



Everyone's Smart
University

Project Fundamentals

Understanding the work at hand

Chapter 2

PMG511

Project Leadership

Learning Outcomes:

2.1 What is a Project?

2.2 Project Life Cycle and the project Phases.

2.3 Organizational Structure.

2.5 Process Models.

2.6 Quality Project.

2.7 Project Outcomes.

2.8 Summary and Conclusions.

2.9 Self Assessment.

2.1 What is a Project?

What is a Project?

- Project based on a business need or opportunity.
- Often explored and initiated by the *Project Sponsor(s)*, who writes or approves the *Project Charter*.
- Has the following features:
 - **A defined beginning and end.**
 - **Unique goals and outcomes.**
 - **Typically requires team members with varied skills.**
- Contrasts with *Operational Work*, which is repetitive 'business as usual'



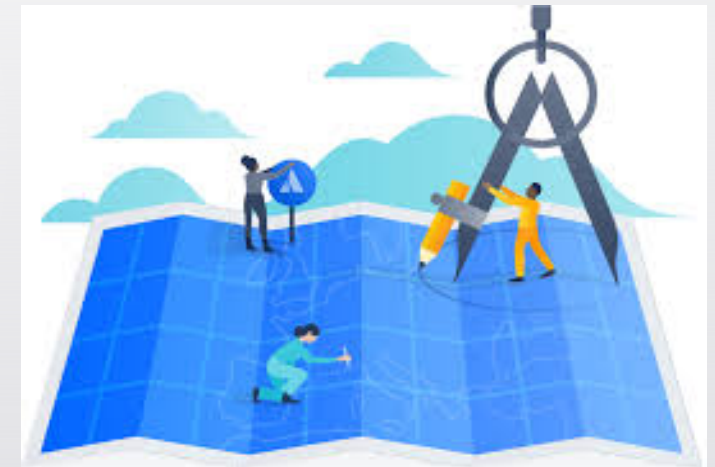
2.2 Project Life Cycle and the project Phases

Project Life Cycle and the project Phases

Most projects need to be broken down into a logical sequence of 'phases', known as **The 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?



A deliverable is a product or service produced or provided as part of a project.

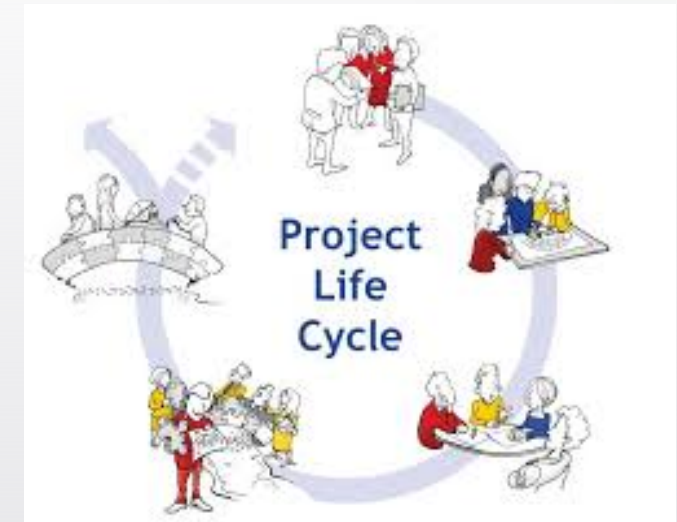
Project Life Cycle (PLC)

- Different project managers or leaders choose different PLC's, depending on the nature of the task i.e. Engineering, software development etc.

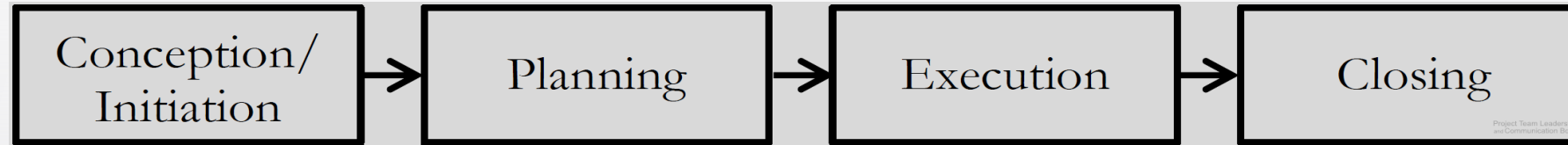


Project Phases

- **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.



Project Phases:



- **Conception/Initiation Phase**

- Research conducted, leadership chosen, goals and requirements established.

- **Planning Phase**

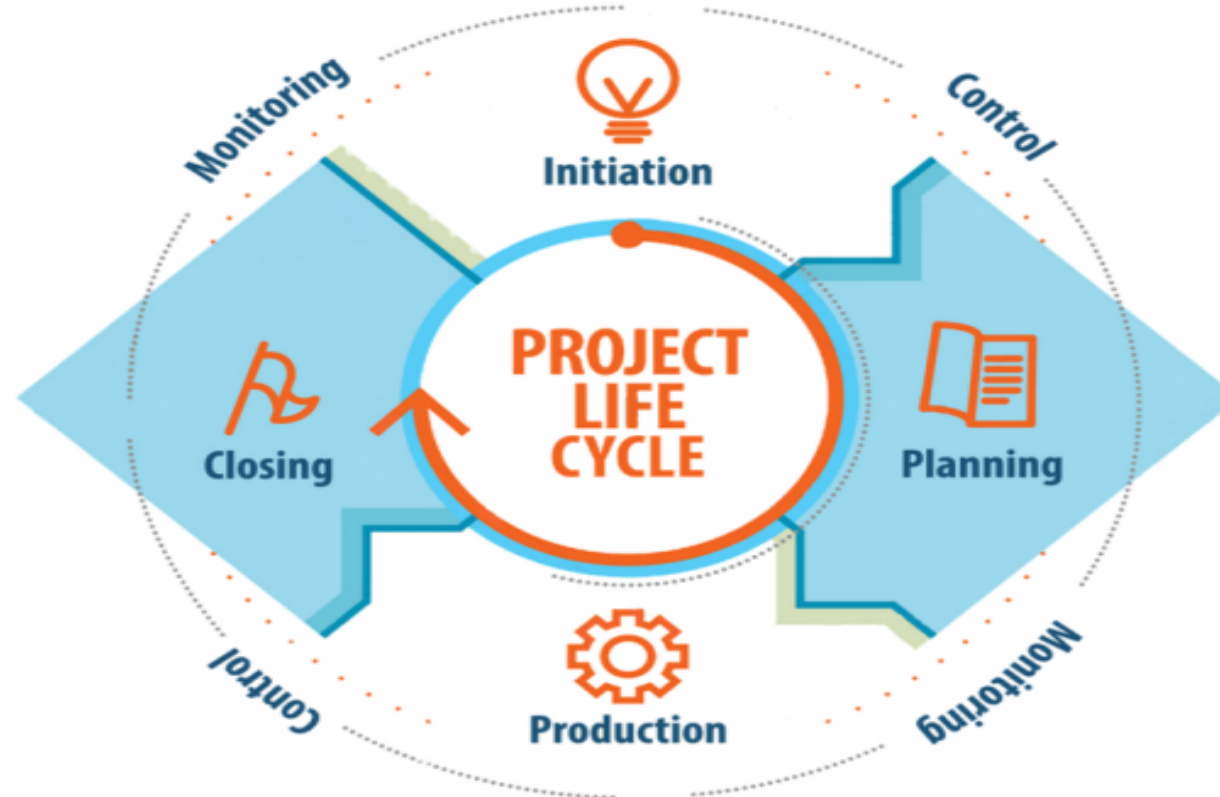
- Detailed plans drafted and documented.

- **Execution Phase**

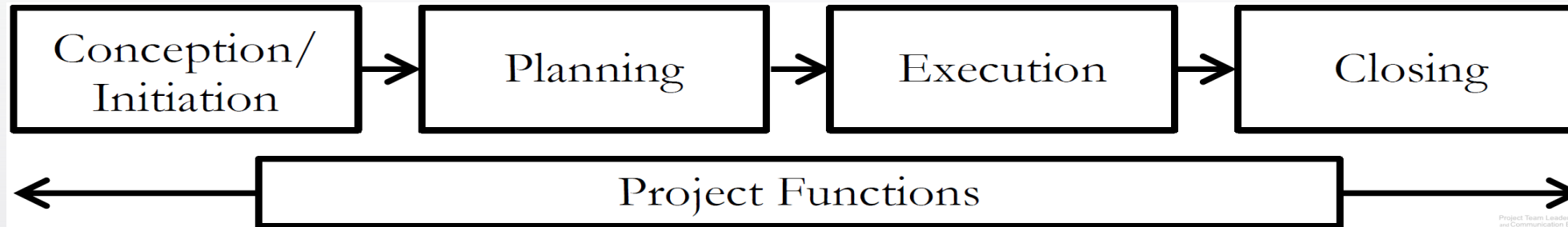
- Plans are implemented, intended result of project takes shape.

- **Closing Phase**

- Results handed off, lessons learned collected.



Project Functions

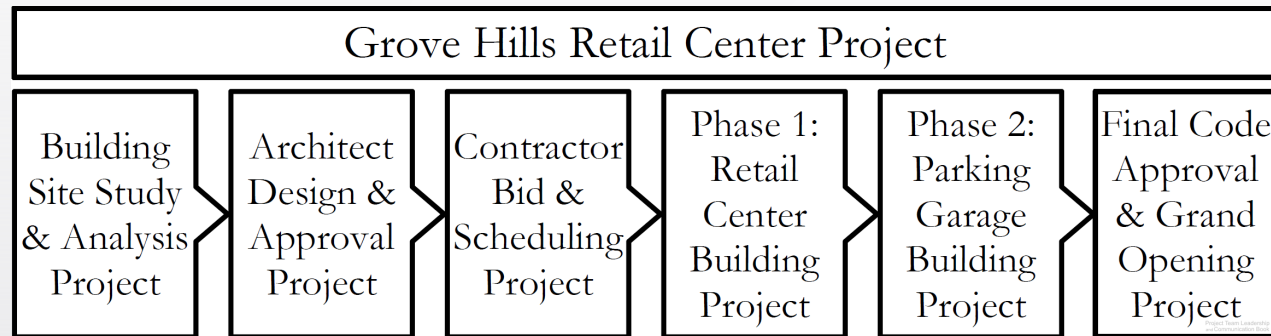


- Unlike individual phases, **Project Functions** don't occur at one point in time – they require continuous attention and/or action:

- Risk and Issue Management.
- Quality Management.
- Communications Management.
- Project Management itself!

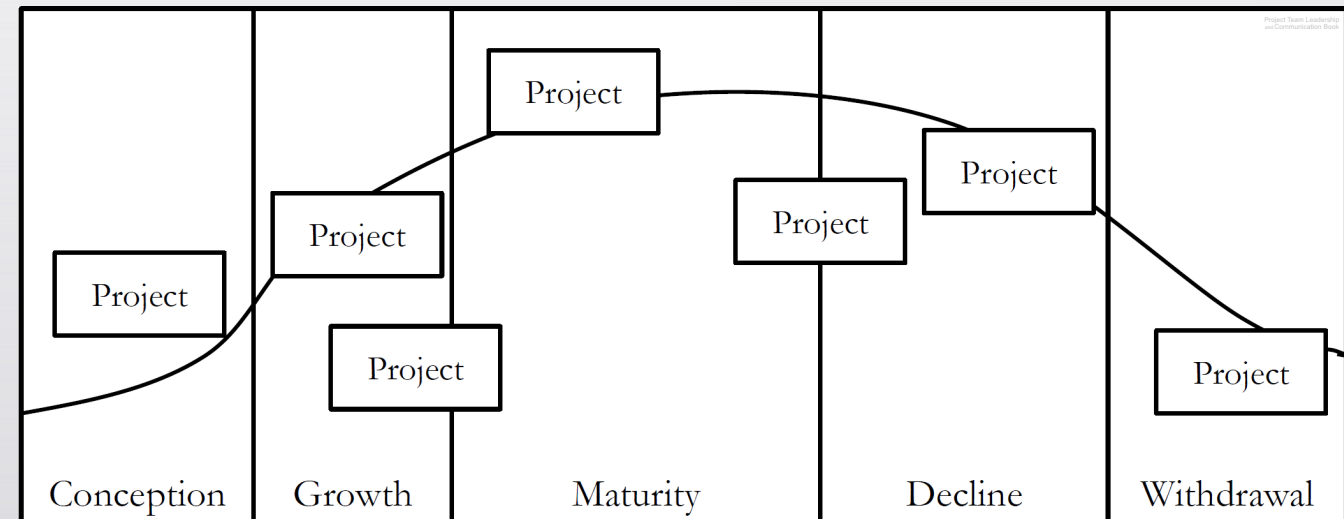


- Projects Can **Vary in Size and Scale**

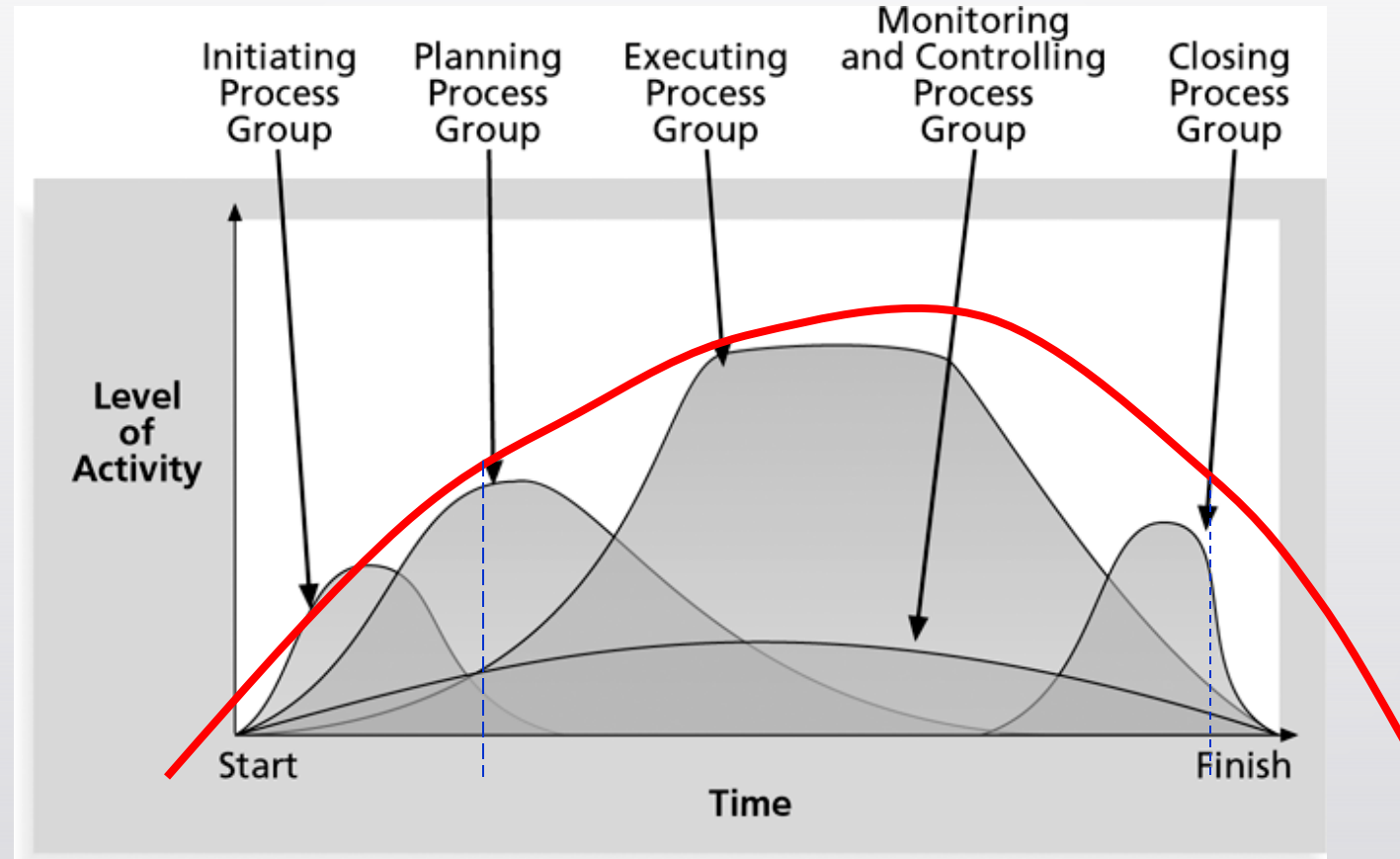


- A large project can have **multiple sub-projects**

- A *project life cycle* includes **projects in every phase**



Level of Activity and Overlap of Process Groups Over Time during the project lifecycle



Project Life Cycle (PLC)

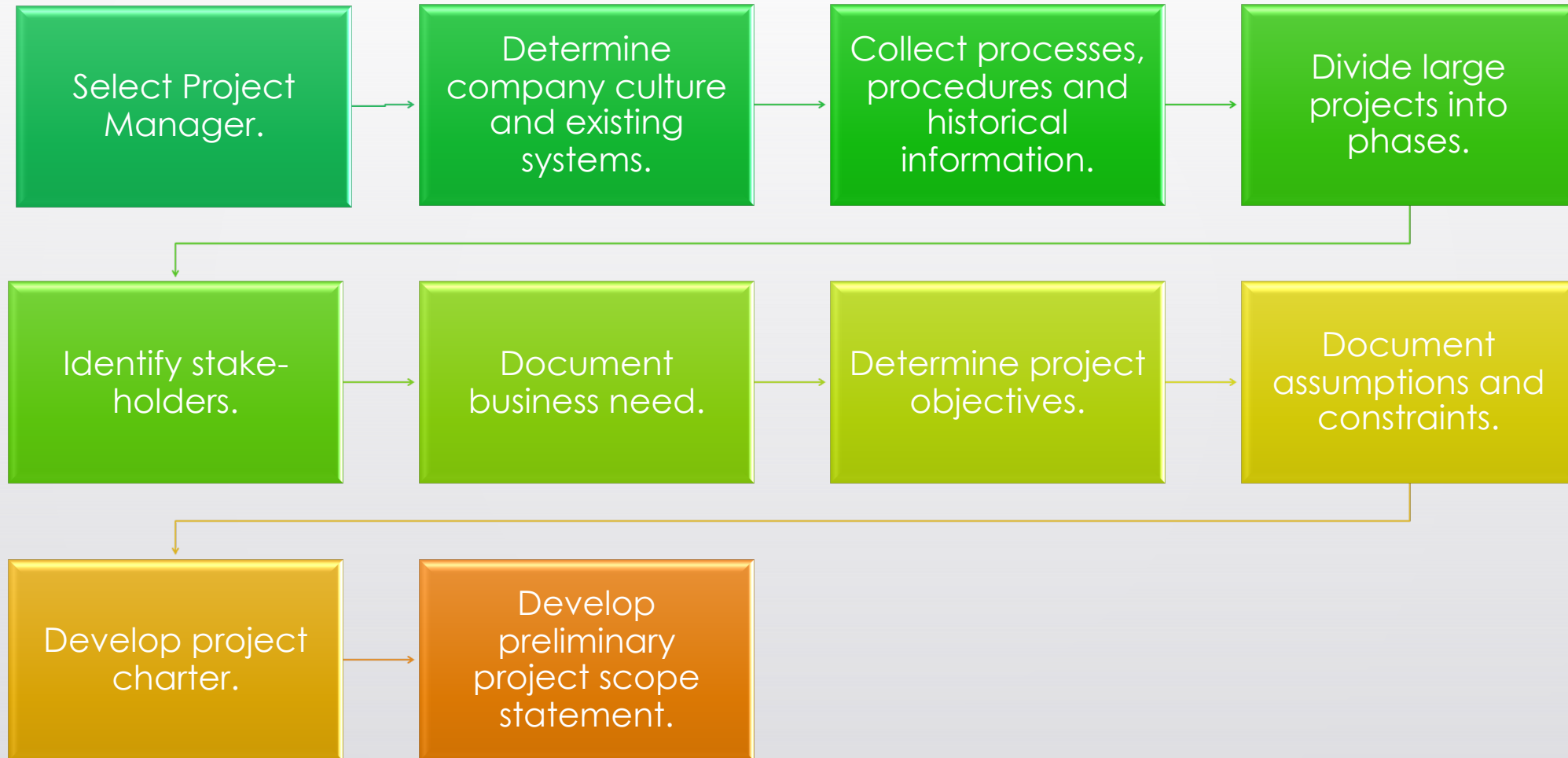
1-Initiation Process

1-Project Initiation :

- Determine the **nature and scope of the project**. If this stage is not performed well, it is unlikely that the project will be successful in meeting the business' needs.
- The key project controls needed here are an understanding of the business environment and making sure that all necessary controls are incorporated into the project. **Any deficiencies should be reported and a recommendation should be made to fix them.**
- Every organization has its own variations of **what documents are required to initiate a project**. It's important to identify the project need, stakeholders, and main goals.



Initiation Breakdown Process:



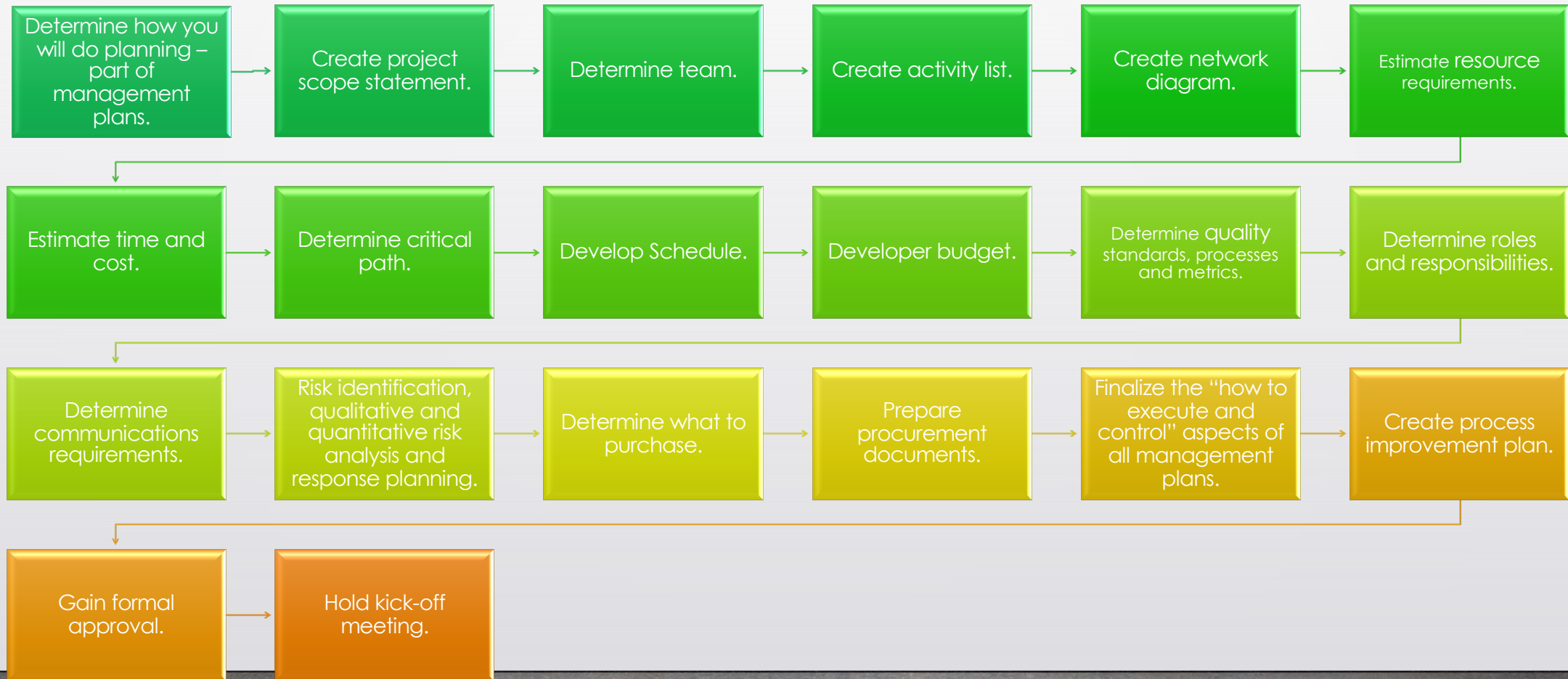
2-Planning process

2- Project Planning

- The main purpose of project planning is to **guide execution**.
- To plan **time, cost and resources** adequately to estimate the work needed and to **effectively manage risk** during project execution. As with the Initiation process group, a failure to adequately plan greatly reduces the project's chances of successfully accomplishing its goals.
- Every knowledge area includes **planning information**.
- Key outputs included in the project include:
 - **A team contract.**
 - **A scope statement.**
 - **A work breakdown structure (WBS).**
 - **A project schedule, in the form of a Gantt chart with all dependencies and resources entered.**
 - **A list of risks (part of a risk register).**



Planning Breakdown process



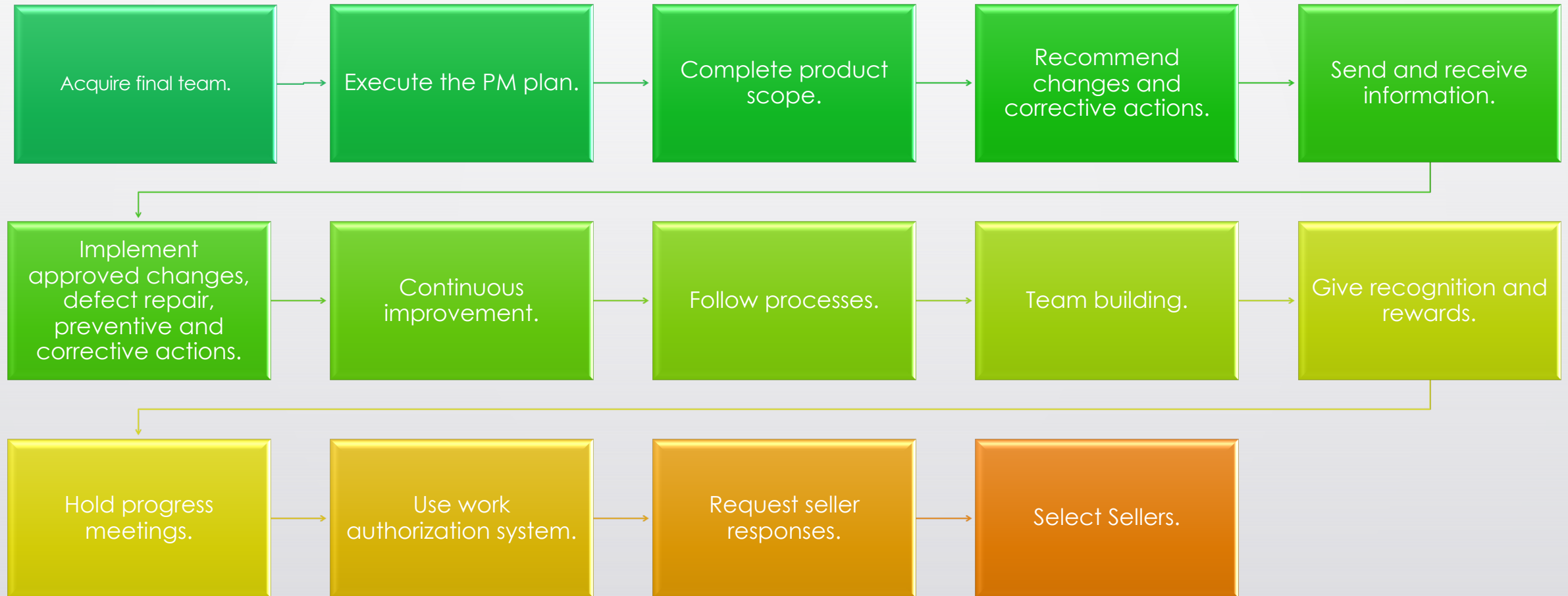
3-Execution process

3- Project Executing

- Project execution usually takes the most time and resources.
- Executing consists of the processes used to complete the work defined in the project management plan to accomplish the project's requirements.
- Execution process involves coordinating people and resources, as well as integrating and performing the activities of the project in accordance with the project management plan.
- The deliverables are produced as outputs from the processes performed as defined in the project management plan.
- Project managers must use **their leadership skills** to handle the many challenges that occur during project execution.
- the executing processes and outputs. Many project sponsors and customers focus on **deliverables** related to providing the products, services, or results desired from the project.



Execution Breakdown processes



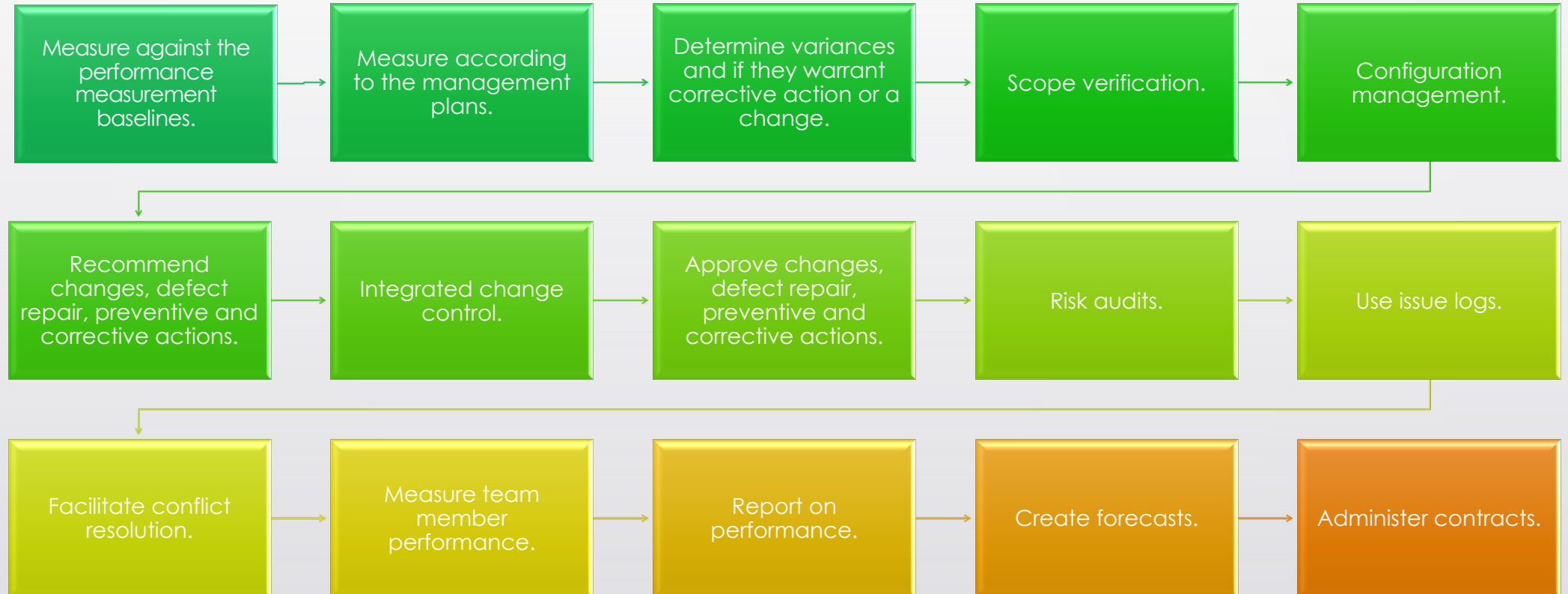
4- Project Monitoring and Controlling process



4- Project Monitoring and Controlling

- Involves **measuring progress** toward project objectives, monitoring deviation from the plan, and taking corrective action to match progress with the plan.
- Monitoring and controlling consists of **those processes performed to observe project execution so that potential problems can be identified in a timely manner and corrective action can be taken, when necessary, to control the execution of the project.**
- The key benefit is that project performance which observed and measured regularly to identify variances from the project management plan.
- **Affects all other process groups and occurs during all phases of the project life cycle.**
- **Outputs** include performance reports, requested changes, and updates to various plans.

Monitoring and controlling Breakdown processes



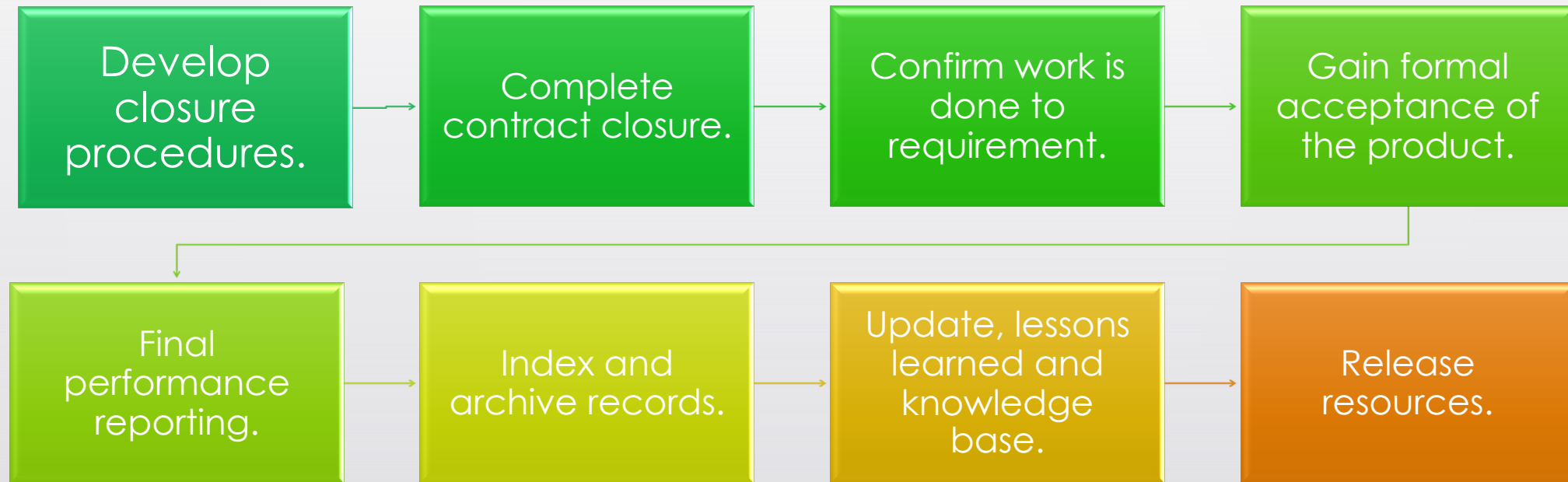
5-Project Closing process

4- Project Closing

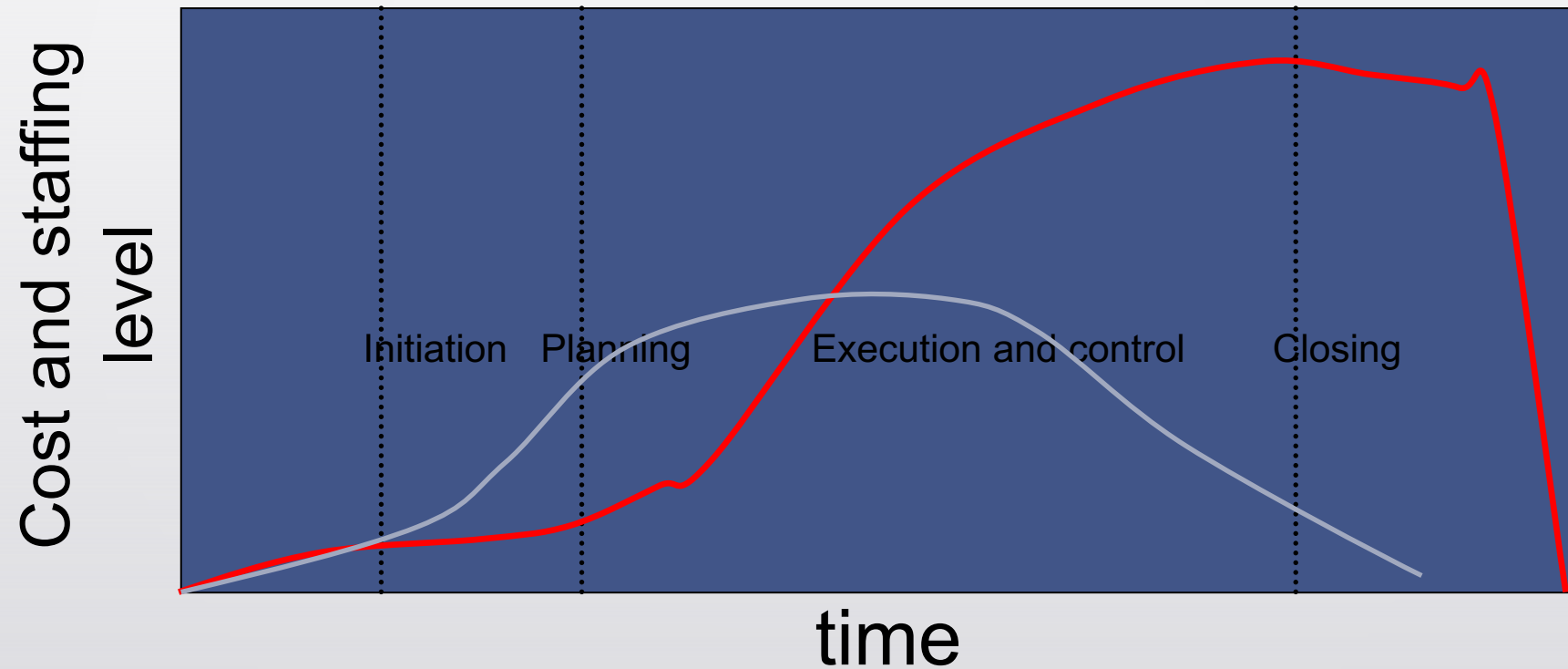
- Closing includes **the formal acceptance of the project and the ending**. And also it include the administrative activities like archiving of the files and documenting lessons learned.
- Involves **gaining stakeholder and customer acceptance of the final products and services**.
- Even if projects are not completed, they should be formally closed in order to reflect on what can be learned to improve future projects.
- Outputs include project **archives and lessons learned**, which are part of organizational process assets.
- Most projects also include a **final report and presentation** to the sponsor or senior management.



Closing Breakdown processes



Project Life Cycle - Ideal v Typical



Project Life Cycle - Ideal v Typical

- The **Red curve** shows that the project is delayed in finishing.
- The area under the curve represents the spend on the project – the red curve spent much more.
- If the project is rushed, do you think that the quality of the outputs or deliverables will be good?

Example of delayed Project:

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



The Opera House under construction in 1965.

2.3 Organizational Structure

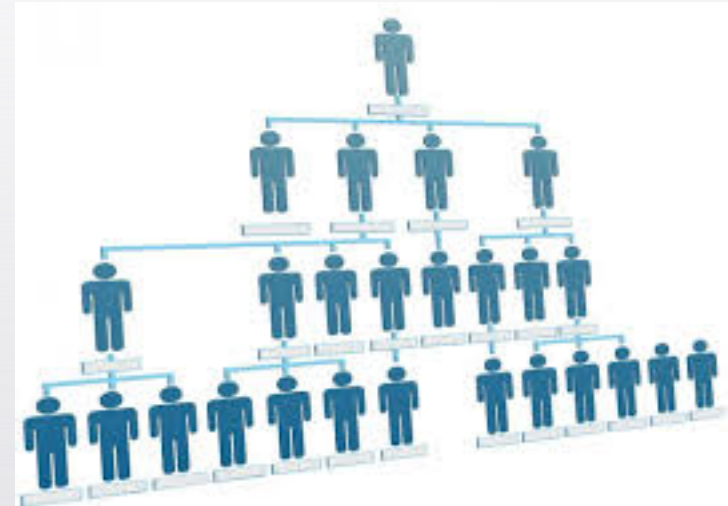
What is organization?

- Organization is the **structural framework** of duties and responsibilities required through a social unit of people, systematically structured and managed to meet a need or to pursue a common and collective goals on a continuing basis.
-



What is organization structure?

Is a system that outlines how certain activities are directed in order to achieve the goals of an **organization**. These activities can include rules, roles, and responsibilities.



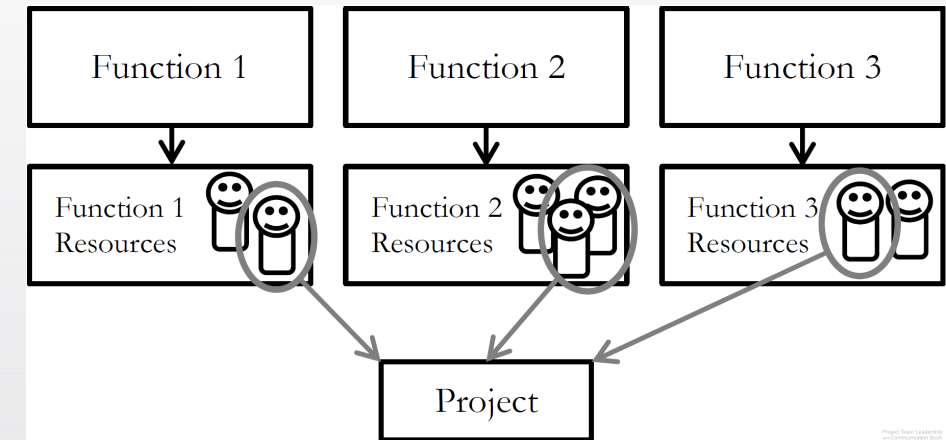
Why do we need organizational structure in a project?

To determine the **relationships, functions and positions and subdivides and delegates roles, responsibilities and authority** to carry out any defined tasks. It determines how **information flows** between levels within the company.



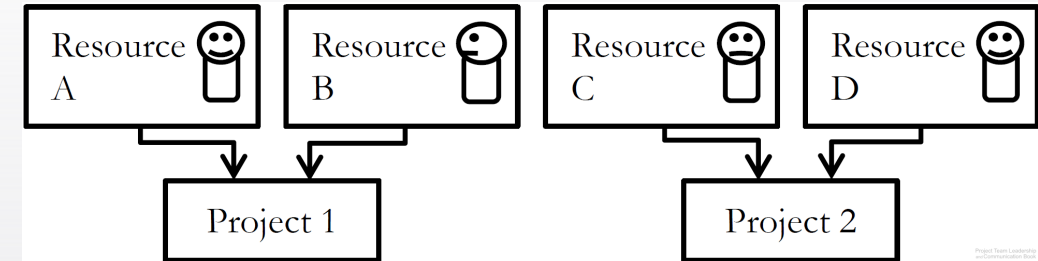
1-Functional Organizational Structure

- 'Classic' organizational structure
- Organization made up of functional 'silos' (HR, Sales, Marketing, etc.)
- Project teams consist of **resources from multiple departments**
- **Strengths:** resource redundancy
- **Weaknesses:** resources don't report to project leader, functional managers may not be supportive of project



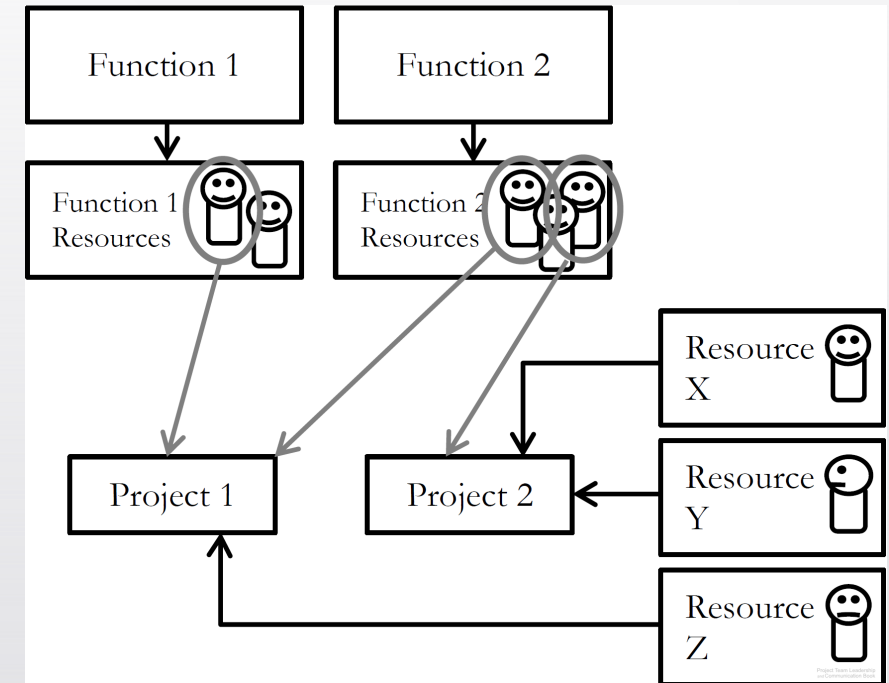
2- Project-Focused (Flattening) Organizational Structure

- 'Flat' organizational structure
- Organization made of project leads and resources, with few 'layers' (few management level).
- Project teams consist of resources specifically recruited/assigned to that project
- **Strengths:** Autonomy/freedom/self-direction, no functional managers
- **Weaknesses:** Resources are tempted to join other projects 'jump ship' to retain employment, projects must 'stand on their own', competition between projects for resources



3- Matrix Organizational Structure

- 'Strong' or 'weak' matrix depending on ratio of Functional to Project-Focused aspects
- Resources are often external contractors
- **Strengths:** compatible with older, 'classic' orgs, can be adjusted as needed.
- **Weaknesses:** some resources may feel more detached from project than others, significant increase in number of stakeholders.



2.4 Organizational Values and Needs

Organizational Values and Needs

- Similar to the concept of *culture*, organizations have defining characteristics:
 - **How customers are treated (input, visibility into inner workings)**
 - **Risk tolerance and preferred schedule certainty**
 - **Experience level of personnel and management**
- And these can highlight certain needs. For example:
 - **The need for extremely clear requirements/specifications vs. the need for stakeholder input .**
 - **The need for a clear schedule vs. the need for a responsive project.**
 - **The need for many or few project artifacts (documentation).**



2.5 Process Models



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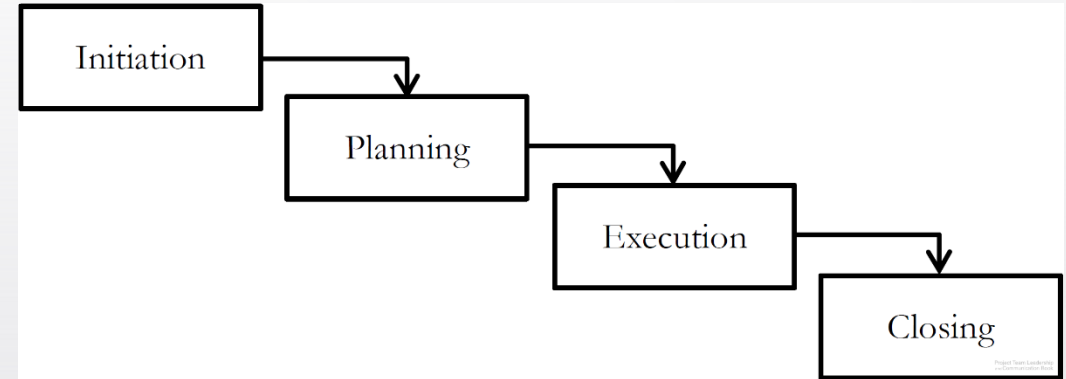
Process in Organizations

- Process are actually **much less abstract (they're more exact) in organizations**
- It is the “The project life cycle”.



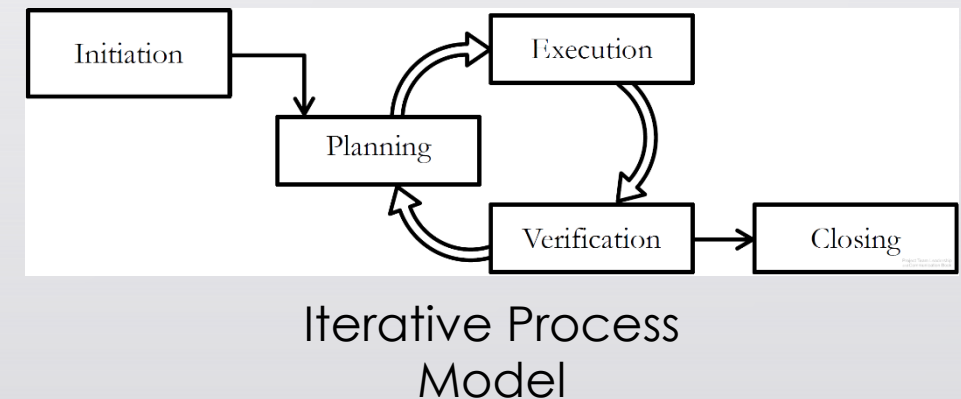
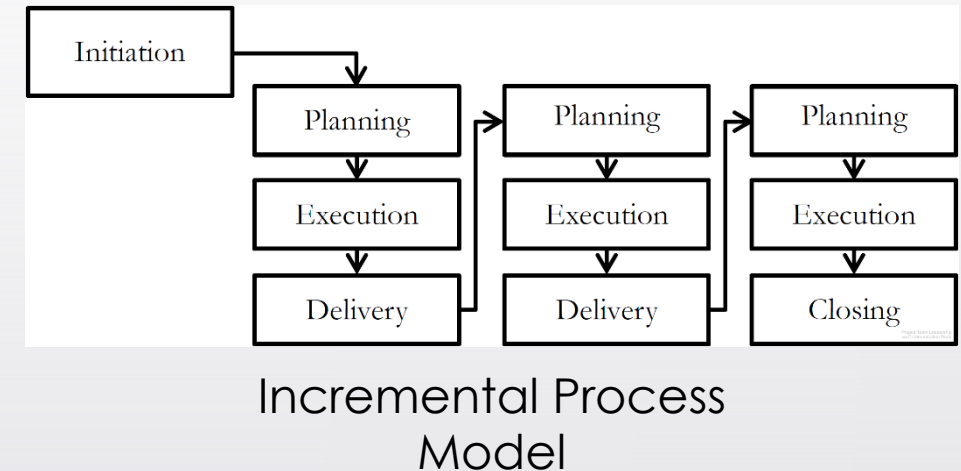
1-Plan-Focused Process Models

- Each step must be completely **done** before the next can be begun
- Plans are made for each step, then executed **'waterfall' style**
- **Strengths**: high, schedule certainty, easy to understand, straightforward, time-tested
- **Weaknesses**: does not handle uncertainty/change well, stakeholder *visibility* can be poor (only changes of phase)



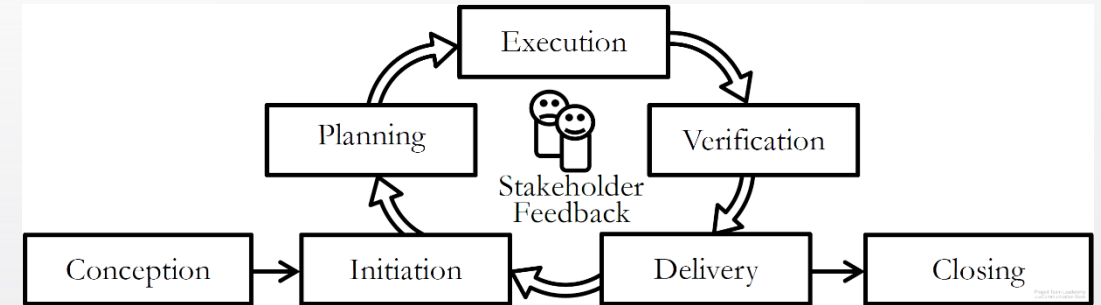
2- Cyclical Process Models

- Projects cycle through **delivery or feedback phases**
- Plans are made a little-at-a-time
- Strengths:** stakeholder visibility is often higher than Plan-Focused
- Weaknesses:** can be difficulty to know when to stop, requires strong disciplined leadership or can get out of control



3- Change-Focused Process Models

- Responsiveness to change and stakeholder input is the most important aspect
- Similar to Cyclical Process Models
- Requires **experienced, disciplined leaders and team members**
- **Strengths**: stakeholder visibility is high (they're consulted frequently), responds well to changing market conditions or circumstances
- **Weaknesses**: can 'go on forever' if stakeholders are uncertain or conditions keep changing, requires frequent customer interactions



2.6 Quality Project

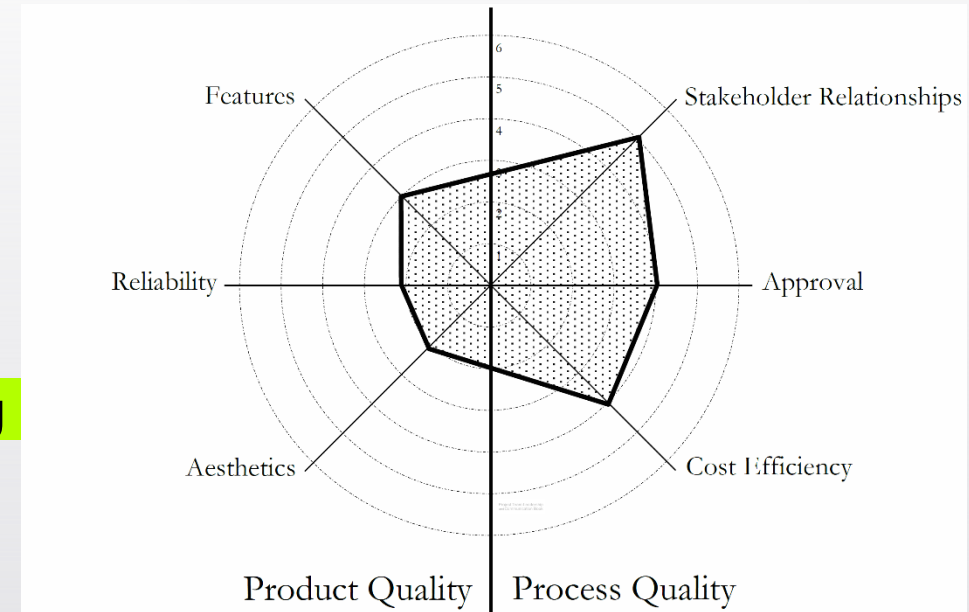
Project Quality

- Quality is hard to define; most agree there are three main aspects:
 1. **Standards** defined by the industry, organization, or team.
 2. **Conformance** to the requirements, specifications, and commitments inherent to the project.
 3. **Excellence**, the need to go beyond strictly meeting basic requirements/specifications. Thinking about elements such as the user's perspective, maintenance, long-term cost, etc.
- A fourth element can't be ignored, though:
 - **Perception** – do stakeholders have an appropriate, well-informed view of the project? Are communications appropriate? Is the team acting professionally?



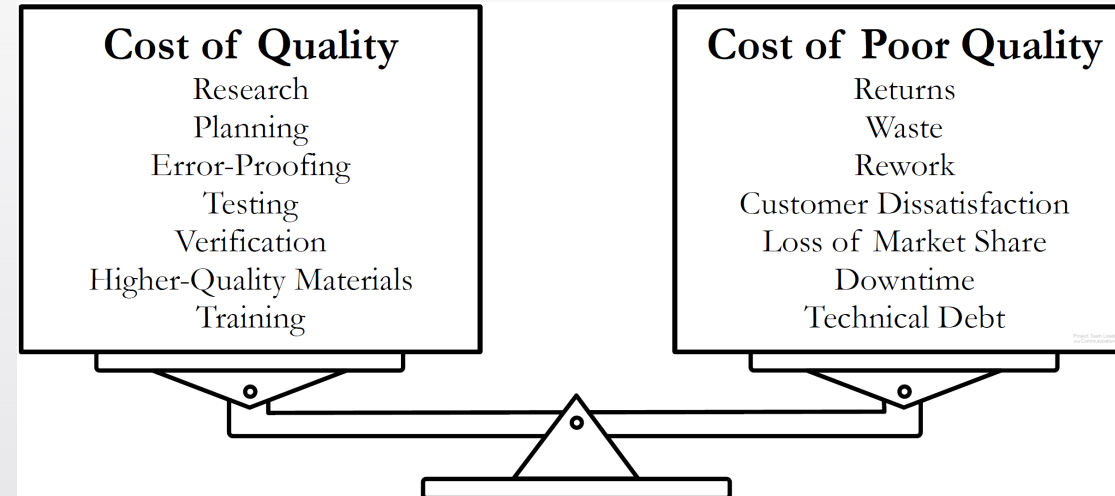
Product and Process Quality

- Product Quality relates to what the project is trying to produce
 - Examples include: **Features, performance, durability, reliability, resources consumed**
- Process Quality relates to the **team's planning and execution of the project**
 - Examples include: **Timeliness, safety, compliance, responsiveness to customer**
- Both must be addressed, balance must be achieved



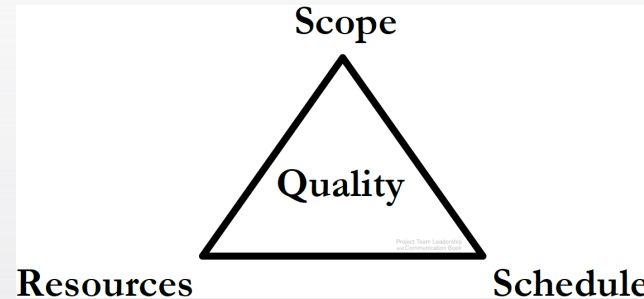
‘Radar Chart’ Showing Balance/Prioritization of Quality in a Project

Quality is a Balancing Act



- Projects must **balance** the **cost of quality** with the **cost of poor quality**.
- Determining where that balance lies requires teams to **think about future** implications of their actions.

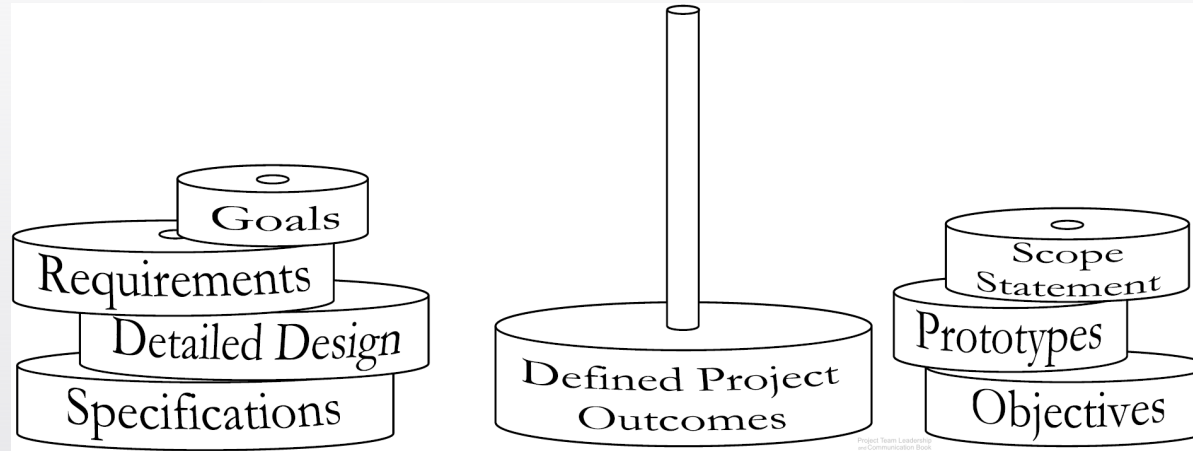
Projects are a Balancing Act, The Project Triangle



- **Resources:** The budget, materials, wages, etc.
- **Schedule:** The time expended.
- **Scope:** What is and isn't included in the project outcomes.
- **Quality:** can relate to any or all of the three.
- **Balance:** More scope requires more resources, more schedule, or both. Faster project means less scope/more resources, etc.

2.7 Project Outcomes

Defining Project Outcomes



- Defining **the projects outcomes, or deliverables** often requires multiple *artifacts* (documents).
 - Specific artifacts can vary by industry, organization, or team

1- Project Goal Statements

Goals – The overarching outcomes of the project.

- **High-level:** What the project is trying to achieve.
- **Measurable:** It should be clear when the goal is or isn't met.
- **Achievable:** Within the capability of the resources/time available.



2- Project Scope Statements

Scope Statements – What *is* and *isn't* included in the project?

- A list of major *deliverables*.
- A basic strategy.
- Constraints, assumptions, and external dependencies.
- Often in the form of paragraphs with 'bullets'.



3- Project Requirements / Specifications

Requirements and/or Specifications – Details for what's expected.

- Non-ambiguous.
- Reader should know exactly what's needed.
- Functional (the outcomes) and non-functional (limits such as schedule, safety, etc.)



Project Kicking Off Meeting

The 'Project Kickoff Meeting' is designed to:

- Establish the project and begin the work.
- Introduce team members and stakeholders to each other, and define roles/responsibilities.
- Share clear goals and objectives, define what success means to the team.
- Choose/share tools, meeting times, etc.
- Begin foundational work on the project plans.

2.8 Summary and Conclusions

Summary and Conclusions

- **Projects** are **unique and time limited**, and **vary from organization to organization** (size, length, etc.).
- **What is the project phases and project lifecycle?**
- Organizational **structures, values, and needs** have very significant effects on projects and how they're carried out.
- **Quality** (the cost of quality and the cost of poor quality) and the Project Triangle represent a constant give-and-take balancing act.
- **Project outcomes** are defined in layers, which can include **goals, objective, requirements/specifications**.
- **Project kickoff meetings** and creating the project plan are often the initial steps in any project.

2.9 Self Assessment.

Self Assessment



1- List 10 successful projects around you from any of the following industries:

- | | |
|-----------------------------|----------------------------------|
| • Automobile Manufacturing | • Health Care |
| • Agriculture | • Music Production |
| • Banking | • Publishing/Printing |
| • Software Development | • University Education |
| • Defense Contractors | • Venture Capital and Investment |
| • Canned Food Manufacturing | |

Self Assessment



2- Think about your own project, organize a teams of 3-4 and consider the following :

Your project phases, structure of organization, the values and needs, goals/objectives, basic scope statement, specifications/requirements and the project quality.

Resources:

- Project Team Leadership and Communication by [Samuel Malachowsky](#), 2018.



THANKS!