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MIDOCEAN
UNIVERSITY
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Project Leadership

PMG 511

Lecture 2
Ch2 - Project Fundamentals

Prepared by
Dr Hakem Sharari

www.midocean.ae

Learning Outcomes

- What is a Project?
- Project Life Cycle and the project Phases.
- Organizational Structure.
- Process Models.
- Quality Project.
- Project Outcomes.
- Summary and Conclusions.
- Self Assessment.

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'.

Project Life Cycle

Project Life Cycle

- 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 will management control and approve work produced in each phase?
- A deliverable is a product or service produced or provided as part of a project.



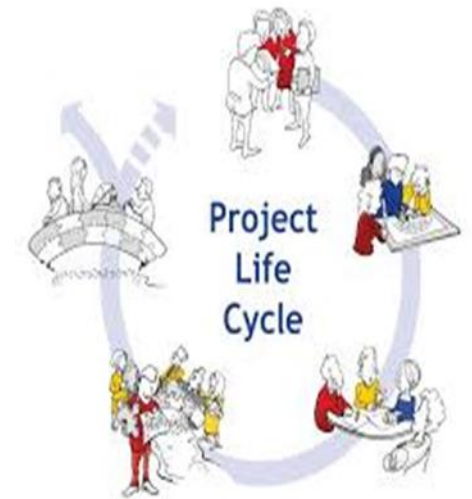
Project Life Cycle

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



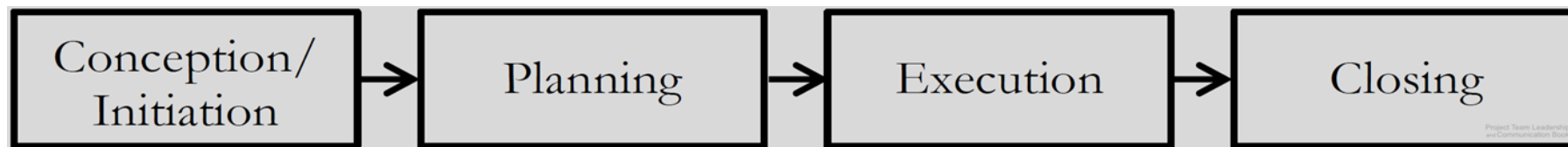
Project Phases

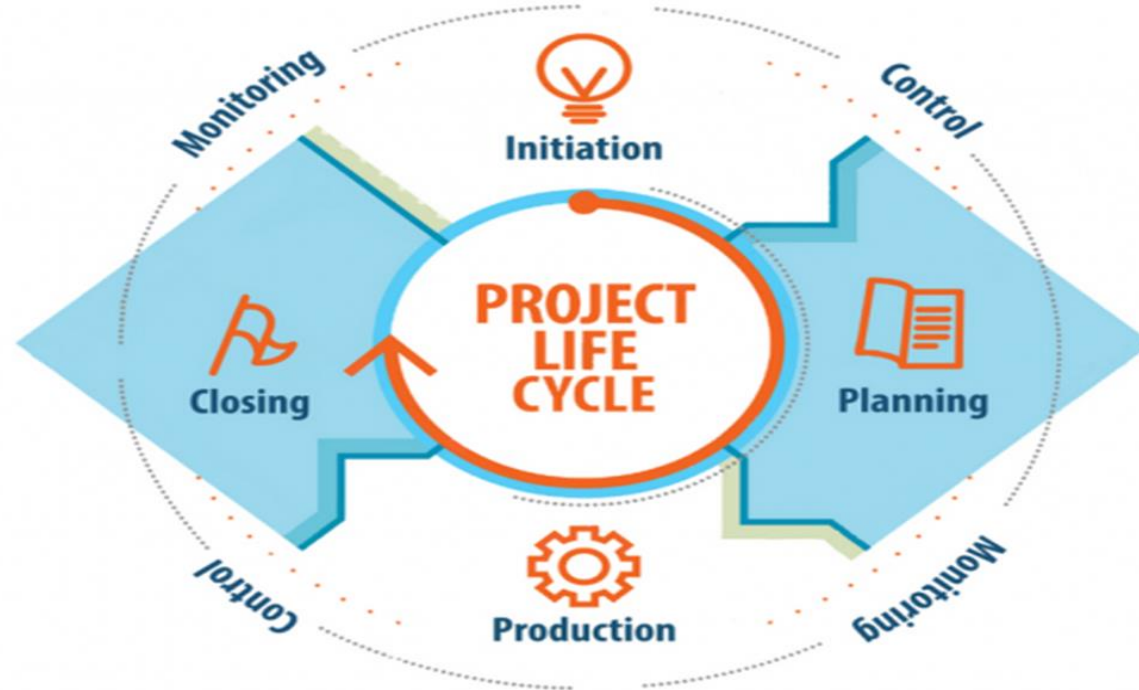
- In the early phases of a project life cycle:
 - Resource needs are usually lowest.
 - The level of uncertainty (risk) is highest.
 - Project stakeholders have the greatest opportunity to influence the project.
- In the middle phases of a project life cycle:
 - The certainty of completing a project 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:** research conducted, leadership chosen, goals and requirements established.
- **Planning:** detailed plans drafted and documented.
- **Execution:** plans are implemented, intended result of project takes shape.
- **Closing:** results handed off, lessons learned collected.

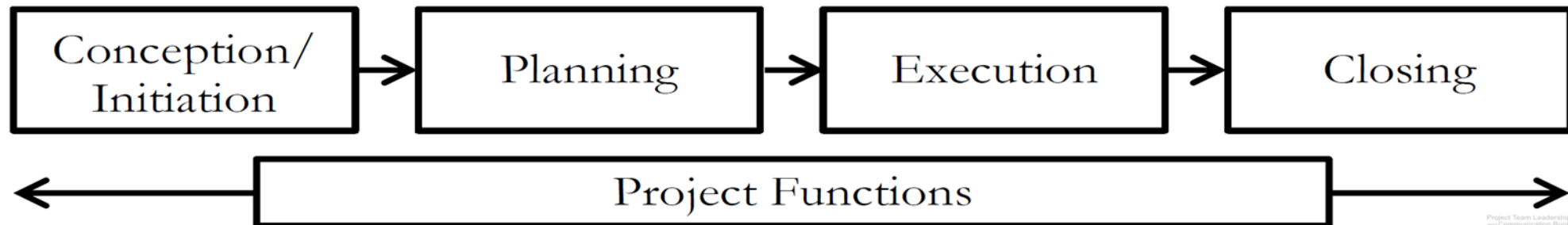




Project Functions

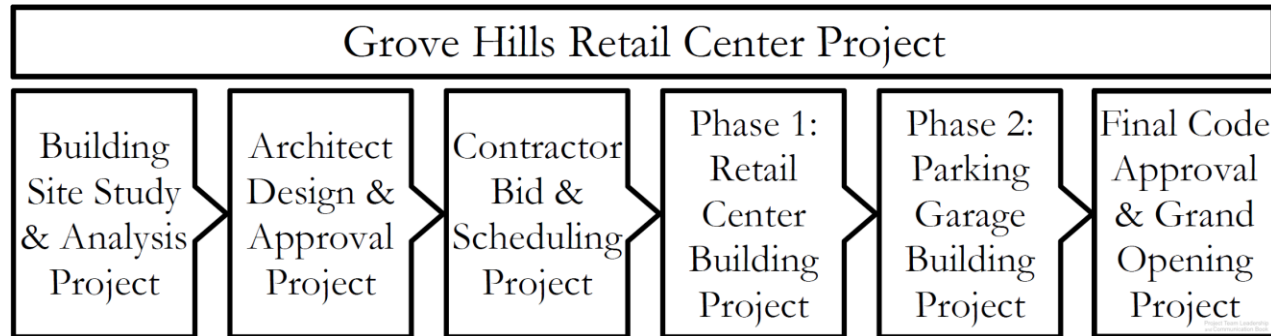
➤ Unlike individual phases, project functions don't occur at one point in time – they require continuous attention and/or action:

- Risk and Issue Management.
- Quality Management.
- Communications Management.
- Managing the Project Itself.



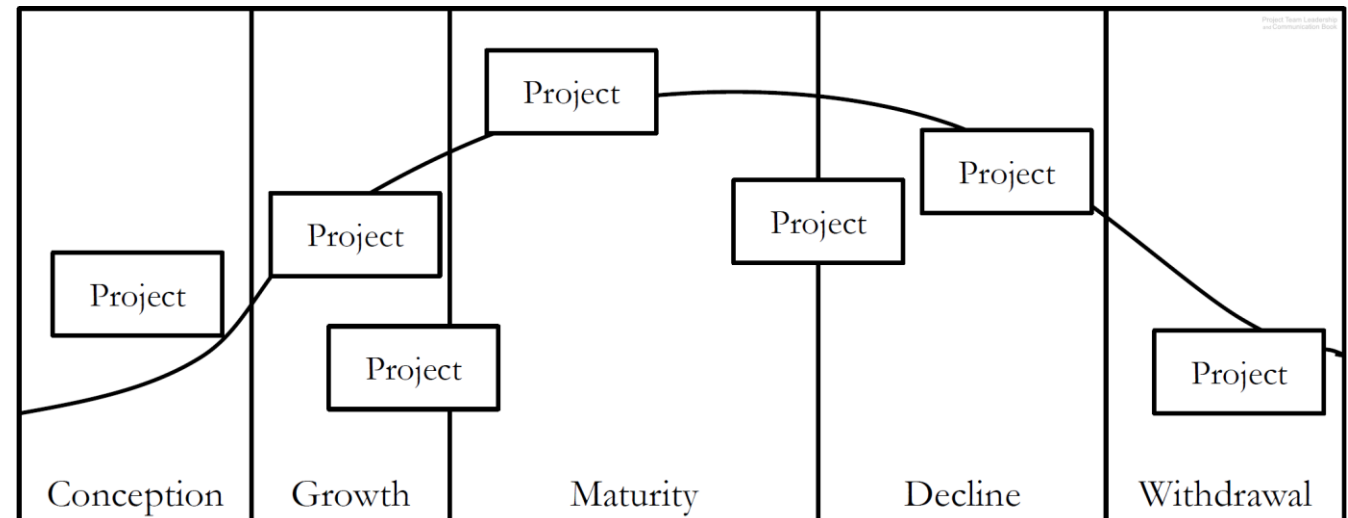
Projects Size and Scale

- Projects can vary in size and scale.



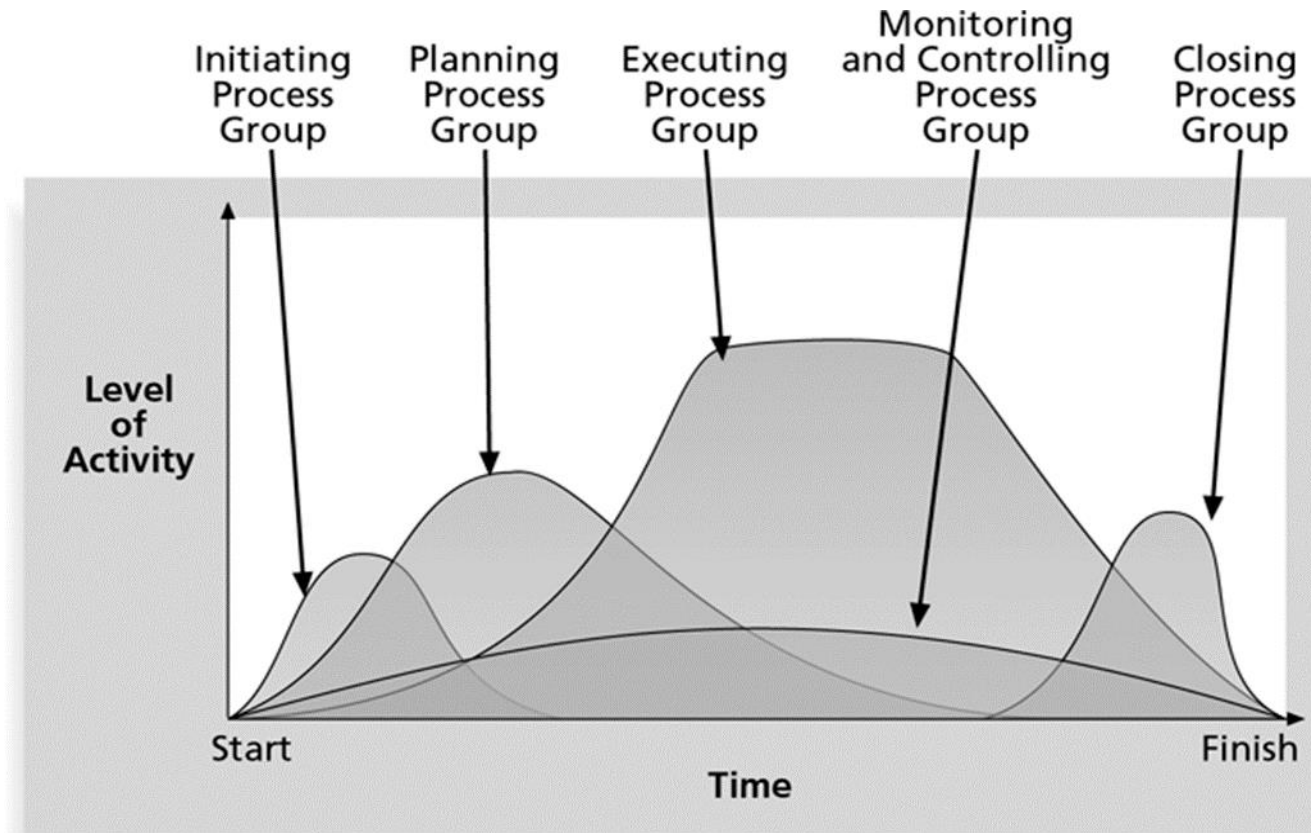
- A large project can have multiple sub-projects

- A project life cycle includes projects in every phase



Activity and Groups

- Level of activity and overlap of process groups over time during the project lifecycle.



Project Life Cycle (PLC)



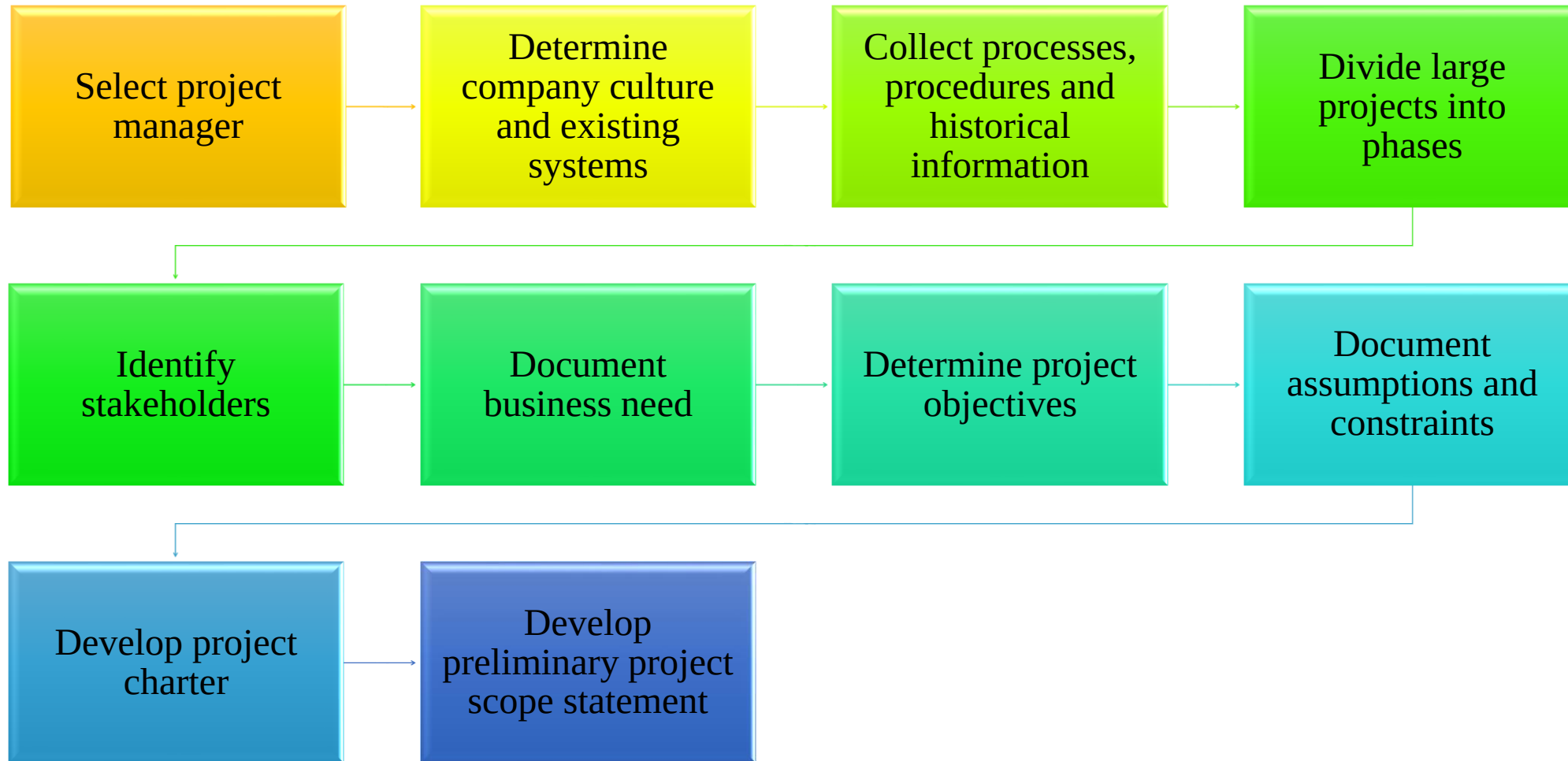
Initiation Process

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



Planning Process

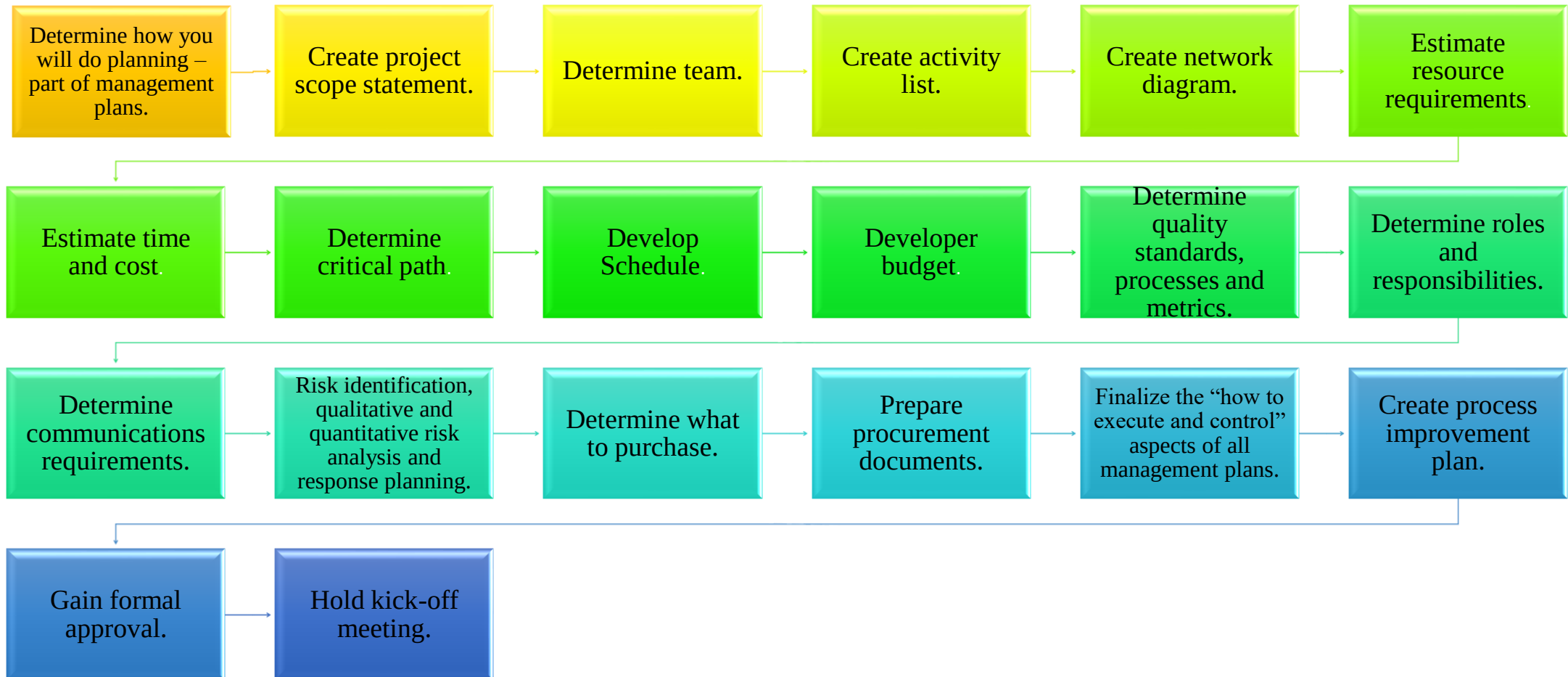


Project Planning

- 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).



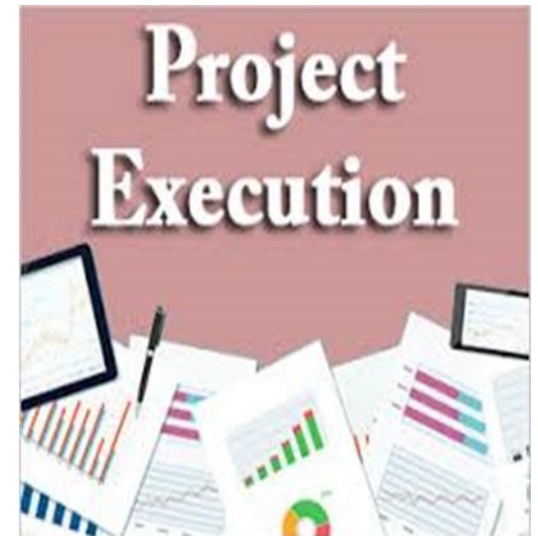
Planning Breakdown process



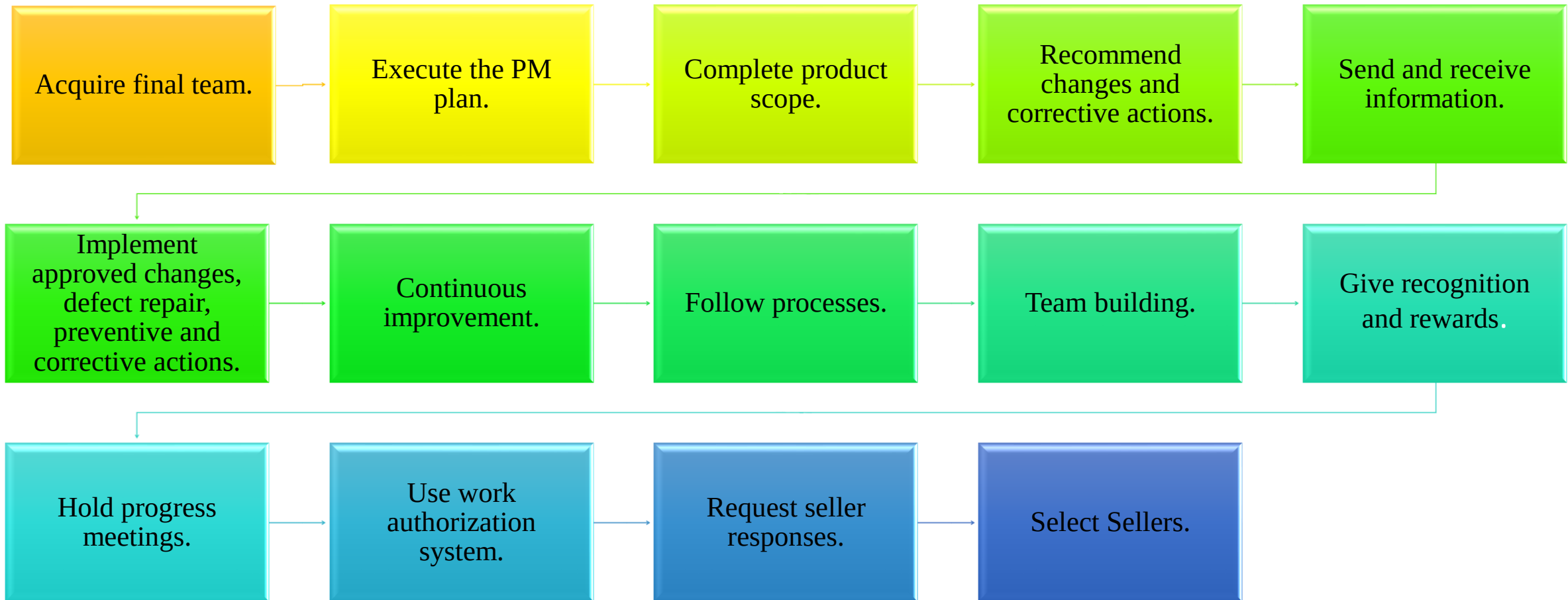
Execution Process

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



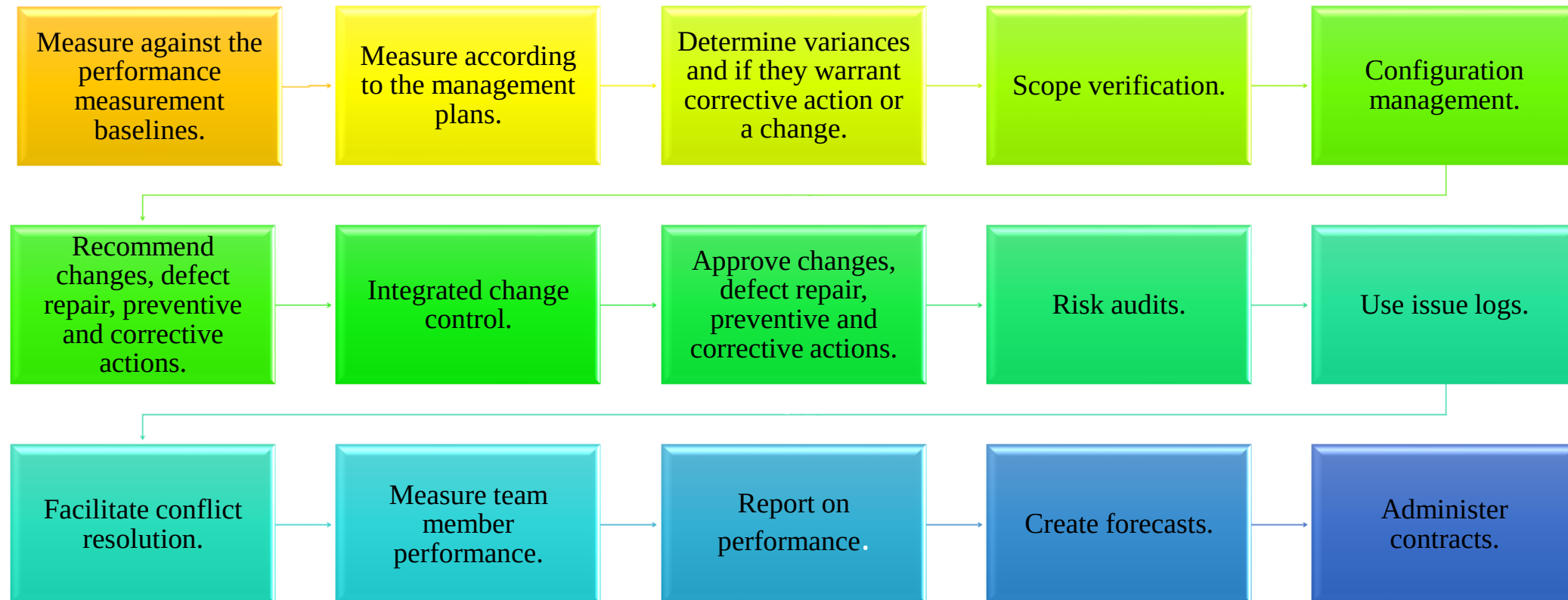
Monitoring and Controlling Process

Monitoring and Controlling Processes

- 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



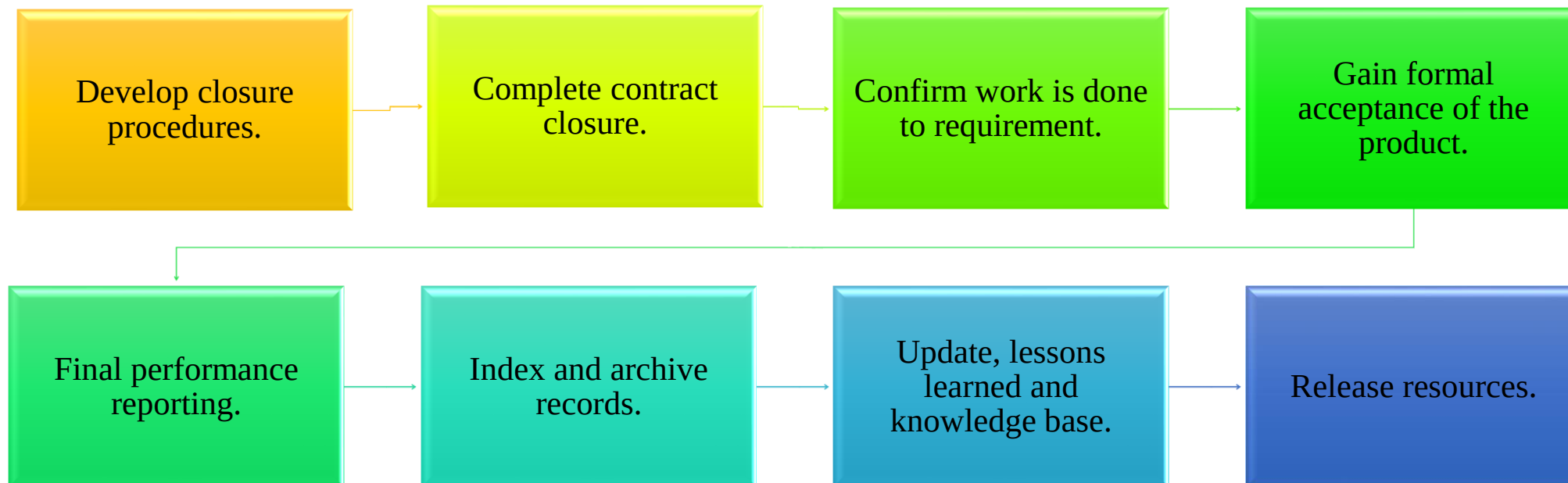
Closing Process

Project Closing

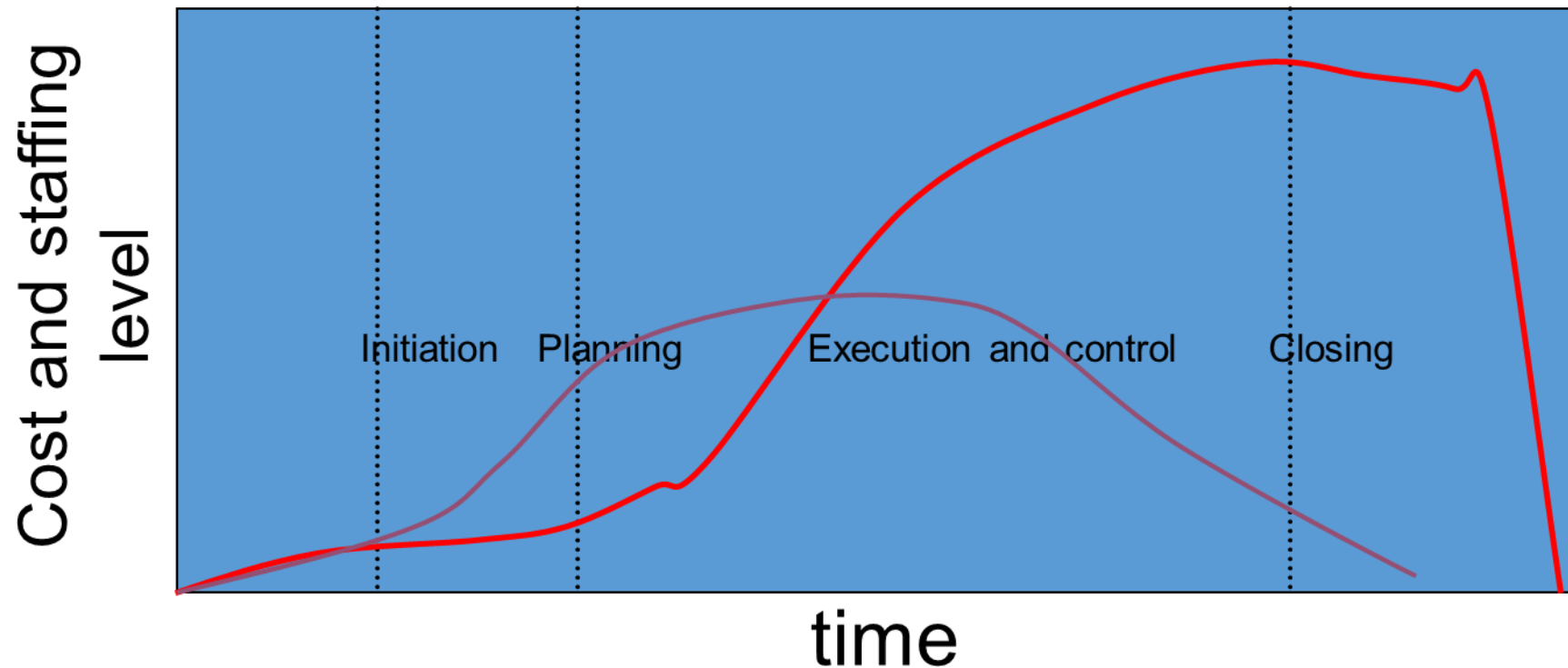
- Closing includes the formal acceptance of the project and the ending. And also it include the administrative activities like archiving of the files and documenting lessons learned.
- Involves gaining stakeholder and customer acceptance of the final products and services.
- Even if projects are not 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 vs 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 a 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.



Organizational Structure

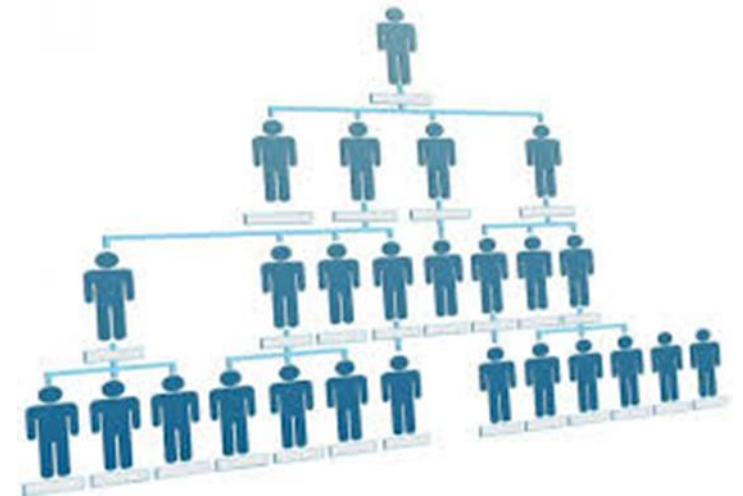
What is organization?

- 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 An Organizational 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



Organizational Structures and Projects

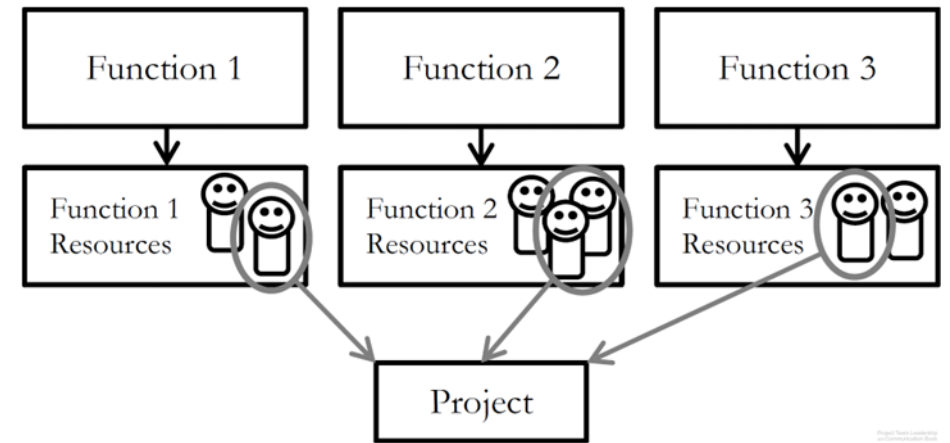
➤ Why do we need organizational structure in a project?

**To determines 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**



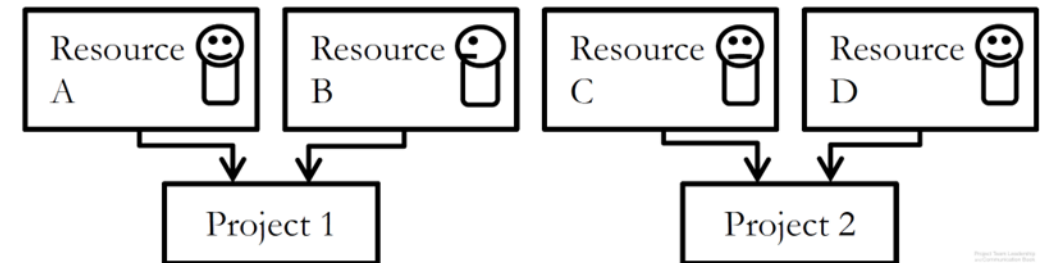
Functional Organizational Structure

- ‘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.



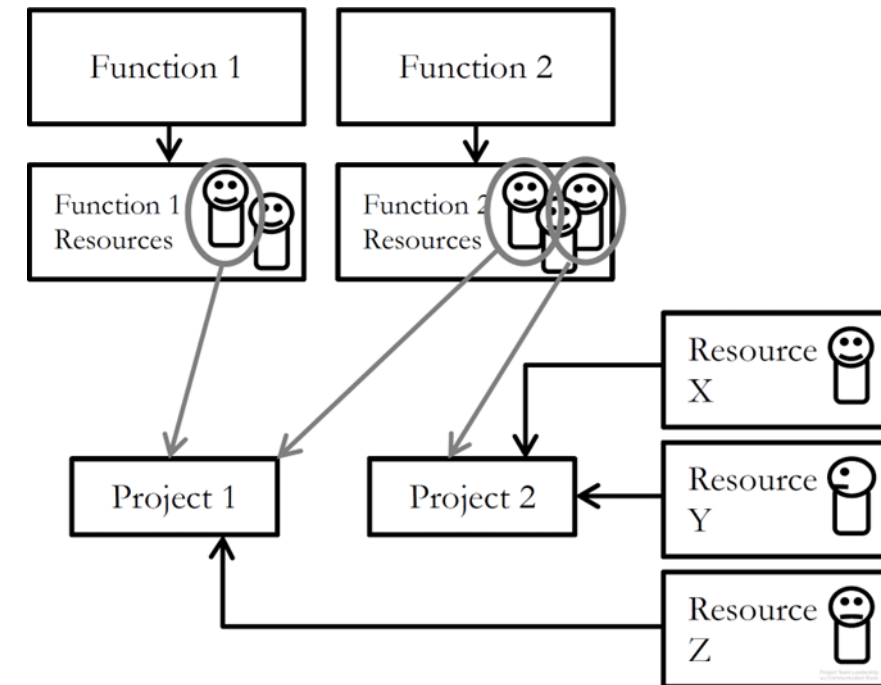
Project-focused Organizational Structure

- '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.



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.



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

➤ 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).



Process Models

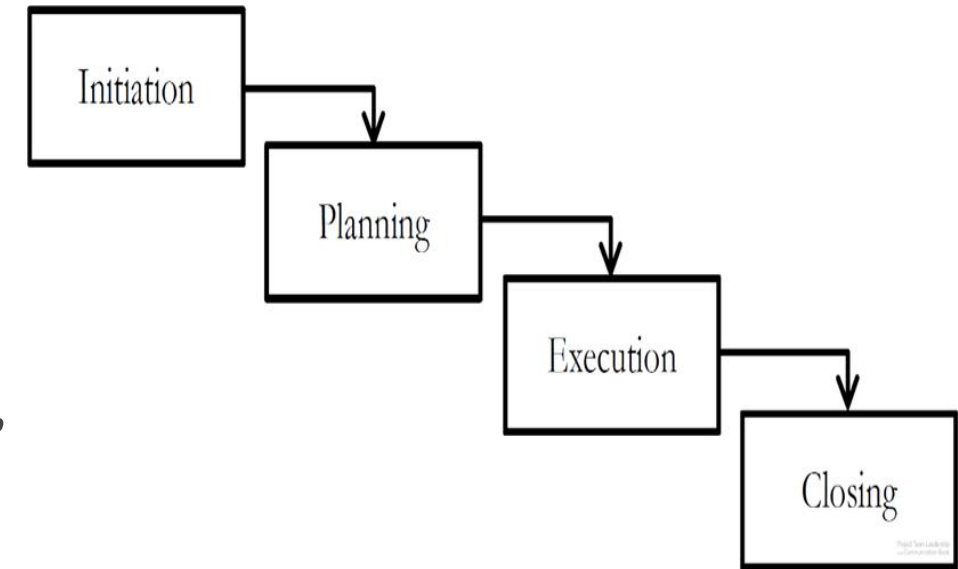
Process in Organizations

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



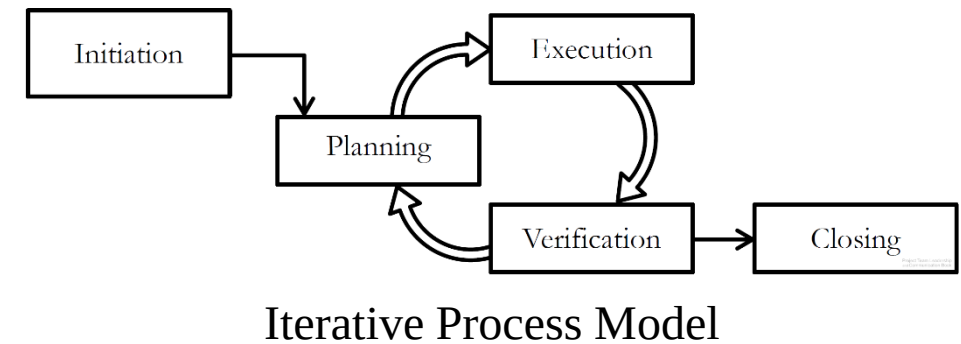
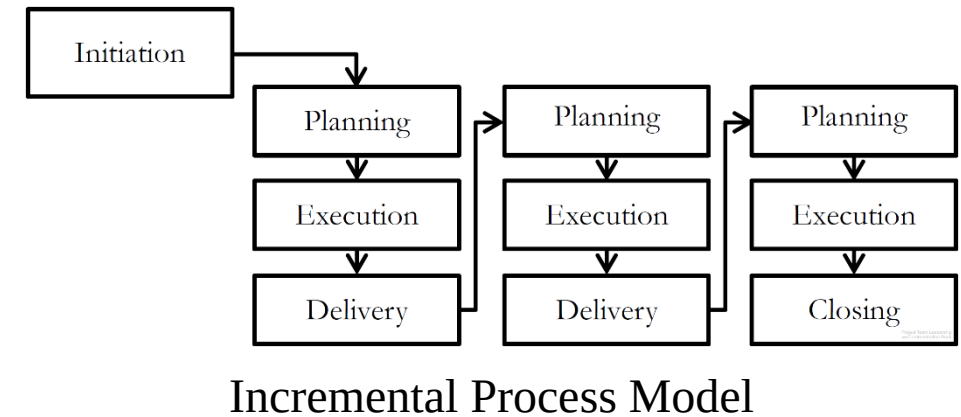
Plan-focused Process Models

- 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).



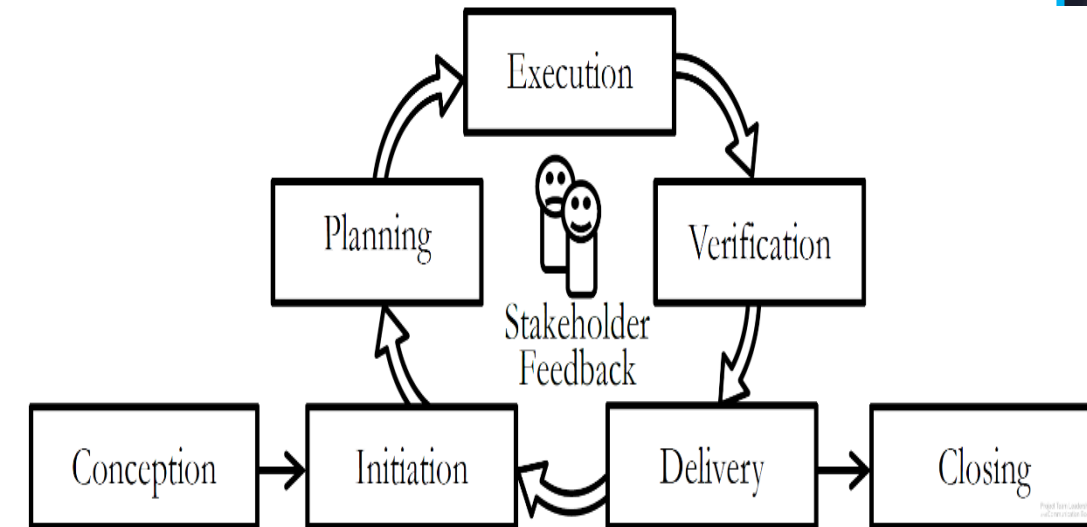
Cyclical Process Models

- 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.



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.



Project Quality

Project Quality

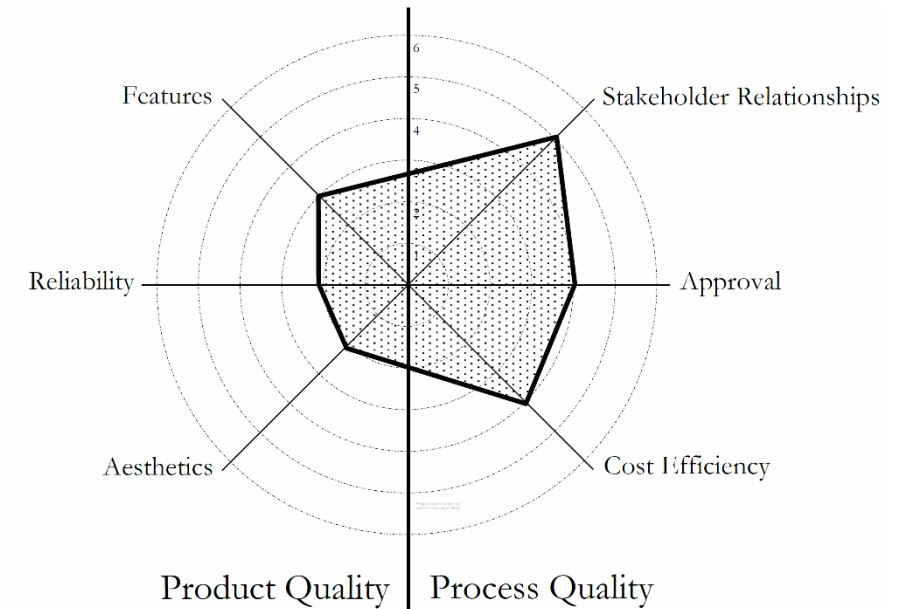
- Quality is hard to define; most agree there are three main aspects:
 - **Standards** defined by the industry, organization, or team.
 - **Conformance** to the requirements, specifications, and commitments inherent to the project.
 - **Excellence**, the need to go beyond strictly meeting basic requirements/specifications.

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?

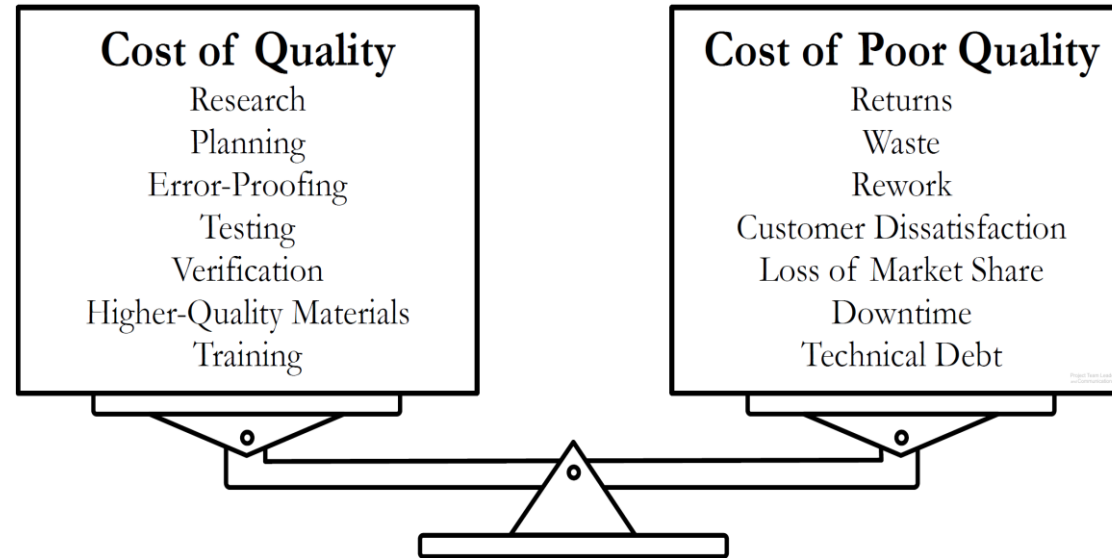
Product and Process Quality

- 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, and balance must be achieved.



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

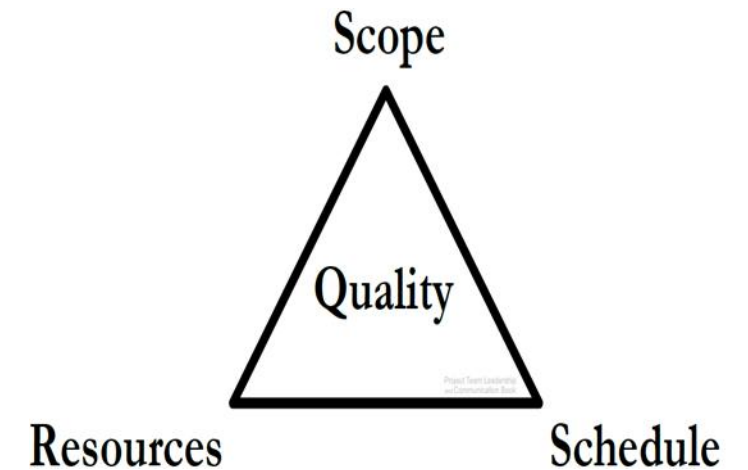
Quality As a Balancing Act



- 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.

The Project Triangle

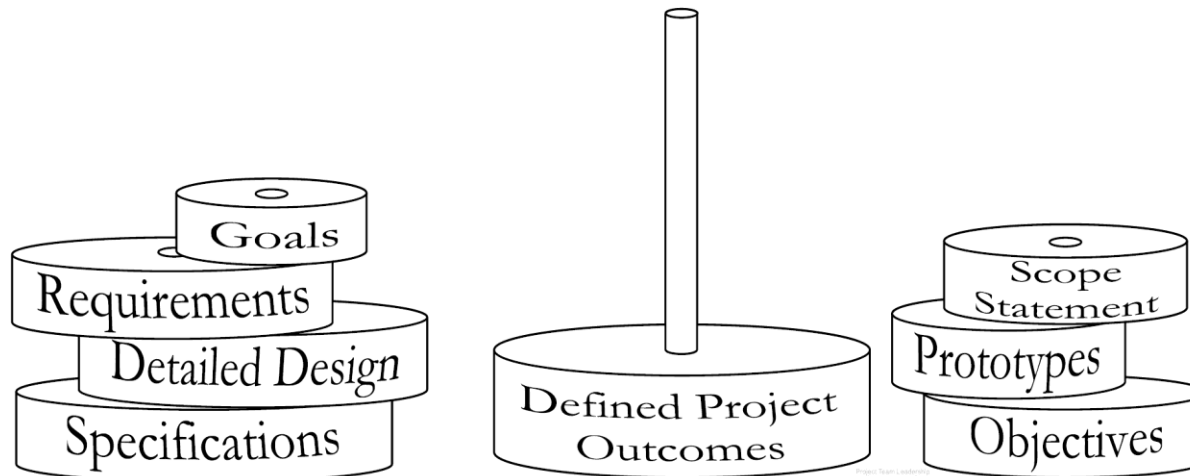
- **Resources:** the budget, materials, wages, etc.
- **Schedule:** the time expended.
- **Scope:** What is and isn't included in the project outcomes.
- **Quality:** can relate to any or all of the three.
- **Balance:** more scope requires more resources, more schedule, or both. Faster project means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



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.



Project Goal Statements

- Goals are 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.



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'.



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 Kick-off Meeting

- The 'Project Kick-off 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.

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.

Self Assessment

Self Assessment

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

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

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.

Thank You For Listening

Reference

