IT PROJECT MANAGEMENT

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Project Life Cycle

- Role of a Project Manager
  - Leads the team responsible for achieving project objectives
  - PM's reporting relationships are based on the organizational structure and project governance.
  - PM should have specific technical skills and general management proficiencies.
  - Other attributes
    - Knowledge about project management, the business environment, technical aspects and other information necessary to manage the project effectively
    - Skills needed to effectively lead the project team, coordinate the work, collaborate with stakeholders, solve problems and make decisions.
    - Abilities to develop and manage scope, schedules, budgets, resources, risks, plans, presentations and reports
    - Personality, attitude, ethics, and leadership.

Project Life Cycle

- Project Manager
  - Required Interpersonal skills include:
    - Team building
    - Motivating
    - Communicating
    - Influencing
    - Decision Making
    - Political and cultural awareness
    - Negotiating
    - Facilitating
    - Managing conflict
    - Coaching.
  - Successful Factors
    - Project objectives achieved.
    - Stakeholder satisfaction
    - When project approach is tailored to the project life cycle
    - Project management activities meet the project and product requirements

Project Life Cycle

- Stakeholder Analysis
  - Results in a list of stakeholders and relevant information such as
    - their position in the organization
    - Roles on the project
    - Stakes
    - Expectations
    - Attitudes (levels of support for the project)
    - Interest in information about the project
  - Stakes can include:
    - Interest – when the stakeholders are affected by a decision related to the project or its outcome
    - Rights (legal or moral)
    - Ownership (asset or property)
    - Knowledge (specialist)
    - Contribution (funds or some resources)

Project Life Cycle

- Project Charter
  - A document issued by the project sponsor or initiator formally authorizing the existence of a project.
  - Provides the project Manager the authority to apply resources to project activities.
  - It documents the high-level information on the project and its deliverables such as
    - Project Purpose
    - Measurable project objectives and related success criteria
    - High-level requirements
    - High-level project description, boundaries and key-deliverables
    - Overall project risk
    - Summary milestone schedule
    - Preapproved financial resources
    - Key stakeholder list
    - Project approval requirements
    - Project exit criteria
    - Assigned Project Manager, responsibility and authority level
    - Name and authority of person authorizing the Project Charter.

Project Life Cycle

- **Project Charter**
  - It is a powerful tool to empower the Project Manager
  - Usually initiated by Project Manager and reviewed with Project Sponsor
  - Simple Charter should have:
    - Name the project manager.
    - Background on the business purpose and objectives for the project.
    - Scope of work.
    - Initial constraints and assumptions.

    - sample_ProjectCharter.pdf

Project Life Cycle

- ▶ Preliminary Scope Statement
  - Project Statement: (Overview of the project in 15 to 20 words.)
  - Business Purpose: (What are we trying to accomplish?)
  - Specific Project Objectives/Background and Goals: (Reasons for the project, background information, business problem and more specific goals.)
  - Project Work Statement. (At a high level, what work will be done in the project to deliver the project product? What is the delivery approach ?)
  - Key Deliverables: (Verifiable outcomes of the work.)
  - Out of Scope List. (Work that will not be covered within the project but can creep in)
  - Key Milestones and Schedule Goals:(Major events and points in time indicating the progress in implementing your work. Potentially define the phases.)
  - Major Constraints and Cost Goal - Constraints may be physical, technical, resource, or any other limitations.
  - Major Assumptions. (Factors that are not entirely known.)
  - Team Composition. (Identify the core team members including the project manager, sponsors, known vendors, and known subject matter experts.)

Project Life Cycle

- Divide Large projects into phases.
- Consult with Subject Matter Experts (SMEs)
    1. What improvements would you suggest to the scope or high-level plan?
    2. What team members should be involved?
    3. Who should have approval responsibilities?
    4. Which technologies should be used or avoided?
    5. What risks might we encounter?
    6. How much should things cost?
    7. What do you predict regarding the schedule?
    8. What do you suggest for quality specifications?
    9. What other stakeholders should be involved?
- Solicit Stakeholder Inputs
- Plan the approach to ensure a solution that will provide the highest satisfaction to sponsors based on the constraints and project priorities.

Project Life Cycle

- Work Breakdown Structure (WBS)
  - A deliverable oriented hierarchical decomposition of the work to be executed by the project team. PMBOK
  - Two types
    - Deliverable –based
    - Phase – Based
  - Integrates scope, cost and schedule baselines ensuring project plans are aligned.
  - Draft the WBS to organize the work to be done (written in terms of deliverables) in
    - outline
    - organizational chart format.

Project Life Cycle

- Creating WBS
  - Gather Critical Documents by identifying content with project deliverables, such as
    - the Project Charter
    - Scope Statement
    - Project Management Plan (PMP) subsidiary plans.
  - Identify Key Team Members
    - Identify the appropriate project team members.
    - Analyze the documents and identify the deliverables.
  - Define Level 1 Elements
    - Level 1 Elements are summary deliverable descriptions that must capture 100% of the project scope.
    - Verify 100% of scope is captured.
      - This requirement is commonly referred to as the 100% Rule.

Project Life Cycle

- Creating WBS
  - Decompose (Breakdown) elements
    - Breakdown level 1 deliverables into unique lower level deliverables
      - Known as decomposition
    - Continue breaking down the work until work covered in each element is managed by a single individual or organization.
      - Ensure that all elements are mutually exclusive (cannot happen simultaneously)
    - Ask if any additional decomposition will make the project more manageable.
      - If no, the WBS is completed.
  - Create WBS Dictionary
    - Define the content of the WBS Dictionary.
      - A narrative description of the work covered in ach element in the WBS.
      - The lowest level elements are called Work Packages.
    - Create the WBS Dictionary descriptions at the Work Package level
   - Should be detailed enough to ensure 100% coverage of project scope

Project Life Cycle

- Creating WBS
  - WBS Dictionary
  - Descriptions should include
    - Code of account identifier
    - Description of work
    - Assumptions and constraints
    - Responsible organization / team member
    - Schedule milestones
    - Associated schedule activities
    - Resources required
    - Cost estimates
    - Quality requirements
    - Acceptance criteria
    - Technical references
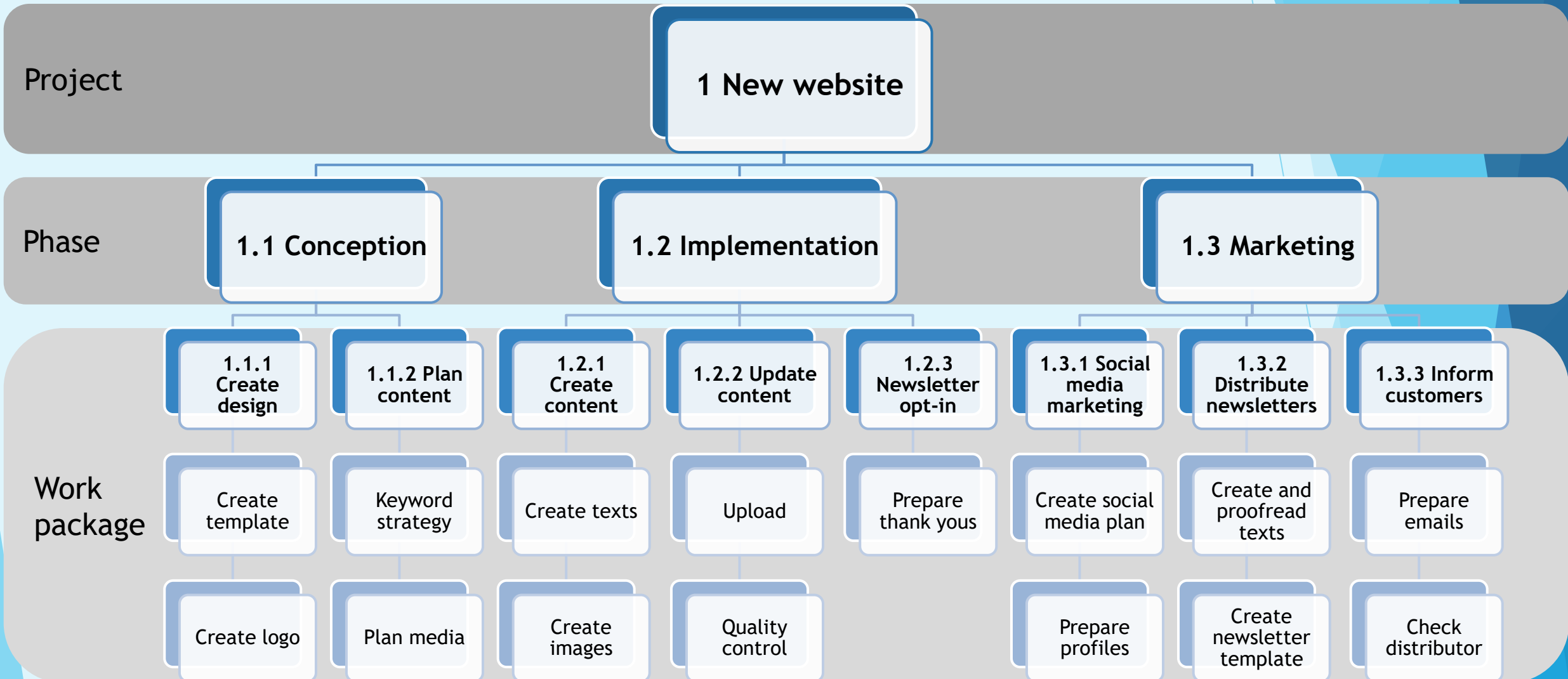   - Agreement information
- Create GANTT Chart
  - Decompose the work Packages to activities as appropriate
  - Export or enter the WBS into a Cantt chart for further scheduling and project tracking.
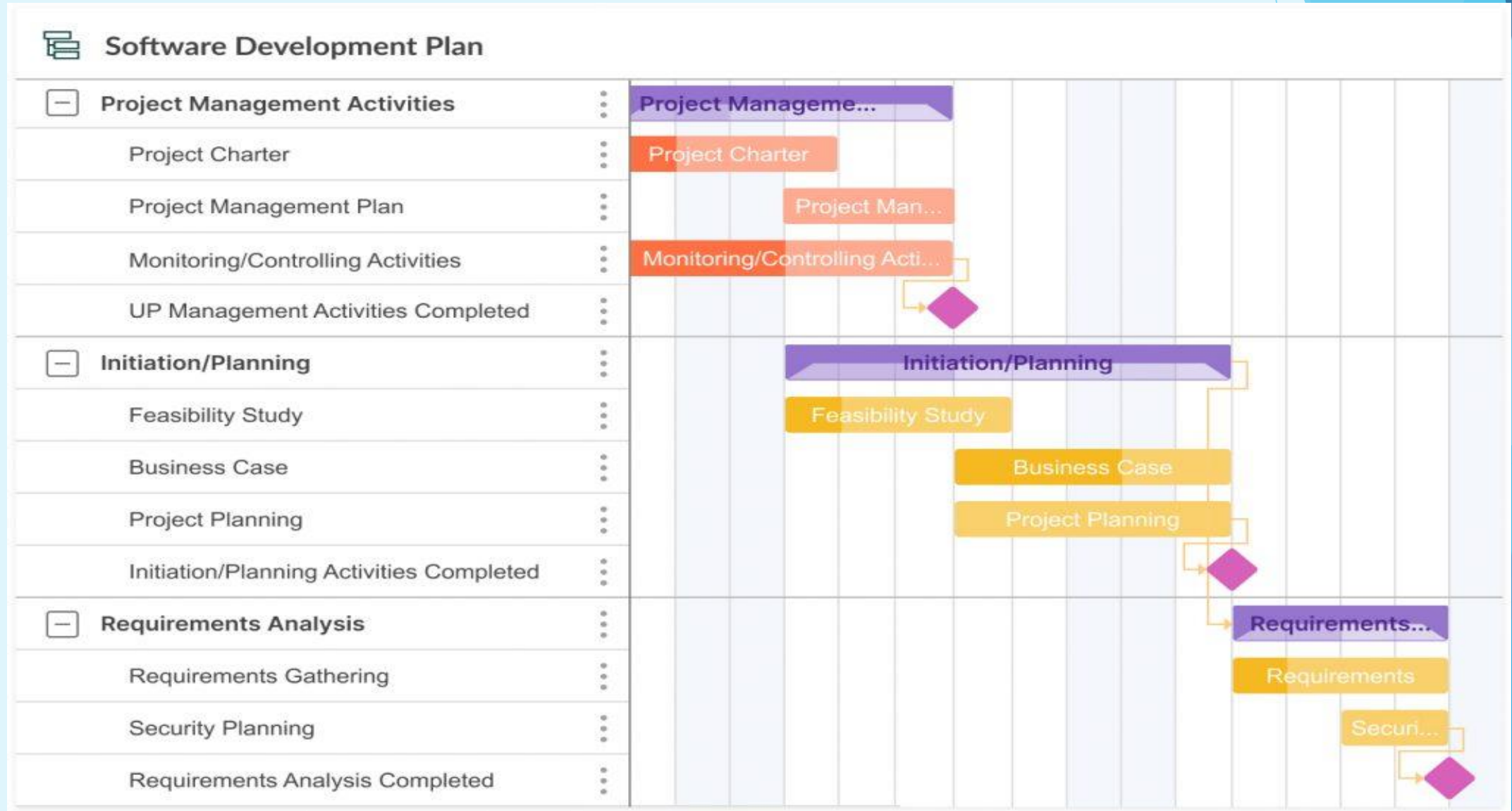
Project Life Cycle
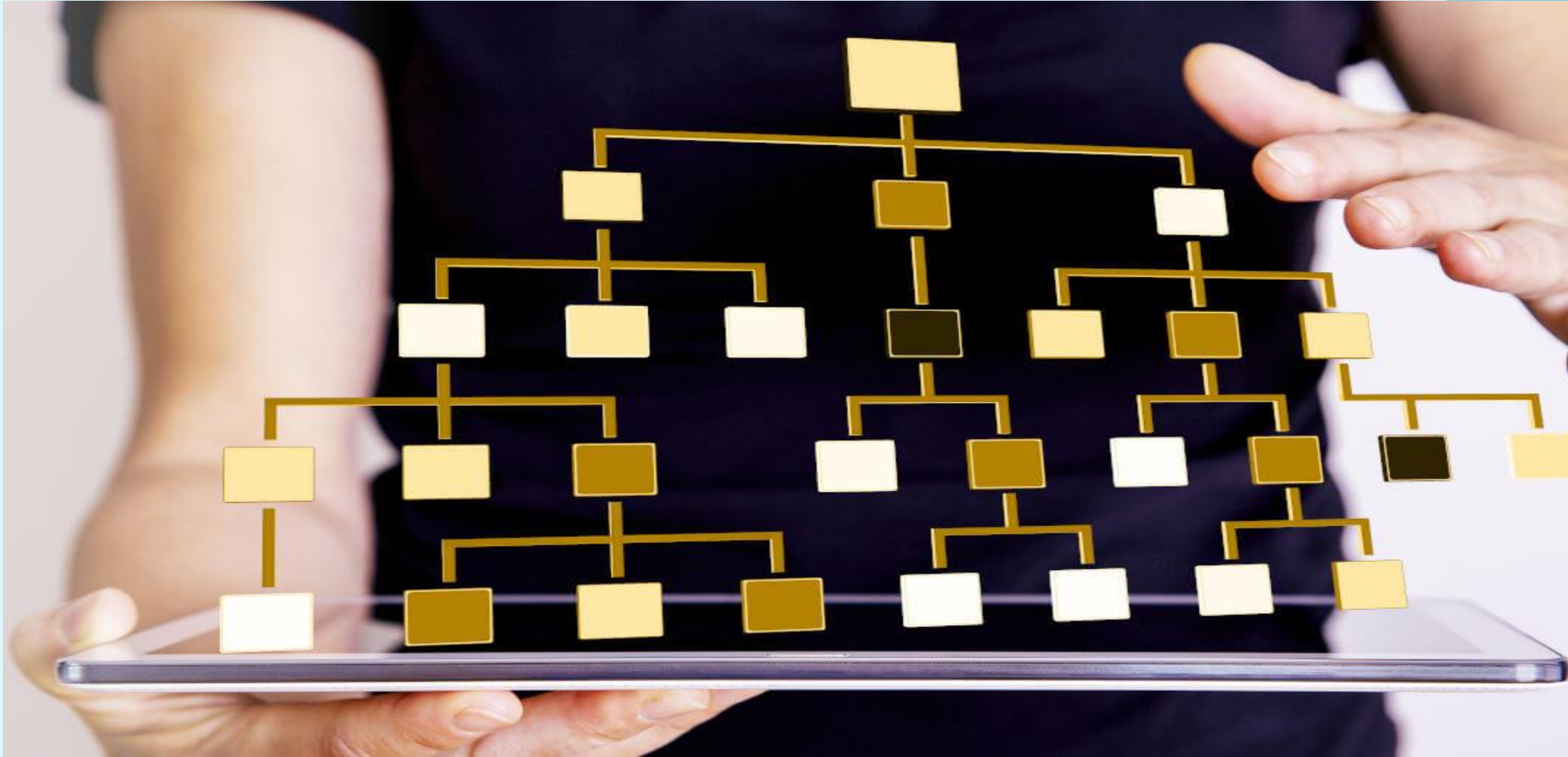
▶ Work Breakdown Structure

Project Life Cycle – Gantt Chart Example

Project Management Knowledge Areas

- Knowledge area
  - Identified by its knowledge requirements
  - Described in terms of its component processes, practices, inputs, outputs, tools and techniques.
  - Are interrelated but defined separately from Project Management perspective.
  - Areas are:
    - Project Integration Management
    - Project Scope Management
    - Project Schedule Management
    - Project Cost Management
    - Project quality Management
    - Project Resource Management
    - Project Communications Management
    - Project Risk Management
    - Project Procurement Management
    - Project Stakeholder Management

Knowledge Areas	Project Management Process Groups				
	Initiating Process Group	Planning Process Group	Executing Process Group	Monitoring and Controlling Process Group	Closing Process Group
4. Project Integration Management	4.1 Develop Project Charter	4.2 Develop Project Management Plan	4.3 Direct and Manage Project Work 4.4 Manage Project Knowledge	4.5 Monitor and Control Project Work 4.6 Perform Integrated Change Control	4.7 Close Project or Phase
5. Project Scope Management		5.1 Plan Scope Management 5.2 Collect Requirements 5.3 Define Scope 5.4 Create WBS		5.5 Validate Scope 5.6 Control Scope	
6. Project Schedule Management		6.1 Plan Schedule Management 6.2 Define Activities 6.3 Sequence Activities 6.4 Estimate Activity Durations 6.5 Develop Schedule		6.6 Control Schedule	
7. Project Cost Management		7.1 Plan Cost Management 7.2 Estimate Costs 7.3 Determine Budget		7.4 Control Costs	
8. Project Quality Management		8.1 Plan Quality Management	8.2 Manage Quality	8.3 Control Quality	
9. Project Resource Management		9.1 Plan Resource Management 9.2 Estimate Activity Resources	9.3 Acquire Resources 9.4 Develop Team 9.5 Manage Team	9.6 Control Resources	
10. Project Communications Management		10.1 Plan Communications Management	10.2 Manage Communications	10.3 Monitor Communications	
11. Project Risk Management		11.1 Plan Risk Management 11.2 Identify Risks 11.3 Perform Qualitative Risk Analysis 11.4 Perform Quantitative Risk Analysis 11.5 Plan Risk Responses	11.6 Implement Risk Responses	11.7 Monitor Risks	
12. Project Procurement Management		12.1 Plan Procurement Management	12.2 Conduct Procurements	12.3 Control Procurements	
13. Project Stakeholder Management	13.1 Identify Stakeholders	13.2 Plan Stakeholder Engagement	13.3 Manage Stakeholder Engagement	13.4 Monitor Stakeholder Engagement	

Project Integration Management

► Includes the processes and activities to identify, define, combine, unify and coordinate the various processes and project management activities within all the processes toa achieve project objectives

► Includes characteristics of unification, consolidation, communication and interrelationship.

► Includes making choices about:

   ► Resource allocation

   ► Balancing competing demands

   ► Examining any alternative approaches

   ► Tailoring the processes to meet the project objectives

   ► Managing the interdependencies among the Project Knowledge Areas

Project Integration Management

- Two levels
  - Macro Integration considers how the project fits with the organization, community and environment
  - Micro level considers how
    - project constraints are balanced,
    - project change management,
    - configuration management
    - keeping plans updated
    - keeping communications current.

Project Integration Plan

- Processes
  - Develop Project Charter
    - The process of developing the document that formally authorizes the existence of a project.
  - Develop Project Management Plan
    - Process of defining, preparing, coordinating all plan components and consolidating into an integrated project management plan.
  - Direct and Manage Project Work
    - The process of leading and performing the work defined in the PMP and implementing approved changes to achieve project objectives.
  - Manage Project Knowledge
    - The process of using existing knowledge and creating new knowledge to achieve project objectives.
  - Monitor and Control Project Work
    - The process of tracking, reviewing, and reporting overall progress to meet performance objectives.

Project Integration Management

- **Processes**
  - **Perform Integrated Change Control**
    - Process of reviewing all change requests
    - Approving and managing changes to
      - Deliverables
      - Organizational process assets
      - Project documents
      - The project management plan
    - Communicating decisions
  - **Close Project or Phase**
    - Process of finalizing all activities for the project, phase or contract.

Project Integration Management

- Configuration Management
  - Manages product plan including scope and features
  - Develops the Configuration Management Plan
    - Part of the Integrated PMP
    - Provides documentation explaining why project changes occurred, change approval and assigned change owner.
    - Provides version control of project product
    - Includes an integrated Change Control Process which should be known to all relevant stakeholders
  - Project Manager responsibilities include:
    - Recognizing when a change has occurred.
    - Filtering out changes from inappropriate people.
    - Ensuring that change is beneficial.
    - Managing the changes as they occur.