Project Management Professional (PMP)

Section (3)
Project Management Processes

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PMBOK 5th. Edition

Project Management Processes

- Project management is:
  - The application of knowledge, skills, tools, and techniques to project activities to meet the project requirements.
  - This application of knowledge requires the effective management of the project management processes.

Project Management Processes

- A process is:
  - A set of interrelated actions and activities performed to create a pre-specified product, service, or result.
  - Each process is characterized by its inputs, the tools and techniques that can be applied, and the resulting outputs.

Project Management Processes

- As explained in Section 2
  - The project manager needs to consider organizational process assets and enterprise environmental factors.
    - Organizational process assets
      - Provide guidelines and criteria for tailoring the organization's processes to the specific needs of the project
    - Enterprise environmental factors
      - Constrain the project management options

Project Management Processes

- Project management processes are grouped into **5** categories known as Project Management Process Groups (or Process Groups):
  1. Initiating Process Group
  2. Planning Process Group
  3. Executing Process Group
  4. Monitoring and Controlling Process Group
  5. Closing Process Group

Common Project Management Process Interactions

- The project management processes:
  - Presented as discrete elements with well-defined interfaces.
  - The Process Groups & Processes are guides for PM knowledge & skills.
  - The PM Processes is iterative & processes are repeated.
  - The integrative nature of project management requires:
    - The MC Process Group to interact with the other Process Groups.
  - MC Processes occur at the same time as processes contained within other Process Groups.
    - Thus, the MC Process is pictured as a “background” Process Group for the other four Process Groups

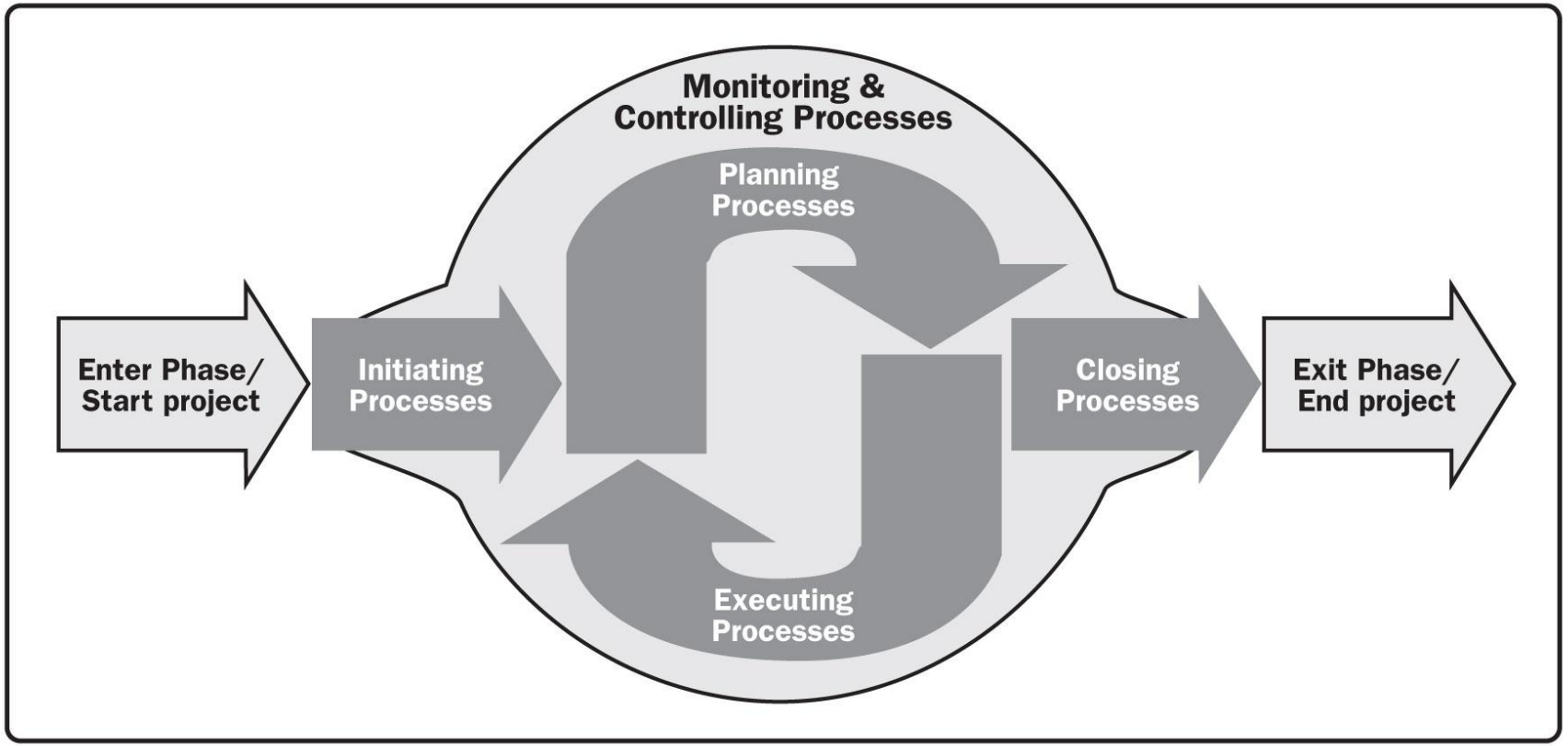

Figure 3-1. Project Management Process Groups

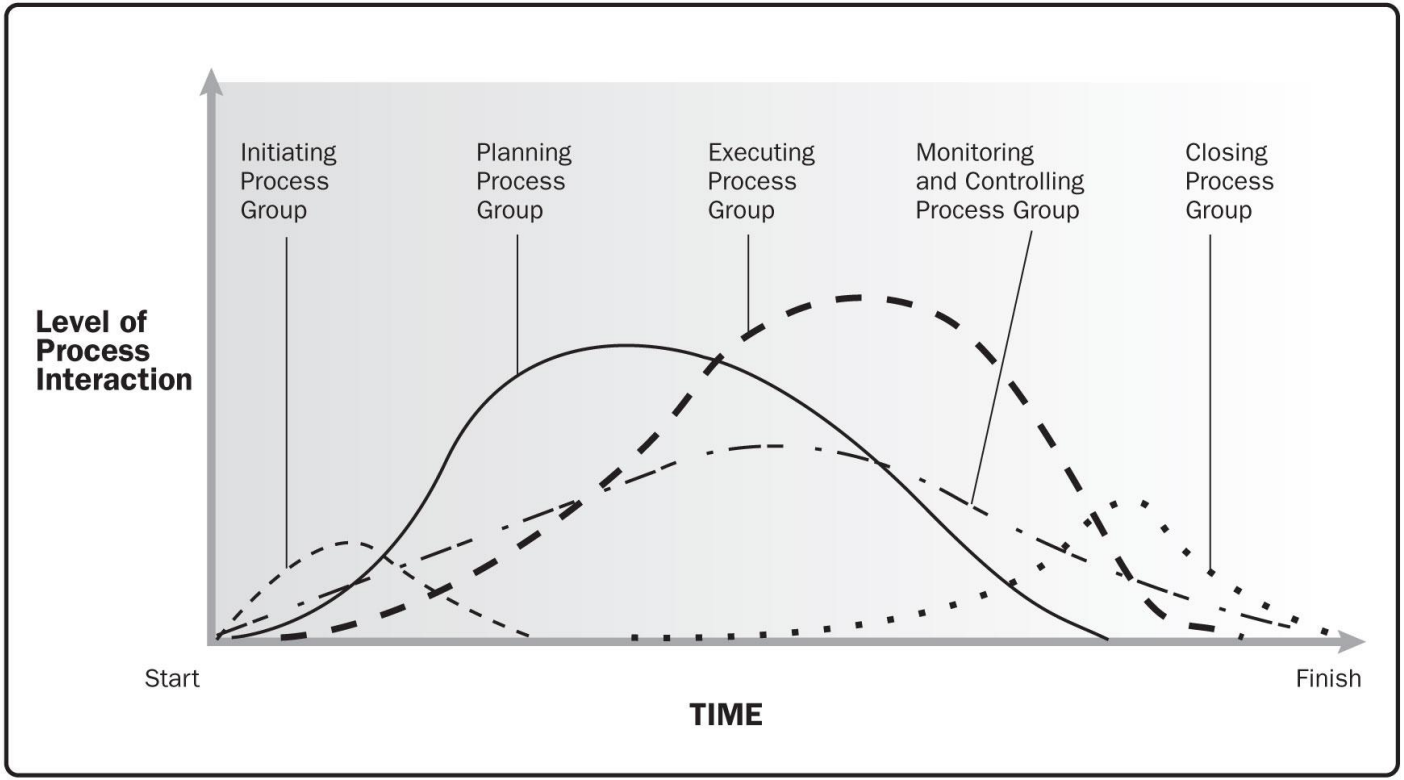

Figure 3-2. Process Groups Interact in a Phase or Project

Project Management Process Groups

- The **five** Process Groups:
  - They have clear dependencies & performed in each project and highly interact with one another.
  - They are independent of application areas or industry focus.
  - Individual Process Groups and individual processes are often iterated prior to completing the project
  - They can have interactions within a Process Group and among Process Groups.
  - The nature of these interactions varies from project to project and may or may not be performed in a particular order.

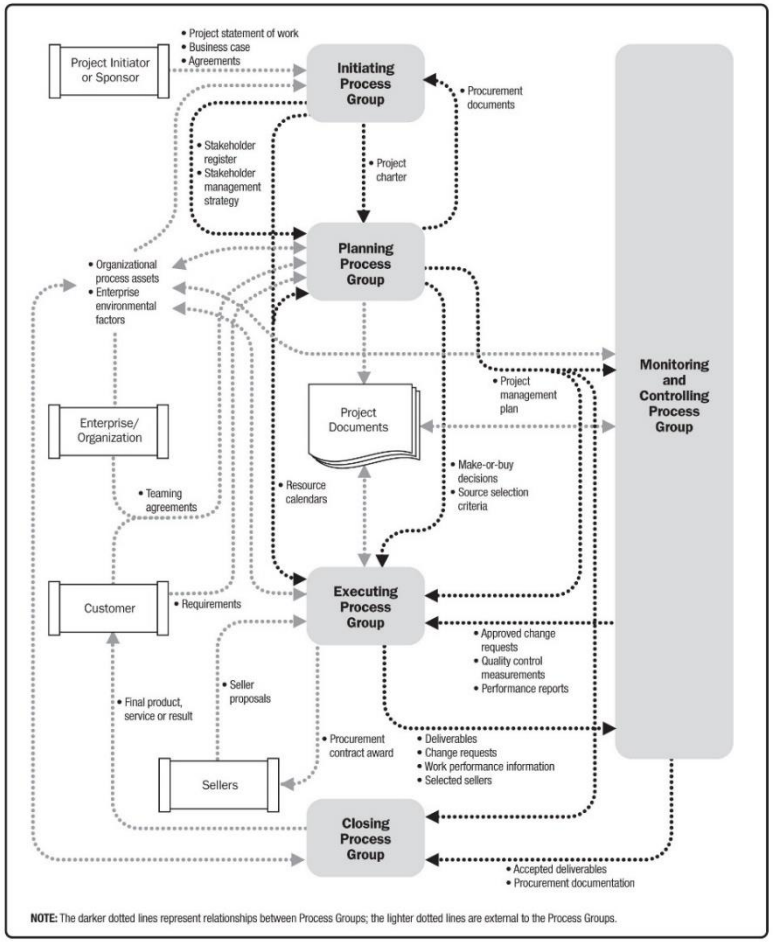

Figure 3-3. Project Management Process Interactions

Project Management Process Groups

- The **five** Process Groups:
  - The PM Processes are linked by specific inputs and outputs where the result or outcome of one process becomes the input to another process
  - The Process Groups are **not** project life cycle phases
    - All Process Groups could be conducted within a phase.
  - All Process Groups would normally be repeated for each phase or subcomponent

Project Management Process Groups

- The **five** Process Groups
  - The PM Processes are shown in the Process Group in which most of the related activities takes place.
    - Example: a process that normally takes place in the planning phase is put into the Planning Process Group.
    - When this process is updated by an Executing Process Group process or activity, it is not considered a new process within the Executing Process Group but is still a Planning Process Group process or activity.
  - The iterative nature of project management means that processes from any group may be reused throughout the project life cycle.

Initiating Process Group

- The Initiating Process Group:
  - Consists of those processes performed to define a new project or a new phase of an existing project by obtaining authorization to start the project or phase.
  - Within the **Initiating processes**, the initial scope is defined and initial financial resources are committed.
  - **Internal & external stakeholders** who will interact and influence the overall outcome of the project are identified.

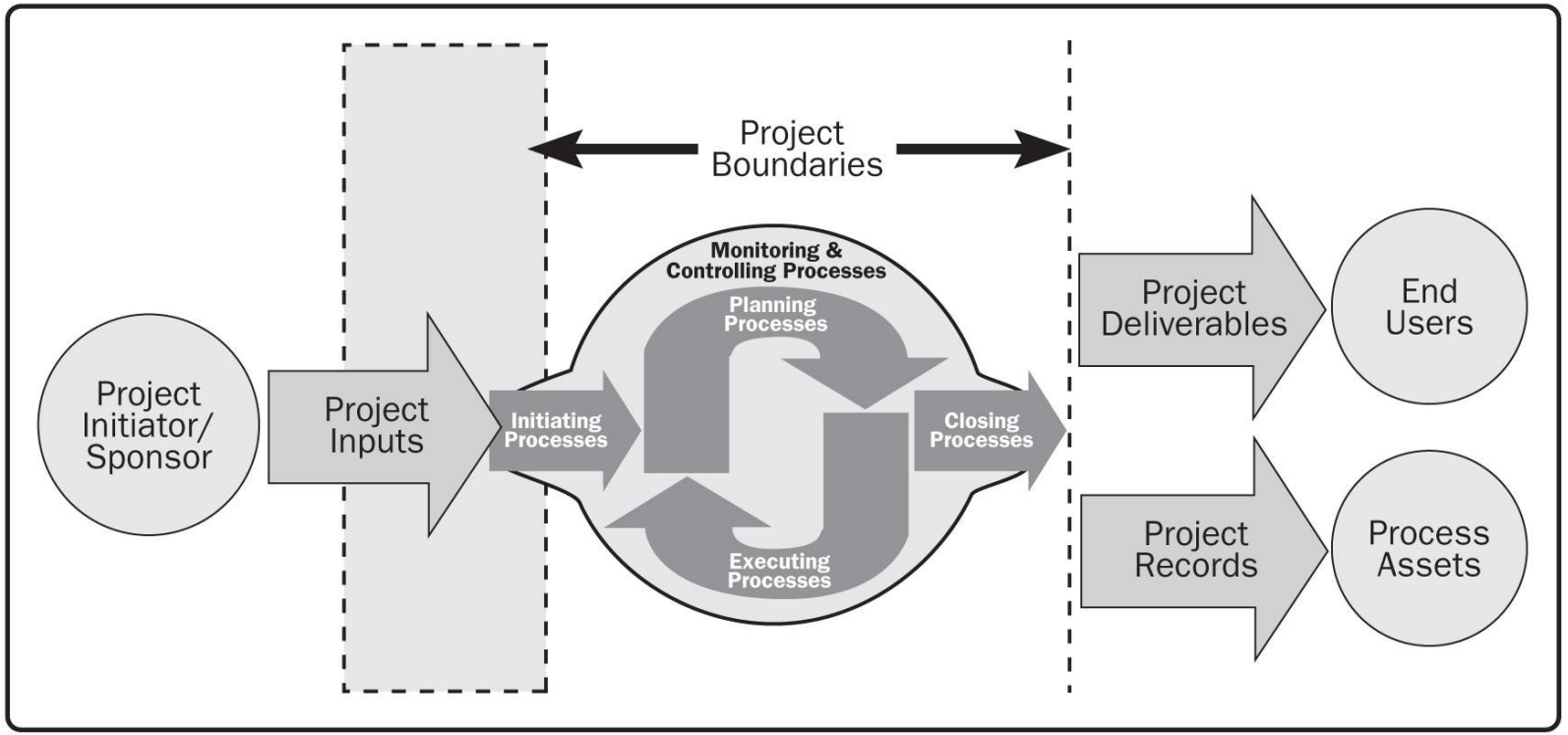

Figure 3-4. Project Boundaries

Planning Process Group

- Consists of:
  - Those processes performed to establish the total scope of the effort, define and refine the objectives & develop the course of action required to attain those objectives.
  - The Planning processes develop the project management plan and the project documents.
  - The complex nature of project management may require the use of repeated feedback loops for additional analysis.

Executing Process Group

- Consists of
  - Those processes performed to complete the work defined in the project management plan to satisfy the project specifications.
  - This Process Group involves coordinating people and resources, managing stakeholder expectations
  - During project execution
    - Results may require planning updates and rebase lining.
    - This may include changes to expected activity durations, changes in resource productivity and availability, and unanticipated risks.

Monitoring and Controlling Process Group

- Consists of
  - Those processes required to **track, review the progress & performance of the project**
  - **Identify** any areas in which changes to the plan are required
  - Initiate the **corresponding changes.**
  - The key benefit is that project performance is measured and analyzed at regular intervals, appropriate events, or exception conditions to identify variances from the project management plan.

Closing Process Group

- Consists of
  - those processes performed to conclude all activities across all Project Management Process Groups to formally complete the project, phase, or contractual obligations.
  - This Process Group, when completed, verifies that the defined processes are completed within all of the Process Groups to close the project or a project phase and formally establishes that the project or project phase is complete

Closing Process Group

- This Process Group also formally establishes the premature closure of the project.
- Prematurely closed projects may include:
  - aborted projects
  - cancelled projects
  - projects having a critical situation
- In specific cases, when some contracts cannot be formally closed or some activities are to be transferred to other organizational units, specific hand-over procedures may be arranged and finalized.

Closing Process Group

- At project or phase closure, the following may occur:
  - Obtain acceptance by the customer or sponsor to formally close the project or phase
  - Conduct post-project or phase-end review
  - Record impacts of tailoring to any process
  - Document lessons learned
  - Apply appropriate updates to organizational process assets
  - Archive all relevant project documents in PMIS to be used as historical data
  - Close out all procurement activities ensuring termination of all relevant agreements
  - Perform team members' assessments and release project resources

Project Information

- Throughout the life cycle of the project:
  - a significant amount of data is collected, analyzed, transformed & distributed in various formats to project team members & stakeholders
  - Project data are collected as a result of various Executing processes and are shared within the project team.
  - The collected data are analyzed in context and aggregated and transformed to become project information during Controlling processes.
    - The information may then be communicated verbally or stored and distributed as reports in various formats.

Project Information

- Throughout the life cycle of the project:
  - The project data are continuously collected and analyzed during the dynamic context of the project execution.
  - As a result, the terms data and information are often used interchangeably in practice.
  - The indiscriminate use of these terms can lead to confusion and misunderstandings by the various project stakeholders.

Project Information

- Throughout the life cycle of the project:
  - The following guidelines help minimize miscommunication and help the project team use appropriate terminology:
    - **Work Performance Data**: The raw observations and measurements identified during activities performed to carry out the project work. Examples:
      - Reported percent of work physically completed
      - Quality and technical performance measures
      - Start and finish dates of schedule activities
      - Number of change requests
      - Number of defects
      - Actual costs
      - Actual durations, etc.

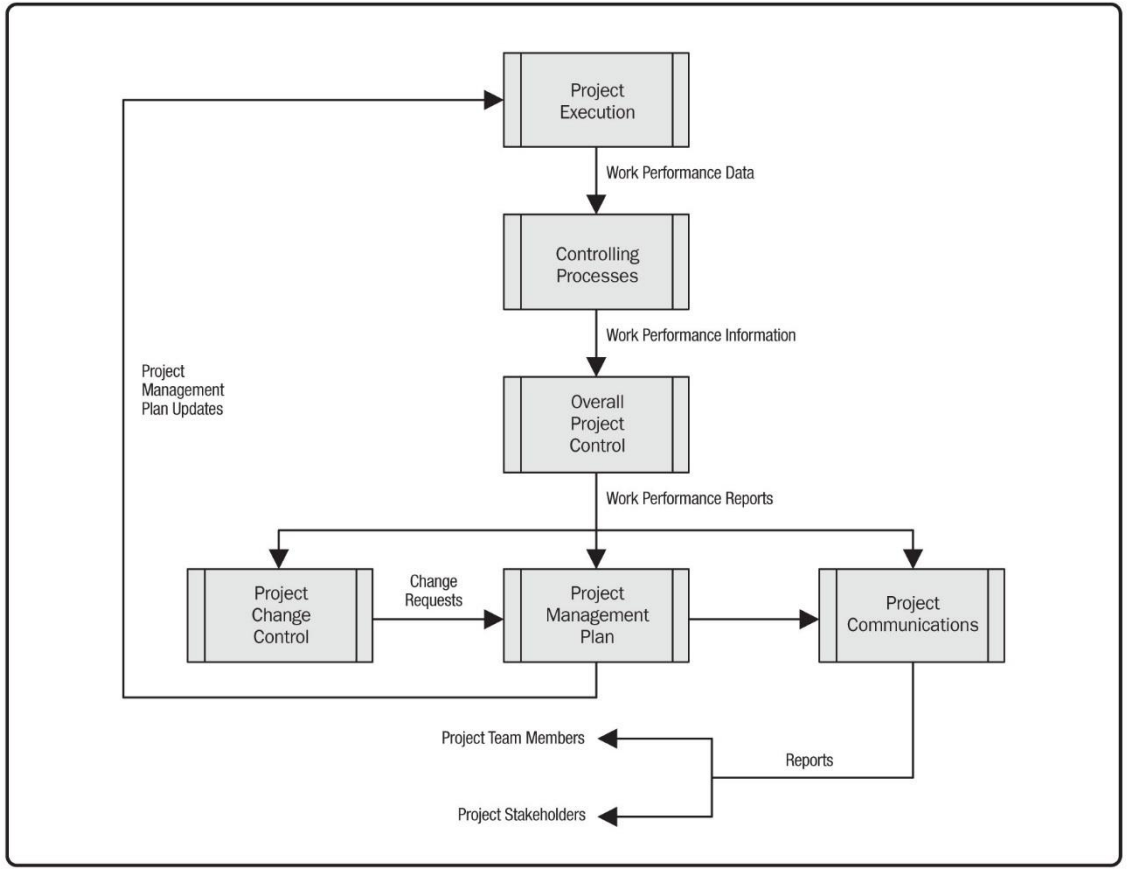

Figure 3-5. Project Data, Information and Report Flow

Project Information

- Throughout the life cycle of the project:
  - **Work Performance Information:** The performance data collected from various controlling processes, analyzed in context and integrated based on relationships across areas, Examples:
    - Status of deliverables
    - Implementation status for change requests
    - Forecasted estimates to complete.

Project Information

- Throughout the life cycle of the project:
  - **Work Performance Reports:** The physical or electronic representation of work performance information compiled in project documents, intended to generate decisions or raise issues, actions, or awareness, Examples:
    - Status reports
    - Memos
    - Justifications
    - Information notes
    - Electronic dashboards
    - Recommendations
    - Updates.

Role of the Knowledge Areas

- The 47 project management processes identified in the PMBOK® Guide are further grouped into ten separate Knowledge Areas.

- A Knowledge Area represents a complete set of concepts, terms and activities that make up a professional field, project management field, area of specialization.

- These ten Knowledge Areas are used on most projects most of the time.

Role of the Knowledge Areas

- Project teams should utilize these ten Knowledge Areas:
  1. Project Integration Management
  2. Project Scope Management
  3. Project Time Management
  4. Project Cost Management
  5. Project Quality Management
  6. Project Human Resource Management
  7. Project Communications Management
  8. Project Risk Management
  9. Project Procurement Management
  10. Project Stakeholder Management

Role of the Knowledge Areas

- Each Knowledge Area within the PMBOK® Guide is contained in a separate section.
- The PMBOK® Guide defines the important aspects of each Knowledge Area and how it integrates with the five Process Groups.
- The Knowledge Areas provide a detailed description of the process inputs and outputs along with a descriptive explanation of tools and techniques most frequently used.

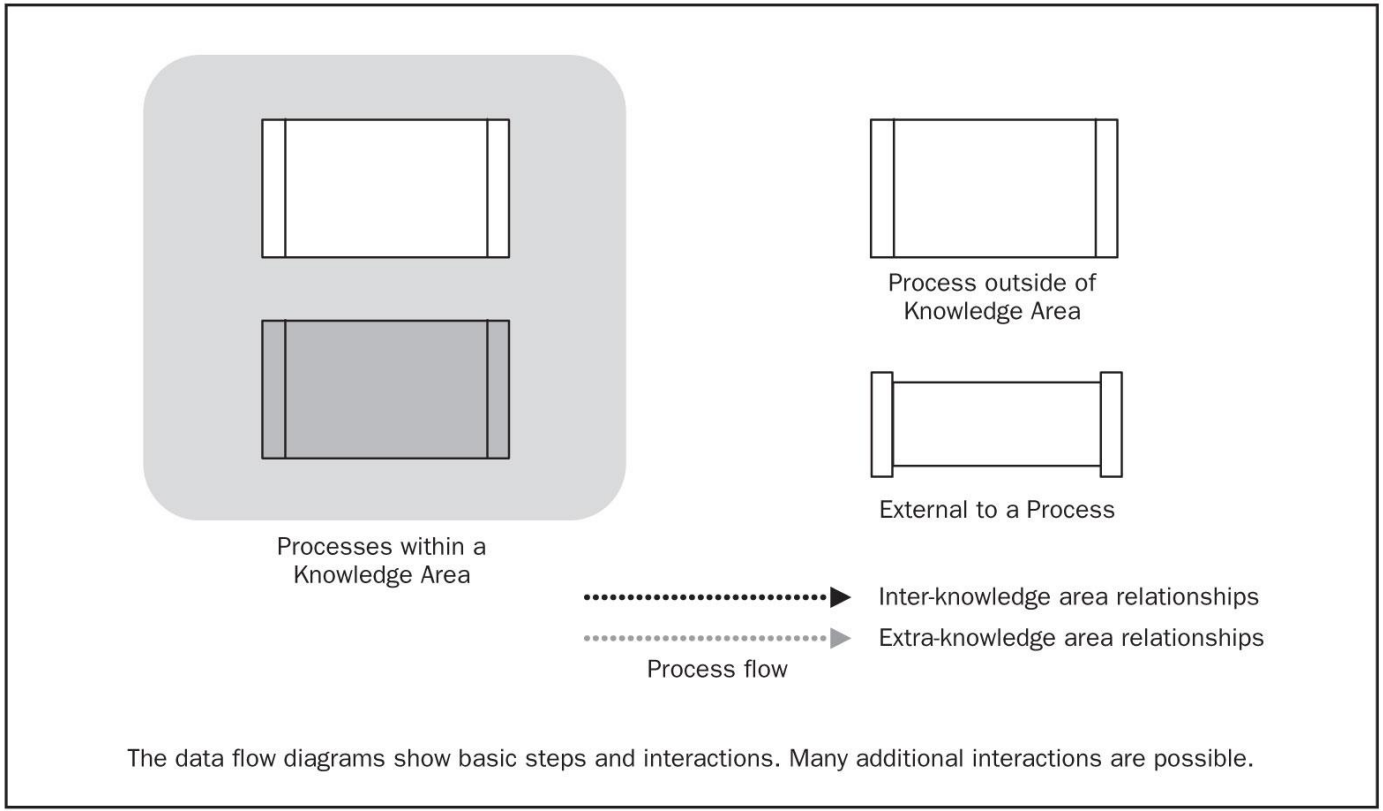

Figure 3-6. Data Flow Diagram Legend

Table 3-1. Project Management Process Group and Knowledge Area Mapping

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 Monitor and Control Project Work 4.5 Perform Integrated Change Control	4.6 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 Time Management		6.1 Plan Schedule Management 6.2 Define Activities 6.3 Sequence Activities 6.4 Estimate Activity Resources 6.5 Estimate Activity Durations 6.6 Develop Schedule		6.7 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 Perform Quality Assurance	8.3 Control Quality	
9. Project Human Resource Management		9.1 Plan Human Resource Management	9.2 Acquire Project Team 9.3 Develop Project Team 9.4 Manage Project Team		
10. Project Communications Management		10.1 Plan Communications Management	10.2 Manage Communications	10.3 Control 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 Control Risks	
12. Project Procurement Management		12.1 Plan Procurement Management	12.2 Conduct Procurements	12.3 Control Procurements	12.4 Close Procurements
13. Project Stakeholder Management	13.1 Identify Stakeholders	13.2 Plan Stakeholder Management	13.3 Manage Stakeholder Engagement	13.4 Control Stakeholder Engagement	

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