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Learning

Crosswind Success Series:
PMP® Exam Bootcamp Manual

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3.10. Process Groups

3.10.1. Process Groups

There are five main process groups: initiating, planning, executing, monitoring and controlling, and closing.

For the exam, an understanding of each process group and the manner in which it interacts with the other process groups is important. It is also important to assume that all process groups, processes, and process interactions will be used unless otherwise stated, although in the working world, the project manager and project team often tailor their approach to a specific project.

The process groups are rarely executed in a linear manner. Moving from monitoring and controlling back to execution and/or planning is acceptable if relevant to the situation.

Reference Figure 3-9: Project Boundaries to understand how the processes interact in relation to boundaries.
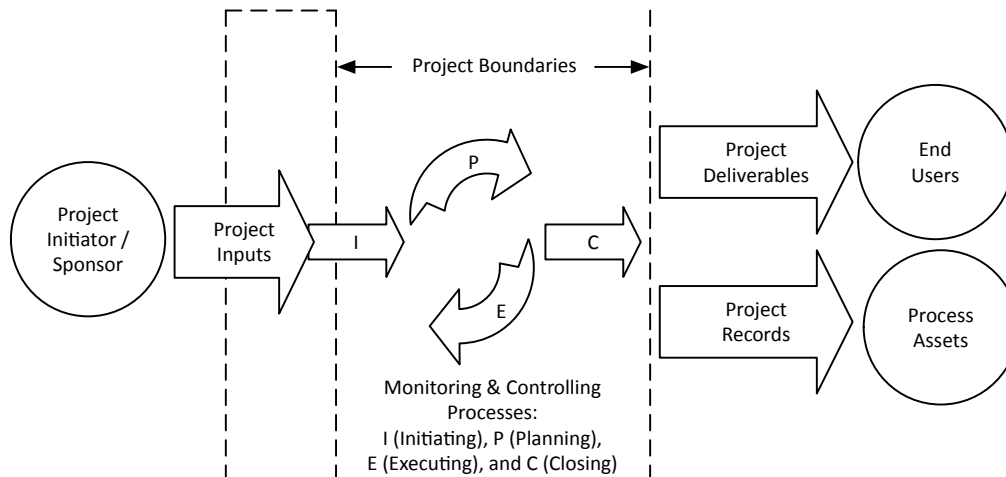

Figure 3-9: Project Boundaries
The source for the above figure is the Project Management Institute, *A Guide to the Project Management Body of Knowledge*, (*PMBOK® Guide*) – Sixth Edition, Project Management Institute Inc., 2017, Figure 2-1, Page 562

Initiating	Project management is the **application of information, skills, tools, and techniques to project activities in order to meet project needs**. It can include developing requirements, determining realistic goals, managing the triple constraint, and adapting the various plans to achieve project goals. Project management starts with selecting the processes associated with completing the work of the project and typically involves using an established methodology to align project and product requirements with the product specifications.
Planning	Because the success of the project is so dependent on planning, it is considered the **most important** of the process groups. The project manager creates the project management plan and the component management plans (Integration, Scope, Schedule, Cost, Quality, Resource, Communications, Risk, Procurement, and Stakeholder), then integrates the component plans into the **project management plan**. The project manager typically involves the team in planning.

Executing	During the executing process group, the actual **work of the project is performed** in accordance with the project management plan. This process group creates **work results**. Note that performing the work typically unearths unplanned events and unforecasted issues. The executing processes **create work results**.
Monitoring and Controlling	During the monitoring and controlling process group, the team checks for variances (monitoring) and adjusts the plan or output in light of the variances (controlling). This process group results in **preventative and corrective actions**. Note that any changes are subject to the change control process, which means that a change may only be implemented if it has received formal approval.
Closing	During the closing process group, the **project or phase is closed**. Assuming that the project or phase has been executed and is nearing completion, any procurements must be closed, and then the project or phase may be closed. Closing the project or phase involves archiving all project documentation and **transitioning** the **product, service, or result** of the project or phase to the customer.

3.10.2. Project Management Process Groups in the Plan-Do-Check-Act Format

The American Society for Quality (ASQ) defines the plan-do-check-act cycle as an approach to process development. While the project management process groups require a more sophisticated approach than the basic plan-do-check-act format, it can be used to illustrate how monitoring and controlling actually works with the other four process groups.

Know how to align the plan-do-check-act with the process groups.
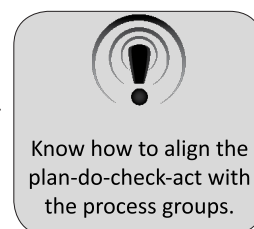
Reference Figure 3-10: Comparison of Plan-Do-Check-Act to Process Groups for a depiction of the alignment of the plan-do-check-act format to the process groups.
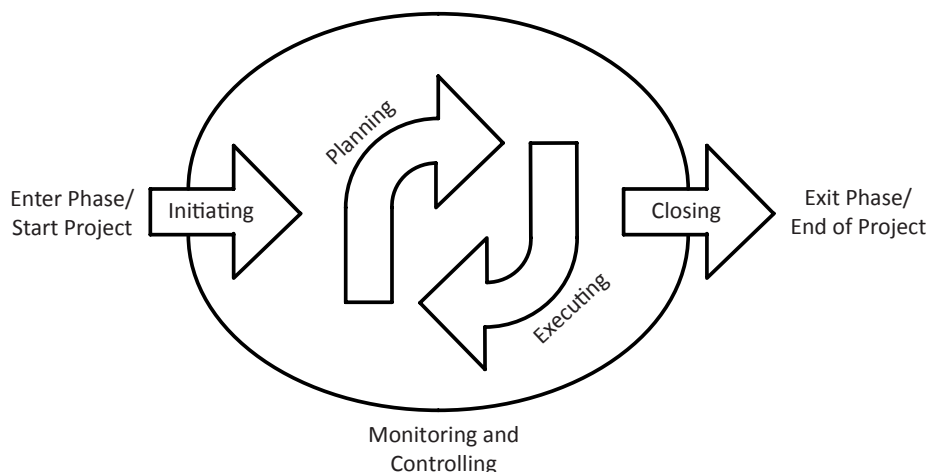

Figure 3-10: Comparison of Plan-Do-Check-Act to Process Groups

3.10.3. Process Group Interaction

A common misconception about process groups is that they are sequential, moving from initiating to planning to executing, to monitoring and controlling, and then to closing.

Working sequentially would mean that the team would have to complete one process group (e.g. planning) before it moved on to next process group (e.g. executing) and could not return to the prior process group (e.g. planning) once it began the latter process group (e.g. executing).

The truth is that any process group can be revisited at any time the situation warrants. The team could begin executing and discover they had to return to initiating because the addition of a new stakeholder or change in a stakeholder's goals change would require that the stakeholder register had to be updated.
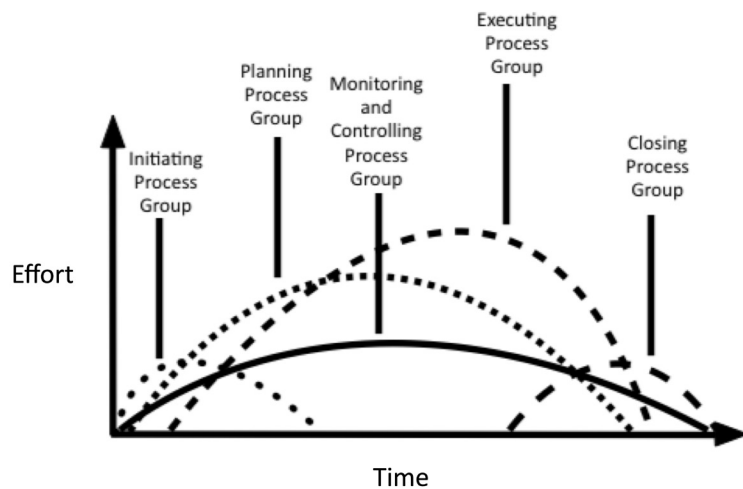

Figure 3-11: Example of Process Group Interactions within a Project or Phase
The source for the above figure is the Project Management Institute, *A Guide to the Project Management Body of Knowledge*, (*PMBOK® Guide*) – Sixth Edition, Project Management Institute Inc., 2017, Figure 1-5, Page 555

Phase to Phase Relationships

Phases in a multiple phase project are typically sequential, but there are instances when overlapping or concurrent (iterative) phases are more beneficial.

If the **phases** have a **sequential relationship,** a phase only begins after its predecessor phase has been completed. For example, phase two begins only after the completion of phase one.
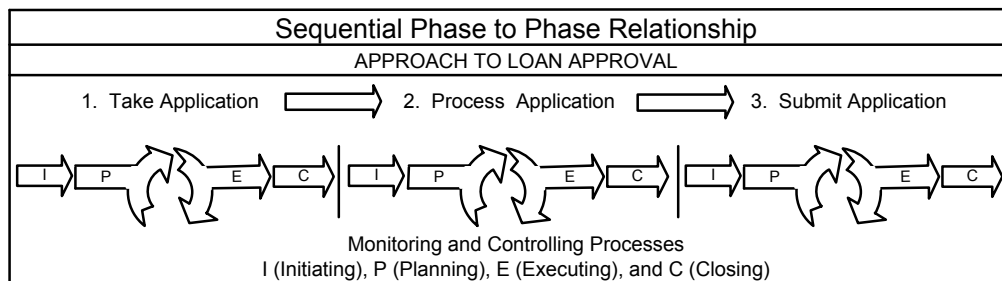

Figure 3-12: Sequential Phase to Phase Relationship
The source for the above figure is the Project Management Institute, *A Guide to the Project Management Body of Knowledge*, (*PMBOK® Guide*) – Sixth Edition, Project Management Institute Inc., 2017, Figure 3-3, Page 668

If the **phases** have an **overlapping relationship**, a phase can begin even if its predecessor phase has not been completed. For example, phase two can begin while phase one is still in process. An overlapping relationship is typically used if a compression technique, such as fast tracking, is applied. While the overall project could be completed sooner, overlapping phases may increase risk and rework may be required if a phase is started prior to obtaining accurate information from the prior phase.
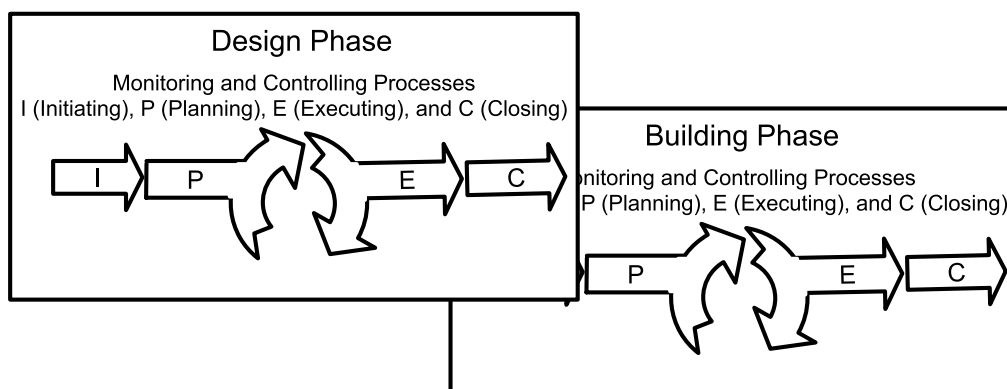

Figure 3-13: Overlapping Relationship
The source for the above figure is the Project Management Institute, *A Guide to the Project Management Body of Knowledge*, (*PMBOK® Guide*) – Sixth Edition, Project Management Institute Inc., 2017, Figure 3-3, Page 668

If the **phases** have an **iterative relationship**, **planning for the successor phase is conducted while work is being performed on the current phase.** This approach is typically used for a project characterized by uncertainty or a constantly evolving environment. Scope management is achieved through continuous incremental product delivery and continuous requirement prioritization.

3.10.4.   The Relationship between Phases and Process Groups

A project phase is a piece of a multi-phase project and all five process groups are often applied to each project phase.

Note that the five process groups may have a sequential, overlapping, or iterative relationship. As an example, during the monitoring and control process group, a change impacting the project management plan is authorized through the change control process; a return to the planning process is required to revise the project management plan.

3.10.5.   Predictive Life Cycles

Projects with predictive life cycles use **waterfall or plan driven approaches** and the scope, schedule, and budget are established as early as possible in the project.

If the project has phases, it's common for them to have an overlapping relationship with the focus of each phase on specific tasks and processes that require the application of unique skill sets.

Changes are subject to the change control process and must be authorized before implementation.

The predictive life cycles approach is generally used when the work is well understood by the performing organization and the organization understands that the work must be completed for stakeholders to realize project value.

3.10.6. Iterative or Incremental Life Cycles

Projects with an iterative or incremental life cycle also identify the project scope early in the project, but the schedule and budget are adjusted as the team learns more about the project work. Iteration durations and team members may change based on project need.

Since each **iteration adds to the functionality** of the project, **an incremental evolution of project functionality occurs from one iteration to the next**. A full project management life cycle with a focus on completed deliverables occurs at each iteration.

The iterative or incremental life cycle approach is typically used when the goal of the project is to **minimize complexity or risk** or when an incremental project delivery can be useful to some stakeholders.

3.10.7. Adaptive Life Cycles

Projects with adaptive life cycles expect change when using an Agile method. Agile is generally considered to be a **change-driven approach** to project management, which is characterized by rapid iterations (**typically 2-4 weeks long** with fixed time and resources) and requires significant stakeholder/customer involvement.

The initial iteration typically focuses on **vision** and creating a **master feature or backlog list**. As each iteration begins, an iteration backlog is created which lists the features to be completed during the iteration. At the end of the iteration, the features should be complete and ready for customer acceptance. The focus of projects with an adaptive life cycle is on delivering customer value with each iteration or release.

The adaptive life cycle approach is typically used in a rapidly changing project environment where the scope is difficult to identify or define in advance. It is also used when smaller increments of deliverables can add value to the stakeholder experience.

Examples of an adaptive approach include: **Agile, Scrum, Kanban**, and **Lean**.

3.10.8. Phase Gate

A phase gate is a review process undertaken to determine if a project is likely to succeed. At the end of a program or project phase, an authorized group reviews the work of the phase and either makes a decision to continue the project or stop future work on the initiative. The authorized group is typically a steering committee or independent party. As a result of the phase gate, a project considered unlikely to succeed is terminated early. A phase gate can be considered a "**kill point**."

3.10.9. Project Management Tailoring

Because of the uniqueness of each project, not every process, input, tool/technique, or output listed in the Project Management Institute, *A Guide to the Project Management Body of Knowledge, (PMBOK® Guide)* - Sixth Edition, Project Management Institute, Inc., 2017 is required for every project. Project management tailoring, or tailoring project management to the project, is the selection of the appropriate project management processes, inputs, tools/techniques, outputs, and project life cycle phases for the project after considering the required levels of governance and if the customer is internal or external.   Project management tailoring will occur throughout the project.

The **project manager collaborates** with the project team, sponsor, and organizational management, as appropriate, to perform this activity.

One aspect that should be tailored is the competing constraints of scope, schedule, budget, resources, quality, and risk. Since the relative importance of these constraints can vary from project to project, the project manager must tailor the approach for their management based on the organizational culture, project environment, and other variables.

3.10.10. Project Management Methodology Tailoring

Most project managers apply a project management methodology to their work. Project management methodologies may be developed by experts in the organization, acquired from government agencies, obtained from a professional organization, or purchased from vendors.

Again, because of the uniqueness of each project, a methodology may require tailoring to ensure project success.

3.11. Business Environment Formulas and Variables

There are no formulas related to the business environment.