
Section II

Foundations

In this section, you will learn the foundations of project management. First, we will guide you through key PMI references and how they relate to the exam. Then, we will discuss predictive, hybrid, and adaptive approaches to project management. You'll find out how projects are selected and what the roles are on a project. Here are some highlights of this section:

- Predictive and agile approach overviews
- Plan-based process groups: initiating, planning, executing, monitoring and controlling, and closing
- Agile processes: feasibility, initiation, release planning, iterations and product release, and closing
- Rita's Process Chart (a valuable study tool when learning about plan-based projects)
- Rita's Agile Process Chart (when learning about agile projects)
- How project management relates to the organization
- How projects are selected
- Project roles and responsibilities
- What integration means and how it is a key part of managing a project

2 PMP® Exam References in Context

Introduction

In this chapter we provide an overview of the Process Groups model for plan-driven (or predictive) project management, an agile model overview for adaptive project management, and an overview of possible hybrid models of project management. This chapter also explains the relationships between groups of concepts presented in this book, and what you need to know about these concepts for the exam. We provide an overview of PMI's *Examination Content Outline (ECO)*, the *PMBOK® Guide, Seventh Edition*, and *Agile Practice Guide*. While PMI says the exam is based on the ECO, our research tells us there are also questions on the exam based on content in these references.

We will ask you to look at the ECO periodically in reference to something specific being discussed. If you have not yet downloaded a copy of the ECO from PMI's website, do that now. It will be a good reference tool as you read this book. Feel free to refer to it as you complete exercises too.

PMI publishes a copy of its suggested reference list on its website, and it is a long list of publications. Does this mean you have to read all these books? No! The good news is that we have done the research for you and the information you need to pass the exam is in this book. We suggest that you obtain copies of the *PMBOK® Guide, Seventh Edition*, *Process Groups: A Practice Guide*, and *Agile Practice Guide*. If you have a PMI membership, you can access electronic copies of these books for no additional charge on PMI's website. You can also purchase a hard-copy of the *PMBOK® Guide* on RMC's website.

You will not need to read these cover-to-cover. Instead, think of them as resource guides that you browse or open to a certain page to look up something specific. The most important information from each of those resources is summarized in this book.

Definitions Related to Planning

We will start with the following definitions to remind you, as you read this chapter and the rest of the book, that planning is iterative, regardless of what project life cycle and development approach you have selected with which to manage a project.

Rolling Wave Planning and Progressive Elaboration

Have you ever worked on a project that seemed to have too many unknown components to adequately break down the work and then schedule it? Or the project will have phases and it makes more sense to plan some later phases in detail at a later time? Even in a predictive environment, it is often better to not plan the entire project to the smallest detail in advance. Instead, it is sometimes better to just plan at a high level and then develop more detailed plans when the early project work is being done. This practice is called rolling wave planning. It is a form of progressive elaboration.

Progressive elaboration refers to the process of clarifying and refining plans as the project progresses and more information becomes available. With this common tailoring method, you plan activities in the detail needed to manage the work just before you are ready to start that part of the project.

Iterations of rolling wave planning during the project may result in additional activities being added, and in the further elaboration of other activities. Therefore, rolling wave planning may create the need for updates to the project management plan and other project artifacts. Since the earlier version of the project plan is usually already baselined, these changes often require formal change requests and integrated change control.

QUICKTEST

- Rolling wave planning
- Progressive elaboration
- Examination Content Outline (ECO)
 - People
 - Process
 - Business Environment
- Process Group model
 - Initiating
 - Planning
 - Executing
 - Monitoring and Controlling
 - Closing
- Phase gates
- Rita's Process Chart™
- Agile process
 - Feasibility
 - Initiation
 - Release Planning
 - Iteration
 - Close-out
- Rita's Agile Process Chart™
- Personas
- Product release
- Hybrid project management
- Value delivery system

Examination Content Outline (ECO) Overview

The *Examination Content Outline* (ECO) organizes the exam material into three performance domains:

- People
- Process
- Business Environment

Each domain lists a number of tasks, which taken together, summarize the responsibilities of a project manager within that domain. The order of the performance domains and the tasks within them are not important. In this book we organize the domains and tasks in terms of where they most make sense for what you need to know and what part of the project management process we are talking about. We include domain and task numbers to make it easy for you to find them in the ECO.

The following overview will help you with a basic understanding of what the ECO includes. We will include specific content from it in proper context throughout this book.

The domain names will not be tested on the exam but you should understand their tasks and enablers as they relate to managing projects in both adaptive and predictive environments. You can use the domains to manage your study time since PMI states that 42% of the exam is based on the People domain, 50% of the exam is based on the Process domain, and 8% of the exam is based on the Business Environment domain. As you study, identify your gaps in each domain so you can focus your time on filling those gaps before the exam.

Domain I: People

The People domain concerns skills and methods that help you succeed as a project manager and that you can use to help others succeed on projects. These include servant leadership, team building, motivation, and conflict management. We will focus on specific tasks listed in the ECO, appropriate to each of the following chapters. To start, here is a good list of “people skills” a successful project manager needs:

- | | | |
|--------------------------|-------------------------------------|---|
| • Active listening | • Facilitation | • Personal integrity and trust building |
| • Adaptive leadership | • Individual performance evaluation | • Rewards and recognition systems |
| • Coaching and mentoring | • Negotiation | • Team performance evaluation |
| • Collaboration | • Participatory decision making | • Understanding of motivation |
| • Conflict resolution | • Team development | |
| • Emotional intelligence | | |

Domain II: Process

The Process domain includes the technical project management skills, methods, and the activities needed to manage a project and deliver the benefits for which the project was undertaken. People work together in this effort—the project manager and team—so wouldn't you expect to be using skills and abilities from the People domain? Of course! You lead the organization of the project and facilitate the development of its product with these skills alongside a balanced understanding of the business environment in which you are operating.

The tasks in the Process domain involve managing many of the processes you have probably already handled in your experience as a project manager. They include the management of the following project management processes, along with the integration of all aspects of the project and other related tasks:

- | | | |
|------------------------|---------------|--------------------------|
| • Communications | • Procurement | • Scope |
| • Budget and Resources | • Risk | • Stakeholder engagement |
| • Quality | • Schedule | |

Managing project governance, artifacts, issues, changes, the use and transfer of lessons learned, and product turnover to operations are also part of this domain. Once the project has been closed and turned over, a key measure of success is the continuation of the project's value and benefits (also part of the Business Environment domain).

Domain III: Business Environment

Projects occur within the larger organization and business environment. Let's say you have the skills associated with people and experience with project management processes. You also need to know how to navigate the internal and external business environments. You probably know this, but you may not have thought about it as a separate factor in your success.

The presentation of the business environment as a separate ECO domain helps you focus on understanding the organization in which you work and the environment in which it does business. Understanding the business and environmental factors are critical to accomplishing project objectives for the betterment of your organization and its stakeholders. Let's take as an example the task of evaluating and delivering project benefits. You can only accomplish this task if you use skills related to the People and Process domains together with a complete understanding of your organization's culture, processes, and practices, and of the external, cultural, and legal environments in which they operate.

As another example, let's say that as part of renovating a library, the project manager plans to work with the city on enhancing transit options for getting to the library. Then they hear that a new highway interchange will be built nearby with a major transit hub included. This will affect the project in a number of ways. Organizations evaluate the external business environment during project selection. Then the project manager continuously monitors the business environment as they plan, execute, and control the project to ensure that environmental changes do not negatively affect project objectives.

The Process Groups Model Overview

PMI recently released its *Process Groups: A Practice Guide*, to explain its Process Groups model. The Process Groups model content originated in previous editions of the *PMBOK® Guide*, so it is familiar to many project managers that have used previous editions of the *PMBOK® Guide*.

The Process Groups model describes a prescriptive or plan-driven approach to project management. Much of the information in the Process Groups model can be used as a learning model for project management in general. It is with good reason that the Process Groups model is so widely used today, and that we include it in this book. It is a good and comprehensive model for prescriptive project management. In addition, over many years, through PMI's propagation of it in previous editions of the *PMBOK® Guide*, organizations throughout the world have adopted it and tailored it to their own needs. So many thousands of project managers are familiar with some form of this model. More important yet: Understanding it will greatly enhance your ability to answer many of the 50% of questions based in predictive environments. In addition, this model is useful in many hybrid project management approaches across the approach spectrum. For these reasons we use it extensively in this book as a learning model.

Process Groups

The Process Groups model starts with five process groups that in a general way describe how a project is managed, from beginning to end. These process groups are:

- Initiating
- Planning
- Executing
- Monitoring and Controlling
- Closing

For now, you may draw the conclusion that to manage a project you would follow the process groups from initiating to planning, executing, monitoring and controlling, to closing, one after the other, from the beginning to the end of the project. You would be right—but only partly right. While the process groups generally lead you in order from the beginning to the end of a project, at the same time you carry out the activities associated with them in a very dynamic fashion, sometimes going back and forth between the process groups.

The real story is that project management is a very dynamic process that cannot be adequately described as a linear progression through these processes, although understanding its linear progression is useful. The process groups order the progression through a project. But at the same time, an activity belonging to one process group might cause a return to an "earlier" process group to respond to a request, carry out an activity, or solve a problem.

Understand the rest of this section and you will be well positioned to understand the Process Groups model and the processes within it, as we explain them further, especially in the Process domain section of this book. You will also understand how everything fits together to help you manage plan-driven projects successfully—and, of course, to answer related questions on the exam.

Figure 2.1 shows generally how the five process groups interact on a project. You have the overall initiating effort, followed by planning. Notice the double-arrows between planning, executing (where we are building the product), and monitoring and controlling (where we are observing and assessing activities to keep things on track). These double arrows are meant to indicate the dynamic, non-linear nature of much of project management work. For example, something that happens in executing and monitoring and controlling, like a change in product scope, may send you back to planning in order to replan to accommodate that change. Many changes like this occur on projects after initial planning is “complete.”

Now notice two more important things about figure 2.1. First, there's a dotted line representing the directional arrow going from monitoring and controlling, back to initiating. This broken arrow is there to remind you that returning to initiating is not a given. In fact, once you leave initiating, it is only under limited circumstances that you would return to initiating. See figure 2.6, where we show those limited circumstances to you.

The second important thing to note right now is that there are two components in figure 2.1 representing “M&C,” or monitoring and controlling. The M&C inside the smaller circle represents monitoring and controlling as a process you carry out along with the others, roughly following the start of executing. The larger, shaded circle also labeled M&C signifies that you are monitoring and controlling throughout the project. No matter what other activities you are carrying out, from whatever process groups, you should also be monitoring and controlling the situation.

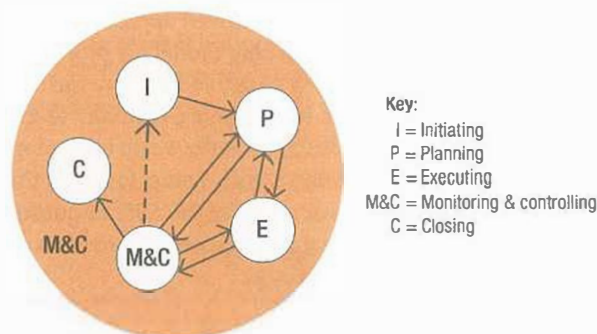


FIGURE 2.1 Project management process

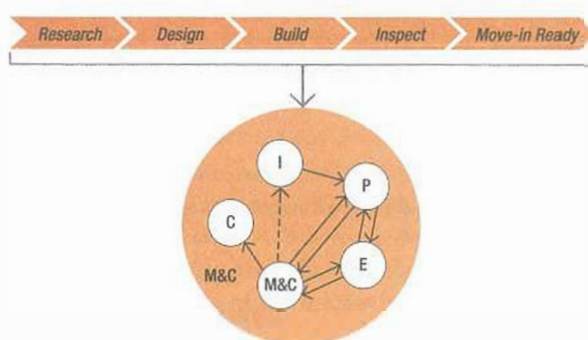


FIGURE 2.2 Small project with a predictive life cycle

The five process groups interact with the selected project life cycle, shown at the top of figure 2.2. Small projects following a plan-driven life cycle may be completed after going through all the process groups (initiating through closing) once for the entire project, although portions of the processes may be iterated or repeated throughout the project life cycle as shown in figure 2.2.

Large projects often require the project manager to manage each life cycle phase iteratively through the project management process groups.

The example illustrated in figure 2.3 is for a large construction project. In this large project, the development life cycle phases of feasibility, planning, design, construction, turnover, and start-up are all extensive, requiring revisiting the five process groups for each phase. For example, there would be an overall initiating effort in which the project manager helps create a charter and does high-level planning for the entire project to get charter approval. Then, a separate initiating

process for the feasibility phase would take place, followed by a planning effort for that phase, the execution and control of that work, and, finally, a closeout of the phase, which typically includes a handoff of deliverables—in this case, the results of the feasibility analysis. This would be repeated for each life cycle phase.

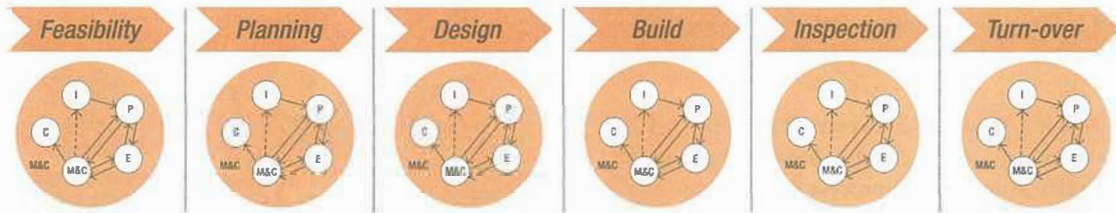


FIGURE 2.3 Large project with a plan-driven approach and phase gates (indicated by the vertical bars)

Phase Gates At the end of each phase, an event called a phase gate may take place. A phase gate involves analyzing the results of the completed phase against what was planned for that phase. Based on that analysis, options may include redoing the same phase, moving forward with the next phase, or choosing not to continue with the project. If the decision is made to move forward, the project would begin initiating work on the next phase and progress through the project management process groups for that phase.

Projects may also be broken into phases and then into smaller releases and iterations within those phases. The project management processes of initiating, planning, executing, monitoring and controlling, and closing are done for each phase. The level of detail and the time spent on each process group may vary, but the entire project management process is typically followed, as indicated in figure 2.4, which depicts the plan-driven process groups with an agile approach. This could be a project using a strictly agile approach, or a hybrid project using project management methods from both plan-driven and agile approaches.

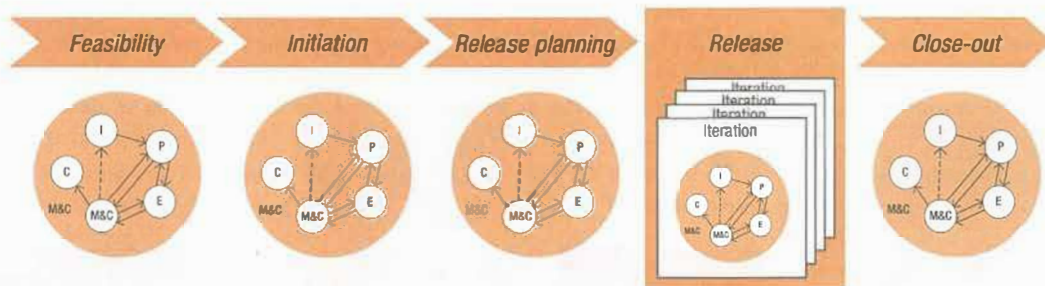


FIGURE 2.4 Large project with an agile approach

TRICKS OF THE TRADE

Agile approaches usually don't include the use of the term "phase." The traditional "phase gate" system is different from an adaptive environment where iterations tend to be short and include product reviews (demos) and retrospectives. The overall process is usually more flexible and evolves throughout the project.

TRICKS OF THE TRADE

Looking at figure 2.4 again, where in the life cycle do you think are opportunities for using a hybrid approach? While the entire life cycle may look adaptive, at the "release" level you can see an iterative approach is most obvious. It's most likely during feasibility, initiation, release planning, and close-out that you'd weave in predictive elements if you chose to do so.

The illustration that appeared in figure 2.1 is shown again here in figure 2.5 for your reference as you read the rest of this section and continue to understand the project management process through the process groups.

Start Here: Take time to fully understand figure 2.5 before continuing.

- Arrows move clockwise from Initiating (I). The process moves mostly in order from Initiating (I) through Planning (P), Executing (E), Monitoring & Controlling (M&C), and Closing (C).
- Double arrows between Planning (P), Executing (E), and Monitoring and Controlling (M&C) process groups show that you often move back and forth between them as you tailor to events taking place. New information becoming available in **executing** (E) may return you to **planning** (P).
- The single dotted arrow returning from monitoring and controlling (M&C) to initiating (I) indicates that only under limited circumstances you may enter **initiating** once you leave it (see figure 2.6).

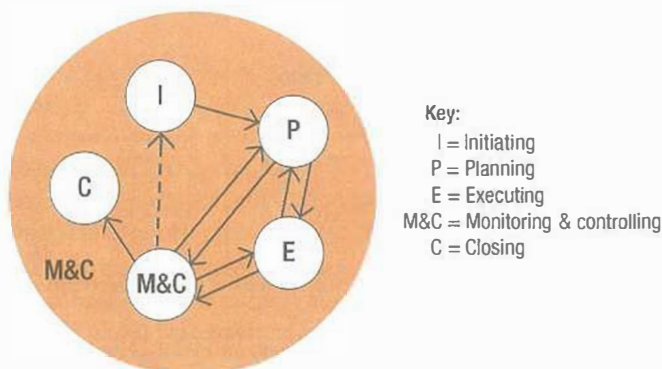


FIGURE 2.5 Project management process

Keep in mind that monitoring and controlling is carried out from start to finish on the project. Remember for the exam: Work in all other process groups takes place in the context of ongoing monitoring and controlling.

The following figures illustrate the reasons for entering the various process groups. Remember, project management is not linear. For example, project planning can be entered into because the results of project monitoring and controlling necessitates additional planning.

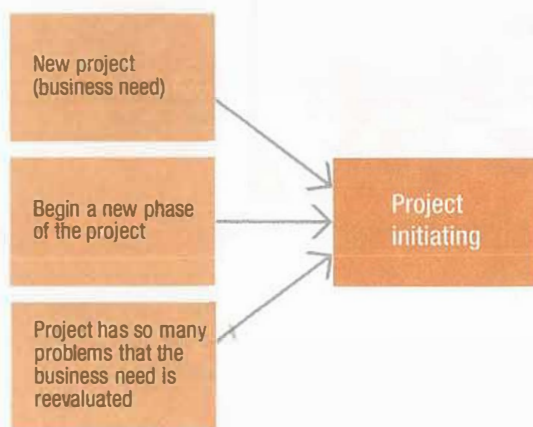


FIGURE 2.6 Reasons for entering project initiating

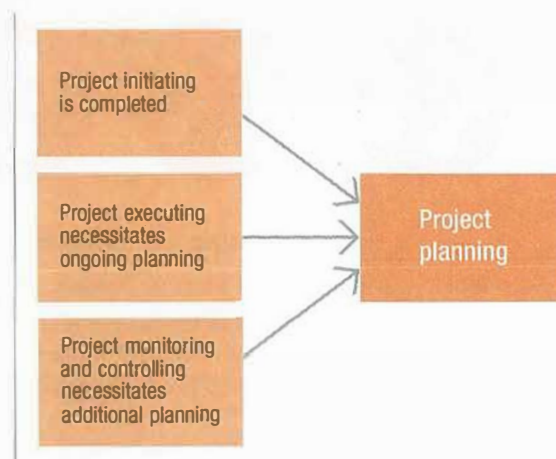


FIGURE 2.7 Reasons for entering project planning

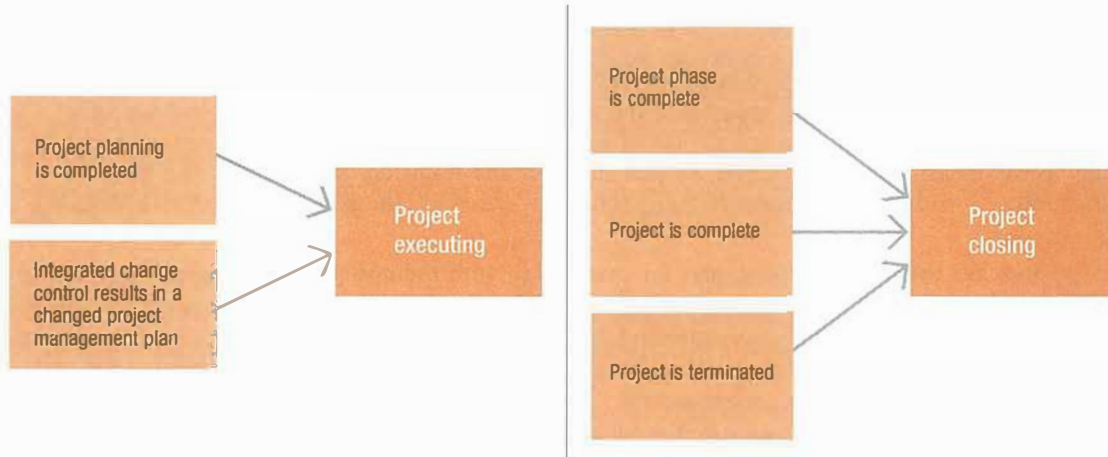


FIGURE 2.8 *Reasons for entering project executing*

FIGURE 2.9 *Reasons for entering project closing*

Let's stop here for a moment to talk about the executing process in a predictive environment versus an adaptive environment. The plan-driven approach to executing is to "go do the items identified in the project plan" and update the project plan baseline if changes occur. These changes may be necessary due to unanticipated issues and risks in activity durations and resource productivity or availability, or for other reasons. We assume that to a certain extent planned activities are fully understood prior to starting work and are completed according to the plan, even though that is not always the case.



Agile methods employ an executing approach in which additional efforts may be made to replan some or all of a project. This is due to the nature of projects that may require a lot of change because project and product scope are emerging. We assume all aspects of work are not known in advance and learning with adaptation will be necessary to complete the project, either because of technical uncertainty or changes to requirements.

We are showing you monitoring and controlling last because its relationships to the other process groups are more intricate. Think about these relationships as you study for the exam. Many students struggle to define what happens during monitoring and controlling versus other process groups, especially executing. Figure 2.10 illustrates key project outputs (on the left) that trigger a focus on monitoring and controlling. It also shows (on the right) that you may tailor your processes to go from monitoring and controlling to any of the other process groups, depending on the situation.

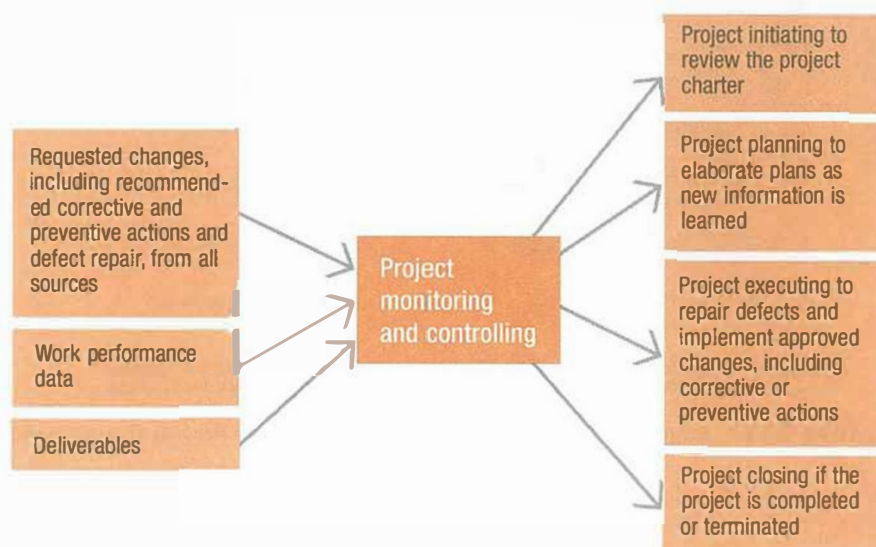


FIGURE 2.10 *Key outputs that trigger monitoring and controlling, and potential next steps*

One reason test takers often find monitoring and controlling to be particularly challenging is that you are expected to know how to observe, measure, evaluate, and analyze a project in a more complete and systematic way than many project managers have experience with.

Monitoring and controlling applies to both agile and plan-driven projects. However, it is useful to think in terms of plan-driven approaches to understand the work of this process group for now because agile practitioners tend not to use the language associated with the five process groups, like “monitoring and controlling.” Nevertheless, just as plan-driven project managers and teams do, agile practitioners measure project and team performance as the product is being built. They also adjust the plan or their actions to remain in line with the plan, as needed.



Agile approaches use different techniques for controlling, with more demos and feedback rather than tests to specification, but the goal of adjusting the product and processes as needed is the same. These environments, which have a high amount of change, usually handle evaluating and approving project changes through the role of a product owner. By putting the product owner in charge of the backlog, an agile team delegates the authority for local decision making to this team member to streamline the change control process.

The iteration review and the retrospective that follow an agile iteration are indicative of the experimental and learn-as-we-go nature of agile projects. These are “measure and control” efforts although the term “monitoring and control” is not used. Special iterations (sometimes called spikes) can be created specifically to try new technology or test new process changes. These short cycles provide important feedback on what is working and what needs further tuning.

Project Constraints and Other Management Areas

You will see a lot of discussion in this book about both the ECO and the Process Groups model. Both represent the processes you are managing in project management. Figure 2.11 compares the main content of the ECO Process domain with that of the Process Groups model, with a symbol between them illustrating their rough equivalence as we have mapped it. Take a moment now to open your ECO so you may read the integration-associated tasks.

ECO Process Tasks (Domain II)	Process Groups Model
Integration (Tasks 1, 9, 10, 12, 13, 14, 16, 17)	Integration Management
Plan and manage scope	Scope Management
Plan and manage schedule	Schedule Management
Plan and manage budget and resources	Cost Management
	Resource Management
Plan and manage quality of products/deliverables	Quality Management
Manage Communications	Communications Management
Assess and manage risks & Manage project issues	Risk Management
Plan and manage procurement	Procurement Management
Engage stakeholders	Stakeholder Engagement

Note: The “budget and resources” Process domain task is comparable to cost and resource management in the Process Groups model. “Human resources” (or soft) skills are addressed in the People domain.

FIGURE 2.11 Relationship between ECO Process domain and Process Groups model

Rita's Process Chart™: A Vital Study Tool

We are here to help you really learn plan-driven project management with the Process Groups model! Since the first edition of this book, people all over the world have used **Rita's Process Chart™** as a tool to learn this project management process in detail, quickly and effectively. Once you understand it, you can use **Rita's Process Chart™** to initiate, plan, and run a plan-driven project, and many of its concepts can also be applied on agile and hybrid projects.

On the exam, although you may not have to identify specific process names from *Process Groups: A Practice Guide*, knowing where you are in the project management process when you read a question's scenario will help you get the right answer.

How to Use Rita's Process Chart™

Located on page 38, **Rita's Process Chart's™** function is to state, simply and directly, the efforts involved in managing a project. Understanding these efforts will provide the context you need for the exam.

As you review **Rita's Process Chart™**, make sure you:

- Understand the overall project management process.
- Find terms you do not know and learn what they are by looking them up in this book.
- Know why each item is in the column (process group) it falls into.
- Understand the project management process groups of initiating through closing, including when each effort should be done on projects. The exam asks questions that present a situation and require you to know where you are in the project management process.
- Can replicate the specific order of the planning activities by understanding what happens when, how previous work supports what comes next and why. Use **Rita's Process Chart™ Game** (discussed later in this chapter) for this. Knowing Rita's Planning column in this order can help you get a large number of questions right on the exam because the exam often asks what should be done next. The work in the other process groups does not have a set order.
- Understand that project planning is an iterative process. Consider how you might go back and redo (iterate) some of the items in the Planning column to refine the plan. Think about how rolling wave planning (a form of progressive elaboration) would be used on a large project to refine and detail plans for each phase as you move through the project life cycle. Here, the earliest parts of the project are planned in sufficient detail for work to begin. Later phases of work are planned at a high level. As the project progresses, and more information impacting the work becomes available, plans are elaborated in sufficient detail to accomplish the work.
- Complete **Rita's Process Chart™ Game** at least three times. Repeating the game will re-enforce your understanding of the overall project management process and help you find your knowledge gaps. Focus your study on your gap areas so you fill those gaps before taking the exam.

Rita's Process Chart™

INITIATING	PLANNING (This is the only process group with a set order.)	EXECUTING	MONITORING & CONTROLLING	CLOSING
Select project manager		Execute work according to the project management plan	Take action to monitor and control the project	Confirm work is done to requirements
Determine company culture and existing systems	Determine development approach, life cycle, and how you will plan for each knowledge area	Produce product deliverables (product scope)	Measure performance against performance measurement baseline	Complete final procurement closure
Collect processes, procedures, and historical information	Define and prioritize requirements	Gather work performance data	Measure performance against other metrics in the project management plan	Gain final acceptance of product
Divide large projects into phases or smaller projects	Create project scope statement	Request changes	Analyze and evaluate data and performance	Complete financial closure
Understand business case and benefits management plan	Assess what to purchase and create procurement documents	Implement only approved changes	Determine if variances warrant a corrective action or other change request(s)	Hand off completed product
Uncover initial requirements, assumptions, risks, constraints, and existing agreements	Determine planning team	Continuously improve; perform progressive elaboration	Influence factors that cause change	Solicit customer's feedback about the project
Assess project and product feasibility within the given constraints	Create WBS and WBS dictionary	Follow processes	Request changes	Complete final performance reporting
Create measurable objectives and success criteria	Create activity list	Determine whether quality plan and processes are correct and effective	Perform integrated change control	Index and archive records
Develop project charter	Create network diagram	Perform quality audits and issue quality reports	Approve or reject changes	Gather final lessons learned and update knowledge base
Identify stakeholders and determine their expectations, interest, influence, and impact	Estimate resource requirements	Acquire final team and physical resources	Update project management plan and project documents	
Request changes	Estimate activity durations and costs	Manage people	Inform stakeholders of all change request results	
Develop assumption log	Determine critical path	Evaluate team and individual performance; provide training	Monitor stakeholder engagement	
Develop stakeholder register	Develop schedule	Hold team-building activities	Confirm configuration compliance	
	Develop budget	Give recognition and rewards	Create forecasts	
	Determine quality standards, processes, and metrics	Use issue logs	Gain customer's acceptance of interim deliverables	
	Determine team charter and all roles and responsibilities	Facilitate conflict resolution	Perform quality control	
	Plan communications and stakeholder engagement	Release resources as work is completed	Perform risk reviews, reassessments, and audits	
	Perform risk identification, qualitative and quantitative risk analysis, and risk response planning	Send and receive information, and solicit feedback	Manage reserves	
	Go back—iterations	Report on project performance	Manage, evaluate, and close procurements	
	Finalize procurement strategy and documents	Facilitate stakeholder engagement and manage expectations	Evaluate use of physical resources	
	Create change and configuration management plans	Hold meetings		
	Finalize all management plans	Evaluate sellers; negotiate and contract with sellers		
	Develop realistic and sufficient project management plan and baselines	Use and share project knowledge		
	Gain formal approval of the plan	Execute contingency plans		
	Hold kickoff meeting	Update project management plan and project documents		
	Request changes			

Study Notes for Rita's Process Chart™

Remember while this focuses primarily on plan-driven project management, many of the same concepts apply to agile projects as well. We continue to note the differences throughout the book.

INITIATING
Select project manager
Determine company culture and existing systems
Collect processes, procedures, and historical information
Divide large projects into phases or smaller projects
Understand business case and benefits management plan
Uncover initial requirements, assumptions, risks, constraints, and existing agreements
Assess project and product feasibility within the given constraints
Create measurable objectives and success criteria
Develop project charter
Identify stakeholders and determine their expectations, interest, influence, and impact
Request changes
Develop assumption log
Develop stakeholder register

Initiating

- You will read more about project selection in the following “Foundations” chapter of this book. Does it matter for you to know why your project was selected? Yes, of course. It will influence how you plan the project, what kinds of changes are allowed, and how the project scope is defined. The business case and the benefits management plan are inputs to developing the project charter (and the project charter is covered in more detail in the Integration chapter of the Domain II: Process section of this book.)
- Notice the phrase “Understand business case and benefits management plan.” This could be read as “Understand the reason the project is being done and the benefits the organization expects to gain as a result of it.” These business documents are created before the project begins and contribute to the project being selected by the organization among many project proposals. They will guide all project management activities to ensure the project is worth the investment and that it will return the expected benefits to the organization.

This is an exam concept that many project managers miss. As the project manager, you should understand why your project was selected and what benefits it is expected to deliver. Is the project being done so the organization can enter a new market? Is it intended to meet a regulatory requirement? Is it the result of a customer request? Is it a priority project for a company executive? Is it expected to dramatically improve the future of the company? If you lose sight of objectives, the project may finish on schedule and on budget but still fail because it does not achieve its objectives or does not deliver the expected value.
- Team building, risk identification, stakeholder identification, risk response planning, and many other activities primarily occur in the process groups in which they are placed on the chart, but these activities can start in initiating and continue until closing.
- Identifying and analyzing stakeholders help to align their expectations about the project and assess their potential involvement and influence on the project.
- The project manager determines whether the project objectives can be achieved and if it is likely to be completed within the given constraints. High-level planning is summarized in a project charter, which documents high-level estimates, measurable objectives, success criteria, milestones, and an initial budget. Initial planning may also include creating a high-level WBS and high-level risk identification.
- The charter, once formally approved by the sponsor, gives the project manager the authority to continue the project beyond initiating. It also provides a guiding vision of the project’s business case and benefits management plan, and the organization’s strategic objectives.
- Besides an approved project charter, an artifact of initiating is the stakeholder register. Then, detailed planning can begin.

PLANNING (This is the only process group with a set order.)
Determine development approach, life cycle, and how you will plan for each knowledge area
Define and prioritize requirements
Create project scope statement
Assess what to purchase and create procurement documents
Determine planning team
Create WBS and WBS dictionary
Create activity list
Create network diagram
Estimate resource requirements
Estimate activity durations and costs
Determine critical path
Develop schedule
Develop budget
Determine quality standards, processes, and metrics
Determine team charter and all roles and responsibilities
Plan communications and stakeholder engagement
Perform risk identification, qualitative and quantitative risk analysis, and risk response planning
Go back—iterations
Finalize procurement strategy and documents
Create change and configuration management plans
Finalize all management plans
Develop realistic and sufficient project management plan and baselines
Gain formal approval of the plan
Hold kickoff meeting
Request changes

Planning

- In the planning column, note the first box: “Determine development approach, life cycle, and how you will plan for each knowledge area.” In plan-driven approaches, each knowledge area (scope, schedule, cost, etc.) requires a management plan. Additional plans are needed for configuration (or updating of project artifacts), change, and requirements management. The first thing you need to do is figure out how you will plan, execute, and control for each knowledge area. This will guide the rest of your planning efforts.
- The project manager and team perform a detailed analysis of whether the objectives in the project charter and the expected business benefits can be achieved. They determine what processes are appropriate for the needs of the project and tailor processes to those needs.
- Notice the phrase “Determine team charter and all roles and responsibilities.” Determining roles and responsibilities involves determining who is going to do which product-related work activities but also who will provide reports, attend meetings, help with risk identification, work with the quality department, etc. Roles and responsibilities may be documented as part of the resource management plan, in project job descriptions, or in the management plans for each area. This item may also include developing a responsibility assignment matrix (RAM) and a rewards and recognition system.
- Some projects may be organized by phases where detailed planning for the next phase is started as the previous phase nears completion. In agile planning only the first part of the project may be fully planned, while the later portions are planned at a high level and then progressively elaborated when more is information about the project becomes available.
- Remember when we said project management seems linear but is dynamic? The Planning column has a reminder that planning is the only process group with a set order. However, a planning process may require an input that isn’t available yet. The risk register, for example, is an input to several processes leading to the creation of the schedule. Initial risks are documented in the charter, so although the risk register will by no means be complete when the schedule is created, known risks can be factored into planning. Then, after performing risk management activities, the more complete risk register can be used to refine the schedule.
- Look at the phrase “Go back—iterations.” This is an important concept. Planning is iterative. When planning a project, the project manager and the team complete each item listed above this point to the best of their ability. But even a plan-driven project will evolve as the project progresses and earlier planning work is then modified. For example, it is only after completing risk management planning that the WBS and the other items can be finalized. A risk response strategy may be used to avoid a portion or all of a threat (see the “Risks and Issues” chapter). This will require adjusting the WBS for added scope (the risk response plans), the network diagram to redetermine the order of the work, the budget for added cost, and so on. The project manager might also work with discretionary dependencies to change the network diagram and thereby decrease some risk (see the “Schedule” chapter).
- Notice the term “procurement strategy and documents” in the Planning column. Also note the placement of “Finalize procurement strategy and documents” after “Go back—iterations.” The risk management process may generate risk response strategies involving contracts; through iterations the procurement documents can be created, refined, and finalized.

- The important thing to remember is that planning should lead to a realistic, bought-into, approved, and formal project management plan that is updated throughout the project to reflect approved changes.
- The distinction between predictive and adaptive approaches is worth thinking about here. The *Process Groups: A Practice Guide* planning processes describe all the traditional activities performed to define the total scope and courses of action for a project. It assumes that with sufficient analysis these are knowable, and development is then largely the execution of this course of action. Progressive elaboration and rolling wave planning are effective mechanisms to tune plans to emerging details, and they act as accepted adjustments to detailed initial planning.
- Although the project management plan is “finalized” in planning, items such as detailed estimates and product and project scope descriptions may be modified as the work is being done during the executing and monitoring and controlling processes.
- The project management plan and documents (also known as project artifacts) resulting from planning guide the execution and control of the project. After the plan is iterated and includes the appropriate detail for the project life cycle and development approach, the sponsor approves it.

Rolling wave planning and progressive elaboration exist within the predictive framework of project management as supporting elements. Agile planning is deliberately more incremental and iterates to discover and refine scope, making progressive elaboration a central rather than a supporting element.

EXECUTING
Execute work according to the project management plan
Produce product deliverables (product scope)
Gather work performance data
Request changes
Implement only approved changes
Continuously improve; perform progressive elaboration
Follow processes
Determine whether quality plan and processes are correct and effective
Perform quality audits and issue quality reports
Acquire final team and physical resources
Manage people
Evaluate team and individual performance; provide training
Hold team-building activities
Give recognition and rewards
Use issue logs
Facilitate conflict resolution
Release resources as work is completed
Send and receive information, and solicit feedback
Report on project performance
Facilitate stakeholder engagement and manage expectations
Hold meetings
Evaluate sellers; negotiate and contract with sellers
Use and share project knowledge
Execute contingency plans
Update project management plan and project documents

Executing

- With an approved project management plan, the project moves into executing, where the team completes the work according to the plan. The project manager's focus is on leading people and managing the project, including engaging stakeholders, working with the team, following processes, and communicating according to the plan. For the exam, get your mind around the critical difference appropriate planning makes. Assume the project was properly planned before work began unless the question indicates otherwise.
- The purpose of project executing is to complete the project work as defined in the plan, to produce the project deliverables (the product scope) at agreed quality levels, within the project's approved budget and schedule. This achieves the expected business value and agreed-upon benefits.
- Team members can be released at any time once their work is approved and accepted and they have completed their project activities.

Example Electricians on a project to build a house may test their work, get acceptance of their work, document lessons learned, suggest process improvements, and turn the work over. They are released while other team members doing drywall are still working. Some team members remain on the project to its end to assist the project manager in creating the final lessons learned, archiving final records, and producing the final report.
- As executing progresses, the project manager may determine that a change is needed. The same could happen while the project manager is monitoring and controlling the work, or in planning as a result of rolling wave planning that occurs after the plan has been approved and work has started. Change requests are evaluated and approved or rejected as part of the Perform Integrated Change Control process (see the "Integration" chapter).

MONITORING & CONTROLLING

Take action to monitor and control the project

Measure performance against performance measurement baseline

Measure performance against other metrics in the project management plan

Analyze and evaluate data and performance

Determine if variances warrant a corrective action or other change request(s)

Influence factors that cause change

Request changes

Perform integrated change control

Approve or reject changes

Update project management plan and project documents

Inform stakeholders of all change request results

Monitor stakeholder engagement

Confirm configuration compliance

Create forecasts

Gain customer's acceptance of interim deliverables

Perform quality control

Perform risk reviews, reassessments, and audits

Manage reserves

Manage, evaluate, and close procurements

Evaluate use of physical resources

Monitoring and Controlling

- Do the project management process groups occur sequentially? Yes, in a sense, but the paradox is that they overlap. For example, you could be using monitoring and controlling processes to control stakeholder identification and adherence to organizational requirements while project planning and the creation of baselines and project documents. Defects could be identified in executing that require work in monitoring and controlling to decide if the defects require a change to the plan to prevent future rework or delays as well as work in executing to fix them. Controlling procurements and the closure of procurements can occur simultaneously on projects because some sellers will complete their contractual obligations to the project while others are still producing deliverables. Look again at **Rita's Process Chart™** and think about the overall focus of each process group, but also about how the work can overlap at various points in time.
- While the work is being done, work results (or data) are fed into monitoring and controlling to make sure the project is advancing according to the established baselines. This requires evaluating hard data on how the project is conforming to the plan, and taking action to address variances that are outside of acceptable limits. The project manager and team are also assessing how stakeholders are participating, communicating, and feeling about the project and the work, and addressing uncertainties (or risks) that have been identified.
- The project management plan includes monitoring activities, such as observing, communicating, and evaluating. It also specifies control activities along with a plan for how variations from planned metrics should be addressed.
- Outcomes of monitoring and controlling include recommended changes to the way the work is being done or possibly requesting adjustments to baselines to reflect more achievable outcomes. Change requests are evaluated in Integrated Change Control to determine their impact on the project, identify the best options for dealing with them, and decide whether they should be approved, rejected, or deferred.
- Approved changes that require adjustments to baselines and other plan elements require replanning before the team starts working on them (in executing). If the project gets so far off the baselines that it requires an analysis of whether it should continue at all, or if significant changes are suggested that are outside the project charter, it may move back into initiating while that evaluation is done.
- Executing and monitoring and controlling actions continually overlap while the work of the project is ongoing, including keeping all project artifacts up-to-date. The focus for the project manager in executing is leading people, removing impediments to progress, and managing physical resources to accomplish the project as planned. The focus of monitoring and controlling is ensuring the project is progressing according to plan and approving necessary changes to the plan to meet the organization's strategic objectives and deliver the expected benefits.

CLOSING
Confirm work is done to requirements
Complete final procurement closure
Gain final acceptance of product
Complete financial closure
Hand off completed product
Solicit customer's feedback about the project
Complete final performance reporting
Index and archive records
Gather final lessons learned and update knowledge bases

Closing

- The closing efforts are similar for plan-driven and agile projects. They include collecting and finalizing all the artifacts needed to complete the project, and technical and administrative work to confirm that the final product of the project is accepted. They also include transferring the completed product to those who will use it and soliciting feedback from the customer about the product and the project.
- Lessons learned should be collected on an ongoing basis on plan-based projects and on agile projects after every iteration. They are finalized at closing. In both cases they should be put to use right away and after closing be made available to future projects.
- In many real-world situations, projects never seem to officially finish. Keep in mind that all projects must complete the required closing activities.

Rita's Process Chart™ Game

Our students invariably report that **Rita's Process Chart™** and the associated explanations have been instrumental for them to pass the exam. The **Rita's Process Chart™ Game** has helped thousands of students remember and ensure their understanding of the overall project management process. You may at first find this game overwhelming, so just play it once before you finish reading this book. Then, come back to the game and play it a few more times before the exam and you will find it getting easier as you are better prepared.

There are two formats you can use to play this game.

- An online version of **Rita's Process Chart™ Game** is available at rmcls.com/process-chart-game-v11.
- A printable version of the game is available for download. This version is available on our RMC Resources page: rmcls.com/rmc-resources (or scan the QR code). You can then cut apart the component "cards" and play the game using this high-touch, low tech format.



Agile Process Overview

The **Rita's Agile Process Chart™** is a matrix representing an agile approach to project management. We draw comparisons between agile, plan-driven and hybrid approaches throughout the book so as you study you should become familiar with how both predictive and adaptive environments work. In addition, always keep in mind that as a project manager you always tailor the methods you use to the needs of the project, and that hybrid approaches work on some projects.



Rita's Agile Process Chart™

FEASIBILITY	INITIATION	RELEASE PLANNING	ITERATION	CLOSE-OUT
Project visioning takes place	Develop project charter		Perform iteration planning	Obtain final release approval
Establish business case	Create team charter	Slice user stories (decompose features)	Build features as described in user stories	Turn over maintenance of product release to another team
Create high-level user stories (features)	Hold daily standup meetings	Build a release plan	Hold daily standup meetings	Hold final retrospective
Establish high-level estimates	Build a release plan	Build a release map	Remove impediments for the team	Ensure procurement closure
	Create personas	Hold daily standup meetings	Update burnup charts	Archive project artifacts
	Identify stakeholders and contact	Perform story estimation using Planning Poker*	Identify acceptance tests for stories	
	Create backlog of features	Focus on how to deliver value	Prepare acceptance tests	
	Create high-level estimates using affinity estimating	Define "done"	Run exploratory tests	
	Create product roadmap using story maps	Estimate how much work can be done	Test user stories	
	Remove impediments for the team	Calculate team velocity	Hold iteration review	
		Reprioritize the backlog	Hold retrospective	
		Define the first iteration goal	Prepare stories of next iteration	
		Ensure there is shared understanding among team members	Collaborate with team to answer questions and obtain story signoff	
		Prepare stories of next iteration		
		Remove impediments for the team		

Feasibility

Agile teams are stable over time so projects are brought to the teams. There typically is not a new team assembled for each project, as is often the case with plan-driven project. Feasibility consists of the following:

- Establishing a business case often involves management and includes things like cost-benefits analysis, calculating expected return on investment and using other metrics to ensure that the project will create the desired value for the organization and its stakeholders.
- Creating a product and project vision is an exercise where the team develops an "elevator pitch" or short statement describing the project and its product, benefits, and value in the time a ride in an elevator might take.
- High-level features are documented along with very high-level estimates of the costs and other resources needed to create the product of the project. The features are very general descriptions of what will be needed from the product.

Initiation

At the point of initiating, you can assume feasibility studies and project selection are complete, just as you would when you are given a plan-driven project. The team develops the following:

- **A project charter** This is a high-level summary of the project and its scope, requirements, risks and other broad features of the project and product as known. The team charter is a set of agreements about how the team will commit to working together to communicate, build the product, and meet the needs of the project and each other. If the team already has a team charter, they will tailor it to the needs of the project.

- **Personas** These are profiles of the various types of stakeholders who will use the product. The team develops them to understand requirements from the perspectives of their various stakeholders, usually end users of the product. The team also identifies specific stakeholders and stakeholder groups, gathers their contact information, and begins to contact them. See figure 2.12.
- **A product backlog** This is an elaboration of the feature list started in Feasibility. This single artifact holds all the features needed from the product. It is elaborated and decomposed iteratively throughout the project. The team completes affinity estimation, or grouping features by high-level estimates of their size (estimated effort to build, for example small, medium, large, extra-large). Common terms used here are “bucket size” or “t-shirt size.” See figure 2.13
- **A product roadmap (or story map)** This graphic depicts features that will be built first, and then next, etc., across a period of time. Product increments are built and delivered to the customer in releases, so the product roadmap or story map may also be referred to as a release map. See figure 2.14.

Remember that the product owner is an integral part of the team and helps in all these endeavors. The project manager meanwhile is ensuring that processes are understood and being followed, and is working to remove impediments to the team’s progress.

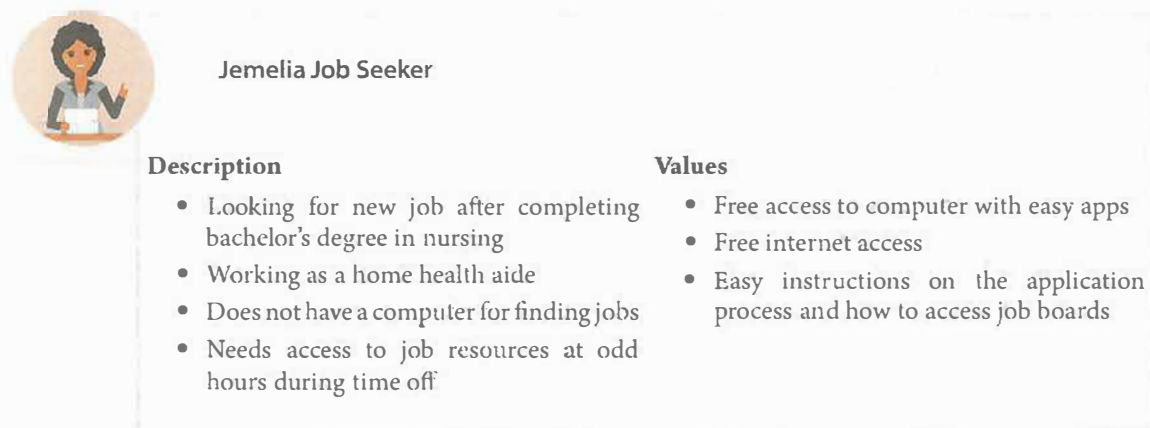


FIGURE 2.12 Example persona for library case

#	Backlog Item	Stakeholders
P1	Manage appointments	Patients, administrators, practitioners
P2	Change personal data and preferences	Patients, administrators, practitioners
P3	View health information library	Patients, practitioners
P4	Outreach (marketing) campaigns	Patients, marketing
P5	Practitioner and patient communications	Patients, practitioners, marketing
P6	Regulation compliance	Patients, government
P7	View patient’s own medical data from The Center	Patients, administrators, practitioners

FIGURE 2.13 Example partial backlog for clinic user website

Release 1 (Mar 28)	Release 2 (May 30)	Release 3 (Jul 31)
- Regulation compliance	- Regulation compliance	- Manage bill and payments
- Branding/style schemes	- UID	- Manage own insurance information
- Database integration	- Database integration	- View patient data from other institutions
- Investigate network infrastructure expansion	- Manage web accounts (login, password, etc.)	
- User interface design (UID)	- Patient views own data from The Health Center	
- Site security	- Change personal data and preferences	
- Manage web accounts (login, password, etc.)	- Manage appointments	
- Patient views own data from The Health Center		
- RISK Current web site capacity		
- RISK Patients with “edit” access could damage data		

FIGURE 2.14 Example roadmap from clinic user website case

Agile Release Planning

The release map (or product roadmap) was created during Initiation, along with the feature backlog. In release planning these will be planned further for the release of the first increment of the product. Once that first increment is released the team begins work on the second release, and so on, for the number of releases decided on by the team during initiation. The release plan is developed iteratively throughout the project because in adaptive environments planning occurs throughout the project. Other activities the team carries out are as follows:

- Features are “sliced,” or decomposed into smaller units, or stories. The stories are estimated in finer detail using estimating tools like Planning Poker®, where each story is estimated using more finely detailed relative sizing. Additional requirements about the stories are gathered as they can become known, and a “definition of done” (i.e., what does “done” look like?) is created for each story.
- The team establishes its initial “velocity,” which is a measure of how much work can be completed in an iteration (a defined period of time for building the product increment, like two weeks, or three weeks, for example). The team also selects, with the help of the product owner who is responsible for prioritizing the backlog, the stories that will be completed in the first iteration.
- The team continues to gather the detailed requirements for the first (or next) iteration. The product owner, meanwhile, is continuously prioritizing the backlog. The project manager is fostering a common understanding and removing impediments for the team.

Agile Iterations and Product Release

Monitoring and controlling occur throughout an agile project as the product is being built, although most agile practitioners do not use the term “monitoring and controlling.” The team moves through a defined series of iterations (two-to-four usually) per release, until a product increment is ready to be delivered to the customer. This is what these processes look like:

- There is a last, quick effort to finish the iteration planning before the iteration begins. Once the iteration begins the team will simply build the stories that have been selected for that iteration while the project manager is facilitating their work and removing impediments to progress.
- The team has already begun daily standup meetings, which are very short meetings (usually 15 minutes) where they discuss what has been completed since they last met, what will be completed next, and whether there are any impediments to progress. Any elaboration or follow up from the meeting happens after the meeting so everyone can get back to work quickly.
- The team’s work consists of building, testing, and finishing stories so they can be presented to the customer for approval in an iteration review, where the product is demonstrated and the customer has an opportunity to provide feedback.
- The product owner meanwhile is answering questions the team has about missing story details, prioritizing the backlog, and preparing more stories for the next iteration by continually gathering their detailed requirements.
- After the iteration review, the team responds to customer feedback requiring changes. The team also holds an iteration retrospective where they discuss what they did well, what went wrong, and what they would do differently. The daily standups, the iteration reviews, and retrospectives are all part of living a philosophy of continuous improvement.
- Iterations continue until a “minimally marketable” increment of the product is ready for release to the customer. Minimally marketable increments are those that meet the minimum requirements for something that the customer can use while the team builds the next product release.

Agile Closing

There is no appreciable difference between closing processes in adaptive and predictive environments. You can review this information in the Closing section on **Rita’s Agile Process Chart™**. Essentially the team obtains final approval of the last product increment to be released during the project, turns it over to the customer, and holds their final retrospective. The project manager also makes sure all procurements have been closed and that all project artifacts are current and are archived as part of the organization’s process assets.

Rita’s Agile Process Chart™ Game

Rita’s Agile Process Chart™ game will help you gain understanding on how an agile project flows. We suggest you only play the game once before you have read through this book. Then return to it as many times as you’d like to increase your understanding of agile projects.

- An online version of Rita’s Agile Process Chart™ Game is available at rmcls.com/agile-process-chart-game-v11.
- A printable version of the game is available for download. This version is available on our RMC Resources page: rmcls.com/rmc-resources. You can then cut apart the component “cards” and play the game.



RMC RESOURCES

TRICKS OF THE TRADE

Hybrid approaches embody the principle of tailoring. As you read this book, use your experience to practice awareness of tailoring. Think about tailoring the processes and tools discussed in this book with projects you are familiar with and examples we give you. Could you be creative with project management methods to better manage a situation on a project? Think about advantages the different approaches offer. As you become comfortable with these approaches, you will be able to identify them on the exam depending on the given scenario and therefore select the best answer.

Hybrid Environments

A hybrid project management environment uses a combination of plan-driven and agile development approaches. These approaches may take one of many forms. Below are a few examples:

- We can use predictive methods to manage project requirements that are well defined, and adaptive methods to manage requirements that are less clear.

Example Build a small building with plan-driven methods. Build out office spaces iteratively.

- Use a plan-driven approach but add agile elements.

Example The project manager for a mainly plan-driven project uses electronic task boards (“information radiators” in agile) for a remote team and institutes daily standup meetings during designated periods along the critical path.

- Use an adaptive approach to develop the product and then use a predictive approach to implement the product once it has been approved for release.

Example Develop a large, complex software installation incrementally and iteratively. Once it is ready to be released, complete the rollout and training using plan-driven methods.



Figure 2.15 illustrates the spectrum of development approaches, using the small office building construction example from chapter 1. The dotted line indicates that with a hybrid approach, any combination of methods along the spectrum may be used.



FIGURE 2.15 Development Approach Spectrum

PMBOK® Guide, Seventh Edition Overview

As we mentioned earlier in this chapter, PMI states that the exam is based on the ECO but also gives ten other references, including the *PMBOK® Guide, Seventh Edition*. Since we have found that you could see questions on the exam based on information in the *PMBOK® Guide*, we want to provide an overview. We will also present concepts from it throughout the book, where appropriate.

Updates in the *PMBOK® Guide's Seventh Edition*

The seventh edition of the *PMBOK® Guide* is not prescriptive since it does not endorse a single framework or approach to good project management. Connected to this idea of not endorsing a single project management model, the *PMBOK® Guide* describes the continuum of approaches along which projects may be managed. This continuum of practices ranges from managing projects using only plan-driven methods, to doing so using only agile methods. Between these two extremes are hybrid models that combine methods from both plan-driven and agile project management.

Anywhere along this continuum, remember, is the basic tenet of tailoring. You must tailor your project management approach and methods to the needs of the project you are managing and its potential benefits to your organization and its stakeholders. These benefits tie back to the reason a given project was selected by the organization.

Other fundamentals in the *PMBOK® Guide* to think about focus on project management as:

- **A system of value delivery** You still need to understand the definitions of projects, programs, portfolios, and operations from the perspective of their unique attributes and connections to one another. PMI now also emphasizes thinking of these collective efforts from the perspective of a system of delivering value to the business and to achieving its strategic objectives—and those of its stakeholders. These two perspectives are completely compatible with each other, with the principles in the ECO, and with everything we teach in this book.

- **A principles-based system** Complementary to PMI's Code of Ethics and Professional Responsibility, PMI introduces the *PMBOK® Guide* as a principles-based system of managing projects to deliver value. These principles are listed later in this book, in the "*PMBOK® Guide* and the PM Standard" chapter.
- **Having a performance domain focus** The *PMBOK® Guide* is based on performance domains, each of which describe a collection of skills and abilities that a project manager should have and use on a project, in whatever ways necessary depending on the project's needs and attributes.
 The *PMBOK® Guide*'s performance domains are not the same as those described in the ECO, but they are compatible with them. Do not worry about having to memorize all these performance domains. It will not be hard for you to relate to the *PMBOK® Guide*'s performance domains as you gain an understanding of plan-driven, agile, and hybrid project management approaches (along with the concepts expressed in the ECO), as taught in this book. The domains are:

✓ Stakeholders	✓ Planning	✓ Measurement
✓ Team	✓ Project Work	✓ Uncertainty
✓ Development Approach and Life Cycle	✓ Delivery	
- **An outcomes-based system** Projects inevitably deliver outputs—those deliverables that result from the project-related activities the project manager and team complete. There is a difference between outputs (deliverables directly resulting from the work on a project), and outcomes—what needs to be accomplished with these deliverables. The *PMBOK® Guide* places an increased emphasis on the outcomes that should result from these deliverables.
Example It is one thing for a project to deliver improved sales and engineering processes (the outputs, or deliverables), but do these new or improved processes achieve the desired outcome of measurably improving sales results? The output of the project is the new or improved processes, and the desired outcome is the measurable improvement in sales and product delivery.
- **Models, methods, and artifacts** A model is a way of understanding a concept or a set of tools, a method is the set of tools itself, and artifacts are all of the documentation and other useful organizational assets project managers use on a project, keep updated, and leave behind from a properly managed project.

Putting It All Together

We would like you to have more practice with the two main project management process models before you read the rest of this book.

Read through the concepts in the first column (the Agile column), and study how they are illustrated in the Agile Process Overview in figure 2.16. The Agile Process Overview will help you better understand the agile model. Next, read through the concepts in the plan-driven column and go back to Rita's Process Chart™ earlier in this chapter and read through it again.

Make sure you understand both process models and, at a high level, how they are similar to and different from each other.

TRICKS OF THE TRADE

It is useful to draw parallels between plan-driven and agile project management so that you may understand both, along with their similarities and differences. As we show these parallels also keep in mind that they are models, and all models have limits. So do not look for exact parallels from these comparisons. Come to a general understanding that each approach arrives at the same goals by taking different paths.

Agile (Agile Process Overview, figure 2.16): Initiating

- Chartering and identify stakeholders: Personas.
- Create Backlog: High-level requirements; features and functions.
- High-level estimation: Bucket size (like t-shirt size: S, M, L).
- Create roadmap: Time-phased story map.

Plan-driven (Rita's Process Chart™: Initiating)

- Project charter and identify stakeholders: Stakeholder register.
- High-level known requirements: In project charter.
- High level estimation: In project charter.

Agile (Agile Process Overview, figure 2.16): Release Planning and Iteration Planning

- Story slicing Decomposed from feature-level (high-level) to smaller chunks of functionality (stories).
- Story estimation using Planning Poker®: An all-team participatory estimating method.
- Cost and schedule (not shown on figure 2.16): Cost is stable and estimated early; scope is emerging and more negotiable.
- Build a release plan: Risk-adjusted backlog contains sliced stories; prioritized sufficiently to plan the (first and) next iteration. Quality, procurement, communications planned in.
- Team charter, roles, & responsibilities: SMEs as generalizing specialists (can help where needed); project manager/servant leader; product owner represents the customer.
- Iteration 0 and spikes: Detailed requirements are gathered in Iteration 0. Spikes are experimental iterations to explore a new risk, technology, or approach.
- Iteration planning: Short, whole-team meeting (the team manages their own work).
- Project manager as servant leader.
- Building with excellence: Technical team.
- Answer questions; prepare stories for next iteration: Product Owner/value management.
- Daily standup meetings: Short—What is done; what are you working on; are there impediments?
- Servant leader (project manager): Helps remove impediments after the meeting.
- Iteration review: Demo product increment to customer, get feedback, and go back to make changes as needed.
- Planning executing, and control: happens iteratively until defined product scope is built or the customer decides that the built scope is enough and the project can close (or the project is terminated early).

Plan-driven (Rita's Process Chart™: Planning)

- Gather requirements, define scope, decompose to create WBS (work packages) and WBS dictionary.
- Create activity list, estimate activity durations, costs, resource requirements.
- Build the rest of the project management plan (detailed quality, procurement, communications, stakeholder, and risk plans).
- Team charter, roles and responsibilities.
- Go back – iterations, create change and configuration plans. Finalize procurement and other management plans. Get final project management plan approval, hold kickoff meeting.
- Project manager and team consult plan for next steps; adjustments are made as needed.
- Project manager as servant leader.
- Technical team builds with excellence.
- Project manager controls to the plan.
- Meetings for various reasons including project reporting.
- Servant leader (project manager) helps remove impediments, engage stakeholders, manage procurements, etc.
- Meetings to execute and control, including integrated change control and project reporting.
- Executing and control continues; replanning happens for approved changes; iterative planning happens for progressive elaboration as needed.
- Product scope is built, verified, and validated (accepted) until scope as planned is completed and the project can close (or the project is terminated early).

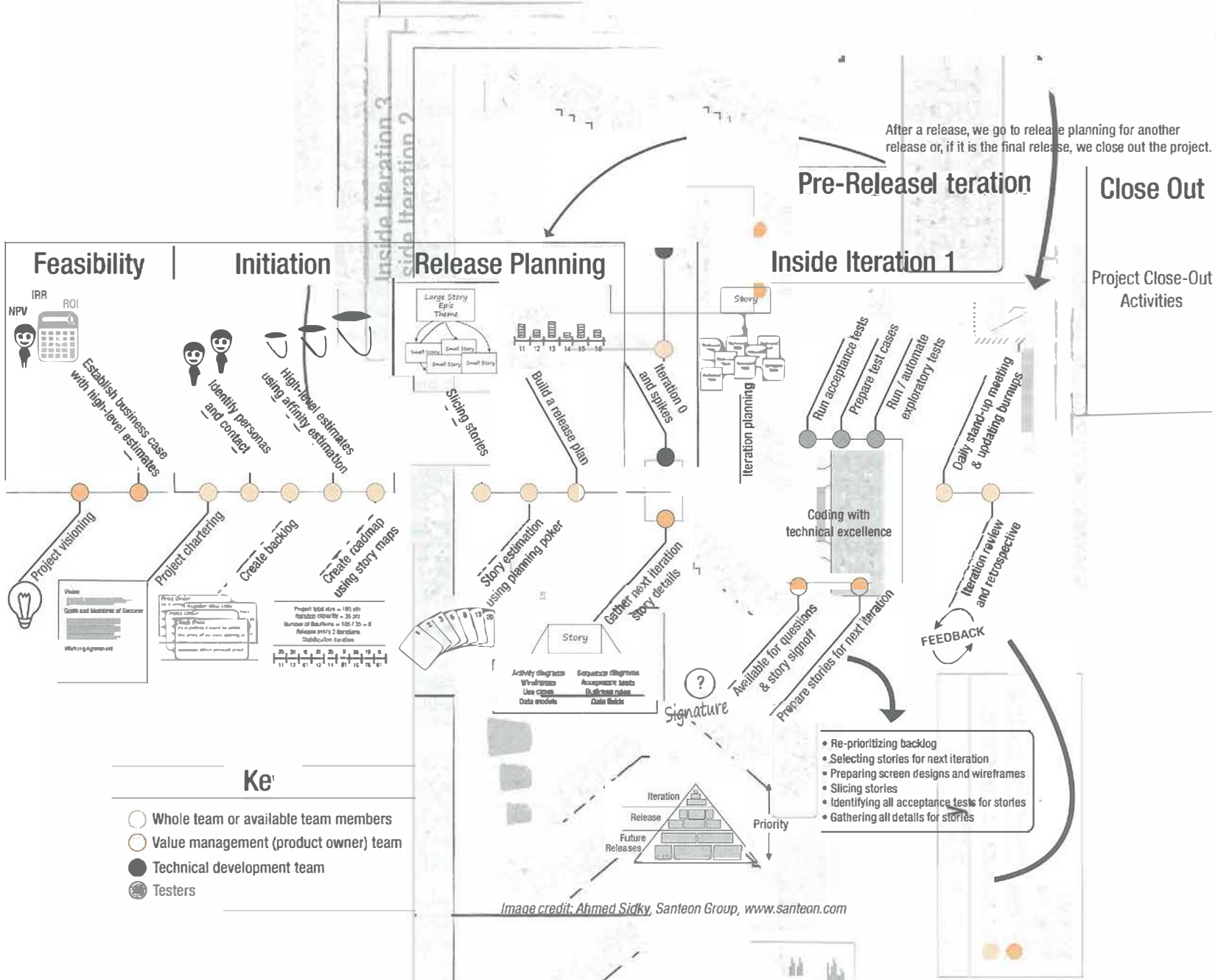


FIGURE 2.16 A Process Overview

Image credit: Ahmed Sidky, Santeon Group, www.santeon.com