

Chapter 3:

The Project Management Process Groups



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Learning Objectives

Describe the five project management process groups, the typical level of activity for each, and the interactions among them

Relate the project management process groups to the project management knowledge areas

Discuss how organizations develop information technology (IT) project management methodologies to meet their needs

Review a case study of an organization applying the project management process groups to manage an IT project, describe outputs of each process group, and understand the contribution that effective initiating, planning, executing, monitoring and controlling, and closing make to project success

Review a case study of the same project managed with an agile focus and compare the key differences between an agile approach and a predictive approach

Describe several templates for creating documents for each process group

Introduction



Project management consists of 10 knowledge areas

Integration, scope, schedule, cost, quality, resource, communications, risk, procurement, and stakeholder management



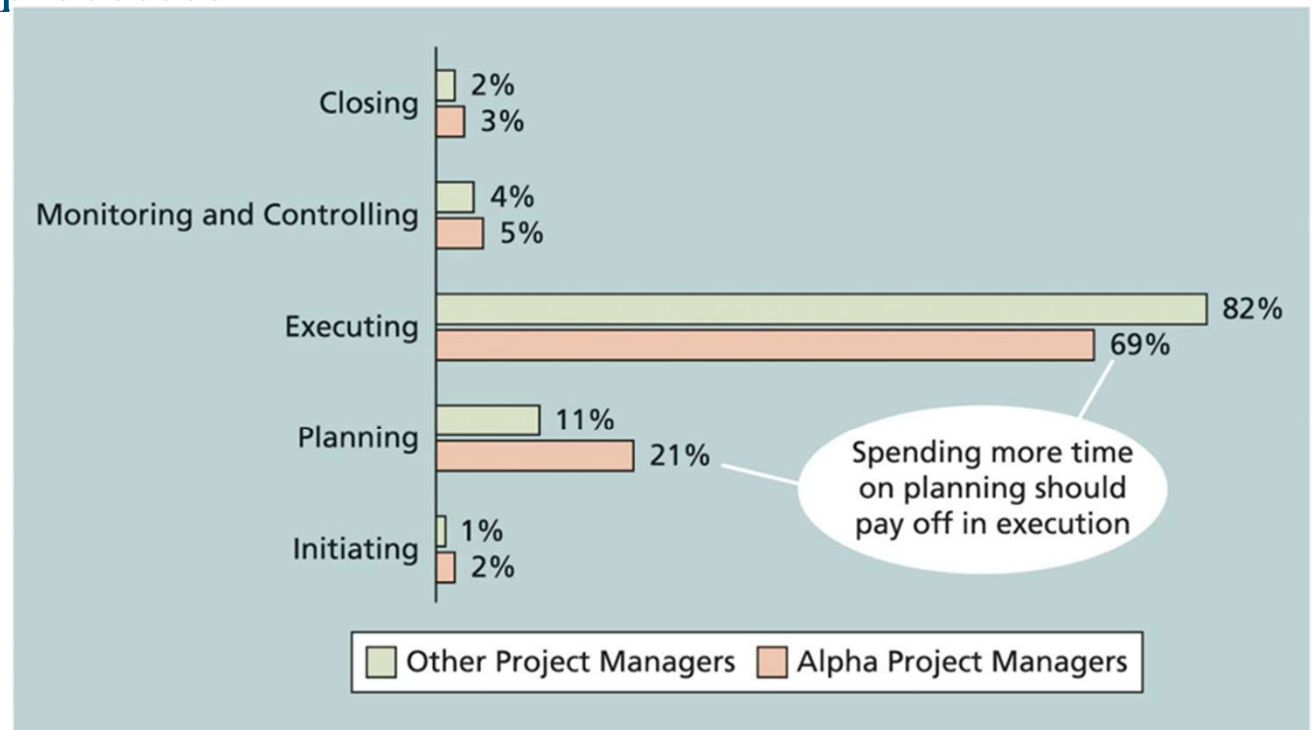
Projects involve five project management process groups

Initiating, planning, executing, monitoring and controlling, and closing

- **Tailoring these process groups to meet individual project needs increases the chance of success in managing projects**

Project Management Process Groups

- A process is a series of actions directed toward a particular result
 - Project management can be viewed as a number of related processes
- **Project management process groups**
 - Initiating processes
 - Planning processes
 - Executing processes
 - Monitoring and controlling processes
 - Closing processes



Source: Andy Crowe

FIGURE 3-1 Percentage of time spent on each process group

Mapping the Process Groups to the Knowledge Areas

- You can map the main activities of each PM process group into the ten knowledge areas using the *PMBOK® Guide, seventh Edition*
 - Note that there are activities from each knowledge area under the planning process groups
 - Table 3-1 provides a big-picture view of the relationships among the 49 project management activities, the process groups in which they are typically completed, and the knowledge areas into which they fit

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

Table 1-4 (Guide). Project Management Process Group and Knowledge Area Mapping

A Guide to the Project Management Body of Knowledge (PMBOK® Guide) – Sixth Edition. ©2017 Project Management Institute, Inc. All rights reserved.

Developing an IT Project Management Methodology



Many organizations develop their own internal IT project management methodologies

A methodology describes how things should be done
A standard describes what should be done



Different project management methodologies

*Projects IN Controlled Environments (PRINCE2)

Agile is a project management approach that prioritizes cross-functional collaboration and continuous improvement. It divides projects into smaller phases and guides teams through cycles of planning, execution, and evaluation.

Rational Unified Process (RUP) is an incremental process whereby the overall project is broken down into phases and iterations. The iterations are risk driven — that is, oriented toward mitigating risks — and each one should deliver executable software that's demonstrable and testable against the project's requirements and use cases.

Six Sigma is a business methodology that aims to improve processes, reduce waste and errors, and increase customer satisfaction throughout an organization. Driven by data and statistical analysis, Six Sigma provides a way to minimize mistakes and maximize value in any business process, from manufacturing to management

*PRINCE2 is a process-based method for effective project management and will give you the fundamental skills you need to become a successful project manager.

It stands for PProjects IN Controlled Environments, and is used and recognised all over the world



Global Issues

https://www.pmi.org/-/media/pmi/documents/public/pdf/learning/thought-leadership/pulse/pmi_pulse_2021.pdf

- In 2021, Pulse found gymnastic enterprises are more likely than traditional enterprises to complete projects using agile (**28 percent versus 22 percent**) and hybrid (**24 percent versus 16 percent**) approaches, and less likely to complete projects using waterfall (**45 percent versus 59 percent**).

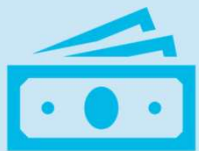
<https://www.businesswire.com/news/home/20221207005283/en/2022-State-of-Agile-Report-Organizations-Embrace-Agile-Innovation-in-LOBs-Amid-Uncertain-Business-Climate-But-Shortfall-in-Leadership-Can-Limit-Its-Success>

- 2022 data show 47% of teams are measured by on-time delivery and a whopping 44% are measured by business objectives achieved
- High-performing Agile teams are people-centric with strong leadership support and defined culture and tools, according to 89% of respondents
- Yet nearly 4 in 10 cite a lack of leadership support as a barrier to both Agile adoption and delivery

What Went Right?



Organizations that excel in project management complete 89 percent of their projects successfully compared to only 36 percent of organizations that do not have good project management processes



PMI estimates that poor project performance costs over \$109 million for every \$1 billion invested in projects and programs

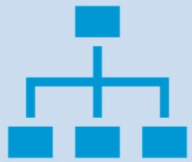
Project Plan Template

- You can use the template uploaded in BB for creating your own project management



**Project Plan
Template**

Project Pre-Initiation and Initiation



Initiating includes recognizing and starting a new project

Right kinds of projects for the right reasons



Strategic planning should serve as the foundation for deciding which projects to pursue

Expresses the vision, mission, goals, objectives, and strategies of the organization
Provides the basis for IT project planning

Pre-initiation Tasks

It is good practice to lay the groundwork for a project before it officially starts



Senior managers often perform several pre-initiation tasks

Determine the scope, time, and cost constraints for the project

Identify the project sponsor

Select the project manager

Develop a business case for a project

Meet with the project manager to review the process and expectations for managing the project

Determine if the project should be divided into two or more smaller projects

A. Initiating (1 of 3)

Knowledge Area	Initiating Process	Initiating Process
Project Integration Management	Develop project charter	*Project charter *Assumption log
Project Stakeholder Management	Identify stakeholders	Stakeholder register Change requests Project management plan updates Project documents updates

Table 3-3 Project initiation knowledge areas, processes, and outputs

*A project charter is a short document used in project planning to outline the key aims and benefits of a project. It's an at-a-glance guide to why a project is taking place. It's used both as a marketing tool, useful to get buy-in from stakeholders, and a reference point to keep the project on track.

An assumption log is simply a place to log all assumptions and track the validation of each one. We make project assumptions out of necessity. They allow us to continue forward with planning without checking the validity of every single fact

Initiating (2 of 3)

Name	Position	Internal/ External	Project Role	Contact Information
xxxxxxxxx	CEO	Internal	Sponsor	xxxxxxxxx@.....com
yyyyyyyyy	PMO Director	Internal	Project Manager	yyyyy@.....com
zzzzzzzzzz	Senior Consultant	Internal	Team Member	Zzzzzzzzzz @.....com
aaaaaaaaa	Business Analyst	External	Advisor	aaaaaa@client1.com
bbbbbbb	PR Director	Internal	Advisor	aaaaaa@.....com

Table 3-4 Stakeholder Register

Name	Level of Interest	Level of Influence	Potential Management Strategies
xxxxxxxxx	High	High	Xxxx likes to stay on top of key projects and make money. Have a lot of short, face-to-face meetings and focus on achieving the financial benefits of the project.
bbbbbbb	Low	High	bbbbbbb has a lot of things on her plate, and she does not seem excited about this project. She may be looking at other job opportunities. Show her how this project will help the company and her resume.

Table 3-5 Stakeholder Management Strategy

Source: PMBOK® Guide – Seventh Edition, 2021

Initiating (3 of3)

- Drafting the project charter
 - See Table 3-6 for an example
- Holding a project kick-off meeting
 - It's good practice to hold a kick-off meeting at the beginning of a project so that stakeholders can meet each other, review the goals of the project, and discuss future plans

Kick-Off Meeting [Date of Meeting]		
Project Name: Project Management Intranet Site Project		
Meeting Objective: Get the project off to an effective start by introducing key stakeholders, reviewing project goals, and discussing future plans		
Agenda:		
<ul style="list-style-type: none">• Introductions of attendees• Review of the project background• Review of project-related documents (business case and project charter)• Discussion of project organizational structure• Discussion of project scope, time, and cost goals• Discussion of other important topics• List of action items from meeting		
Action Item	Assigned To	Due Date
Date and time of next meeting:		

B. Project Planning (1 of 2)

- The main purpose of project planning is to guide execution
 - Every knowledge area includes planning information (see Table 3-7)
- Key outputs included in the project
 - Team contract
 - Project scope statement
 - Work breakdown structure (WBS)
 - Project schedule, in the form of a Gantt chart with all dependencies and resources entered
 - List of prioritized risks (part of a risk register)
- See sample documents

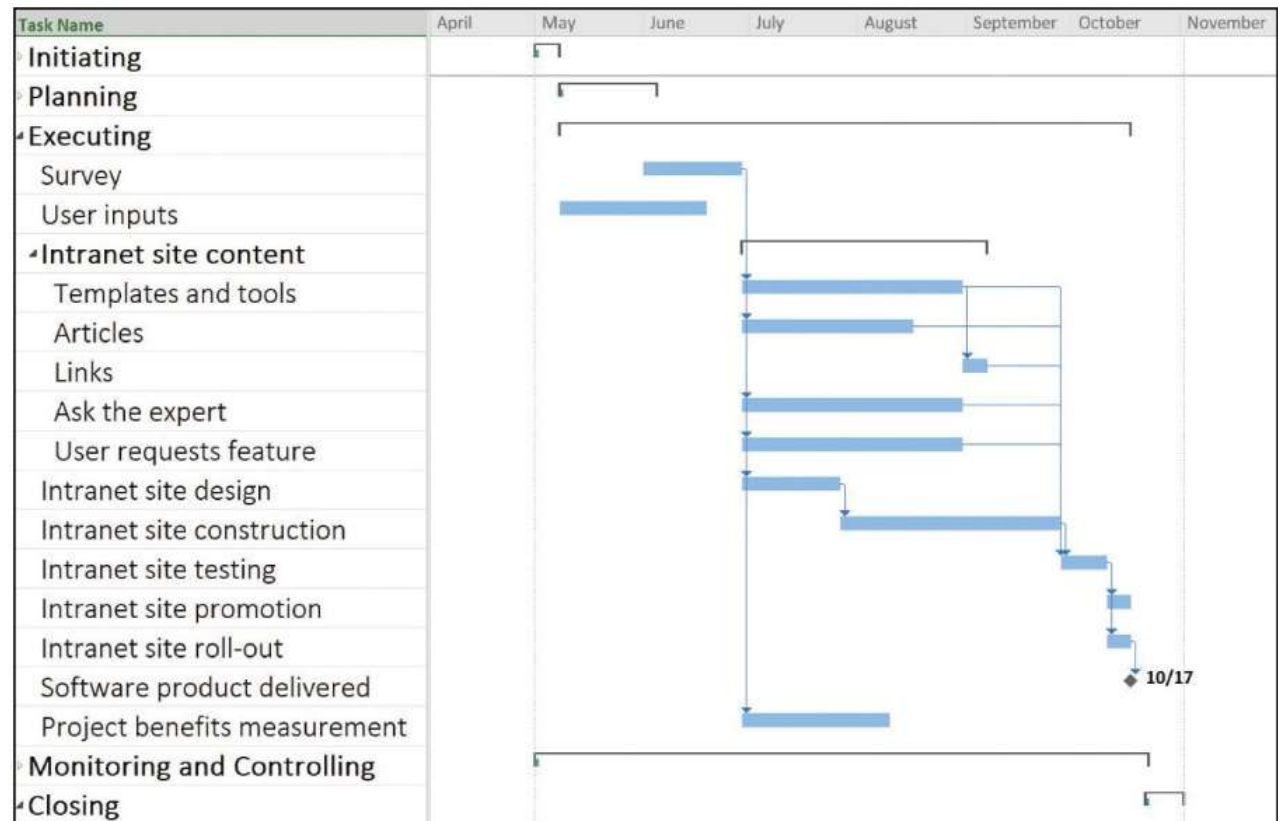


FIGURE 3-4 IWD Consulting intranet site project baseline Gantt chart

Project Planning (2 of 2)

Ranking	Potential Risk
1	Lack of inputs from internal consultants
2	Lack of inputs from client representatives
3	Security of new system
4	Outsourcing/purchasing for the article retrieval and Ask the Expert features
5	Outsourcing/purchasing for processing online payment transactions
6	Organizing the templates and examples in a useful fashion
7	Providing an efficient search feature
8	Getting good feedback from Michael Chen and other senior consultants
9	Effectively promoting the new system
10	Realizing the benefits of the new system within one year

Table 3-10 List of Prioritized Risks

C. Project Execution

Usually takes the most resources to perform

- Project managers must use their leadership skills to handle the many challenges that occur during project execution

Table 3-11 lists the knowledge areas, executing processes, and outputs of project execution

- Many project sponsors and customers focus on deliverables related to providing the products, services, or results desired from the project
- It is equally important to document change requests and update planning documents

A milestone report can help focus on completing major milestones

D. Project Monitoring and Controlling



Involves measuring progress toward project objectives, monitoring deviation from the plan, and taking correction actions

Affects all other process groups and occurs during all phases of the project life cycle



Outputs include performance reports, change requests, and updates to various plans

See Table 3-13

E. Project Closing



Involves gaining stakeholder and customer acceptance of the final products and services

Even if projects are not completed, they should be closed out to learn from the past



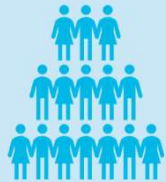
Outputs may include project files and lessons-learned reports

Also may include a final report and presentation

Scrum Roles, Artifacts, and Ceremonies (1 of 4)



Product owner: person responsible for the business value of the project and for deciding what work to do and in what order, as documented in the product backlog



ScrumMaster: person who ensures that the team is productive, facilitates the daily Scrum, enables close cooperation across all roles and functions, and removes barriers that prevent the team from being effective



Scrum team or development team: cross-functional team of five to nine people who organize themselves and the work to produce the desired results for each sprint, which normally lasts two to four weeks

Scrum Roles, Artifacts, and Ceremonies (2 of 4)

An artifact (object) is a useful object created by people

Scrum artifacts

- **Product backlog:** A product backlog is a prioritized list of work for the development team that is derived from the roadmap and its requirements. The most important items are shown at the top of the product backlog so the team knows what to deliver first.
- **Sprint backlog:** is a list of work items your team plans to complete during a project sprint. These items are usually pulled from the product backlog during the sprint planning session. A clear sprint backlog prevents scope creep by clarifying exactly what your team will be doing—and not doing—during each sprint
- **Burndown chart:** shows the amount of work that has been completed in an epic or sprint, and the total work remaining. Burndown charts are used to predict your team's likelihood of completing their work in the time available.

Scrum ceremonies

- **Sprint planning session:** meeting with the team to select a set of work from the product backlog to deliver during a sprint
- **Daily Scrum:** short meeting for the development team to share progress and challenges and plan work for the day
- **Sprint reviews:** meeting in which the team demonstrates to the product owner what it has completed during the sprint
- **Sprint retrospectives:** meeting in which the team looks for ways to improve the product and the process based on a review of the actual performance of the development team



Scrum Roles, Artifacts, and Ceremonies (4 of 4)

Process Group	Scrum Activity
Initiating	
	Determine roles
	Decide how many sprints will compose each release and the scope of software to deliver
Planning	
	Create product backlog
	Create sprint backlog
	Create release backlog
	Plan work each day in the daily Scrum
	Document stumbling blocks in a list
Executing	
	Complete tasks each day during sprints
	Produce a shippable product at the end of each sprint

Table 3-18 Unique Scrum activities by process group

Project Pre-Initiation and Initiation

- Main differences between pre-initiation
 - Determining roles and deciding what functionality would be delivered as part of each release
 - How many sprints will be required to complete a release
 - How many releases of software to deliver

Planning (1 of 3)



Because Scrum implies that team members work as a self-directed group, coached by the ScrumMaster, a team charter should not be necessary



Descriptions of work are identified in the product and sprint backlogs



More detailed work is documented in technical stories



Team must estimate a velocity or capacity for each sprint

Planning (2 of 3)

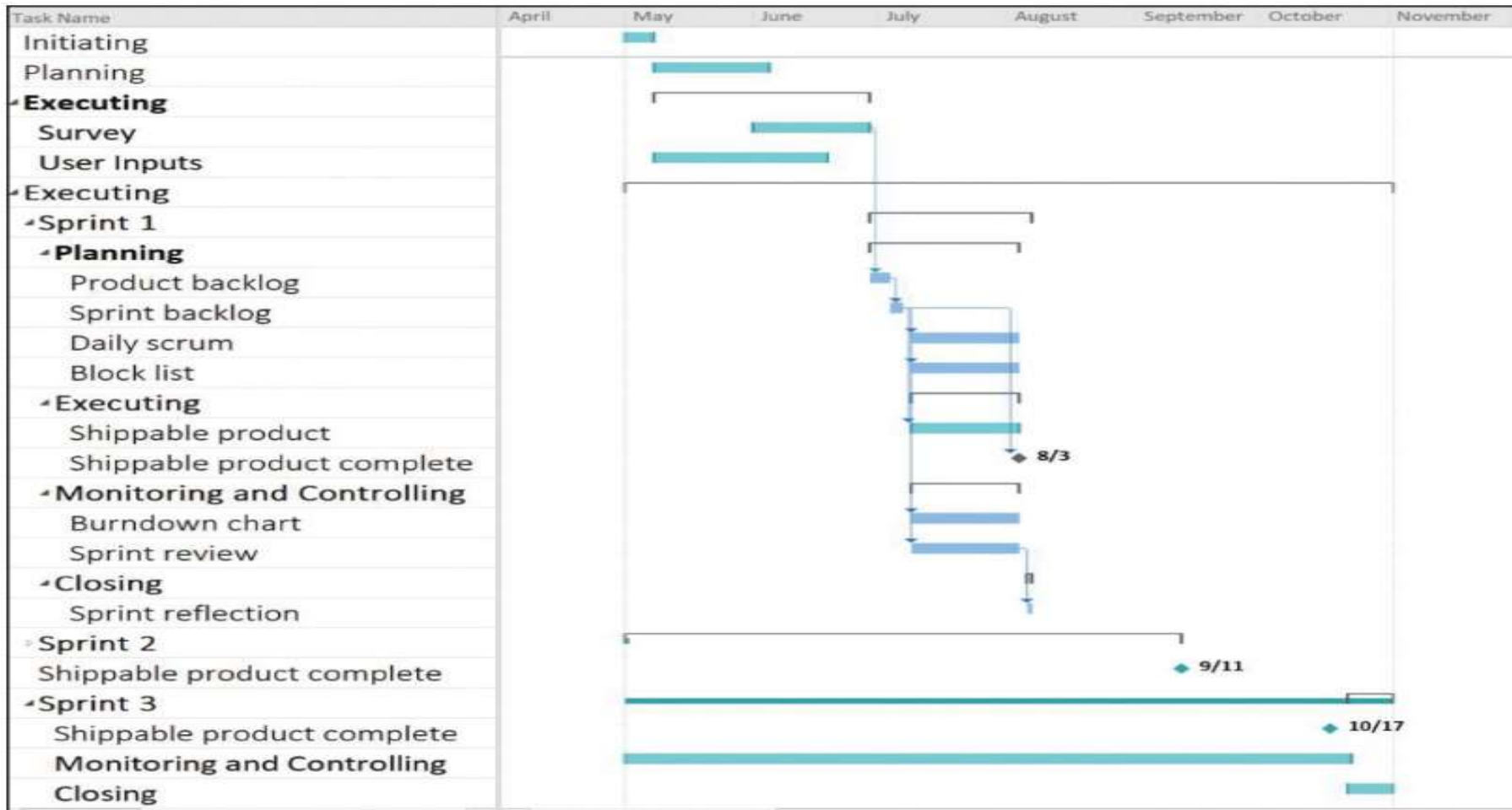


FIGURE 3-6 Intranet site project baseline Gantt chart using Scrum approach

Planning (3 of 3)

Product Backlog	Sprint Backlog
1. User story templates, samples, and point person	1. User story templates, samples, and point person
2. WBS templates, samples, and point person	2. WBS templates, samples, and point person
3. Project schedule templates, samples, and point person	3. Project schedule templates, samples, and point person
4. Ability to charge customers for some intranet products and services	4. Ability to charge customers for some intranet products and services
5. Ability to collect user suggestions	5. Ability to collect user suggestions
6. Business case templates, samples, and point person	
7. Ask the Expert feature	
8. Stakeholder management strategy templates, samples, and point person	
9. Risk register templates, samples, and point person	
10. Etc.	

Table 3-19 Product and Sprint Backlogs

Executing

The most time and money should be spent on executing

- Plans are implemented to create the desired product

Agile approach: team produces several iterations of a potentially shippable product

- Users can access and make suggestions

Communications are different

- Project team meets every morning, physically or virtually

Monitoring and Controlling

- The two main tools for monitoring and controlling in the Scrum framework
 - Daily Scrum: held each morning to plan and communicate work for the day and discuss any risks, issues, or blockers
 - Sprint review: work progress within a sprint can be represented on a sprint board maintained by the ScrumMaster
 - Burndown chart: an important artifact used to graphically display progress on each sprint

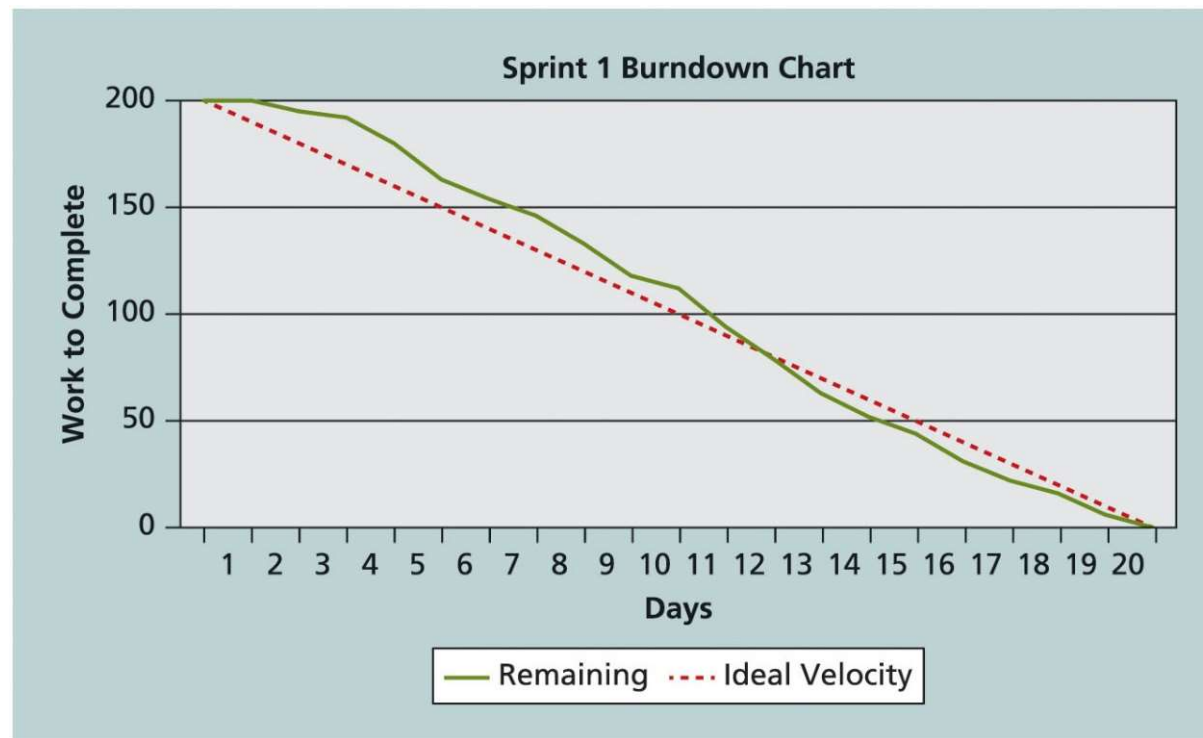


FIGURE 3-7 Burndown chart

Closing

After the sprint review, the ScrumMaster leads a sprint retrospective

- Team reflects on what happened during the sprint

Sprint retrospective is intended to answer two fundamental questions

- What went well during the last sprint that we should continue doing?
- What could we do differently to improve the product or process?

Templates by Process Group

- Table 3-20 lists several templates used to prepare the documents shown in this chapter and later chapters

Process Groups	Initiating	Planning	Executing	Monitoring and Controlling	Closing
Project Integration Management	<ul style="list-style-type: none"> Develop Project Charter 	<ul style="list-style-type: none"> Develop Project Management Plan 	<ul style="list-style-type: none"> Direct and Manage Project Work Manage Project Knowledge 	<ul style="list-style-type: none"> Monitor and Control Project Work Perform Integrated Change Control 	<ul style="list-style-type: none"> Close Project or Phase
Project Scope Management		<ul style="list-style-type: none"> Plan Scope Management Collect Requirements Define Scope Create WBS 		<ul style="list-style-type: none"> Validate Scope Control Scope 	
Project Schedule Management		<ul style="list-style-type: none"> Plan Schedule Management Define Activities Sequence Activities Estimate Activity Durations Develop Schedule 		<ul style="list-style-type: none"> Control Schedule 	
Project Cost Management		<ul style="list-style-type: none"> Plan Cost Management Estimate Costs Determine Budget 		<ul style="list-style-type: none"> Control Costs 	
Project Quality Management		<ul style="list-style-type: none"> Plan Quality Management 	<ul style="list-style-type: none"> Manage Quality 	<ul style="list-style-type: none"> Control Quality 	
Project Resource Management		<ul style="list-style-type: none"> Plan Resource Management Estimate Activity Resources 	<ul style="list-style-type: none"> Acquire Resources Develop Team Manage Team 	<ul style="list-style-type: none"> Control Resources 	
Project Communications Management		<ul style="list-style-type: none"> Plan Communications Management 	<ul style="list-style-type: none"> Manage Communications 	<ul style="list-style-type: none"> Monitor Communications 	
Project Risk Management		<ul style="list-style-type: none"> Plan Risk Management Identify Risks Perform Qualitative Risk Analysis Perform Quantitative Risk Analysis Plan Risk Responses 	<ul style="list-style-type: none"> Implement Risk Responses 	<ul style="list-style-type: none"> Monitor Risks 	
Project Procurement Management		<ul style="list-style-type: none"> Plan Procurement Management 	<ul style="list-style-type: none"> Conduct Procurements 	<ul style="list-style-type: none"> Control Procurements 	
Project Stakeholder Management	<ul style="list-style-type: none"> Identify Stakeholders 	<ul style="list-style-type: none"> Plan Stakeholder Engagement 	<ul style="list-style-type: none"> Manage Stakeholder Engagement 	<ul style="list-style-type: none"> Monitor Stakeholder Engagement 	

Advice for Young Professionals

Most organizations have templates for many different kinds of documents

Ask your boss, co-workers,
and other colleagues for
templates

If you don't like the
templates you find, look at
other sources

If you can improve them,
share your work with
others



Templates are great, but completed templates with good
information are even more useful

Chapter Summary

The five project management process groups are initiating, planning, executing, monitoring and controlling, and closing

You can map the main activities of each process group to the ten knowledge areas

Some organizations develop their own information technology project management methodologies

The JWD Consulting case study provides an example of using the process groups and shows several important project documents

The second version of the same case study illustrates how to use Scrum, the leading agile method, to manage the project