

Chapter 3

The Project Management Process Groups



Learning Objectives (1 of 2)



- Describe the **five project management** process groups, the typical level of activity for each, and 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



Learning Objectives (2 of 2)



- 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



Opening Case: JWD Consulting,

Erica Bell oversees the Project Management Office (PMO) for her consulting firm, JWD Consulting, which has grown to include more than 200 full-time consultants and many part-time consultants. JWD Consulting provides a variety of consulting services to assist organizations in selecting and managing IT projects. The firm focuses on finding and managing high-payoff projects and developing strong metrics to measure project performance and benefits to the organization after the project is implemented. The firm's emphasis on metrics and working collaboratively with its customers gives it an edge over many competitors. Joe Fleming, the CEO, wanted his company to continue to grow and become a world-class consulting organization. Because the core of the business is helping other organizations with project management, he felt it was crucial for JWD Consulting to have a process for managing its own projects. He asked Erica to work with her team and consultants in the firm to develop several intranet site applications that would allow them to share their project management knowledge. He also thought the firm should make some information available to the firm's clients. For example, the firm could provide project management templates, tools, articles, links to other sites, and an Ask the Expert feature to help build relationships with current and future clients. Because JWD Consulting emphasizes the importance of high-payoff projects, Joe also wanted to see a business case for this project before proceeding.



What Is a Project?

- A project is “a temporary endeavor undertaken to create a unique product, service, or result” (PMBOK® Guide, Sixth Edition, 2017)
- Operations is work done to sustain the business
- Projects end when their objectives have been reached or the project has been terminated



Project Attributes

- A project
 - Of *unique purpose*
 - *Temporary*
 - Drives change and enable value creation
 - Developed using *progressive elaboration*
 - Requires *resources*, often from various areas
 - Should have a sponsor who provides the direction and funding for the project
 - involves *uncertainty*
- Project managers work with project sponsors, team, and other people involved in a project to achieve project goals



Project Management Knowledge Areas

Project management has **10 knowledge areas**: Integration, scope, schedule, cost, quality, resource, communications, risk, procurement, and stakeholder management

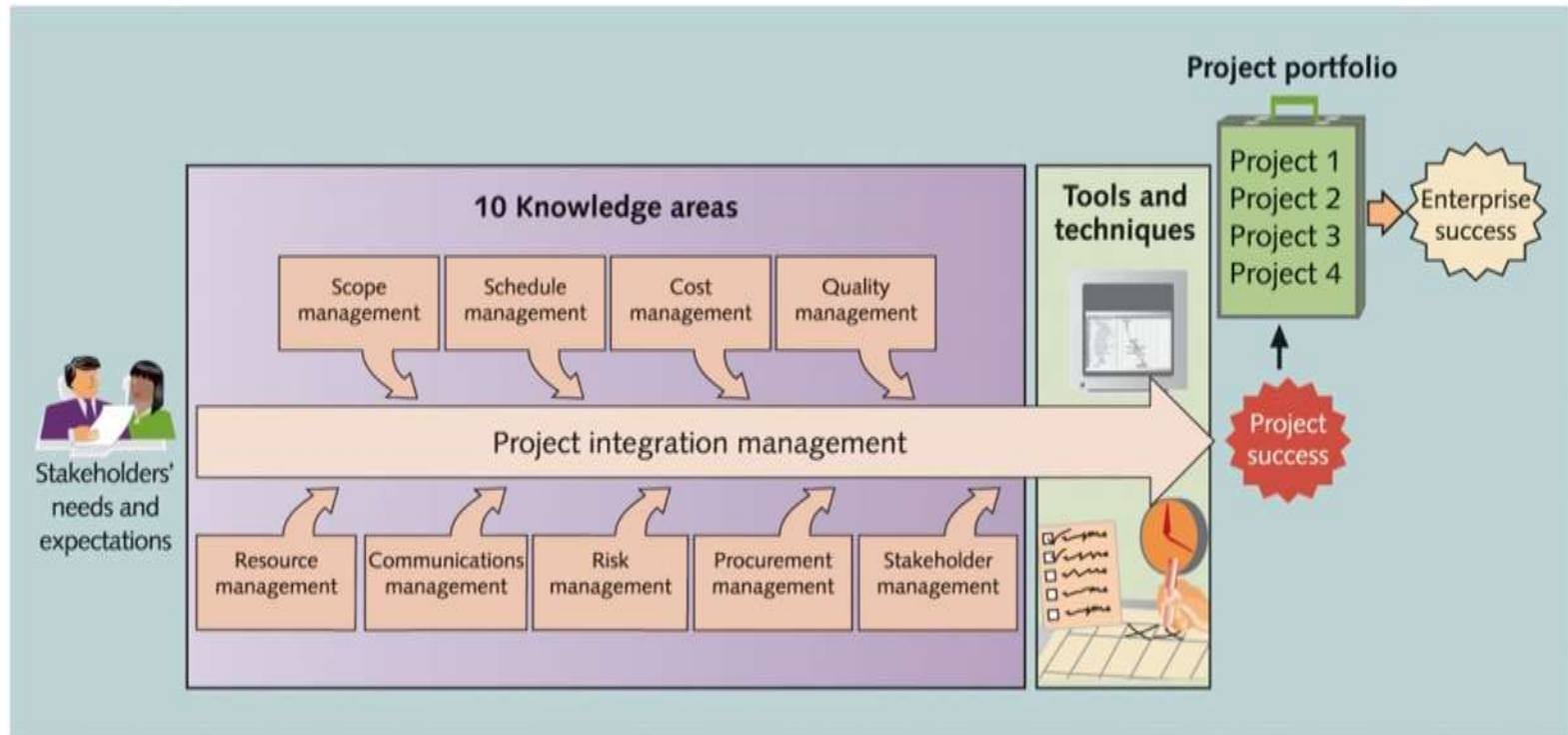


FIGURE 1-2 Project management framework

Project Constraints

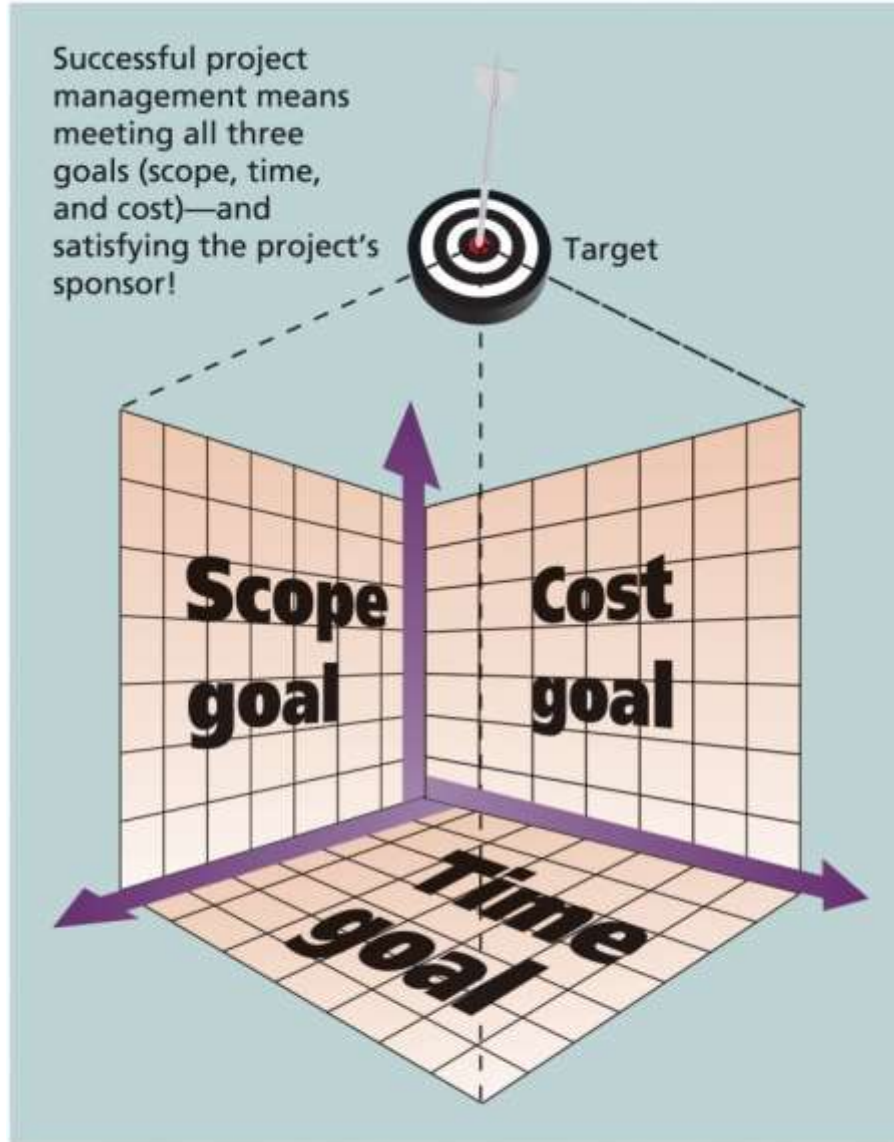


FIGURE 1-1 Project constraints

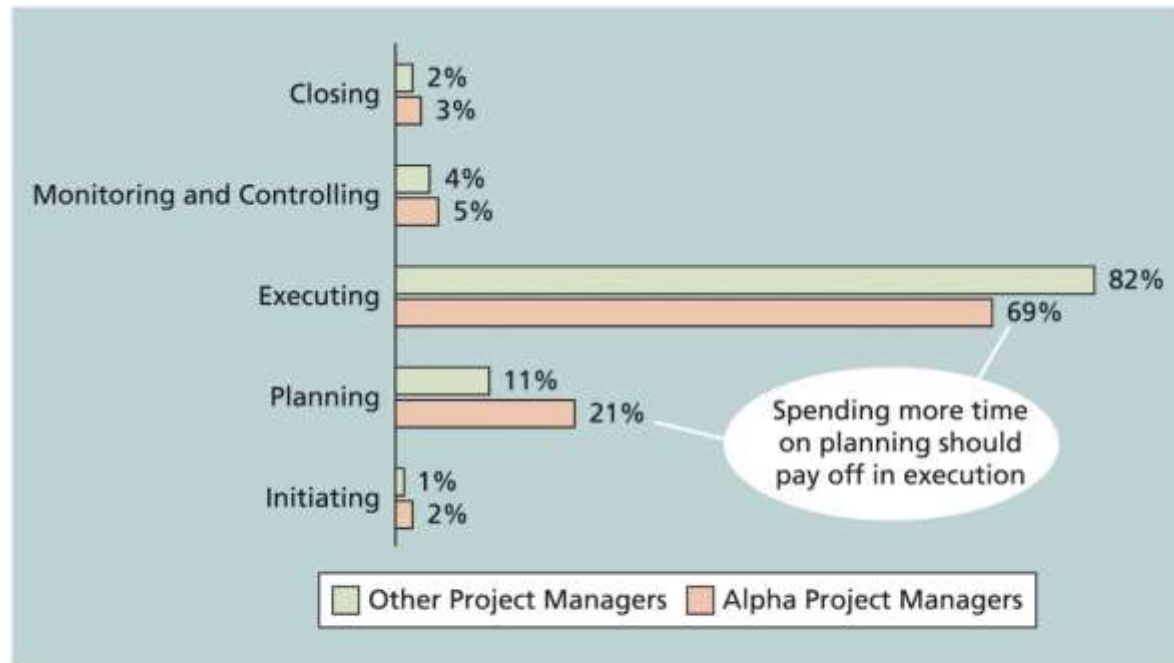


Project Management Process Groups (1/2)

- *A process is a series of actions directed toward a particular result. Project management process groups*
 1. *Initiating processes*
 2. *Planning processes*
 3. *Executing processes*
 4. *Monitoring and controlling processes*
 5. *Closing processes*



Project Management Process Groups (2/2)



Source: Andy Crowe

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



What Went Wrong?

- *Philip A. Pell, PMP, commented on how the U.S. IRS needed to improve its project management process*
 - *“Pure and simple, good, methodology-centric, predictable, and repeatable project management is the SINGLE greatest factor in the success (or in this case failure) of any project...”*
- *The IRS continues to have serious problems in managing its aging IT infrastructure, and lack of proper planning is still being questioned*



Media Snapshot



- *Just as IT projects follow the PM process groups, so do other projects, such as the production of a movie*
- *Processes include screenwriting (initiating), producing (planning), acting & directing (executing), editing (monitoring and controlling), and releasing the movie to theaters (closing)*
- *Many people enjoy watching the extra features on a DVD that describe how processes lead to the creation of a movie*
- *This acted "...not as promotional filler but as a serious and meticulously detailed examination of the entire filmmaking process."**
- *Project managers in any field know how important it is to follow a good process*

• *Jacks, Brian, "Lord of the Rings: The Two Towers Extended Edition (New Line)", Underground Online (accessed from www.ugo.com August 4, 2004).



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, Sixth 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*



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
 - PProjects IN Controlled Environments (**PRINCE2**)
 - **Agile**: Scrum, Scrumban (Scrum& Kanban), Extreme Programming, Feature Driven Development, Crystal, Agile Unified Process, Dynamic System Development
 - **Rational Unified Process** (RUP): Iterative Process
 - **Six Sigma**: a data-driven model to project management that eliminates defects in any process: Define, Measure, Analyze, Improve, and Control (DMAIC)& Define, Measure, Analyze, Design, and Verify (DMADV)



Global Issues



- In 2018 PMI published their tenth annual global project management survey (Pulse of the Profession®)
 - 47% of projects completed in organizations in the past year used a **predictive approach**, 23% used **agile**, 23% used a **hybrid of predictive and agile**, and seven percent used other approaches
- A 2017 global survey conducted by VersionOne found that 94% of respondents said their organizations practiced agile, but 60% of their teams were not yet practicing it
 - The **top three benefits of agile** listed were the ability to manage changing priorities, increased team productivity, and improved project visibility



What Went Right?



- Organizations that excel in project management complete **89% of their projects** successfully compared to only 36% 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



Case Study: JWD Consulting's PM Intranet Site (Predictive Approach)

- *This case study provides an example of what's involved in all process groups: initiating, planning, executing, controlling, and closing an IT project*
 - *You can download **templates** for creating your own **project management documents** from the companion website for this text or the author's site*
- *Note: this case study provides a big picture view of managing a project*
 - *Later chapters provide detailed information on each knowledge area*



0-Project Pre-Initiation and Initiation

- **Project Initialization** 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**
 - **SWOT** micro analysis
 - **PESTEL** macro analysis
 - **Financial NPV** analysis.



Strategic Planning and Project Selection

- **Strategic planning** involves determining long-term objectives
 - Analyzing the **strengths and weaknesses** of the organization
 - Analyzing **opportunities and threats** in the business domain
 - Predicting **future trends**
 - Projecting the need for new products and services
- **SWOT analysis:** Strengths, Weaknesses, Opportunities, & Threats
- **Identifying potential projects:**
 - Start of project initiation
- **Aligning IT with business strategy**
 - Organization must develop a strategy for using IT to define how it will support the organization's objectives



SWOT Analysis

SWOT is used to aid in strategic planning



Strategic Planning and Project Selection

SWOT Micro Analysis

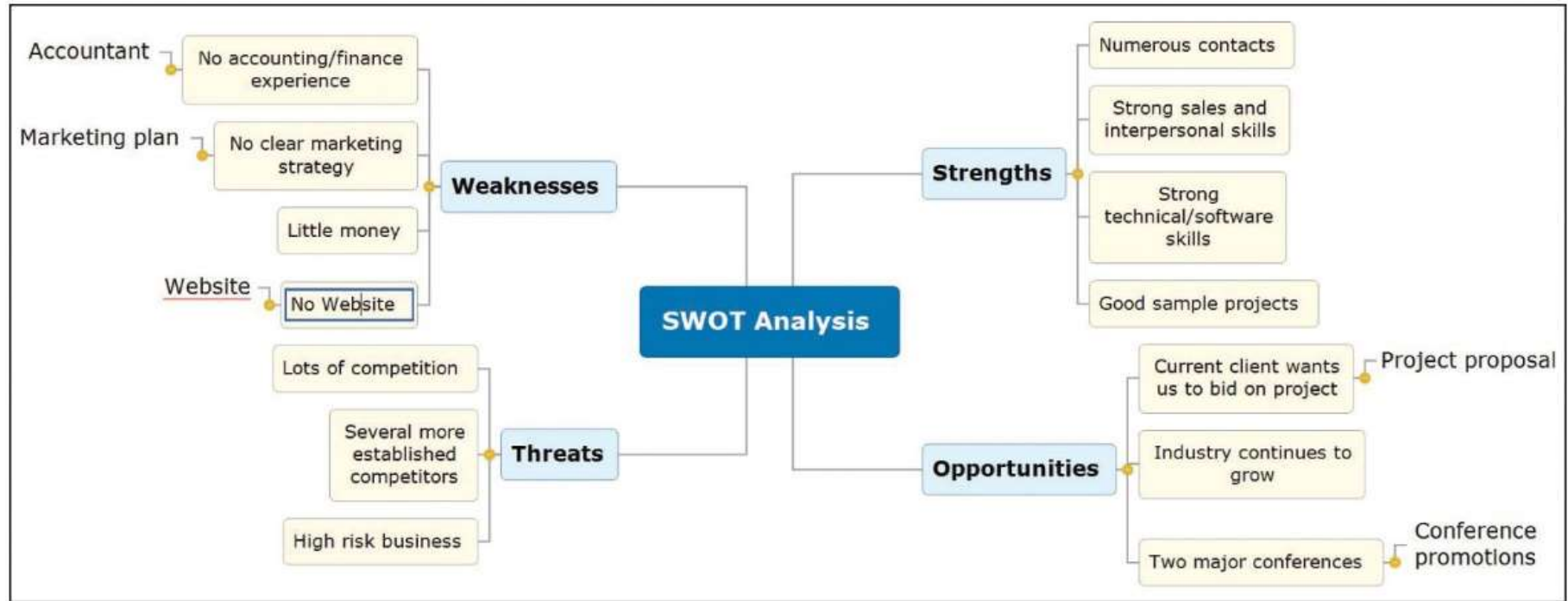


FIGURE 4-2 Mind map of a SWOT analysis to help identify potential projects



Strategic Planning and Project Selection

PESTEL Macro Analyses



Performing Financial Analyses

- *Financial considerations are often an important consideration in selecting projects*
 - *Regardless of current economics*
- *Primary methods for determining the projected financial value of projects*
 - *Net present value (NPV) analysis*
 - *Return on investment (ROI)*
 - *Payback analysis*
- *Financial Analyses will be discussed in detail later.*



Pre-initiation Tasks

- 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 the project (SWOT-PESTEL)
 - Meet with the project manager to review the process and expectations for managing the project
 - Decide if the project should be divided into two or more smaller projects



1. Initiating (1 of 5)

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

Source: PMBOK® Guide – Sixth Edition, 2017

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



1. Initiating (2 of 5)

Name	Position	Internal/ External	Project Role	Contact Information
<i>Joe Fleming</i>	<i>CEO</i>	<i>Internal</i>	<i>Sponsor</i>	<i>joe_fleming@jwdconsulting.com</i>
<i>Erica Bell</i>	<i>PMO Director</i>	<i>Internal</i>	<i>Project Manager</i>	<i>erica_bell@jwdconsulting.com</i>
<i>Michael Chen</i>	<i>Senior Consultant</i>	<i>Internal</i>	<i>Team Member</i>	<i>michael_chen@jwdconsulting.com</i>
<i>Kim Phuong</i>	<i>Business Analyst</i>	<i>External</i>	<i>Advisor</i>	<i>kim_phuong@client1.com</i>
<i>Louise Mills</i>	<i>PR Director</i>	<i>Internal</i>	<i>Advisor</i>	<i>louise_mills@jwdconsulting.com</i>

Table 3-4 Stakeholder Register



1. Initiating (3 of 5)

Name	Level of Interest	Level of Influence	Potential Management Strategies
Joe Fleming	High	High	Joe 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.
Louise Mills	Low	High	Louise 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



1. Initiating (4 of 5)

- *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*



1. Initiating (5 of 5)

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:

- 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:

FIGURE 3-2 Kick-off meeting agenda



2. Project Planning (1 of 3)

- The main purpose of project planning is to guide execution
 - All knowledge area include planning information (Table 3-7)
- Key outputs included in the JWD project
 - Team contract
 - Project scope statement (Scope Management)
 - Work breakdown structure (WBS) (Scope Management)
 - Project schedule, in the form of a Gantt chart with resources and dependencies entered (Time Schedule Management)
 - Cost estimates (function point/Labor cost)
 - List of prioritized risks (part of a risk register)
- See sample documents



2. Project Planning (2 of 3)

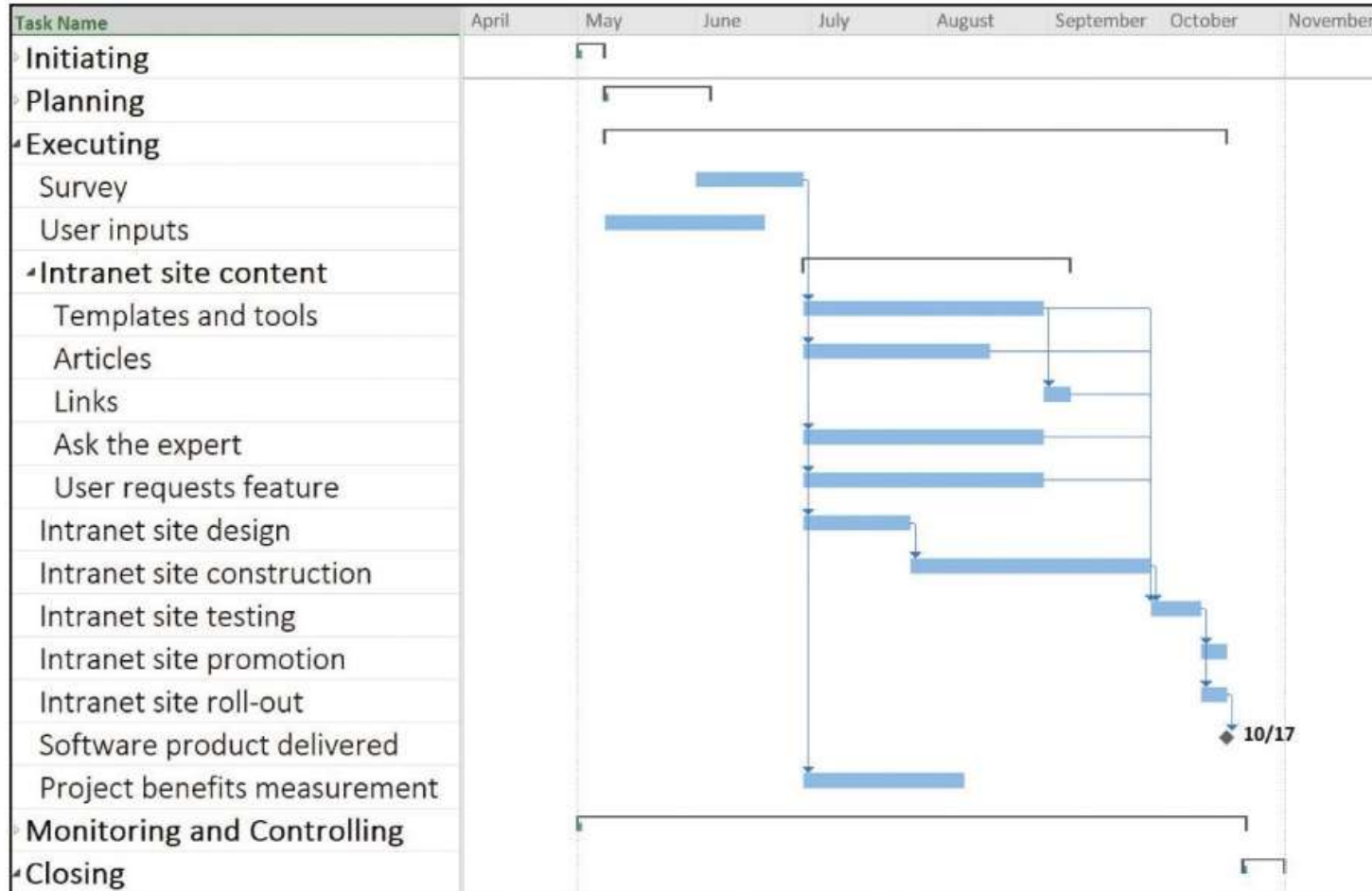


FIGURE 3-4 JWD Consulting intranet site project baseline Gantt chart



2. Project Planning (3 of 3)

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

Table 3-10 List of Prioritized Risks



3. 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 project results*
 - *It is equally important to document change requests and update planning documents*
- *A milestone report helps focus on completing major milestones*
Table 3-12



Best Practice



- One way to learn about best practices in project management is by studying recipients of PMI's Project of the **Year award**
 - The Quartier international de Montreal (QIM), Montreal's international district, was a 66-acre urban revitalization project in the heart of downtown Montreal
 - This \$90 million, five-year project turned a once unpopular area into a thriving section of the city with a booming real estate market and has generated \$770 million in related construction



4. Project Monitoring and Controlling

- *Involves measuring progress toward project objectives, monitoring deviation from the plan, & taking corrective 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*



5. 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

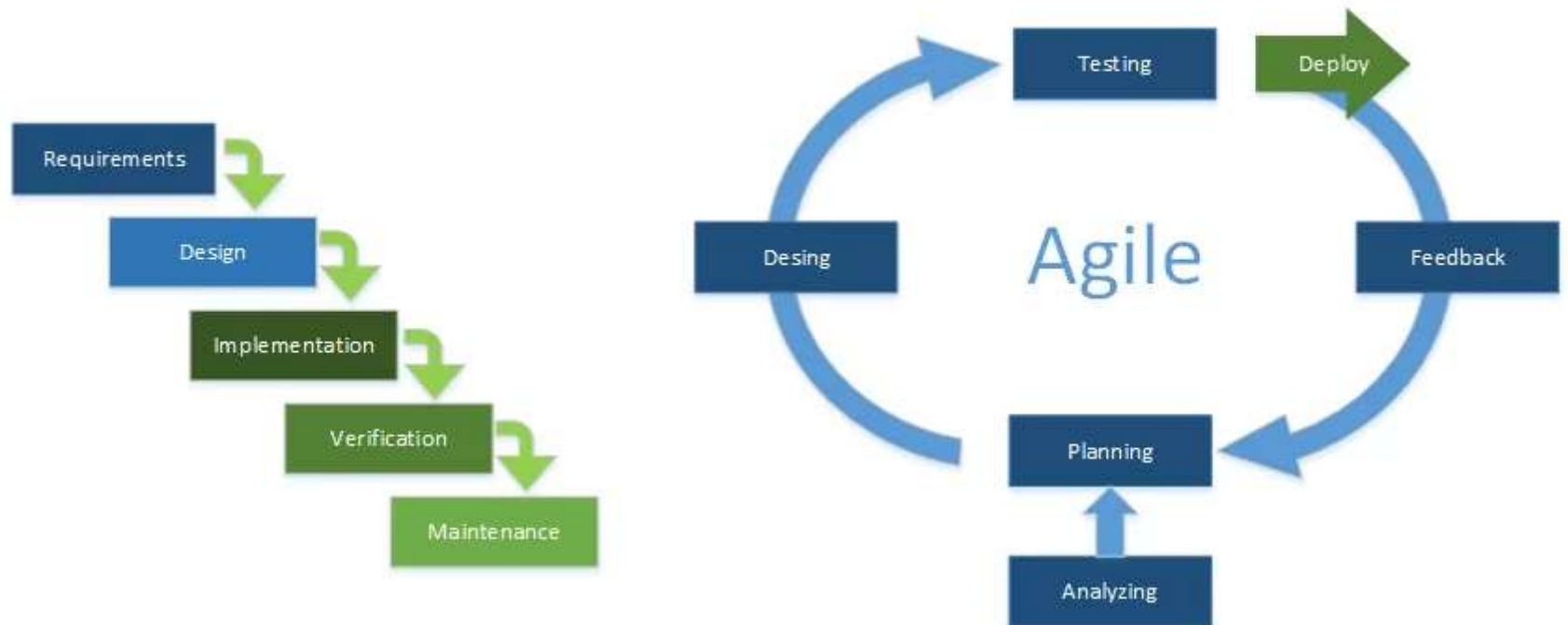


Case Study 2: JWD Consulting's Project Management Intranet Site (Agile Approach)

- An agile project team typically uses **several iterations** or deliveries of software instead of waiting until the end of the project to provide one product
 - Teams do not normally make a **snap decision** about whether to manage a project using an agile approach or not



Waterfall vs. Agile



Scrum Agile Framework

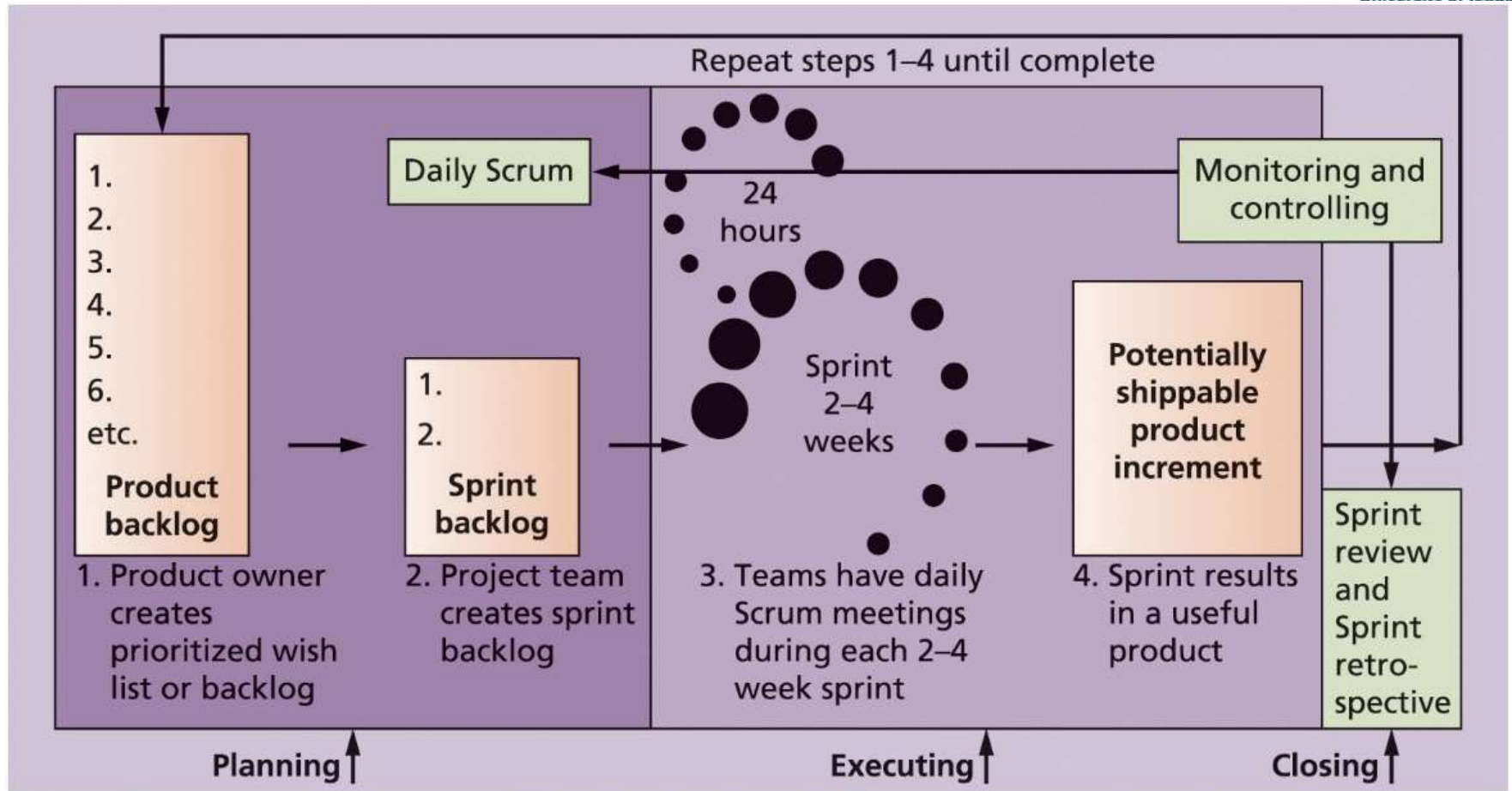


FIGURE 3-5 Scrum framework and the process groups



Scrum Roles, Artifacts, and Ceremonies (1/5):

a. Roles

- **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 (i.e., **JWD CEO**)
- **Scrum Master**: 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 (i.e., **PMO**)
- **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, & Ceremonies (2/5):

b. Artifacts

- An artifact is a useful **object created by people**
- **Scrum artifacts**
 - **Product backlog**: list of features prioritized by business value
 - **Sprint backlog**: highest-priority items from the product backlog to be completed within a sprint
 - **Burndown chart**: shows the cumulative work remaining in a sprint on a day-by-day basis



Scrum Roles, Artifacts, & Ceremonies (3/5):

c. Ceremonies

- **Sprint planning session**: meeting with the team to select a set of work from the product backlog to deliver during 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 /5)

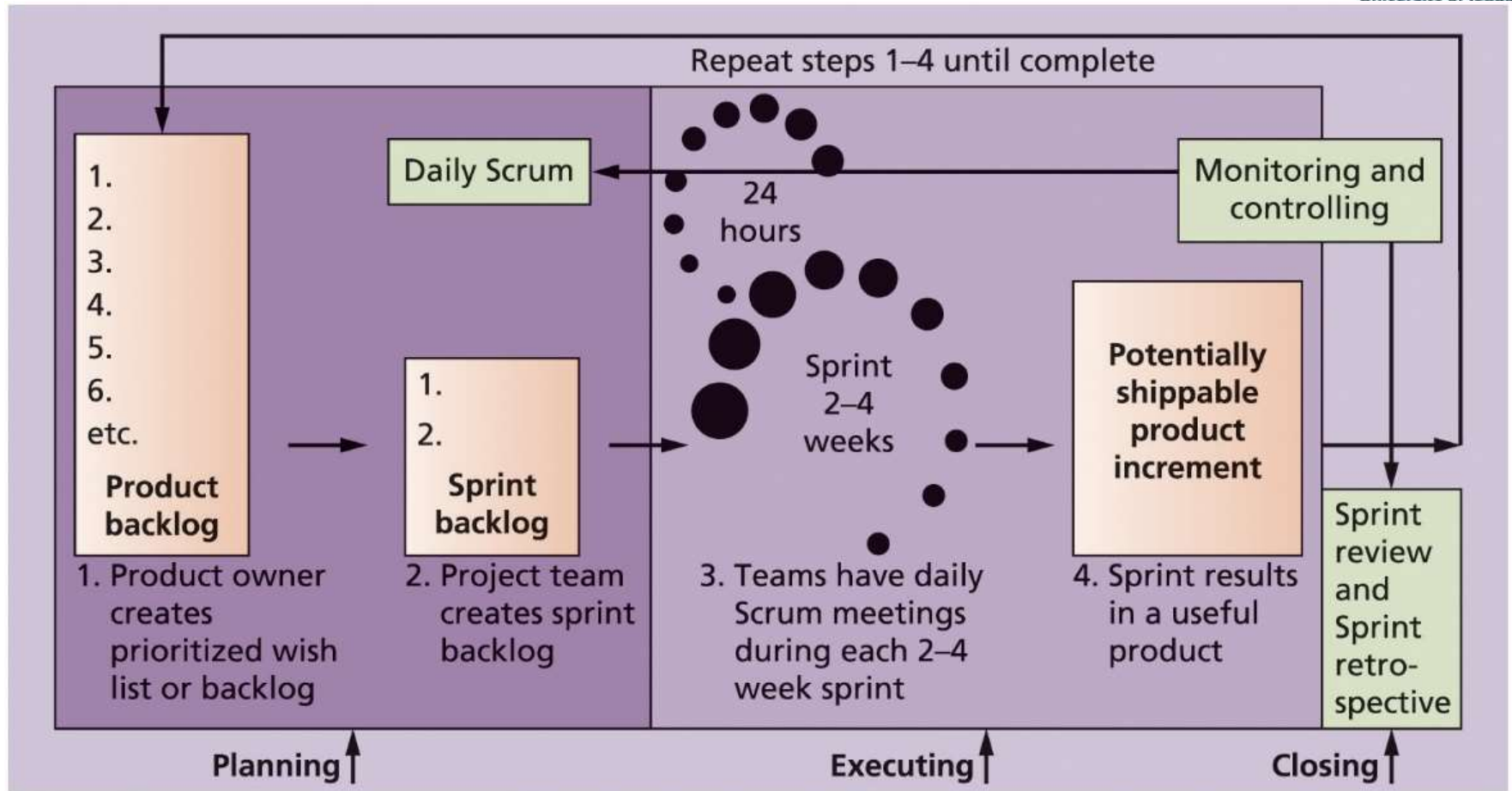


FIGURE 3-5 Scrum framework and the process groups



Scrum Roles, Artifacts, & Ceremonies (5/5)

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

Table 3-18 Unique Scrum activities by process group



Project Pre-Initiation and Initiation

- *Main differences between pre-initiation in this case and the first case*
 - *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)



جامعة جدة
University of Jeddah

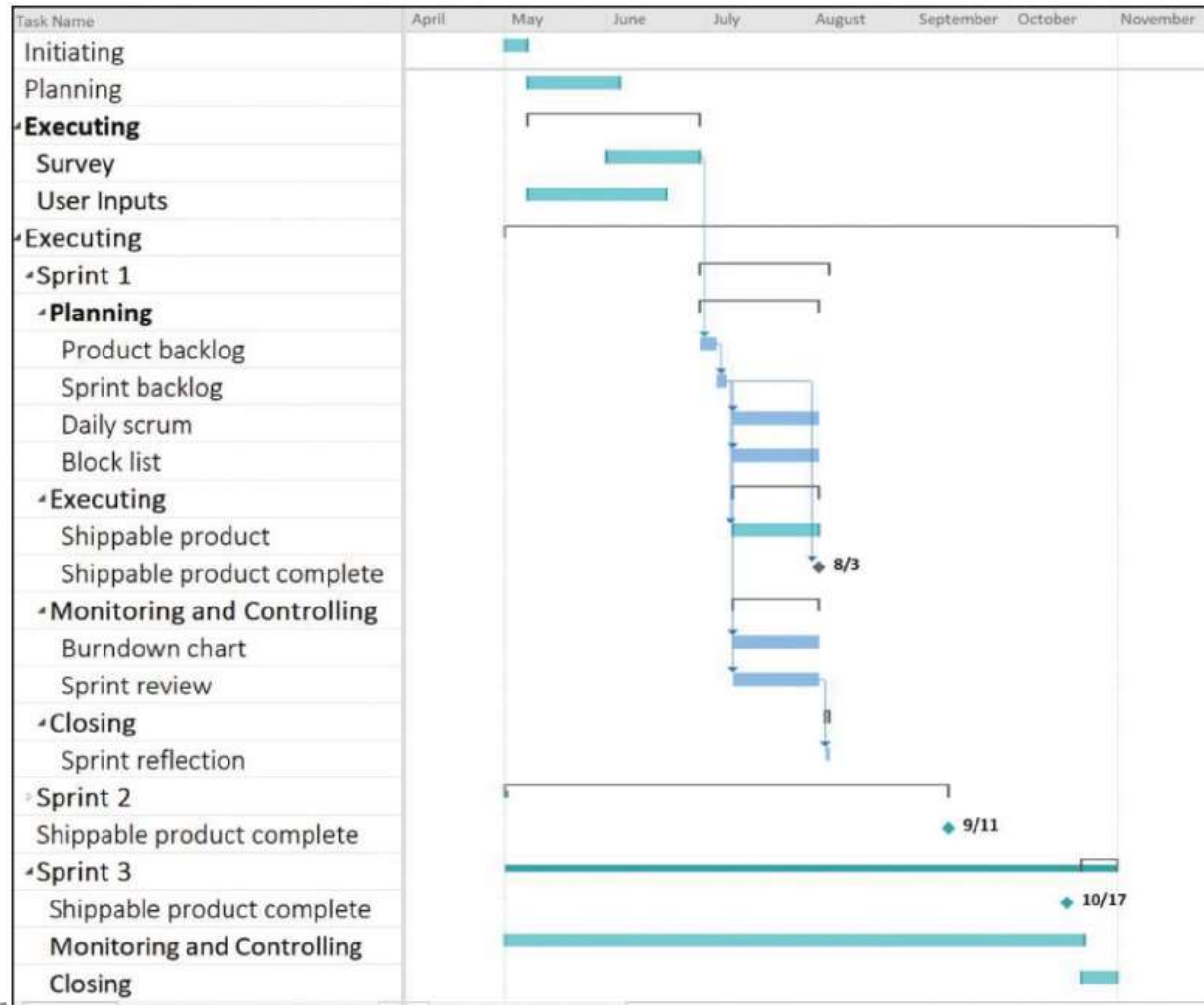


FIGURE 3-6 Intranet site project baseline Gantt chart using Scrum approach

Planning (3 of 3)

Product Backlog

1. User story templates, samples, and point person
2. WBS templates, samples, and point person
3. Project schedule templates, samples, and point person
4. Ability to charge customers for some intranet products and services
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.

Sprint Backlog

1. User story templates, samples, and point person
2. WBS templates, samples, and point person
3. Project schedule templates, samples, and point person
4. Ability to charge customers for some intranet products and services
5. Ability to collect user suggestions

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 (1 of 2)

- *The two main tools for monitoring and controlling in the Scrum*
 - **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



Monitoring and Controlling (2 of 2)

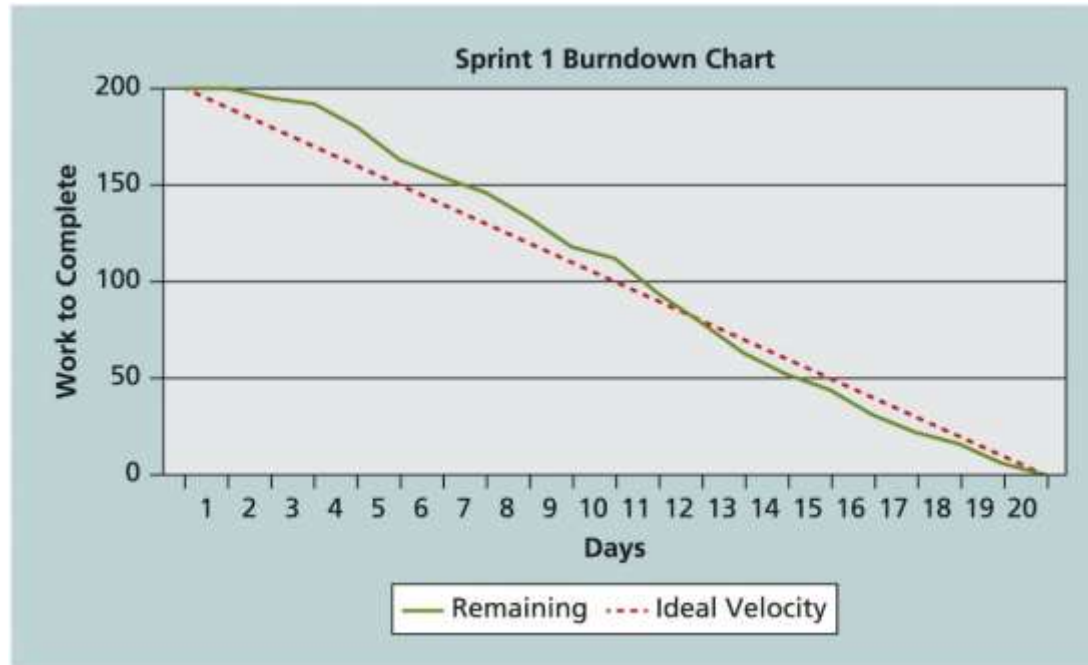


FIGURE 3-7 Burndown chart



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*
 - *Download these and additional templates in one compressed file from the Companion website for this text or from the [author's website](#).*



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

