# Chapter 3: The Project Management Process Groups: A Case Study

## Information Technology Project Management, Eighth Edition


Note: See the text itself for full citations.

# Learning Objectives

- Describe the five project management process groups, the typical level of activity for each, and the interactions among them
- Understand how the project management process groups relate to the project management knowledge areas
- Discuss how organizations develop information technology (IT) project management methodologies to meet their needs

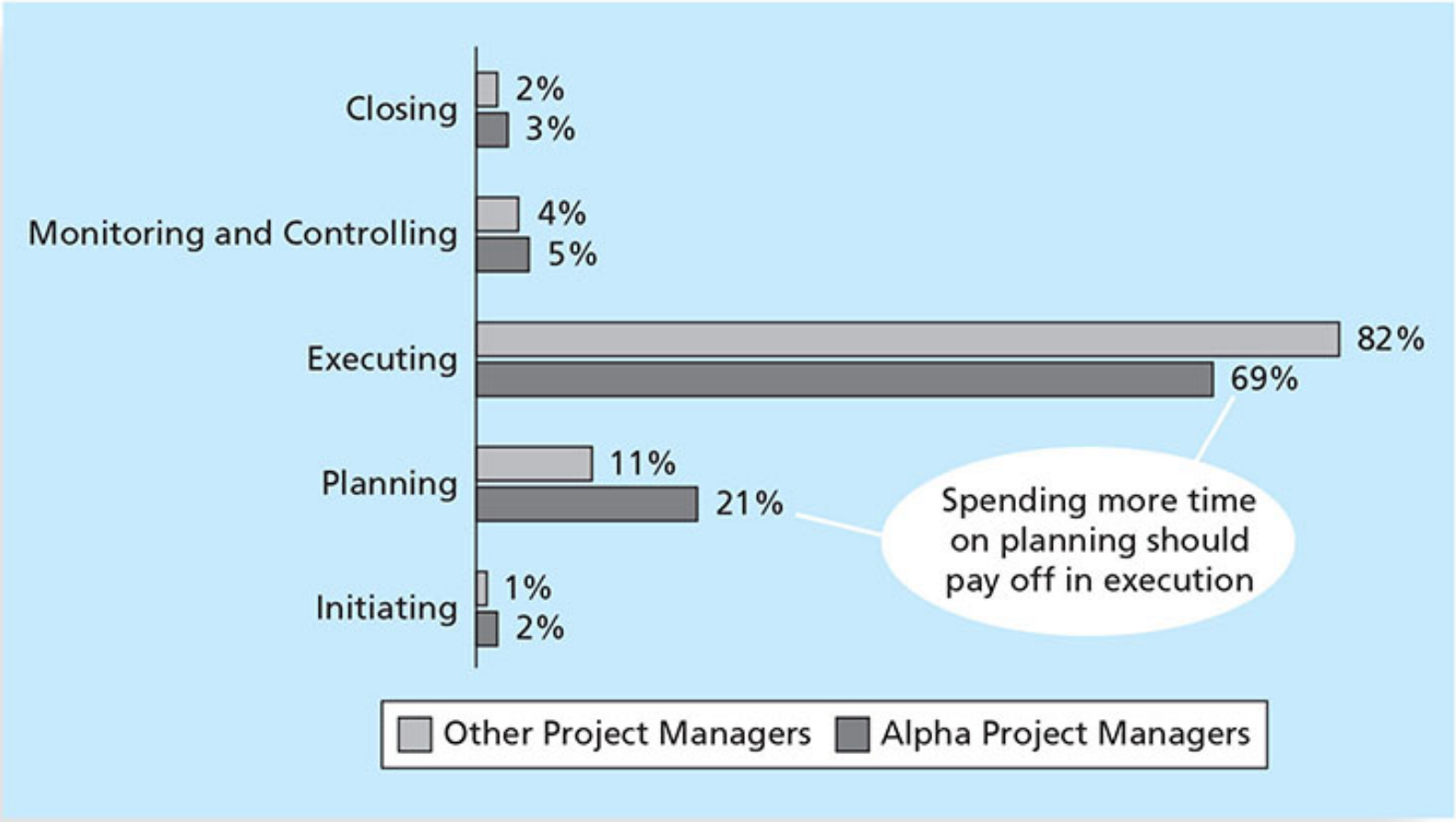
# Learning Objectives

- 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 the same case study of a project managed with an agile focus to illustrate the key differences in approaches
- Describe several templates for creating documents for each process group

# 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 interlinked processes
- The project management process groups include
  - initiating processes
  - planning processes
  - executing processes
  - monitoring and controlling processes
  - closing processes

# Figure 3-1. Percentage of Time Spent on Each Process Group




Source: Andy Crowe

# 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 project manager is ultimately responsible for the success or failure of the project.”*
- A 2014 U.S. Government Accountability Office (GAO) report stated that IRS had significant cost and schedule variances in over 68 percent of its major IT projects

*Comments posted on CIO Magazine Web site on article “For the IRS, There’s No EZ Fix,” (April 1, 2004).

# Media Snapshot

Just as information technology projects need to follow the project management process groups, so do other projects, such as the production of a movie. Processes involved in making movies might include screenwriting (initiating), producing (planning), acting and 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 these 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, Fifth Edition, 2013
- Note that there are activities from each knowledge area under the planning process groups

# Table 3-1. Mapping Project Management Process Groups to Knowledge Areas*

| Knowledge Area | Project Management Process Groups | | | | |
|---|---|---|---|---|---|
| | Initiating | Planning | Executing | Monitoring and Controlling | Closing |
| *Project Integration Management* | Develop project charter | Develop project management plan | Direct and manage project work | Monitor and control project work, Perform integrated change control | Close project or phase |
| *Project Scope Management* | | Plan scope management, Collect requirements, Define scope, Create WBS | | Validate scope, Control scope | |
| *Project Time Management* | | Plan schedule management, Define activities, Sequence activities, Estimate activities resources, Estimate activity durations, Develop schedule | | Control schedule | |

*(continued)*

*Source: PMBOK® Guide, Fifth Edition, 2013.

# Table 3-1. continued

| Knowledge Area | Project Management Process Groups | | | | |
|---|---|---|---|---|---|
| | Initiating | Planning | Executing | Monitoring and Controlling | Closing |
| *Project Cost Management* | | Plan cost management, Estimate costs, Determine budget | | Control costs | |
| *Project Quality Management* | | Plan quality management | Perform quality assurance | Control quality | |
| *Project Human Resource Management* | | Plan human resource management | Acquire project team, Develop project team, Manage project team | | |
| *Project Communications Management* | | Plan communications management | Manage communications | Control communications | |
| *Project Risk Management* | | Plan risk management, Identify risks, Perform qualitative risk analysis, Perform quantitative risk analysis, Plan risk responses | | Control risks | |
| *Project Procurement Management* | | Plan procurement management | Conduct procurements | Control procurements | Close procurements |
| *Project Stakeholder Management* | Identify stakeholders | Plan stakeholder management | Manage stakeholder engagement | Control stakeholder engagement | |

# Developing an IT Project Management Methodology

- Just as projects are unique, so are approaches to project management
- Many organizations develop their own project management methodologies, especially for IT projects
- A **methodology** describes *how* things should be done; a **standard** describes *what* should be done
- PRINCE2, Agile, RUP, and Six Sigma provide different project management methodologies

# Global Issues

- A 2011 study of organizations across India included the following findings:
  - Two-thirds of organizations in some stage of Agile adoption are realizing key software and business benefits in terms of faster delivery of products to the customer, an improved ability to manage changing requirements, and higher quality and productivity in IT.
  - Organizations struggle with the magnitude of the cultural shift required for Agile, opposition to change, a lack of coaching and help in the Agile adoption process, and a lack of qualified people.
  - The daily stand-up, iteration planning, and release planning are the most commonly used practices, while paired programming and open workspaces are not popular

# 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

# Case Study: JWD Consulting's Project Management Intranet Site (Predictive Approach)

- This case study provides an example of what's involved in initiating, planning, executing, controlling, and closing an IT project
- You can download templates for creating your own project management documents from the companion Web site 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

# Project Pre-initiation

- It is good practice to lay the groundwork for a project before it officially starts
- Senior managers often perform several pre-initiation tasks, including the following:
  - 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 (see Table 3-2 for an example)
  - 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

# Project Initiation

- Initiating a project includes recognizing and starting a new project or project phase
- The main goal is to formally select and start off projects
- Table 3-3 shows the project initiation knowledge areas, processes, and outputs

| Knowledge Area | Initiating Process | Outputs |
|---|---|---|
| *Project Integration Management* | Develop project charter | Project charter |
| *Project Stakeholder Management* | Identify stakeholders | Stakeholder register |

# Table 3-4. Stakeholder Register

| Name | Position | Internal/ External | Project Role | Contact Information |
|---|---|---|---|---|
| Joe Fleming | CEO | Internal | Sponsor | joe_fleming@jwdconsulting.com |
| Erica Bell | PMO Director | Internal | Project manager | erica_bell@jwdconsulting.com |
| Michael Chen | Team member | Internal | Team member | michael_chen@jwdconsulting.com |
| Kim Phuong | Business analyst | External | Advisor | kim_phuong@client1.com |
| Louise Mills | PR Director | Internal | Advisor | louise_mills@jwdconsulting.com |

# Table 3-4. Stakeholder Management Strategy

| 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. |

Contents are often sensitive, so do not publish this document.

# Project Charters and Kick-off Meetings

- See Table 3-6 for an example of a charter
- Charters are normally short and include key project information and stakeholder signatures
- 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

# Figure 3-2. Kick-off Meeting Agenda

**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 (i.e., business case, 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

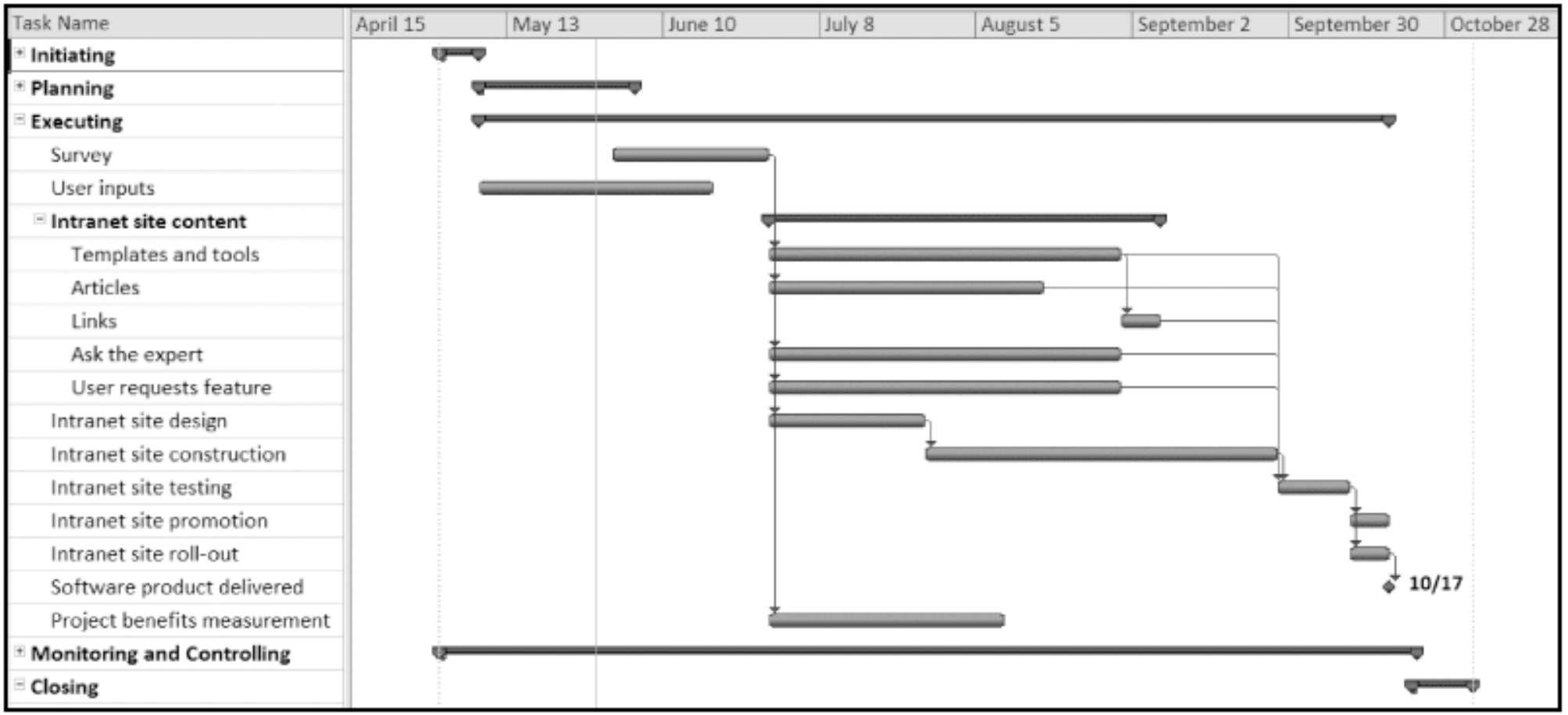
| Action Item | Assigned To | Due Date |
|---|---|---|
| | | |
| | | |
| | | |

**Date and time of next meeting:**

# Project Planning

- The main purpose of project planning is to *guide execution*
- Every knowledge area includes planning information (see Table 3-7 on pages 98-99)
- Key outputs included in the JWD project include:
  - A team contract
  - A project scope statement
  - A work breakdown structure (WBS)
  - A project schedule, in the form of a Gantt chart with all dependencies and resources entered
  - A list of prioritized risks (part of a risk register)
- See sample documents starting on p. 101

# Figure 3-4. JWD Consulting Intranet Site Project Baseline Gantt Chart



# Table. 3-10. List of Prioritized Risks

| 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 |

# Project Executing

- Usually takes the most time and resources to perform project execution
- Project managers must use their leadership skills to handle the many challenges that occur during project execution
- Table 3-11 lists the executing processes and outputs. Many project sponsors and customers focus on deliverables related to providing the products, services, or results desired from the project
- A milestone report can help focus on completing major milestones

# Part of Milestone Report (Table 3-12, partial)

| Milestone | Date | Status | Responsible | Issues/ Comments |
|---|---|---|---|---|
| ***Initiating*** | | | | |
| Stakeholders identified | May 2 | Completed | Erica and Joe | |
| Project charter signed | May 10 | Completed | Erica | |
| Project kick-off meeting held | May 13 | Completed | Erica | Went very well |
| ***Planning*** | | | | |
| Team contract signed | May 13 | Completed | Erica | |
| Scope statement completed | May 27 | Completed | Erica | |
| WBS completed | May 31 | Completed | Erica | |
| List of prioritized risks completed | June 3 | Completed | Erica | Reviewed with sponsor and team |
| Schedule and cost baseline completed | June 13 | Completed | Erica | |
| ***Executing*** | | | | |
| Survey completed | June 28 | | Erica | Poor response so far! |

# 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

# 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

# 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 include project files and lessons-learned reports, part of organizational process assets
- Most projects also include a final report and presentation to the sponsor/senior management

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

- This section demonstrates a more agile approach to managing the same project
- Differences in using an agile approach are highlighted
- 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.

# An Informed Decision

- It is not a snap decision whether to use an agile approach or not, just like flying or driving somewhere on a trip
- Projects with less rigid constraints, experienced and preferably co-located teams, smaller risks, unclear requirements, and more flexible scheduling would be more compatible with an agile approach
- The following example uses Scrum roles, artifacts, and ceremonies

# Scrum Roles

- **Product owner**: The 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.
- **ScrumMaste**r: The 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**: A 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 2-4 weeks.

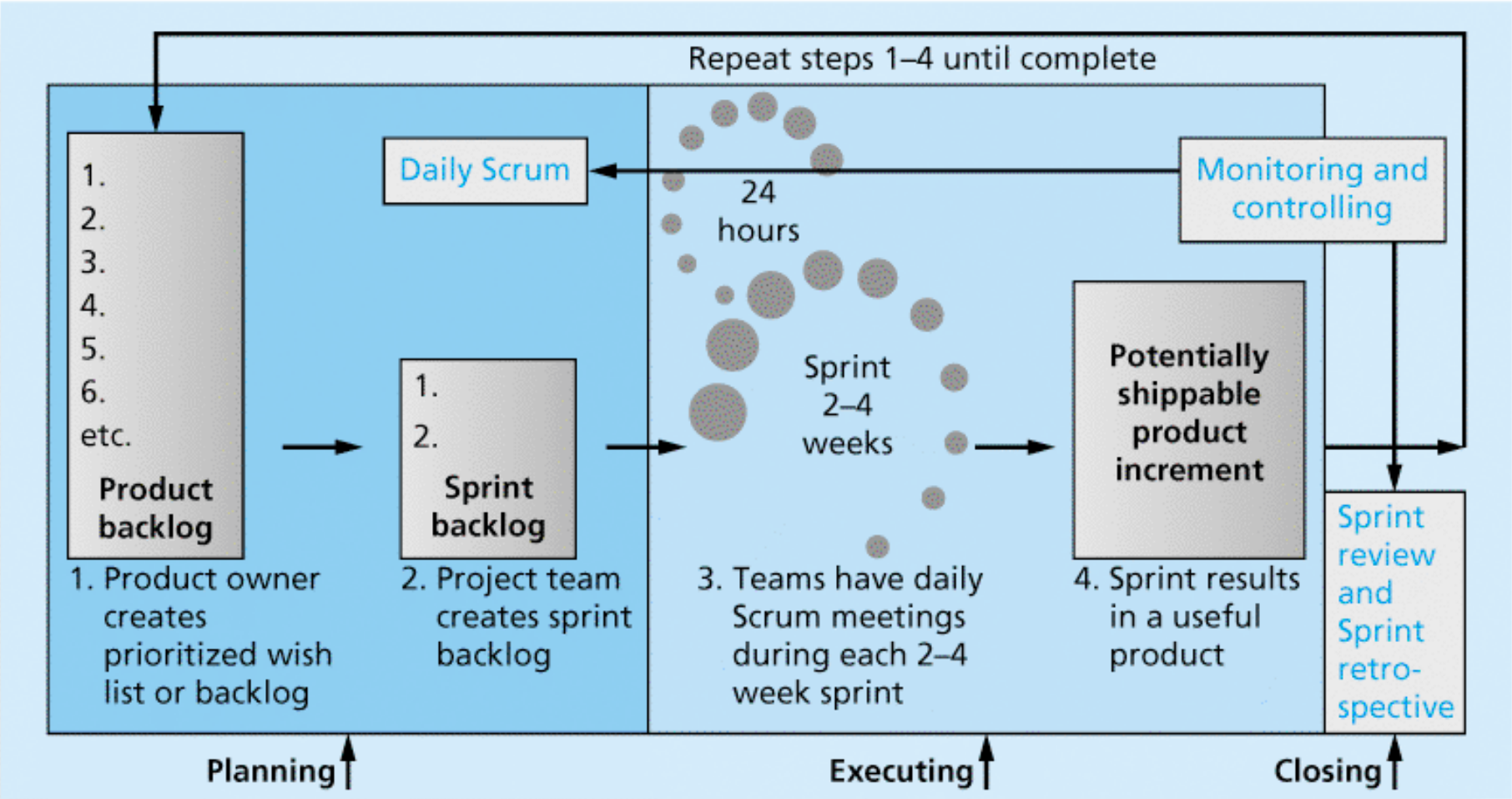
# Scrum Artifacts

- An artifact is a useful object created by people
- Scrum artifacts include:
  - **Product backlog**: A list of features prioritized by business value
  - **Sprint backlog**: The 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 Ceremonies

- Sprint planning session: A meeting with the team to select a set of work from the product backlog to deliver during a sprint.
- **Daily Scrum**: A short meeting for the development team to share progress and challenges and plan work for the day.
- Sprint reviews: A meeting in which the team demonstrates to the product owner what it has completed during the sprint.
- Sprint retrospectives: A 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.

# Figure 3-5. Scrum Framework and the Process Groups



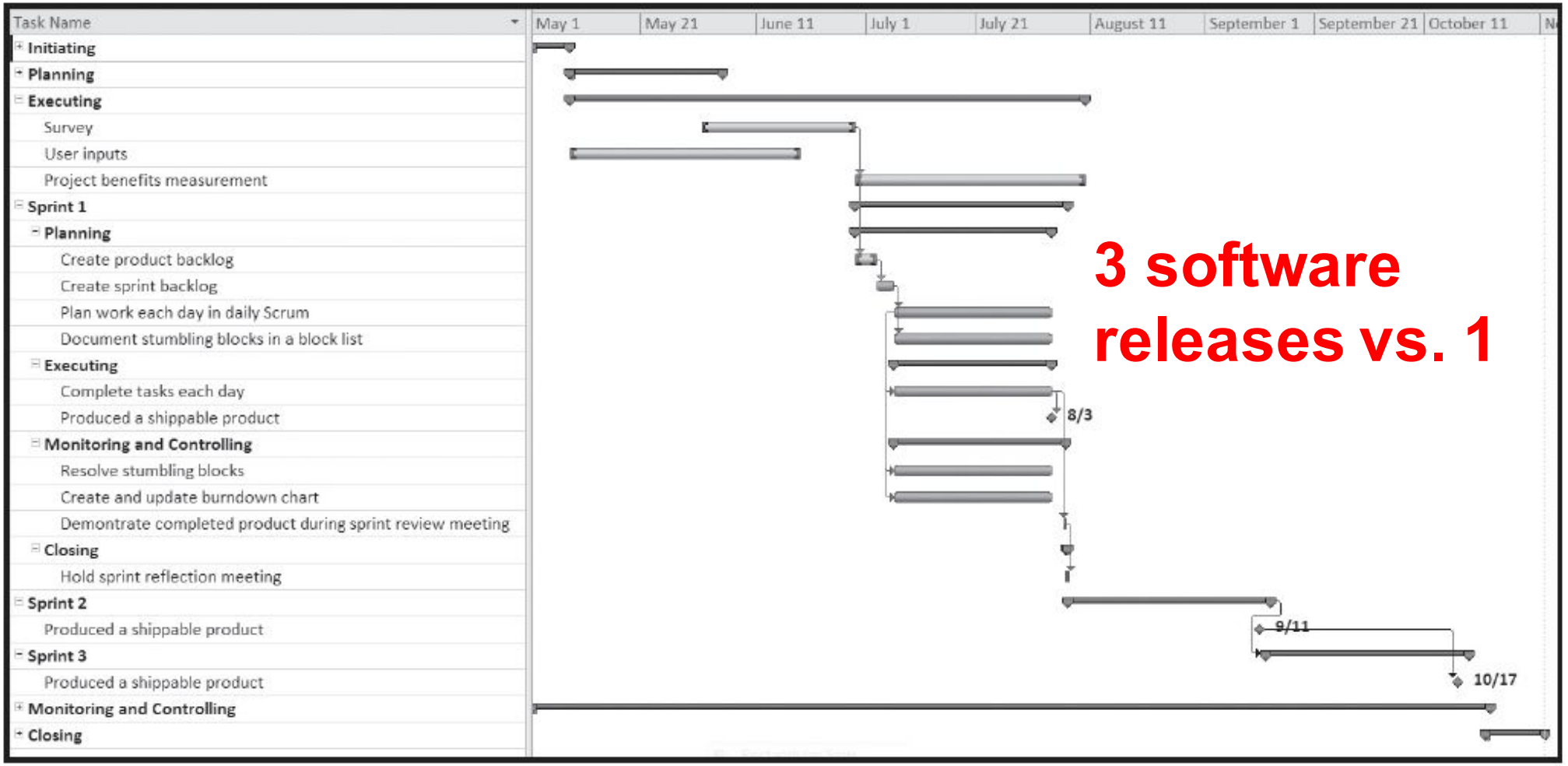
# Table 3-18. unique Scrum Activities by Process Group

| |
|---|
| **Initiating:**<br>• Determine roles<br>• Decide how many sprints will compose each release and the scope of software to deliver |
| **Planning:**<br>• Create product backlog<br>• Create sprint backlog<br>• Create release backlog<br>• Plan work each day in the daily Scrum<br>• Document stumbling blocks in a list |
| **Executing:**<br>• Complete tasks each day during sprints<br>• Produce a shippable product at the end of each sprint |
| **Monitoring and Controlling:**<br>• Resolve issues and blockers<br>• Create and update burndown chart<br>• Demonstrate the completed product during the sprint review meeting |
| **Closing:**<br>• Reflect on how to improve the product and process during the sprint reflection meeting |

# Planning

- Not different from PMBOK® Guide
  - Still create a scope statement and can use a Gantt chart for the entire project schedule; other planning similar (risk, etc.)
- Different:
  - Descriptions of work are identified in the product and sprint backlogs, more detailed work documented in technical stories, estimate a velocity or capacity for each sprint; release roadmap often used for schedule

# Figure 3-6. Intranet Site Project Baseline Gantt Chart Using Scrum



# Table 3-19. Product and Sprint Backlogs

| 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. | |

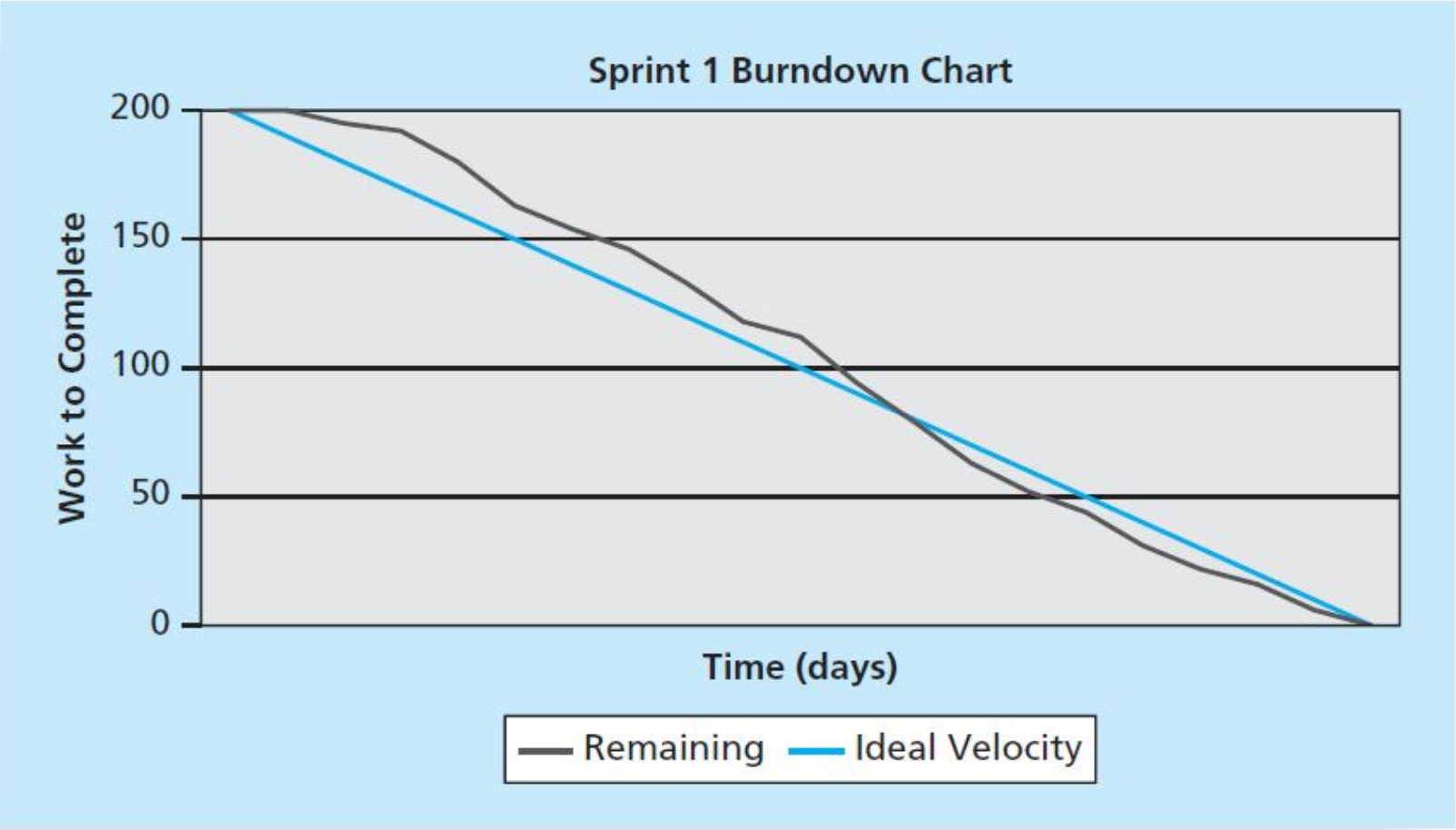
# Executing

- Not different from PMBOK® Guide
  - Still produce products, lead people, etc.
- Different:
  - Produce several releases of software - users of the new software might be confused by getting several iterations of the product instead of just one
  - Communications different because the project team meets every morning, physically or virtually

# Monitoring and Controlling

- Not different from PMBOK® Guide
  - Still check actual work vs. planned work
- Different
  - Names of key reviews are the daily Scrum and the sprint review
  - A sprint board is used instead of a tracking Gantt chart or other tools
  - Use a burndown chart vs. earned value chart

# Figure 3-7. Burndown Chart



# Closing

- Not different from PMBOK® Guide
  - Focus is still on acceptance of deliverables and reflection
- Different:
  - The retrospective is similar to a lessons-learned report, but it focuses on a shorter period of time. It 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

- Table 3-20 lists the templates available on the companion website and the author's site at www.pmtexts.com or www.kathyschwalbe.com

# 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 nine 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 differences using agile (Scrum). The biggest difference is providing three releases of useable software versus just one