

Lesson

1

Project Management Basics

LESSON OBJECTIVES

- ✓ Identify a project versus an operation.
- ✓ Label the three sides of the project triangle.
- ✓ List the six project stages or processes.
- ✓ Explain project manager duties in each project process.
- ✓ Name two prevalent project management methodologies.
- ✓ Assess the project types best for the two methodologies.





When you decide to use Microsoft Project as a key tool in managing your projects, you also want to include a solid grounding in project management principles in that toolbox.

This lesson introduces you to the basics of projects and project manager responsibilities, including project management knowledge areas. You'll see the project triangle and the processes within the project life cycle. You'll review waterfall and agile project management methodologies.

Through all this, you'll preview how Microsoft Project can assist you in your responsibilities as a skilled project manager so that you can deliver your well-scoped project on deadline and within budget.

Projects and Project Managers

So what actually characterizes a project as such, rather than other activities we do like operations or task lists? And what are the responsibilities of the project manager? Let's break them down now.

What Is a Project?

A *project* is a unique activity that has a distinct starting point and a distinct finishing point. Here are some examples of projects:

- Remodeling an office
- Developing a new training program
- Launching an awareness campaign
- Hosting a conference and trade show
- Designing a new product

Each of these examples are unique—the specific office being remodeled, the topic of the training program or awareness campaign, the locale and speakers involved in the conference, or the specific qualities that go into designing a new product.

None of these projects are ongoing, meaning that they each have a start and an end date. Although some projects like designing a new product or building a high rise might take several years, they proceed through different phases through those years until the project's completion.

In contrast, ongoing activities that are repeated and that don't have distinct start and finish dates are considered *operations*. Some examples of operations are as follows:

- Maintaining information on a website
- Running payroll twice each month
- Sending weekly e-news to customers and prospects
- Preparing packets for the monthly board of directors meeting
- Posting daily items on social media

These are routine activities that take place on an ongoing basis as part of the regular business of an organization.

Projects can become operations, or operations can be a result of finished projects. For example, after the project of developing a new training program is complete, delivering a set of classes each month can become part of the organization's regular operations.

Projects can repeat in certain ways but still not be considered an operation. For example, your organization might follow a certain project template for product development that includes research, prototyping, testing, manufacturing, marketing, and launch. Its uniqueness lies in the difference in the product under development.

Whether small, medium, or large, projects are often characterized by the following:

- A scope of work defining the project boundaries and standards
- Part- or full-time team members who are assigned to the project
- Equipment and materials earmarked for the project, if applicable
- A budget dedicated to the project
- At least one expected deliverable or outcome at the project end

What Is a Project Manager?

Some people become professional *project managers* as a result of strategic career planning, whether they majored in it in college or discovered it in the working world and then climbed the project management ladder. Many just get themselves assigned one day as a project manager and then must figure out what it's all about.

A project manager is the point person responsible for carrying out a project and delivering the desired outcomes—the *scope* of the project. As the project manager, you balance the constraints of the project *budget* and the deadline with the elements of the project scope. You continually check in with the team members working on their assigned project tasks, track and analyze the progress, prevent or solve any problems that arise, and report overall project progress to the project sponsor and other stakeholders.

As the project manager, you have your finger on the pulse of the overall project at any given moment. While individual team members might be working on their own specific part of the project, the project manager always sees the project as a whole and knows in what direction it is heading.

According to the *Project Management Book of Knowledge (PMBOK®)*, a successful and well-rounded project manager functions within the following nine disciplines, or *knowledge areas*:

1. Integration management
2. Scope management
3. Schedule management
4. Cost management
5. Quality management
6. Resource management
7. Communications management
8. Risk management
9. Procurement management
10. Stakeholder management

The Project Triangle

Project management is a constant balancing act of managing the tension between project deadlines and costs to deliver the intended project scope. You might have heard the old saying, “Cheap, fast, or good. Pick two.” This illustrates the *project triangle*, which is also known as the project management triangle, triple constraint, or the iron triangle.

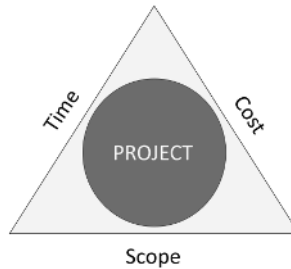
Suppose your project is to develop a new website. If you have a spare budget and need to launch it in two weeks, the website might be more minimal with fewer features. But if you have an ample budget and several months of development time, the site might contain all the information and features that the project sponsor wants. If your customer wants the website in two weeks and is adamant that all the information and features are included without delay, it will be more expensive.

Therefore, the two triangle sides that are non-negotiable, and the one side that’s flexible, determines the constraints of your project and where your project has some “give.”

Several interpretations of the project triangle exist. One version is the triangle sided with time, cost, and quality, with scope in the center. You might see it as a project rectangle with scope, schedule, budget, and quality. Another version is a six-sided project star with scope, schedule, budget, risk, resources, and quality. Figure 1.1 illustrates the concept of a good interpretation of the project triangle with time, cost, and scope.

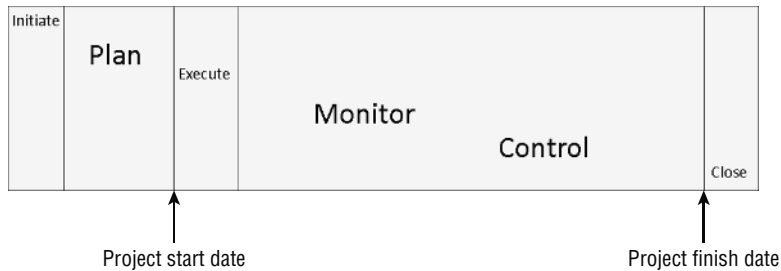
Depending on the interpretation, a budget can include all *resources* that cost money including staff, *equipment*, and *materials*. Scope might include quality.

While project managers can and do argue about the “right” project triangle, the important thing is to simply keep the model in mind as you manage your projects. Your job as project manager is to know the ranked priorities and constraints of your project and to make adjustments accordingly.

FIGURE 1.1 A project triangle

Project Processes

With its explicit start and finish dates, any project has its own life cycle. The project life cycle consists of six specific *stages*, or *project processes*. Figure 1.2 illustrates the project processes along the project life cycle.

FIGURE 1.2 The processes in the project life cycle

Initiating

Also considered preplanning or scoping, the project is conceived, its scope is defined, and a preliminary budget is drafted during the *initiating process*. The powers that be—that is, the customer, executive, or other *project sponsor* paying for the project—agree to the project objectives and requirements.

The initiating stage is also the stage when a project manager is assigned, the business case for the project is outlined, and any other *stakeholders* and their expectations are identified.

Planning

The project manager works during the *planning process* to transform the goals and constraints defined in the initiating process into a roadmap for achieving those goals, step

by step and task by task. To do this, the project manager lays out the tasks in the *work breakdown structure (WBS)*, determines the duration and dependency of those tasks, assigns resources to the tasks, and estimates costs for those resources.

This effort defines the project schedule, resource requirements, and costs with a greater degree of certainty. With its scheduling engine, resource planner, and costing formulas, Microsoft Project steps up as the project manager's key partner in this planning process.

Executing

When planning is complete and the funding and resources are secured and ready to work, the project manager can press that figurative “GO” button. This represents the start of the *executing process*.

The project starts and all resources begin working on their assigned tasks in the work breakdown structure. The clock is ticking and the budget is depleting. The project manager can now use Microsoft Project to track actual progress against the scheduled projections in the plan.

Monitoring and Controlling

As soon as project execution begins, the project shifts to the monitoring and controlling processes, which happen simultaneously and continually throughout the project life cycle from the start of the executing process until the closing process.

In the *monitoring process*, the project manager gathers information from team members and compares this information with the plan represented in Microsoft Project. Think of as if you've entered a travel destination into your vehicle's map app, and as you drive, you're watching your progress on your itinerary.

In the *controlling process*, the project manager makes decisions and adjustments when actual experience differs from the project plan. These adjustments are corrections to the plan to maintain the project triangle balance of time, cost, and quality within the project scope. Again, it's as if you're trying to follow your vehicle's map app, but you've run into a traffic jam or spent more money at a roadside attraction than planned. You must then adjust your travel itinerary to account for the time delay or the unexpected cost.

Closing

When the final project tasks are completed, the deliverables are submitted, and the goals are met, the project's *closing process* happens. The project manager deals with the final details, especially ensuring that the project sponsor accepts the project as complete.

The closing process also includes documenting processes, archiving files, and conducting a project review, or *lessons learned* exercise, with the project team before they all move to their next projects. This review process ensures that the project ends as it intentionally began, and that important institutional knowledge is captured to help future projects be more successful.

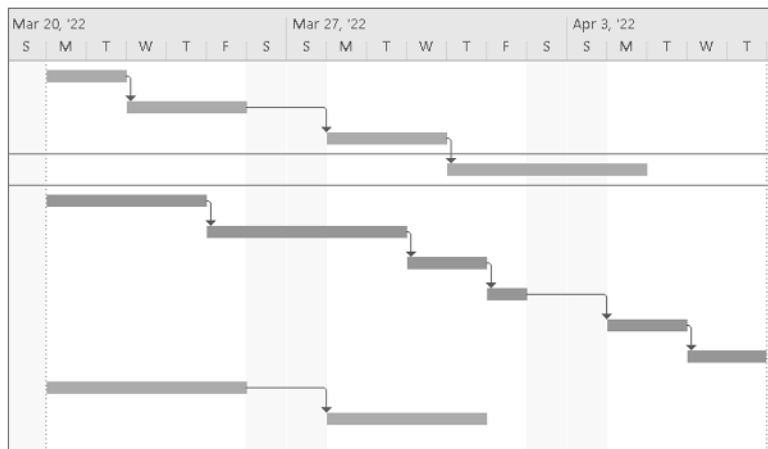
Project Management Methodologies

The waterfall and agile project management methodologies are two major approaches to project management. Both methods are widely used and both are supported by Microsoft Project.

Waterfall Project Management

Waterfall project management is also known as traditional project management or the *Critical Path Method (CPM)*. This method identifies project activities into sequential phases, where each phase depends on the completion of previous phases. Progress flows mostly in one direction, like a waterfall, through the various phases (see Figure 1.3).

FIGURE 1.3 Bars on a Gantt chart illustrate waterfall project management.



More specifically, this method relies on the duration of all activities required to complete the project and the dependencies between those activities. The tasks and their dependencies create multiple paths throughout the project. The longest path is known as the *critical path*. If any task component on the critical path is delayed, the entire project is also delayed.

The waterfall method or CPM is typically used in manufacturing and construction—that is, in structured physical environments in which changes even early in the project are very expensive.

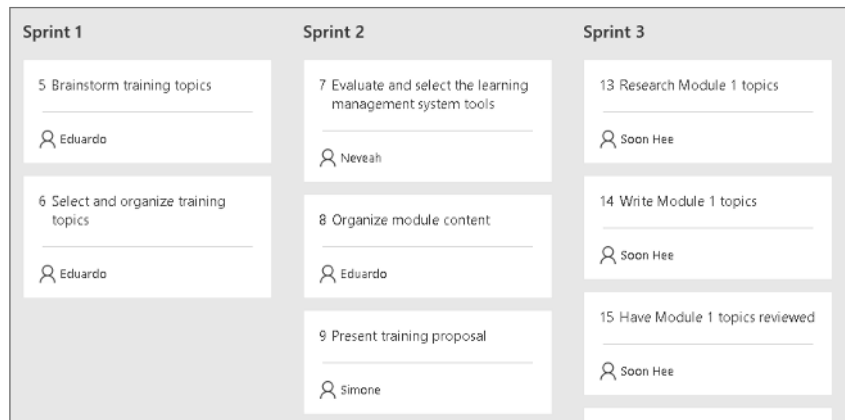
Agile Project Management

Agile project management is a type of iterative or incremental project management that allows for more experimentation, exploration, and discovery. Designed for the software industry, it has been adopted in other industries that center on knowledge-based (rather than physically based) creative work.

In work such as software development, the phased waterfall approach is not well suited because requirements are often loosely defined at first, or technologies in use are quickly changing.

In agile or iterative project management, the details of the entire project are not planned from the start. Instead, the plan focuses on iterations, often called *sprints*. After the start of the project, the iteration or sprint is planned, executed, monitored, controlled, and closed. Each one is like a mini-project within the project. A deliverable, perhaps a prototype or a section of code, is produced at the end of the iteration and offered to the customer or other project sponsor for feedback. Based on that feedback, additional iterations are planned and executed. In this way, the solution the project is seeking evolves through each sprint (see Figure 1.4).

FIGURE 1.4 An agile project uses task board views to schedule project iterations.



Although Microsoft Project was originally designed for the waterfall method, it now highlights features and views designed specifically for agile projects as well.

Other Methodologies

Although waterfall and agile are the most widely used project management methodologies and the only two discussed in this book, there are several others. Examples include critical chain, earned value management, lean project management, and benefits realization.

As the project manager, you are in the best position to determine which methodology is best for the project under consideration. This determination should be done during the initiating process, when the project scope, resources, and tools are all being defined.

When you know the nature of the project, its requirements, and the team, you'll have a better idea of the best methodology to employ for greater chances of the project's success. You might find yourself advocating for a different methodology, especially if one has been the norm or the trend in your organization but not necessarily the best choice.

More About Project Management

The more you expand your knowledge on project management principles and best practices, the more adept and effective you'll become as a project manager.

An especially valuable resource is the Project Management Institute (PMI®), a professional association for project managers. It publishes the *Project Management Book of Knowledge* (PMBOK®) and hosts annual conferences and other training opportunities. It administers the Project Management Professional (PMP®), *Certified Associate in Project Management* (CAPM®), and Disciplined Agile Scrum Master (DASM™) certification exams, among several others. Learn more at www.PMI.org.

Learning project management principles and how to use the tools and features in Microsoft Project go hand in hand. Together, they both can help you become a more successful project manager: one who plans deliberately, communicates well, solves problems, balances the triangle, satisfies stakeholders, closes out strong, and moves on to the next project challenge with confidence and enthusiasm.

Key Terms

agile project management

budget

Certified Associate in Project Management (CAPM®)

closing process

controlling process

critical path

Critical Path Method (CPM)

equipment

executing process

Disciplined Agile Scrum Master (DASM)

initiating process

knowledge areas

lessons learned

materials

monitoring process

operation

planning process

project

Project Management Book of Knowledge (PMBOK®)

Project Management Institute (PMI®)

Project Management Professional (PMP®)

project manager

project processes

project sponsor

project triangle

resources

scope

sprints

stage

stakeholder

waterfall project management

work breakdown structure (WBS)

Review Questions

1. A nonprofit organization, which has worked with volunteers for many years, has decided to develop the curriculum and materials for a new quarterly volunteer-training program and then train the trainers—the various department heads—in conducting their training modules. Is this considered a project or an operation?
 - A. It's a project because although it's conducted quarterly, it will be done by different volunteers each time, and possibly by different trainers.
 - B. It's a project because developing the curriculum and materials for the new training program is a new and unique activity for the organization.
 - C. It's an operation because it's not unique to the organization, as it has been training and working with volunteers for years.
 - D. It's an operation because training will be conducted quarterly as part of regular business.
2. A startup technology company has just finished developing its branding and marketing materials, including the design of its e-newsletter. After conducting a pilot and making adjustments with a few test issues, the company is now writing and disseminating the e-newsletter at the first of each month. Is this a project or an operation?
 - A. It's a project because although the e-newsletters go out monthly, each one contains different content from the previous month.
 - B. It's a project because the development of the branding and marketing materials had specific start and finish dates.
 - C. It's an operation because producing the e-newsletter is an ongoing process that happens once every month with no end date.
 - D. It's an operation because producing the e-newsletter has a start date but no finish date.
3. The discussion in this lesson indicates that the three sides of the project triangle are time, cost, and scope. Regardless of different opinions about which elements belong where on the project triangle, what is the point that a project manager should always keep in mind?
 - A. That the budget is always the fixed element of any project, and other elements like time and scope must flex around the budget as needed
 - B. That time is always the fixed element of any project, and other elements like budget and scope must flex around the schedule as needed
 - C. That there are always two fixed elements of any project, and the third element can flex as necessary to maintain the project scope
 - D. That each project will have different priorities for time, cost, and scope, and when one of these elements changes, the other elements must flex to compensate

4. You're the project manager of an office remodeling project that has a limited budget and an absolutely fixed finish date of September 1. As conditions change throughout the life of the project, what adjustments can you make to the project without running out of money or jeopardizing that set finish date?
 - A. You can only reduce the project scope.
 - B. You can only adjust the budget.
 - C. You can increase the budget and extend the project finish date.
 - D. You can only extend the project finish date.
5. What are the first three processes in the project life cycle?
 - A. Initiating, planning, and controlling
 - B. Initiating, planning, and executing
 - C. Planning, executing, and monitoring
 - D. Planning, controlling, and monitoring
6. Monitoring and controlling happen at the same time in the project life cycle. What's the difference between the two processes?
 - A. Monitoring is about collecting information about project progress and comparing it against the project plan. Controlling is about adjusting the project based on that comparison.
 - B. Monitoring is about collecting status information from team members daily. Controlling is about helping team members stay on schedule.
 - C. Monitoring is about working with the appropriate Microsoft Project views. Controlling is about entering the right information in the right views.
 - D. Monitoring is about designing and generating reports for the team and stakeholders. Controlling is about watching the project schedule and budget.
7. What are two of the most important aspects of the closing process of a completed project?
 - A. Archiving project files and celebrating with the team
 - B. Documenting processes developed as part of the project and writing team member evaluations
 - C. Obtaining project sponsor acceptance and conducting a lessons learned meeting
 - D. Collecting all project deliverables and debriefing with your manager
8. You are the project manager for equipment retrofit of a manufacturing line. Which of the following project characteristics lead you to advocate for using the waterfall project management methodology?
 - A. The project requirements are very well defined before the project starts.
 - B. The project scope is vague and can benefit from experimentation, prototyping, and iterations of solutions and deliverables.

- C.** The project is in a more structured, physical environment and even early changes to the project can be prohibitively expensive.
 - D.** A and C
 - E.** B and C
- 9.** You've been assigned as project manager for an ambitious website design initiative. Which of the following characteristics might lead you to recommend using the agile project management methodology?
 - A.** The project requirements are very well defined before the project starts, and the project sponsor will not be frequently engaged.
 - B.** The project scope is more vague and can benefit from experimentation, prototyping, and iterations of solutions and deliverables.
 - C.** The project is centered on knowledge-based work done by a highly collaborative creative team, and the project customers are enthusiastic about frequent reviews and feedback.
 - D.** A and C
 - E.** B and C

