Dear readers/instructors:

This preview provides information about my upcoming text book, *An Introduction to Healthcare Project Management*. I plan to have it finished before June 1, 2013. Several instructors asked me to write this book for their students in various healthcare programs. Special thanks to Cindy LeRouge of St. Louis University for her inputs.

I used my other book, *An Introduction to Project Management, Fourth Edition*, as the foundation for this book, adding new information related to the healthcare field and replacing the main running project with a healthcare project. The basic structure and information will be the same. It will also include nine chapters:

- Chapter 1: An Introduction to Project, Program, and Portfolio Management in Healthcare
- Chapter 2: Project, Program, and Portfolio Selection
- Chapter 3: Initiating Projects
- Chapter 4: Planning Projects, Part I (Project Integration, Scope, Time, and Cost Management)
- Chapter 5: Planning Projects, Part II (Project Quality, Human Resource, Communications, Stakeholder, Risk, and Procurement Management)
- Chapter 6: Executing Projects
- Chapter 7: Monitoring and Controlling Projects
- Chapter 8: Closing Projects
- Chapter 9: Best Practices in Project Management

I will post updates on a new link from [www.intropm.com](http://www.intropm.com). If you’d like to provide inputs or get on a list for a desk copy, please email me at schwalbe@augsburg.edu.

The contents of this preview include the first draft of Chapter 1.

Sincerely,
Kathy Schwalbe, Ph.D., PMP

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Chapter 1
An Introduction to Project, Program, and Portfolio Management in Healthcare

LEARNING OBJECTIVES
After reading this chapter, you will be able to:
• Understand the growing need for better project, program, and portfolio management in the healthcare industry
• Explain what a project is, provide examples of healthcare projects, list various attributes of projects, and describe project constraints
• Describe project management and discuss key elements of the project management framework, including project stakeholders, the project management knowledge areas, common tools and techniques, and project success factors
• Investigate the context of healthcare projects, including a brief history of the U.S. healthcare industry, the nature of healthcare projects, characteristics of project team members, and recent trends in healthcare that can affect project management
• Discuss the relationship between project, program, and portfolio management and their contribution to enterprise success
• Describe the project management profession, including suggested skills for project, program, and portfolio managers, the role of professional organizations like the Project Management Institute, the importance of certification and ethics, and the growth of project and portfolio management software
OPENING CASE
Casey Goodman, the Chief Executive Officer (CEO) of a large healthcare company in the Midwest, was discussing strategic plans with the board of directors. They had to figure out how to work more cost effectively while also providing new services and meeting new regulations. Federal reforms meant that insurers would compete directly for members on new health insurance exchanges and would no longer be allowed to deny coverage for preexisting conditions. Business as usual was no longer an option as healthcare providers were preparing for a more consumer-centric marketplace. When one of the board members asked what he was most proud of that year, Casey thought for a few seconds, and then replied, “Excellent question. As you all know, healthcare is too expensive and needs to change. Honestly, I think the main reason we did well this past year was because we recognized that and are working on becoming a more project-based organization. We have dramatically improved our ability to quickly select and implement projects that help our company succeed and cancel or redirect others. We set goals and then develop timelines with deliverables and people committed to getting things done. We have been able to respond quickly to market changes and take advantage of new technologies, unlike many of our competitors. Marie Jacobs, our Director of the Project Management Office (PMO), has done an outstanding job in making this happen. And believe me, it was not easy. It’s never easy to implement changes. But with this new capability to manage projects across the organization, I am very confident that we will have continued success in years to come.”

INTRODUCTION
Many people and organizations today have a new or renewed interest in project management. In the past, project management primarily focused on providing schedule and resource data to top management in just a few industries, such as the military and construction industries. Today’s project management involves much more, and people in every industry and every country manage projects. New technologies have become a significant factor in many businesses, and the use of interdisciplinary and global work teams has radically changed the work environment.

The facts below demonstrate the significance of project management in general:

- In 2011, the average annual salary (excluding bonuses, in U.S. dollars) for someone in the project management profession was $160,409 in Switzerland (the highest-paid country), $139,497 in Australia, $105,000 in the United States, and $23,207 in China (the lowest-paid country). This survey was based on self-reported data from more than 30,000 practitioners in 29 countries.1
- CareerBuilder.com found that 44% of U.S. employers listed project management as a skill they looked for in new college graduates, behind only communication and technical skills.2 Employers throughout the world, especially in Australia and Canada, echo the same request.
- Project management certification continues to be one of the most popular certifications throughout the world.
- The U.S. spends $2.3 trillion on projects every year, and the world as a whole spends nearly $10 trillion on projects of all kinds. Projects, therefore, account for about one fourth of the U.S. and the world’s gross domestic product (GDP).3
• Project management is also a vital skill for personal success. Managing a family budget, planning a wedding, remodeling a house, completing a college degree, and many other personal projects can benefit from good project management.

### What Went Wrong?

In 1995, the Standish Group published an often-quoted study entitled “CHAOS” which reported that the overall success rate of IT application development projects in the U.S. was only 16.2 percent. The researchers defined success as meeting project goals on time and on budget. The study also found that more than 31 percent of IT projects were canceled before completion, costing U.S. companies and government agencies more than $81 billion. The authors of this study were adamant about the need for better project management in the IT industry. They explained, “Software development projects are in chaos, and we can no longer imitate the three monkeys—hear no failures, see no failures, speak no failures.”

In another large study, PricewaterhouseCoopers surveyed 200 companies from 30 different countries about their project management maturity and found that over half of all projects fail, including those in healthcare. They also found that only 2.5 percent of corporations consistently meet their targets for scope, time, and cost goals for all types of projects.

Although several researchers question the methodology of the CHAOS studies, their popularity has prompted organizations throughout the world to examine their practices in managing projects. Managers are recognizing that to be successful, they need to be conversant with and use modern project management techniques.

The main emphasis of this book is to help people in the healthcare industry to improve the success rate of their projects. The U.S. has significant challenges in this area. The following statistics are from the 2012 Henry J. Kaiser Family Foundation:

• Health care spending accounted for 17.9% of U.S. GDP in 2010, an average of $8,402 per person.
• The Centers for Medicare and Medicaid Services (CMS) estimates that health care spending will grow to about 19.8% of GDP by 2020.
• Compared to other Organisation for Economic Co-operation and Development (OECD) countries, the U.S. spends 48% more on health care compared to the next highest country, Switzerland.
• Increases in health insurance premiums continue to outpace inflation and the growth in workers’ earnings.
• Hospital care ($814 billion) and physician/clinical services ($515.5 billion) are the top two categories of healthcare expenditures in the U.S.
Media Snapshot

Articles related to healthcare often make the New York Times “most-emailed” list. A 2013 article described the importance of improving healthcare, especially for people who know they are dying. It also states some misperceptions about spending on healthcare.

“It is conventional wisdom that end-of-life care is an increasingly huge proportion of health care spending. I’ve often heard it said that people spend more on health care in the year before they die than they do in the entire rest of their lives. If we don’t address these costs, the story goes, we can never control health care inflation. Wrong. Here are the real numbers. The roughly 6 percent of Medicare patients who die each year do make up a large proportion of Medicare costs: 27 to 30 percent. But this figure has not changed significantly in decades. And the total number of Americans, not just older people, who die every year—less than 1 percent of the population—account for much less of total health care spending, just 10 to 12 percent.”

The healthcare industry has been engaged in projects for a long time, but not necessarily using formal project management techniques. Healthcare organizations are realizing that to remain competitive, they must develop skills to effectively select and manage the projects they undertake. They also realize that many of the concepts of project management, especially interpersonal skills, will help them as they work with people on a day-to-day basis.

Organizations claim that using project management provides advantages, such as:

- Better control of financial, physical, and human resources
- Improved customer relations
- Shorter development times
- Lower costs
- Higher quality and increased reliability
- Higher profit margins
- Improved productivity
- Better internal coordination
- Higher worker morale
- Reduced stress

In addition to project management, healthcare organizations are embracing program and portfolio management to address enterprise-level needs. This chapter introduces projects and project management, summarizes the context of healthcare project management, describes the differences between project, program, and portfolio management, discusses the role of the project, program, and portfolio manager, and provides important background information on these growing professions.

WHAT IS A PROJECT?

To discuss project management, it is important to understand the concept of a project. A project is “a temporary endeavor undertaken to create a unique product, service, or result.” Operations, on the other hand, is work done in organizations to sustain the
business. Projects are different from operations in that they end when their objectives have been reached or the project has been terminated.

**Examples of Healthcare Projects**

Projects in the healthcare sector can be large or small and involve one person or thousands of people. They can be done in one day or take years to complete. They also can occur in various types of healthcare related entities. Examples of healthcare entities and related projects in various contexts include the following:

**Patient/Health Consumer Level:**
- A family makes modifications to their home to accommodate a handicapped family member
- A diabetic initiates a structured self-management program

**Sole Providers and Physician Groups**
- A physician’s office implements an electronic health record system
- A physician group modifies its billing system to meet revised International Classification of Diseases (ICD) code sets used to report diagnoses and inpatient procedures

**Community Clinics**
- A community health center brings federally certified moderate complexity lab testing in house to expedite access to test results and minimize the cost of lab testing for uninsured patients

**Hospital/ Hospital Departments:**
- A community hospital launches a women’s healthcare service line
- A university hospital designs and constructs a new neurology clinic
- A hospital develops a physician evaluation program in alignment with new standards
- An emergency department develops a formal process for notifying patients of sexually transmitted disease test results in advance of Department of Health notification
- A hospital develops a program to reduce readmission rates by identifying and monitoring high-risk patient discharges

**Health Networks**
- A collection of health care providers forms an accountable care organization
- A hospital network begins a telemedicine service

**Health Research:**
- A research team performs an evaluation of a state health information exchange

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• A cancer center develops an internship program for pre-med students to assist with research studies
• A software company develops a smart phone application to assist diabetics with self-management
• A team of medical researchers conducts a clinical trial of a new medical device

Payers
• A health insurance company establishes a medical call center and Web site to help subscribers make decisions regarding medical care options

Government and Public Health
• A developing country’s health department launches a maternal and child wellness program
• The state public health department develops and launches an immunization campaign
• A local health agency works with the public health department to develop an educational course to train the public health workforce and other first responders to improve their capacity to respond and provide essential services for natural disasters and bio-terrorists situations

Not for Profit/Community Health
• A medically supervised camp program for overweight adolescents creates a summer program
• A not-for-profit hospital conducts a community assessment to determine how to target community benefit activities
• A tobacco control charity designs and executes a smoking cessation campaign
• A kidney disease foundation holds a 10K race event
• A health research funding agency designs and launches a new grant program

Healthcare Vendor/Consulting/Auditing
• A consulting company designs and implements a dashboard form a hospital to evaluate status and results by department
• A medical supply and distribution company installs new distribution software that will facilitate just in time inventory levels
• An audit team conducts an audit of a health organization
• A health care consulting company develops a workforce needs assessment tool that hospitals use to optimize and plan for clinical workforce needs
Video Highlights

The Yale School of Management and Change Observer created a Web site and several videos about the Mayo Clinic in Rochester, Minnesota, an organization known worldwide for its excellence in healthcare and innovation. One of the videos about project management includes interviews with key members of the Center for Innovation. Barbara Spurrier, Administrative Director, describes how much project management has taken off at Mayo. They prepare project charters, status reports, and other documents to help manage projects and improve communications. She states that being really clear about deliverables while also being flexible with stakeholders is crucial in executing projects. The project management team uses disciplined processes to co-create. Dan O’Neil, a project manager, explains that project managers are part of a triad with designers and physicians to develop realistic plans that guide the execution of projects.9

See www.intropm.com for links to this and other videos. You can also learn about the history of project management by watching a series of videos on youtube.com by Mark Kozak-Holland, author of a book on the subject.

Project Attributes

As you can see, projects come in all shapes and sizes. The following attributes help to define a project further:

- **A project has a unique purpose.** Every project should have a well-defined objective. For example, using the first example project described earlier, suppose a family needs to make modifications to their home to accommodate a handicapped family member. Each renovation project is unique. One might involve simply adding an entry ramp, while another might include remodeling and adding on several rooms to a home.

- **A project is temporary.** A project has a definite beginning and a definite end. For a home renovation project, owners usually have a date in mind when they’d like the renovations to be complete.

- **A project is developed using progressive elaboration or in an iterative fashion.** Projects are often defined broadly when they begin, and as time passes, the specific details of the project become more clear. For example, there are many decisions that must be made in planning and renovating a house for a handicapped person. It works best to draft preliminary plans for owners to approve before more detailed plans are developed.

- **A project requires resources, often from various areas.** Resources include people, hardware, software, or other assets. Many different types of people, skill sets, and resources may be needed to renovate a home to accommodate a handicapped person.

- **A project should have a primary customer or sponsor.** Most projects have many interested parties or stakeholders, but someone must take the primary role of sponsorship. The **project sponsor** usually provides the direction and funding for the project.
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- **A project involves uncertainty.** Because every project is unique, it is sometimes difficult to define the project’s objectives clearly, estimate exactly how long it will take to complete, or determine how much it will cost. External factors also cause uncertainty, such as a supplier going out of business or a project team member needing unplanned time off. Uncertainty is one of the main reasons project management is so challenging, because uncertainty invokes risk.

It should not be difficult to explain the goals or purpose of a project. As described in the next chapter, it is important to work on projects for the right reasons. Unlike the characters in the comic in Figure 1-1, you should not work on projects just because you think they are cool; projects should add value to individuals or organizations in a cost-effective manner.

![Figure 1-1. Not so practical projects (www.xkcd.com)](image)

A good project manager contributes to a project’s success. **Project managers** work with the project sponsors, the project team, and the other people involved in a project to define, communicate, and meet project goals.

### Project Constraints

Every project is constrained in different ways. Some project managers focus on scope, time, and cost constraints. These limitations are sometimes referred to in project management as the **triple constraint**. To create a successful project, project managers must consider scope, time, and cost and balance these three often-competing goals. They must consider the following:

- **Scope:** What work will be done as part of the project? What unique product, service, or result does the customer or sponsor expect from the project?
- **Time:** How long should it take to complete the project? What is the project’s schedule?
- **Cost:** What should it cost to complete the project? What is the project’s budget? What resources are needed?

Other people focus on the quadruple constraint, which adds quality as a fourth constraint.

- **Quality:** How good does the quality of the products or services need to be? What do we need to do to satisfy the customer?

The *PMBOK® Guide, Fifth Edition* suggests these four constraints plus risk and resources, but states that there may be others as well, depending on the project.
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Figure 1-2 shows these six constraints. The triple constraint goals—scope, time, and cost—often have a specific target at the beginning of the project. For example, a family might initially plan to renovate their home for a handicapped person by adding an entry ramp, installing an electronic monitoring system, and renovating the bathroom. They might set a goal of completing the renovation in two months and spending about $30,000 on the entire project. The couple will have to make many decisions along the way that may affect meeting those goals. They might need to increase the budget to meet scope and time goals or decrease the scope to meet time and budget goals. The other three constraints—quality, risk, and resources—affect the ability to meet scope, time, and cost goals. Projects by definition involve uncertainty and resources, and the customer defines quality. No one can predict with one hundred percent accuracy what risks might occur on a project. Resources (people) working on the house might produce different results, and material resources may vary as well. Customers cannot define their quality expectations in detail for a project on day one. These three constraints often affect each other as well as the scope, time, and cost goals of a project.

For example, the couple may have picked out a certain type of bathtub for the bathroom, but that supplier may have run out of stock, forcing them to choose a different one to meet the schedule goal. This may affect the cost of the project. Projects rarely finish according to the discrete scope, time, and cost goals originally planned. Instead of discrete target goals for scope, time, and cost, it is often more realistic to set a range of goals that allow for uncertainties, such as spending between $25,000 and $35,000 and having the renovation completed within one to four months. These goals allow for inevitable changes due to risk, resources, and quality considerations.

Experienced project managers know that you must decide which constraints are most important on each particular project. If time is most important, you must often change the initial scope and/or cost goals to meet the schedule. You might have to accept more risk and lower quality expectations. If scope goals are most important, you may need
to adjust time and/or cost goals, decrease risk, and increase quality expectations. If communications is most important, you must focus on that. If there are set procurement goals or constraints, that knowledge might be key to the project. In any case, sponsors must provide some type of target goals for a project’s scope, time, and cost and define other key constraints for a project. The project manager should be communicating with the sponsor throughout the project to make sure the project meets his or her expectations.

How can you avoid the problems that occur when you meet scope, time, and cost goals, but lose sight of customer satisfaction? The answer is good project management, which includes more than meeting project constraints.

WHAT IS PROJECT MANAGEMENT?

Project management is “the application of knowledge, skills, tools and techniques to project activities to meet the project requirements.” Project managers must not only strive to meet specific scope, time, cost, and quality requirements of projects, they must also facilitate the entire process to meet the needs and expectations of the people involved in or affected by project activities.

Figure 1-3 illustrates a framework to help you understand project management. Key elements of this framework include the project stakeholders, project management process groups, knowledge areas, tools and techniques, project success, and the contribution of a portfolio of projects to the success of the entire enterprise. Each of these elements of project management is discussed in more detail in the following sections.

Figure 1-3. Project management framework

Project Stakeholders

Stakeholders are the people involved in or affected by project activities and include the project sponsor, project team, support staff, customers, users, suppliers, and even opponents to the project. These stakeholders often have very different needs and expectations. For example, there are several stakeholders involved in a home renovation project to accommodate a handicapped person.
• The project sponsors would be the homeowners. They would be the people paying for the renovations to the house and could be on a very tight budget, so they would expect the contractor to provide accurate estimates of the costs involved in renovating the house. They would also need a realistic idea of when they could use the new items, such as a ramp, toilet, sink, bathtub, and so on. The homeowners would have to make important decisions to keep the costs of the house within their budget. In this example, if the handicapped person is also one of the homeowners, then he or she would be the main customer for the project as well.

• The project manager in this example would normally be the general contractor responsible for renovating the house. He or she needs to work with all the project stakeholders to meet their needs and expectations.

• The project team for building the house would include several construction workers, electricians, carpenters, and so on. These stakeholders would need to know exactly what work they must do and when they need to do it. They would need to know if the required materials and equipment will be at the construction site or if they are expected to provide the materials and equipment. Their work would need to be coordinated since there are many interrelated factors involved.

• Support staff might include the employers of the homeowners, the general contractor’s administrative assistant, and other people who support other stakeholders. The employers of the homeowners might expect their employees to complete their work but allow some flexibility so they can visit the building site or take phone calls related to renovating the house. The contractor’s administrative assistant would support the project by coordinating meetings between the buyers, the contractor, suppliers, and other stakeholders.

• Renovating a house often requires many suppliers. The suppliers in this example would provide the wood and railing for the entry ramp, materials for the bathroom (floor and wall tiles, bathtub, toilet, sink, lighting, etc.), and electronic monitoring equipment and software. Suppliers would expect exact details on what items they need to provide, where and when to deliver those items, and similar information.

• Additional stakeholders might include the handicapped person’s doctor and safety officials. The doctor might use certain software to monitor his or her patient, and there may be regulations to ensure the safety of the items installed as part of the renovation project. The local housing inspector would also be a stakeholder, concerned with ensuring that everything meets specific codes and regulations.

• There may or may not be opponents to a project. In this example, there might be a neighbor who opposes the project because the workers are making so much noise that she cannot concentrate on her work at home, or the noise might awaken her sleeping children. She might interrupt the workers to voice her complaints or even file a formal complaint. Alternatively, the neighborhood might have association rules concerning renovation design and construction. If the homeowners did not follow these rules, they might have to halt construction due to legal issues.
As you can see from this example, there are many different stakeholders on projects, and they all have different interests. Stakeholders’ needs and expectations are important in the beginning and throughout the life of a project. Successful project managers develop good relationships with project stakeholders to understand and meet their needs and expectations.

**Project Management Process Groups and Knowledge Areas**

The five project management process groups include initiating, planning, executing, monitoring and controlling, and closing activities. Chapter 3 provides more information on the process groups and how they relate to the ten project management knowledge areas. Project management knowledge areas describe the key competencies that project managers must develop. The center of Figure 1-3 shows the ten knowledge areas of project management. Project managers must have knowledge and skills in all ten of these areas, briefly described as follows:

- **Project integration management** is an overarching function that coordinates the work of all other knowledge areas. It affects and is affected by all of the other knowledge areas.
- **Project scope management** involves working with all appropriate stakeholders to define, gain written agreement for, and manage all the work required to complete the project successfully.
- **Project time management** includes estimating how long it will take to complete the work, developing an acceptable project schedule given cost-effective use of available resources, and ensuring timely completion of the project.
- **Project cost management** consists of preparing and managing the budget for the project.
- **Project quality management** ensures that the project will satisfy the stated or implied needs for which it was undertaken.
- **Project human resource management** is concerned with making effective use of the people involved with the project.
- **Project communications management** involves generating, collecting, disseminating, and storing project information.
- **Project risk management** includes identifying, analyzing, and responding to risks related to the project.
- **Project procurement management** involves acquiring or procuring goods and services for a project from outside the performing organization.
- **Project stakeholder management** focuses on identifying project stakeholders, understanding their needs and expectations, and engaging them appropriately throughout the project. Note that PMI added stakeholder management as a tenth knowledge area to the *PMBOK® Guide, Fifth Edition* in 2012.

**Project Management Tools and Techniques**

Thomas Carlyle, a famous historian and author, stated, “Man is a tool-using animal. Without tools he is nothing, with tools he is all.” As the world continues to become more
complex, it is even more important for people to develop and use tools, especially for managing important projects. **Project management tools and techniques** assist project managers and their teams in carrying out work in all ten knowledge areas. For example, some popular time-management tools and techniques include Gantt charts, project network diagrams, and critical path analysis. Figure 1-4 lists some commonly used tools and techniques by knowledge area. You will learn more about these and other tools and techniques throughout this text. Note that the *PMBOK® Guide* refers to some of these items as outputs.

A 2006 survey of 753 project and program managers was conducted to rate several project management tools. Respondents were asked to rate tools on a scale of 1–5 (low to high) based on the extent of their use and the potential of the tools to help improve project success. “Super tools” were defined as those that had high use and high potential for improving project success. These super tools included software for task scheduling (such as project management software), scope statements, requirement analyses, and lessons-learned reports. Tools that are already extensively used and have been found to improve project performance include progress reports, kick-off meetings, Gantt charts, and change requests.

These super tools are bolded in Figure 1-4. Of course, different tools can be more effective in different situations. It is crucial for project managers and their team members to determine which tools will be most useful for their particular projects.

<table>
<thead>
<tr>
<th>What Went Right?</th>
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<tbody>
<tr>
<td>Follow-up studies by the Standish Group (see the previously quoted “CHAOS” study in the What Went Wrong? passage) showed some improvement in the statistics for IT projects:</td>
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<tr>
<td>• The number of successful projects has more than doubled, from 16 percent in 1994 to 37 percent in 2010.</td>
</tr>
<tr>
<td>• The number of failed projects decreased from 31 percent in 1994 to 21 percent in 2010.</td>
</tr>
<tr>
<td>• &quot;This year's results represent the highest success rate in the history of the CHAOS Research, says Jim Johnson, chairman of The Standish Group, &quot;We clearly are entering a new understanding of why projects succeed or fail.&quot;</td>
</tr>
<tr>
<td>Even though there have been significant improvements in managing IT projects, there is still much room for improvement. The best news is that project managers are learning how to succeed more often. “The reasons for the increase in successful projects vary. First, the average cost of a project has been more than cut in half. Better tools have been created to monitor and control progress and better skilled project managers with better management processes are being used. The fact that there are processes is significant in itself.”</td>
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<table>
<thead>
<tr>
<th>Knowledge Area/Category</th>
<th>Tools and Techniques</th>
</tr>
</thead>
<tbody>
<tr>
<td>Integration management</td>
<td>Project selection methods, project management methodologies, project charters, project management plans, <strong>project management software</strong>, <strong>change requests</strong>, change control boards, project review meetings, <strong>lessons-learned reports</strong></td>
</tr>
<tr>
<td>Scope management</td>
<td><strong>Scope statements, work breakdown structures</strong>, mind maps, statements of work, <strong>requirements analyses</strong>, scope management plans, scope verification techniques, and scope change controls</td>
</tr>
<tr>
<td>Time management</td>
<td><strong>Gantt charts</strong>, project network diagrams, critical-path analyses, crashing, fast tracking, schedule performance measurements</td>
</tr>
<tr>
<td>Cost management</td>
<td>Net present value, return on investment, payback analyses, earned value management, project portfolio management, cost estimates, cost management plans, cost baselines</td>
</tr>
<tr>
<td>Quality management</td>
<td>Quality metrics, checklists, quality control charts, Pareto diagrams, fishbone diagrams, maturity models, statistical methods</td>
</tr>
<tr>
<td>Human resource management</td>
<td>Motivation techniques, empathic listening, responsibility assignment matrices, project organizational charts, resource histograms, team building exercises</td>
</tr>
<tr>
<td>Communications management</td>
<td>Communications management plans, <strong>kickoff meetings</strong>, conflict management, communications media selection, <strong>status and progress reports</strong>, virtual communications, templates, project Web sites</td>
</tr>
<tr>
<td>Risk management</td>
<td>Risk management plans, risk registers, probability/impact matrices, risk rankings</td>
</tr>
<tr>
<td>Procurement management</td>
<td>Make-or-buy analyses, contracts, requests for proposals or quotes, source selections, supplier evaluation matrices</td>
</tr>
<tr>
<td>Stakeholder management</td>
<td>Stakeholder registers, stakeholder analyses, issue logs, interpersonal skills, reporting systems</td>
</tr>
</tbody>
</table>

**Figure 1-4. Common project management tools and techniques by knowledge area**

**Note: The bolded items are “super tools”**

Despite its advantages, project management is not a silver bullet that guarantees success on all projects. Some projects, such as those involving new technologies, have a higher degree of uncertainty, so it is more difficult to meet their scope, time, and cost goals. Project management is a very broad, often complex discipline. What works on one project may not work on another, so it is essential for project managers to continue to develop
their knowledge and skills in managing projects. It is also important to learn from the mistakes and successes of others.

**Project Success**

How do you define the success or failure of a project? There are several ways to define project success. The list that follows outlines a few common criteria for measuring project success as applied to the example project of renovating a home to accommodate a handicapped person within two months for $30,000:

- The project met scope, time, and cost goals. If the renovation included an entry ramp, electronic monitoring system, a fully renovated bathroom, and met other scope requirements, was completed in two months, and cost around $30,000, we could call it a successful project based on these criteria. Note that the CHAOS studies mentioned in the What Went Right? and What Went Wrong? examples used this definition of success.

- The project satisfied the customer/sponsor. Even if the project met initial scope, time, and cost goals, the couple paying for the renovation or the handicapped occupant might not be satisfied. Perhaps the project manager never returned their calls and was rude to them or made important decisions without their approval. Perhaps the quality of some of the construction or materials was not acceptable. If the customers were not happy about important aspects of the project, it would be deemed a failure based on this criterion. Many organizations implement a customer satisfaction rating system for projects to measure project success.

- The results of the project met its main objective, such as allowing the handicapped person to live at home comfortably or providing a good return on investment. If the couple liked their renovated home, even if it cost more or took longer to build or the project manager was rude to them, it would be a successful project based on this criterion. As another example, suppose the owners really wanted to keep the house for just a few more years and then sell it for a good return. If that happened, the couple would deem the project a success, regardless of other factors involved. Note that for many projects done to meet ROI objectives, financial success cannot be determined until some time after the project is completed.

Project managers play a vital role in helping projects succeed. Project managers work with the project sponsors, the project team, and the other people involved in a project to meet project goals. They also work with the sponsor to define success for that particular project. Good project managers do not assume that their definition of success is the same as the sponsors’ definition. They take the time to understand their sponsors’ expectations. For example, if you are remodeling a home for someone, find out what is most important:

- meeting scope, time, and cost goals of the project to renovate the home
- satisfying other needs, such as communicating in a certain way
- being sure the project delivers a certain result, such as providing a comfortable living space for a handicapped person or providing a good return on investment.
The success criteria should help you to develop key performance indicators needed to track project progress. It is important to document this information in enough detail to eliminate ambiguity.

THE CONTEXT OF HEALTHCARE PROJECT MANAGEMENT

Projects are not run in isolation. They are part of a bigger system, and in order to be successful, project managers must understand that system. The U.S. healthcare system is extremely complex, and many books and articles are available to attempt to explain it. For this text, it is important to understand basic information about the context of healthcare projects, including a brief history of the U.S. healthcare industry, the nature of healthcare projects, characteristics of project team members, and recent trends in healthcare that can impact project management.

Brief Background on the Healthcare Industry

For most of American history, the maternal figure was responsible for the health needs of the family, performing the duties today traditionally performed by nurses, physicians, and other healthcare professionals when any family member fell ill. However, the mother-as-caregiver health model gradually dissipated with the rise of the American physician, which was based on the English model. The physician was promoted as a profession of learned individuals specializing in medical treatment.

The model for the current, expansive healthcare industry was partially the result of one hospital’s reaction to declining revenue during the Great Depression in 1929. American households faced difficult financial choices during the Depression and many chose to forgo healthcare. As a result, Baylor University’s hospital in Dallas, Texas offered school teachers up to 21 days of compensated hospital care for $6 per year. Baylor’s modest plan would grow into Blue Cross, one of the most well-known health insurance plans in the industry, which would later merge with Blue Shield in 1982.

The creation of “the Blues” is an important part of the healthcare industry because the pair served as the basis for arguably one of the most important pieces of federal healthcare legislation – Medicare. Medicare provides healthcare coverage for U.S. citizens 65 years of age and older as well as and other special populations. The same day President Lyndon B. Johnson signed Medicare into law in 1965, he also signed Medicaid, which is a joint venture between federal and state governments to provide health coverage for low-income and disabled individuals. Today, government spending in U.S. healthcare accounts for almost 45% of total expenses.14

Medicare and Medicaid represent the most significant federal legislation to impact the industry, although not for lack of effort. Presidents Theodore Roosevelt, Franklin D. Roosevelt, Harry Truman, and Bill Clinton proposed some form of national healthcare. However, it was not until March 2010 that the Patient Protection and Affordable Care Act (PPACA or ACA) proved to be the most impactful federal legislation on the healthcare industry since Medicare and Medicaid. One of the ACA’s most controversial components is the individual mandate, which is a requirement that all citizens purchase health insurance.
or face a tax penalty. The individual mandate’s constitutionality was upheld by the Supreme Court of the United States in a narrow 5-4 vote in June 2012. The Court’s division reflects national opinions of the Act and is a significant component in a vast, complicated network whose humble beginnings have flourished into a $2.6 trillion industry.

How is this money spent and where does the money come from? Health expenditures were distributed as follows in 2010 (in billions of dollars):

- Hospital care: $814.0
- Physician/clinical services: $515.5
- Prescription drugs: $259.1
- Nursing care facilities & continuing care retirement communities: $143.1
- Home health care: $70.2
- Other personal health care: $384.2
- Other health spending: $407.6

Historically, health care spending largely originated from private sources, but government spending has increasingly constituted a higher percentage, amounting to almost 45% in 2010. The source of funds for national health expenditures were as follows:

- Private health insurance: 32.7%
- Medicare: 20.2%
- Medicaid: 15.5%
- Out-of-pocket: 11.6%
- Other third party payers/public health: 10.6%
- Investment: 5.7%
- Other public insurance programs: 3.7%

**The Nature of Healthcare Projects**

As shown in the examples of healthcare projects, there are many types of projects done by many types of healthcare entities. An individual patient can develop a project, as can an entire company or federal agency. In addition to this vast variety, some unique aspects of healthcare projects include the following:

- Patient quality is a key concern: Most healthcare projects are done to help people prevent, improve, or deal with a health concern. Some mean the difference between life and death. People in healthcare believe they are doing the right thing for patients, but new technologies often change patient care. For example, doctors used to think it was best to knock out women when they gave birth.
- Government often plays a big role: The government is often the sponsor or reason for a healthcare project (such as many electronic health record projects) or it creates laws or standards that must be followed in private healthcare projects.
- Finances are different in many healthcare organizations.
  - Revenues are difficult to estimate. Many healthcare organizations cannot estimate their revenues because of the complex insurance system in the U.S. For example, emergency rooms cannot turn away patients who

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cannot pay, and most patients honestly do not know how much of their care will be paid for by their insurance companies.

- Donations are often a major source of funding: Many healthcare projects are prompted by donations or rely on them for their continuation. In other words, budgets can be very flexible.

- Many healthcare organizations are not-for-profit: Instead of a profit motive, these organizations strive to fulfill their mission. Community inputs and assessments are often required for this type of organization.

- Healthcare is very personal: People have very different attitudes about healthcare, such as how private or open they are about discussing it, how much they are willing to spend on it, what types of services they will use, etc.

- Care quality, cost containment, and external review are key characteristics: Unlike many other types of projects, healthcare projects normally include these three hallmarks.

**Characteristic of Project Team Members**

Healthcare projects often involve different types of people. Instead of just one leader, projects might be led by different people who play very important yet very different roles:

- a physician or other medical expert is required to make sure the project follows sound medical practices and will not cause harm to patients. Many physicians may feel overworked and be reluctant to changes that do not seem to directly help them in their work.

- a designer provides creative ideas to improve current processes. These designers are often viewed as being very optimistic and free-thinking, yet often unaffected directly by the results of projects that are implemented.

- a project manager works with all of the various stakeholders to develop a realistic scope, schedule, and budget for the project and facilitates its completion. In many healthcare environments, project managers must be especially sensitive to the needs of other team members and share the leadership role. Most people attracted to the healthcare industry are more concerned with people and relationships than budgets and schedules.

Other team members might include administrators, such as a hospital director, a head nurse, or a lab manager; information technology experts, such as systems analysts or programmers; medical experts, such as clinicians, equipment technologists, etc. There is also often a need for multiple champions to help healthcare projects succeed in healthcare settings. Conflicts often arise as people disagree on what should be done, when, and how. Project managers must be especially sensitive to the needs of various stakeholders to create an environment where people can work together to achieve common goals. They have to know when to hand off control to the physician or designer or other people involved in leading a project.

**Recent Trends in Healthcare**

At a 2012 conference panel on “Transforming from Healthcare to Health,” senior leaders of various healthcare organizations and academic programs discussed some of the changes happening in the industry. Three executives shared their views of the future.

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Kenneth Paulus, President and CEO of Allina Hospital and Clinics: The healthcare industry is at a proverbial crossroads and needs to change. In five years things will look very different as organizations become more customer-focused. The new generation wants choices and lower costs, and safety and quality will be a commodity like it is for the airline industry. Healthcare organizations will need to attract customers and keep them loyal. A new kind of leader is needed who understands insurance principles, risk management, and population health. Organizations must become lean to reduce costs. They must embrace information technology and make decisions based on data. Healthcare organizations must learn how to do marketing and become patient service oriented.

Ronald Smith, Principle and Co-founder of Frausenhu Healthcare Real Estate Solutions: Mr. Smith explained that his company’s products keep people out of the hospital. Ambulatory facilities are growing in popularity as patients receive treatment on an outpatient basis. Hospital and physician integration is accelerating, and organizations must use standardized clinical and business models. Important strategies for success include an optimal care environment, brand loyalty, collaborative care models, and partnerships,

Scott Kozicki, Entrepreneur and Market Manager of mHealth at Verizon Wireless: Entrepreneur and technologists see huge opportunities for healthcare projects. It’s a big business and growing every year. About half of healthcare dollars are spent on chronic diseases such as diabetes, heart disease, and lung disease. People wait too long to see a primary care physician – almost twenty days on average. Better primary care can lower healthcare costs. Healthcare must be more preventive and proactive. Cell phones apps are available to track weight, blood pressure, and other data, and patients can have video chats with nurses or other medical professionals. The industry needs to embrace new technologies and a different type of customer.

Healthcare organizations are also realizing that they have to learn from other industries and use proven practices to identify and manage the many projects they face today and in the future. They also have to understand how to group projects into programs and use portfolio management, as described in the next section.

PROGRAM AND PROJECT PORTFOLIO MANAGEMENT

As mentioned earlier, about one-quarter of the world’s gross domestic product is spent on projects. Projects make up a significant portion of work in most business organizations or enterprises, and successfully managing those projects is crucial to enterprise success. Two important concepts that help projects meet enterprise goals are the use of programs and project portfolio management.

Programs

A program is “a group of related projects managed in a coordinated way to obtain benefits and control not available from managing them individually.” As you can imagine, it is often more economical to group projects together to help streamline management, staffing,
purchasing, and other work. The following are examples of programs (Figure 1-5 illustrates the first program in the list).

- A government agency has a program for children’s services, which includes a project to provide pre-natal care for expectant mothers, a project to immunize newborns and young children, and a project for developmental testing for pre-school children, to name a few.

- A construction firm has programs for building single-family homes, apartment buildings, and office buildings, as shown in Figure 1-5. Each home, apartment building, and office building is a separate project for a specific sponsor, but each type of building is part of a program. There would be several benefits to managing these projects under one program. For example, for the single-family homes, the program manager could try to get planning approvals for all the homes at once, advertise them together, and purchase common materials in bulk to earn discounts.

- A clothing firm has a program to analyze customer-buying patterns. Projects under this program might include one to send out and analyze electronic surveys, one to conduct several focus groups in different geographic locations with different types of buyers, and a project to develop an information system to help collect and analyze current customers’ buying patterns.

![Figure 1-5. Example programs](image)

A program manager provides leadership and direction for the project managers heading the projects within the program. Program managers also coordinate the efforts of project teams, functional groups, suppliers, and operations staff supporting the projects to ensure that project products and processes are implemented to maximize benefits. Program managers are responsible for more than the delivery of project results; they are change agents responsible for the success of products and processes produced by those projects.

Program managers often have review meetings with all their project managers to share important information and coordinate important aspects of each project. Many program managers worked as project managers earlier in their careers, and they enjoy sharing their wisdom and expertise with their project managers. Effective program managers recognize that managing a program is much more complex than managing a
single project. They recognize that technical and project management skills are not enough. In addition to skills required for project managers, program managers must also possess strong business knowledge, leadership capability, and communication skills.

**Project Portfolio Management**

In many organizations, project managers also support an emerging business strategy of project portfolio management (also called just portfolio management in this text), in which organizations group and manage projects and programs as a portfolio of investments that contribute to the entire enterprise’s success. Pacific Edge Software’s product manager, Eric Burke, defines project portfolio management as “the continuous process of selecting and managing the optimum set of project initiatives that deliver maximum business value.”

PMI published the *Standard for Portfolio Management, Third Edition*, in 2013. PMI members can download this and other standards, such as the PMBOK® Guide, for free from www.pmi.org. Topics included in this standard include:

- Understanding the role of portfolio management in relation to an organization’s structure and strategy
- Streamlining operations through portfolio management
- Improving the implementation and maintenance of corporate governance initiatives
- Designing and implementing metrics to demonstrate and improve return on investment through portfolio management.
- Reporting information to make the most of an organization’s projects and programs

Portfolio managers need to understand how projects fit into the bigger picture of the organization, especially in terms of corporate strategy, finances, and business risks. They create portfolios based on meeting specific organizational goals, such as maximizing the value of the portfolio or making effective use of limited resources. Portfolio managers help their organizations make wise investment decisions by helping to select and analyze projects from a strategic perspective. Portfolio managers may or may not have previous experience as project or program managers. It is most important that they have strong financial and analytical skills and understand how projects and programs can contribute to meeting strategic goals.

The main distinction between project or program management and portfolio management is a focus on meeting tactical versus strategic goals. Tactical goals are generally more specific and short-term than strategic goals, which emphasize long-term goals for an organization. Individual projects and programs often address tactical goals, whereas portfolio management addresses strategic goals.

- Project and program management address questions like:
  - Are we carrying out projects well?
Are projects on time and budget?
Do project stakeholders know what they should be doing?

- Portfolio management addresses questions like:
  - Are we working on the right projects?
  - Are we investing in the right areas?
  - Do we have the right resources to be competitive?

There can be portfolios for all types of projects. For example:
- A government agency for children’s services could group projects into a portfolio based on key strategies such as improving health, providing education, and so on to help make decisions on the best way to use available funds and resources.
- In a construction firm, strategic goals might include increasing profit margins on large projects, decreasing costs on supplies, and improving skill levels of key workers. Projects could be grouped into these three categories for portfolio management purposes.
- In a clothing firm, strategic goals might include improving the effectiveness of IT, introducing new clothing lines, reducing inventory costs, and increasing customer satisfaction. These might be the main categories for their portfolio of projects.

Organizations group projects into portfolios to help them make better investment decisions, such as increasing, decreasing, discontinuing, or changing specific projects or programs based on their financial performance, risks, resource utilization, and similar factors that affect business value. If a construction firm has much higher profit margins on apartment buildings than single-family homes, for example, it might choose to pursue more apartment building projects. The firm might also create a new project to investigate ways to increase profits for single-family home projects. On the other hand, if the company has too many projects focused on financial performance and not enough focused on improving its work force, the portfolio manager might suggest initiating more projects to support that strategic goal. Just like a personal financial portfolio, a business portfolio should be diversified to account for risk.

By grouping projects into portfolios, organizations can better tie their projects to meeting strategic goals. Portfolio management can also help organizations do a better job of managing its human resources by hiring, training, and retaining workers to support the projects in the organization’s portfolio. For example, if the construction firm needs more people with experience in building apartment buildings, they can make necessary adjustments by hiring or training current workers in the necessary skills.

THE PROJECT MANAGEMENT PROFESSION

As you can imagine, good project managers should have a variety of skills. Good program and portfolio managers often need additional skills and experience in managing projects and understanding organizational strategies. This section describes some of the skills that
help you manage projects, and you will learn many more throughout this text. If you are serious about considering a career in project management, you should consider earning one or more project management certifications, as described later in this section. You should also be familiar with some of the project management software products available on the market today.

**Suggested Skills for Project, Program, and Portfolio Managers**

Project managers and their teams must develop knowledge and skills in the following areas:

- All ten project management knowledge areas
- The application area (domain, industry, market, etc.)
- The project environment (politics, culture, change management, etc.)
- General management (financial management, strategic planning, etc.)
- Human relations (leadership, motivation, negotiations, etc.)

An earlier section of this chapter introduced the ten project management knowledge areas, as well as some tools and techniques that project managers use. The application area refers to the application to which project management is applied. For example, a project manager responsible for building houses or apartment buildings should understand the construction industry, including standards and regulations important to that industry and those types of construction projects. A project manager leading a large software development project must know a lot about that application area. A project manager in education, entertainment, the government, and other fields must understand those application areas.

The project environment differs from organization to organization and project to project, but there are some skills that will help in most project environments. These skills include understanding change, and understanding how organizations work within their social, political, and physical environments. Project managers must be comfortable leading and handling change, since most projects introduce changes in organizations and involve changes within the projects themselves. Project managers need to understand the organizations they work in and how products are developed and services are provided. For example, it takes different skills and behavior to manage a project for a Fortune 100 company in the United States than it does to manage a government project for a new business in Poland or India. It also takes different skills and behaviors to manage a project in the construction industry from one in the entertainment or pharmaceutical industry.

Project managers should also possess general management knowledge and skills. They should understand important topics related to financial management, accounting, procurement, sales, marketing, contracts, manufacturing, distribution, logistics, the supply chain, strategic planning, tactical planning, operations management, organizational structures and behavior, personnel administration, compensation, benefits, career paths, and health and safety practices. On some projects, it will be critical for project managers to have substantial experience in one or several of these general management areas. On other projects, project managers can delegate detailed responsibility for some of these areas to a team member, support staff, or even a supplier. Even so, the project managers must be intelligent and experienced enough to know which of these areas are most important and
who is qualified to do the work. They must also make and/or take responsibility for all key project decisions.

Achieving high performance on projects requires human relations skills, also known as soft skills. Some of these soft skills include effective communication, influencing the organization to get things done, leadership, motivation, negotiation, conflict management, and problem solving. Project managers must lead their project teams by providing vision, delegating work, creating an energetic and positive environment, and setting an example of appropriate and effective behavior. Project managers must focus on teamwork skills in order to use their people effectively. They need to be able to motivate different types of people and develop esprit de corps within the project team and with other project stakeholders.

**Importance of Leadership Skills**

In a popular study, one hundred project managers listed the characteristics they believed were critical for effective project management and the characteristics that made project managers ineffective. Figure 1-6 lists the results. The study found that effective project managers provide leadership by example, are visionary, technically competent, decisive, good communicators, and good motivators. They also stand up to top management when necessary, support team members, and encourage new ideas. The study also found that respondents believed positive leadership contributes the most to project success. The most important characteristics and behaviors of positive leaders include being a team builder and communicator, having high self-esteem, focusing on results, demonstrating trust and respect, and setting goals.

<table>
<thead>
<tr>
<th>Effective Project Managers</th>
<th>Ineffective Project Managers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead by example</td>
<td>Set bad examples</td>
</tr>
<tr>
<td>Are visionaries</td>
<td>Are not self-assured</td>
</tr>
<tr>
<td>Are technically competent</td>
<td>Lack technical expertise</td>
</tr>
<tr>
<td>Are decisive</td>
<td>Avoid or delay making decisions</td>
</tr>
<tr>
<td>Are good communicators</td>
<td>Are poor communicators</td>
</tr>
<tr>
<td>Are good motivators</td>
<td>Are poor motivators</td>
</tr>
</tbody>
</table>


**Figure 1-6. Most significant characteristics of effective and ineffective project managers**

*Leadership* and *management* are terms often used interchangeably, although there are differences. Generally, a *leader* focuses on long-term goals and big-picture objectives, while inspiring people to reach those goals. A *manager* often deals with the day-to-day details of meeting specific goals. Some people say that, “Managers do things right, and leaders do the right things.” “Leaders determine the vision, and managers achieve the vision.” “You lead people and manage things.”

Project managers often take on the role of both leader and manager. Good project managers know that people make or break projects, so they must set a good example to lead their team to success. They are aware of the greater needs of their stakeholders and
organizations, so they are visionary in guiding their current projects and in suggesting future ones.

In another study, experts were asked to identify the ten most important skills and competencies for effective project managers. Figure 1-7 shows the results.

<table>
<thead>
<tr>
<th>Top Ten Skills and Competencies for Effective Project Managers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. People skills</td>
</tr>
<tr>
<td>2. Leadership</td>
</tr>
<tr>
<td>3. Listening</td>
</tr>
<tr>
<td>4. Integrity, ethical behavior, consistent</td>
</tr>
<tr>
<td>5. Strong at building trust</td>
</tr>
</tbody>
</table>


Figure 1-7. Ten most important skills and competencies for project managers

Respondents were also asked what skills and competencies were most important in various project situations:

- **Large projects**: Leadership, relevant prior experience, planning, people skills, verbal communication, and team-building skills were most important.

- **High uncertainty projects**: Risk management, expectation management, leadership, people skills, and planning skills were most important.

- **Very novel projects**: Leadership, people skills, having vision and goals, self-confidence, expectations management, and listening skills were most important.¹⁹

Notice that a few additional skills and competencies not cited in the top 10 list were mentioned when people thought about the context of a project. To be the most effective, project managers require a changing mix of skills and competencies depending on the project being delivered.

As mentioned earlier, program managers need the same skills as project managers. They often rely on their past experience as project managers, strong business knowledge, leadership capability, and communication skills to handle the responsibility of overseeing the multiple projects that make up their programs. It is most important that portfolio managers have strong financial and analytical skills and understand how projects and programs can contribute to meeting strategic goals.

Companies that excel in project, program, and portfolio management grow project leaders, emphasizing development of business and communication skills. Instead of thinking of leaders and managers as specific people, it is better to think of people as having leadership skills, such as being visionary and inspiring, and management skills, such as being organized and effective. Therefore, the best project, program, and portfolio managers...
have leadership and management characteristics; they are visionary yet focused on the bottom line. Above all else, they focus on achieving positive results!

**Best Practice**

A best practice is “an optimal way recognized by industry to achieve a stated goal or objective.” Robert Butrick, author of *The Project Workout*, wrote an article on best practices in project management for the *Ultimate Business Library’s Best Practice* book. He suggests that organizations need to follow basic principles of project management, including these two mentioned earlier in this chapter:

- Make sure your projects are driven by your strategy. Be able to demonstrate how each project you undertake fits your business strategy, and screen out unwanted projects as soon as possible.
- Engage your stakeholders. Ignoring stakeholders often leads to project failure. Be sure to engage stakeholders at all stages of a project, and encourage teamwork and commitment at all times. Use leadership and open communications to make things happen.

**Project Management Certification**

Professional certification is an important factor in recognizing and ensuring quality in a profession. The Project Management Institute (PMI) is a global professional society for project and program managers. PMI provides certification as a Project Management Professional (PMP)—someone who has documented sufficient project experience, agreed to follow the PMI code of professional conduct, and demonstrated knowledge of the field of project management by passing a comprehensive examination.

The number of people earning PMP certification continues to increase. In 1993, there were about 1,000 certified project management professionals. By the end of December, 2012 there were over 485,000 active certified project management professionals. There were also over 19,000 CAPMs (Certified Associate in Project Management). See Appendix C of this text for more information on PMP and other certifications.

Figure 1-8 shows the rapid growth in the number of people earning project management professional certification from 1993 to 2012. Although most PMPs are in the U.S. and Canada, the PMP credential is growing in popularity in several countries, such as Japan, China, and India.
Some companies are requiring that all project managers be PMP certified. Project management certification is also enabling professionals throughout the world to share a common base of knowledge. For example, any person with PMP certification can list, describe, and use the ten project management knowledge areas, as described in PMI’s Guide to the Project Management Body of Knowledge (PMBOK® Guide). Sharing a common base of knowledge is important because it helps advance the theory and practice of project management.

Many colleges, universities, and companies around the world now offer courses related to various aspects of project management. You can even earn bachelors, masters, and doctoral degrees in project management. PMI reported in 2008 that of the 280 institutions it has identified that offer degrees in project management, 103 are in mainland China. “When Western companies come into China they are more likely to hire individuals who have PMP certification as an additional verification of their skills. In our salary survey, the salary differences in IT, for example, was dramatic. A person with certification could make five to six times as much salary, so there is a terrific incentive to get certified and work for these Western companies.” 23 Today, there are even more degree programs in project management. See the companion Web site for links to sites describing various programs.

PMI Student Membership and Certification Information

As a student, you can join PMI for a reduced fee ($40 vs. $129 in 2013). Consult PMI’s Web site (www.pmi.org) for more information. You can network with other students studying project management by joining the New Practitioners Community of Practice. There are many other communities of practice, include one for healthcare professionals. Also check to see about a local chapter. Many welcome students to attend free events, including job networking. You can also volunteer to help develop your skills and serve your community.
Also consider earning the Certified Associate in Project Management (CAPM) credential from PMI or the Project+ certification from CompTIA. See the last section of Appendix C for more details. If you complete a bachelor’s degree, you do not need any work experience to earn either of these two certifications.

**Ethics in Project Management**

Ethics, loosely defined, is a set of principles that guide our decision making based on personal values of what is “right” and “wrong.” Making ethical decisions is an important part of our personal and professional lives because it generates trust and respect with other people. Project managers often face ethical dilemmas. For example, several projects involve different payment methods. If a project manager can make more money by doing a job poorly, should he or she do the job poorly? No! If a project manager is personally opposed to the development of nuclear weapons, should he or she refuse to manage a project that helps produce them? Yes! Ethics guide us in making these types of decisions.

PMI approved a new Code of Ethics and Professional Conduct effective January 1, 2007. This new code applies not only to PMPs, but to all PMI members and individuals who hold a PMI certification, apply for a PMI certification, or serve PMI in a volunteer capacity. It is vital for project management practitioners to conduct their work in an ethical manner. Even if you are not affiliated with PMI, these guidelines can help you conduct your work in an ethical manner, which helps the profession earn the confidence of the public, employers, employees, and all project stakeholders. The PMI Code of Ethics and Professional Conduct includes short chapters addressing vision and applicability, responsibility, respect, fairness, and honesty. A few excerpts from this document include the following:

“As practitioners in the global project management community:

2.2.1 We make decisions and take actions based on the best interests of society, public safety, and the environment.

2.2.2 We accept only those assignments that are consistent with our background, experience, skills, and qualifications.

2.2.3 We fulfill the commitments that we undertake—we do what we say we will do.

3.2.1 We inform ourselves about the norms and customs of others and avoid engaging in behaviors they might consider disrespectful.

3.2.2 We listen to others’ points of view, seeking to understand them.

3.2.3 We approach directly those persons with whom we have a conflict or disagreement.

4.2.1 We demonstrate transparency in our decision-making process.

4.2.2 We constantly reexamine our impartiality and objectivity, taking corrective action as appropriate.

4.3.1 We proactively and fully disclose any real or potential conflicts of interest to appropriate stakeholders.

5.2.1 We earnestly seek to understand the truth.
5.2.2 We are truthful in our communications and in our conduct.24

In addition, PMI added a new series of questions to the PMP certification exam in March 2002 to emphasize the importance of ethics and professional responsibility.

**Project Management Software**

The project management and software development communities have definitely responded to the need to provide more software to assist in managing projects. There are hundreds of tools available, ranging from free online or smart phone apps to enterprise tools costing thousands of dollars to implement and high monthly fees per user. Deciding which project management software to use has become a project in itself. This section provides a summary of the basic types of project management software available and references for finding more information. In Appendix A, you will learn how to use Microsoft Project 2010, the most widely used project management software tool today. You will also learn how to use a popular online tool, AtTask, as well as MindView Business software in Appendix B and C.

### Free Trials and Information on Using Project 2010, AtTask, and MindView Business Software

A 60-day evaluation copy of Microsoft Project is available from Microsoft’s Web site at [www.microsoft.com/project](http://www.microsoft.com/project), and users of this book can access a special 60-day trial of MindView Business software at [www.matchware.com/intropm](http://www.matchware.com/intropm). Note that both of these tools require downloads and Windows software. You can use the link in Appendix B for direct access to AtTask, a totally web-based tool (no download required, just a web browser and Internet access). See Appendix A, B, and C for more information so you can develop hands-on skills using these popular project management software products.

Many people still use basic productivity software such as Microsoft Word and Excel to perform many project management functions, including determining project scope, time, and cost, assigning resources, and preparing project documentation. People often use productivity software instead of specialized project management software because they already have it and know how to use it. However, there are hundreds of project management software tools that provide specific functionality for managing projects. These project management software tools can be divided into three general categories based on functionality and price:

- **Low-end tools**: These tools provide basic project management features and generally cost less than $200 per user or a low monthly fee for online software. They are often recommended for small projects and single users. Most of these tools allow users to create Gantt charts, which cannot be done easily using current productivity software. Some of these tools are available online while others are stand-alone desktop applications. There are also several smart phone applications available, and many online tools include smart phone integration.
• **Midrange tools:** A step up from low-end tools, midrange tools are designed to handle larger projects, multiple users, and multiple projects. All of these tools can produce Gantt charts and network diagrams, and can assist in critical path analysis, resource allocation, project tracking, status reporting, and other tasks. Prices range from about $200 to $600 per user or require a monthly fee per user. Microsoft Project is still the most widely used project management software today in this category and in general. Figure 1-9 provides a screen shot from Microsoft Project showing a Gantt chart for a project that you can create by following the steps in Appendix A. There is also an enterprise version of Microsoft Project, as described briefly below.

![Gantt Chart](image-url)

**Figure 1-9. Screen shot from Microsoft Project**

• **High-end tools:** Another category of project management software is high-end tools, sometimes referred to as enterprise project management software. These tools provide robust capabilities to handle very large projects, dispersed workgroups, and enterprise and portfolio management functions that summarize and combine individual project information to provide an enterprise view of all projects. These products are generally licensed on a per-user basis, integrate with enterprise database management software, and are accessible via the Internet and smart phones. In mid-2002, Microsoft introduced the first version of their Enterprise Project Management software, and in 2003, they introduced the Microsoft Enterprise Project Management...

Several totally Web-based products that provide basic as well as enterprise and portfolio management capabilities are now on the market. For example, TopTenReviews listed AtTask (www.attask.com) as their number one pick for online project management software in 2009. Their 2012 list ranked AtTask at number two, behind Clarizen. Figure 1-10 provides a screen shot from AtTask, and Figure 1-11 shows the AtTask iPhone app. See Appendix B for more information on using AtTask.

Figure 1-10. Screen shot from AtTask

Figure 1-11. iPhone app for AtTask

There are also several free or open-source tools available. For example, many people are familiar with Zoho, which provides online applications accessible from their Web site. They have a tool called Zoho Project (www.projects.zoho.com), which is free for users running just one project, and plans are available for a fee for more projects and users. Open source products like dotProject (www.dotproject.net), Achievo (www.achievo.org) and Ganttproject (www.ganttproject.biz) are all free online project management tools. Remember,
however, that open-source tools are developed, managed, and maintained by volunteers. They also often run on limited platforms and may not be well supported.

By the end of the twentieth century, people in virtually every industry around the globe began to investigate and apply different aspects of project, program, and portfolio management. The sophistication and effectiveness with which organizations use these concepts and tools today is influencing the way companies do business, use resources, and respond to market needs with speed and accuracy. As mentioned earlier, there are many reasons to study project, program, and portfolio management, especially in the healthcare field. The number of projects continues to grow, the complexity of these projects continues to increase, and the profession of project management continues to expand and mature. Many colleges, universities, and companies now offer courses related to various aspects of project, program, and portfolio management. The growing number of projects and the evidence that good project management really can make a difference continue to contribute to the growth of this field.

**CASE WRAP-UP**

Another board member asked the CEO to describe more about what the PMO Director did to help the company become more successful at managing projects. He explained how Marie Jacobs worked with him and all the VPs to reorganize several parts of the company to support their new emphasis on project, program, and project portfolio management. They formed a project team to implement a web-based project management software tool across the enterprise. They formed another team to develop project-based reward systems for all employees. They also authorized funds for a project to educate all employees in project management and to develop a mentoring program for project, program, and project portfolio managers. Casey and Marie had successfully convinced everyone that effectively selecting and managing projects was crucial to their company’s future. The board and the company’s shareholders were very pleased with the results.
CHAPTER SUMMARY

There is a new or renewed interest in project management today as the number of projects continues to grow and their complexity continues to increase. The success rate of IT projects has more than doubled since 1995, but still only about a third are successful in meeting scope, time, and cost goals. Using a more disciplined approach to managing all types of projects can help organizations succeed. The healthcare industry has to make changes to meet government and market demands, and applying good project management is important in meeting the many challenges ahead.

A project is a temporary endeavor undertaken to create a unique product, service, or result. Projects are developed incrementally; they require resources, have a sponsor, and involve uncertainty. The triple constraint of project management refers to managing the scope, time, and cost dimensions of a project.

Project management is the application of knowledge, skills, tools, and techniques to project activities to meet project requirements. Stakeholders are the people involved in or affected by project activities. A framework for project management includes the project stakeholders, project management knowledge areas, and project management tools and techniques. The ten knowledge areas are project integration management, scope, time, cost, quality, human resource, communications, risk, procurement, and stakeholder management.

The context of healthcare project management has unique characteristics. It is important to understand the history of healthcare in the U.S., the nature of healthcare projects, characteristics of project team members, and recent trends in healthcare that can affect project management.

A program is a group of related projects managed in a coordinated way to obtain benefits and control not available from managing them individually. Project portfolio management involves organizing and managing projects and programs as a portfolio of investments that contribute to the entire enterprise’s success. Portfolio management emphasizes meeting strategic goals while project management focuses on tactical goals.

The profession of project management continues to grow and mature. Project, program, and portfolio managers play key roles in helping projects and organizations succeed. They must perform various duties, possess many skills, and continue to develop skills in project management, general management, and their application area, such as IT. Soft skills, especially leadership, are particularly important for project, program, and portfolio managers. The Project Management Institute (PMI) is an international professional society that provides certification as a Project Management Professional (PMP) and upholds a code of ethics. Today, hundreds of project management software products are available to assist people in managing projects.
QUICK QUIZ

1. Approximately what percentage of the world’s gross domestic product is spent on projects?
   A. 10%
   B. 25%
   C. 50%
   D. 75%

2. Health care spending accounted for 17.9% of U.S. GDP in 2010, an average of over __________ per person.
   A. $10,000
   B. $5,000
   C. $8,000
   D. $3,000

3. Which of the following is not a potential advantage of using good project management?
   A. Shorter development times
   B. Higher worker morale
   C. Lower cost of capital
   D. Higher profit margins

4. A ____________ is a temporary endeavor undertaken to create a unique product, service, or result.
   A. program
   B. process
   C. project
   D. portfolio

5. Which of the following is not an attribute of a project?
   A. projects are unique
   B. projects are developed using progressive elaboration
   C. projects have a primary customer or sponsor
   D. projects involve no uncertainty

6. Which of the following is not part of the triple constraint of project management?
   A. meeting scope goals
   B. meeting time goals
   C. meeting communications goals
   D. meeting cost goals
7. _____________ is the application of knowledge, skills, tools and techniques to project activities to meet project requirements.
   A. Project management
   B. Program management
   C. Project portfolio management
   D. Requirements management

8. Project portfolio management addresses ______________ goals of an organization, while project management addresses ______________ goals.
   A. strategic, tactical
   B. tactical, strategic
   C. internal, external
   D. external, internal

9. What is the most significant characteristic or attribute of an effective project manager?
   A. is a strong communicator
   B. is decisive
   C. is visionary
   D. leads by example

10. What is the certification program called that the Project Management Institute provides?
    A. Microsoft Certified Project Manager (MCPM)
    B. Project Management Professional (PMP)
    C. Project Management Expert (PME)
    D. Project Management Mentor (PMM)

Quick Quiz Answers
DISCUSSION QUESTIONS

1. Why is there a new or renewed interest in the field of project management, especially in the healthcare industry?
2. What is a project, and what are its main attributes? How is a project different from what most people do in their day-to-day jobs? What is the triple constraint?
3. What is project management? Briefly describe the project management framework, providing examples of stakeholders, knowledge areas, tools and techniques, and project success factors.
4. Describe the context of project management in the healthcare industry. How do the types of people in healthcare or recent trends affect project management?
5. Discuss the relationship between project, program, and portfolio management and their contribution to enterprise success.
6. What are the roles of the project, program, and portfolio managers? What are suggested skills for project managers? What additional skills do program and portfolio managers need?
7. What role does the Project Management Institute play in helping the profession?
8. What functions can you perform with project management software? What are some popular names of low-end, midrange, and high-end project management tools?

EXERCISES

Note: These exercises can be done individually or in teams, in-class, as homework, or in a virtual environment. Learners can either write their results in a paper or prepare a short presentation to show their results.

1. Find at least three Web sites that provide interesting information about project management in general and in the healthcare industry, including the Project Management Institute’s Web site (www.pmi.org). Write a one-page paper or prepare a short presentation summarizing key information about these three Web sites. See the companion Web site for some suggested sites.

2. Find an example of a real project with a real project manager in the healthcare industry. Write a one-page paper or prepare a short presentation describing the project in terms of its scope, time, and cost goals and each of the project’s attributes. Try to include information describing what went right and wrong on the project and the role of the project manager and sponsor. Also describe whether you consider the project to be a success or not and why. Include at least one reference and proper citations.

3. Review information from http://project-management-software-review.toptenreviews.com. Read at least four reviews and visit the supplier Web sites for their products. Also investigate examples of how healthcare organizations are using project management software. Write a one-page paper or prepare a short presentation summarizing your findings.
4. Watch the videos mentioned in the Video Highlights. The direct links are available on the companion Web site. Summarize key points from the videos. How does May Clinic use project management? What are some famous projects in the history of project management? Write a short paper or prepare a presentation summarizing your findings.

TEAM PROJECTS

1. Find someone who works as a project manager or is a member of a project team in a healthcare environment. If possible, find more than one person. Use the interview guidelines and then ask the questions in person, via the phone, or via the Internet. Discuss the results with your team, and then prepare a one- to two-page paper or prepare a short presentation to summarize your findings.

Project Manager Interview Guidelines
Please note that these are guidelines and sample questions only. Use only the questions that seem appropriate, and feel free to add your own.

Note: If the interviewee wants to remain anonymous, that’s fine. If not, please include his/her name and place of employment as a project manager in your paper. Let him/her know that you are doing this interview for a class assignment and that the information may be shared with others.

The main purpose of these interviews is for students to gain more insight into what project managers really do, what challenges they face, what lessons they've learned, what concepts/tools you're learning about that they really use, and what suggestions they have for you and other students as future team members and project managers. People often like to tell stories or relate particular situations they were in to get their points across. To this end, here are a few sample questions.

1) How did you get into project management?
2) If you had to rate the job of project manager on a scale of 1-10, with 10 being the highest, how would you rate it?
3) Briefly explain the reason for your rating. What do you enjoy most and what do you like least about being a project manager?
4) Did you have any training or special talents or experiences that qualified you to be a project manager? Are you certified or have you thought about becoming certified as a PMP?
5) What do you feel is the most important thing you do as a project manager? On what task do you spend the most time each day?
6) What are some of the opportunities and risks you have encountered on projects? Please describe any notable successes and failures and what you have learned from them.
7) What are some of the tools, software or otherwise, that you use, and what is your opinion of those tools?
8) What are some steps a project manager can take to improve the effectiveness and efficiency of a team? How does a new project manager gain the respect and loyalty...
of team members? Can you share any examples of situations you faced related to this topic?

9) What suggestions do you have for working with sponsors and senior managers?
Can you share any examples of situations you faced related to this topic?

10) Do you have any suggestions for future project managers, such as any specific preparations they should make, skills they should learn, etc.?

2. Go to www.monster.com and search for jobs as a "project manager" or “program manager” in three geographic regions of your choice. Write a one- to two-page paper or prepare a short presentation summarizing what you found, especially related to position in healthcare organizations.

3. As a team, discuss projects that you are currently working on or would like to work on to benefit yourself, your employers, your family, or the broader community. Come up with at least ten projects, and then determine if they could be grouped into programs. Write a one- to two-page paper or prepare a short presentation summarizing your results.

4. Review information on project management certification. As a team, discuss your findings and opinions on earning PMP, CAPM, or other certification. Document your findings in a one- to two-page paper or short presentation, citing your references.

KEY TERMS

**best practice** — An optimal way recognized by industry to achieve a stated goal or objective.

**ethics** — A set of principles that guide our decision making based on personal values of what is “right” and “wrong”.

**leader** — A person who focuses on long-term goals and big-picture objectives, while inspiring people to reach those goals.

**manager** — A person who deals with the day-to-day details of meeting specific goals.

**portfolio** — A collection of projects or programs and other work that are grouped together to facilitate effective management of that work to meet strategic business objectives.

**program** — A group of projects managed in a coordinated way to obtain benefits and control not available from managing them individually.

**program manager** — A person who provides leadership and direction for the project managers heading the projects within the program.

**project** — A temporary endeavor undertaken to create a unique product, service, or result.

**project management** — The application of knowledge, skills, tools, and techniques to project activities to meet project requirements.

**project management process groups** — Initiating, planning, monitoring and controlling, and closing.

**project manager** — The person responsible for working with the project sponsor, the project team, and the other people involved in a project to meet project goals.

**Project Management Institute (PMI)** — International professional society for project managers.
**project management knowledge areas** — Project integration management, scope, time, cost, quality, human resource, communications, risk, and procurement management.

**Project Management Professional (PMP)** — Certification provided by PMI that requires documenting project experience, agreeing to follow the PMI code of ethics, and passing a comprehensive exam.

**project management tools and techniques** — Methods available to assist project managers and their teams; some popular tools in the time management knowledge area include Gantt charts, network diagrams, critical path analysis, and project management software.

**project portfolio management** — The grouping and managing of projects and programs as a portfolio of investments that contribute to the entire enterprise’s success.

**project sponsor** — The person who provides the direction and funding for a project.

**stakeholders** — People involved in or affected by project activities.

**triple constraint** — Balancing scope, time, and cost goals.

**END NOTES**


9 Yale School of Management and Change Observer, Mayo Clinic – Project Management video, (November 2010).


17 AUPHA, 2012 Annual Meeting and Global Symposium, Minneapolis, MN (May 30-June 3, 2012)
18 Burke, Eric, “Project Portfolio Management,” PMI Houston Chapter Meeting (July 10, 2002).
21 Ibid., p. 8.
22 The Project Management Institute, “PMI Today” (February 2013).
23 Vanessa Wong, “PMI On Specialization and Globalization,” Projects@Work (June 23, 2008).