

INTRODUCTION TO PROJECT MANAGEMENT

LEARNING OBJECTIVES

After reading this chapter, you will be able to:

- Understand the growing need for better project management, especially for information technology (IT) projects
- Explain what a project is, provide examples of IT projects, list various attributes of projects, and describe the triple constraint of project management
- 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
- Discuss the relationship between project, program, and portfolio management and the contributions each makes to enterprise success
- Understand the role of project managers by describing what they do, what skills they need, and career opportunities for IT project managers
- Describe the project management profession, including its history, the role of professional organizations like the Project Management Institute (PMI), the importance of certification and ethics, and the advancement of project management software

OPENING CASE

Anne Roberts, the director of the Project Management Office for a large retail chain, stood in front of 500 people in the large corporate auditorium to explain the company's new strategies. She was also broadcasting to thousands of other employees, suppliers, and stockholders throughout the world using live video via the Internet. The company had come a long way in implementing new information systems to improve inventory control, sell products using the Web, streamline the sales and distribution processes, and improve customer service. However, the stock price was down, the nation's economy was weak, and people were anxious to hear about the company's new strategies.

Anne began to address the audience, "Good morning. As many of you know, our CEO promoted me to this position two years ago. Since then, we have completed many projects, including the advanced data networks project. That project enabled us to provide persistent broadband between headquarters and our retail stores throughout the world, allowing us to make timely decisions and continue our growth strategy. Our customers love that they can return items to any store, and any sales clerk can look up past sales information. Local store managers can make timely decisions using up-to-date information. Of course, we've had some project failures, too, and we need to continually assess our portfolio of projects to meet business needs. Two big IT initiatives this coming year include increasing online sales and providing enhanced online collaboration tools for our employees, suppliers, and customers. Our challenge is to work even smarter to decide what projects will most benefit the company, how we can continue to leverage the power of information technology to support our business, and how we can exploit our human capital to successfully plan and execute those projects. If we succeed, we'll continue to be a world-class corporation."

"And if we fail?" someone asked from the audience.

"Let's just say that failure is not an option," Anne replied.

INTRODUCTION

Many people and organizations today have a new—or renewed—interest in project management. Until the 1980s, project management primarily focused on providing schedule and resource data to top management in the military, computer, and construction industries. Today's project management involves much more, and people in every industry and every country manage projects. Project management is a distinct profession with degree programs, certifications, and excellent career opportunities. New technologies have become a significant factor in many businesses. Computer hardware, software, networks, and the use of interdisciplinary and global work teams have radically changed the work environment. The following statistics demonstrate the significance of project management in today's society, especially for projects involving information technology (IT). Note that IT projects involve using hardware, software, and networks to create a product, service, or result.

- The overall information and communications technology (ICT) market grew by 6 percent to almost \$3 trillion in 2010. Spending on computer systems, peripherals, storage devices, mobile devices, and network equipment increased by 16 percent, the fastest rate of growth—for hardware investment

since 1996. Storage spending grew by 14 percent, server spending by 9 percent, and PC spending by 11 percent.¹

- In the United States, the size of the IT workforce topped 4 million workers for the first time in 2008. Demand for talent is high, and several organizations throughout the world cannot grow as desired due to difficulties in hiring and recruiting the people they need.²
- The unemployment rate for IT professionals is generally half the rate of the overall labor market in the United States. Moody's Analytics publicly predicted the addition of about 150,000 tech jobs by the end of 2011 in the United States. "Fueled by explosive growth in mobile and cloud-based applications, as well as federally mandated electronic medical records reforms, this surge has been driven in part by a wave of Angry Birds, smartphones, DropBoxes and compliance requirements. American businesses are crying out for tech-savvy talent."³
- In 2011, the average salary for project management professionals in U.S. dollars was \$105,000 per year in the United States, \$139,497 in Australia, \$160,409 in Switzerland (the highest-paid country), and \$23,207 in China (the lowest-paid country). These average salaries do not include bonuses.⁴
- The number of people earning their Project Management Professional (PMP) certification continues to increase each year. CareerBuilder.com found that 44 percent of employers listed project management as a skill they looked for in new college graduates, behind only communication and technical skills.⁵
- A research report showed that the United States spends \$2.3 trillion on projects every year, an amount equal to 25 percent of the nation's gross domestic product. The world as a whole spends nearly \$10 trillion of its \$40.7 trillion gross product on projects of all kinds. More than 16 million people regard project management as their profession.⁶

Today's companies, governments, and nonprofit organizations are recognizing that to be successful, they need to use modern project management techniques, especially for IT projects. Individuals are realizing that to remain competitive in the workplace, they must develop skills to become good project team members and project managers. They also realize that many of the concepts of project management will help them in their everyday lives as they work with people and technology on a day-to-day basis.

WHAT WENT WRONG?

In 1995, the Standish Group published an often-quoted study titled "The CHAOS Report." This consulting firm surveyed 365 IT executive managers in the United States who managed more than 8,380 IT application projects. As the title of the study suggests, the projects were in a state of chaos. U.S. companies spent more than \$250 billion each year in the early 1990s on approximately 175,000 IT application development projects. Examples of these projects included creating a new database for a state department of motor vehicles, developing a new system for car rental and hotel reservations, and

continued

implementing a client-server architecture for the banking industry. The study reported that the overall success rate of IT projects was *only* 16.2 percent. The surveyors 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 study authors 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.”⁷

In a more recent study, PricewaterhouseCoopers surveyed 200 companies from 30 different countries about their project management maturity and found that *over half of all projects fail*. The study also found that only 2.5 percent of corporations consistently meet their targets for scope, time, and cost goals for all types of projects.⁸

Although several researchers question the methodology of such studies, their popularity has prompted managers throughout the world to examine their practices in managing projects. Many organizations assert that using project management techniques provides advantages, such as:

- Better control of financial, physical, and human resources
- Improved customer relations
- Shorter development times
- Lower costs and improved productivity
- Higher quality and increased reliability
- Higher profit margins
- Better internal coordination
- Positive impact on meeting strategic goals
- Higher worker morale

This chapter introduces projects and project management, explains how projects fit into programs and portfolio management, discusses the role of the project manager, and provides important background information on this growing profession. Although project management applies to many different industries and types of projects, this text focuses on applying project management to IT projects.

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.”⁹ 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 IT Projects

Projects 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. As described earlier, IT projects involve using hardware, software, and networks to create a product, service, or result. Examples of IT projects include the following:

- A team of students creates a smartphone application and sells it online.
- A company develops a driverless car.
- A small software development team adds a new feature to an internal software application for the finance department.
- A college upgrades its technology infrastructure to provide wireless Internet access across the whole campus.
- A company develops a new system to increase sales force productivity and customer relationship management that will work on various laptops, smartphones, and tablets.
- A television network implements a system to allow viewers to vote for contestants and provide other feedback on programs via social media sites.
- A government group develops a system to track child immunizations.
- A large group of volunteers from organizations throughout the world develops standards for environmentally friendly or green IT.
- A global bank acquires a smaller financial institution and needs to reconcile systems and procedures into a common entity.
- Government regulations require new reporting of commercial business data for a manufacturing company.
- A multinational firm decides to consolidate its information systems into an integrated enterprise resource management approach.

Gartner, Inc., a prestigious consulting firm, identified the top 10 strategic technologies for 2012. A few of these technologies include the following:

- *Media tablets and beyond:* Gartner does not believe that a single platform or technology will dominate the market, but that tablet sales will soon surpass laptop sales. Companies must manage employees who bring their own smartphones and tablet devices to work.
- *Mobile-centric applications and interfaces:* User interfaces will be mobile-centric, emphasizing touch, gesture, search, voice, and video. Applications themselves are likely to shift to become more focused and simple Web apps.
- *Contextual and social user experience:* A contextually aware interface anticipates a user's needs and provides the most appropriate and customized content, product, or service. The interfaces for applications will also resemble social networks.
- *Internet of things:* Internet usage will expand as sensors are added to physical items that are connected to the Internet. For example, Near Field Communication allows users to make payments, board airplanes, and perform other tasks by placing their phones in front of a reader.
- *Cloud computing:* Enterprises will move from trying to understand the cloud to making decisions on when to implement cloud services and where they need to build private clouds. IT will be challenged to bring operations and development groups closer together to approach the speed and efficiencies of public cloud service providers.¹⁰

As you can see, a wide variety of projects use information technologies, and organizations rely on them for success.



MEDIA SNAPSHOT

Another one of Gartner's top 10 strategic technologies includes application stores and marketplaces for smartphones and tablets. Gartner predicts that by 2014, there will be more than 70 billion mobile application downloads every year.¹¹ As Apple counted down to 10 billion total app downloads in 2011, it unveiled a page in the iTunes Store that shows the top app downloads of all time, broken into several categories.¹² Many users search these categories to decide what apps to try. In January 2012, the top three iPhone apps in each category included the following:

- *Top free:* Temple Run, Angry Gran, and Zombie Farm
- *Top paid:* Words With Friends, Angry Birds, and Camera+
- *Top grossing:* Temple Run, DragonVale, and NBA Game Time

Notice that all of these apps can be considered unproductive in most work environments. All of them are games, except for Camera+, which helps you produce better pictures with your phone, and NBA Game Time, which lets you follow your favorite National Basketball Association teams.

For the iPad2, the top apps were as follows:

- *Top free:* Words With Friends HD, Where's My Water?, and Pages
- *Top paid:* CloudOn, Bejeweled Blitz, and Mystery Manor: Hidden Adventure

All but two of these iPad apps are games; Pages and CloudOn are productivity tools. Of course, business professionals use phone applications for productive purposes; the challenge is to develop useful apps and get workers to focus on them instead of the many distracting options available.

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, Anne Roberts, the director of the Project Management Office in the chapter's opening case, might sponsor an IT collaboration project to develop a list and initial analysis of potential IT projects that might improve operations for the company. The unique purpose of this project would be to create a collaborative report with ideas from people throughout the company. The results would provide the basis for further discussions and projects. As you can see from this example, projects result in a unique product, service, or result.
- *A project is temporary.* A project has a definite beginning and end. In the IT collaboration project, Anne might form a team of people to work immediately on the project, and then expect a report and an executive presentation of the results in one month.
- *A project is developed using progressive elaboration.* Projects are often defined broadly when they begin, and as time passes, the specific details of the project become clearer. Therefore, projects should be developed in increments. A project team should develop initial plans and then update them with more detail based on new information. For example, suppose that a

