
SOEN – 6841

Software Project Management

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Software Project Management

- Many people and organizations today have a new or renewed interest in project management
- Worldwide IT spending was \$3.5 trillion in 2017, a 2.4 percent increase from 2016 spending
- The Project Management Institute reported that the number of jobs reached almost 66 million in 2017. By 2027, employers will need 87.7 million individuals working in project management-oriented roles

Software Project Management

- In 2017, the average annual salary (without bonuses) for someone in the project management profession was \$112,000 in the U.S. and \$130,866 in Switzerland
- The top skills employers look for in new college graduates are all related to project management: team-work, problem-solving, and verbal communications
- Organizations waste \$97 million for every \$1 billion spent on projects, according to PMI's Pulse of the Profession® report

What Went Wrong?

- Software Projects have a terrible track record, as described in the What Went Wrong?
- A 1995 Standish Group study (CHAOS) found that only 16.2% of Software projects were successful in meeting scope, time, and cost goals; over 31% of Software projects were canceled before completion
- A PricewaterhouseCoopers study found that over half of all projects fail and only 2.5% of corporations consistently meet their targets for scope, time, and cost goals for all types of project

What Is a Project?

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

Examples of Software Projects

- A team of students creates a smartphone application and sells it online
- A company develops a driverless car
- A government group develops a system to track child immunizations
- A global bank acquires other financial institutions and needs to consolidate systems and procedures

Examples of Software Projects

- Top Strategic Technologies for 2021
 - Artificial Intelligence (AI) Foundation
 - Intelligent Things
 - Cloud to the Edge
 - Immersive Experience

Project Attributes

- A project
 - ❑ has a unique purpose
 - ❑ is temporary
 - ❑ drives change and enable value creation
 - ❑ is developed using progressive elaboration
 - ❑ requires resources, often from various areas
 - ❑ should have a primary customer or sponsor
 - The project sponsor usually provides the direction and funding for the project
 - ❑ involves uncertainty
- Project managers work with project sponsors, team, and other people involved in a project to achieve project goals

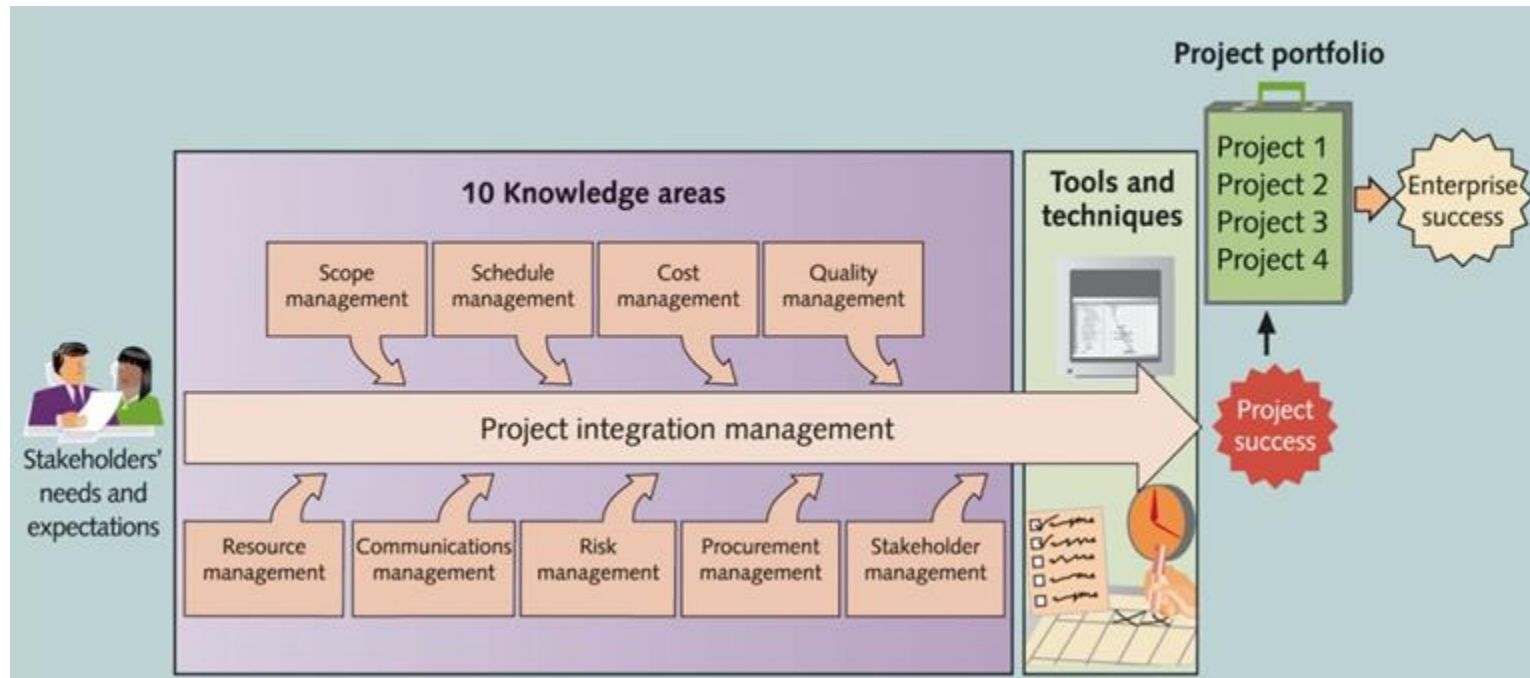
Project Constraints



What is Project Management?

- Project management is “the application of knowledge, skills, tools and techniques to project activities to meet project requirements”
- Project managers strive to meet the triple constraint (project scope, time, and cost goals) and also facilitate the entire process to meet the needs and expectations of project stakeholders

What is Project Management?



Project Stakeholders

- Stakeholders are the people involved in or affected by project activities
- Stakeholders include
 - ❑ the project sponsor
 - ❑ banks and other financial institutions
 - ❑ the project manager
 - ❑ the project team
 - ❑ support staff
 - ❑ suppliers
 - ❑ opponents to the project

Project Management Knowledge Areas

- Knowledge areas describe the key competencies that project managers must develop
- Project managers must have knowledge and skills in all 10 knowledge areas (scope, schedule, cost, quality, resource, communications, risk, procurement, stakeholder, and project integration management)

What Went Right?

- The Standish Group's CHAOS studies show improvements in the statistics for IT projects:
 - ❑ The number of successful projects was 29% in 2015
 - ❑ 62% of small projects were successful, 6% of large, 9% of medium, and 21% of moderate size
 - ❑ 39% of all agile projects were successful compared to 11% of waterfall projects

Project Success

- There are several ways to define project success:
 - ❑ The project met scope, time, and cost goals
 - ❑ The project satisfied the customer/sponsor
 - ❑ The results of the project met its main objective, such as making or saving a certain amount of money, providing a good return on investment, or simply making the sponsors happy

The Role of the Project Manager

- Project managers must work closely with the other stakeholders on a project, especially the sponsor and project team
- They are also more effective if they are familiar with the 10 project management knowledge areas
 - And the various tools and techniques related to project management

Project Manager Job Description

- Job descriptions vary, but most include responsibilities like planning, scheduling, coordinating, and working with people to achieve project goals
- Project management is a skill needed in every major IT field, from database administrator to network specialist to technical writer

Advice for Young Professionals

- A few questions to ask yourself to know if you would be a good project manager
 - ❑ Do you get frustrated by bad bosses? Do you think you could do a better job?
 - ❑ Are you interested in understanding the big picture of how organizations work and how your individual work or your project fits in?
 - ❑ Have you had other leadership roles, such as being a team captain, president of a club, or entrepreneur of a small business? Did you enjoy it? Did others think you did a good job?
 - ❑ Are you good at mentoring others? Do people ask you for help in developing their skills or your advice on what to do?
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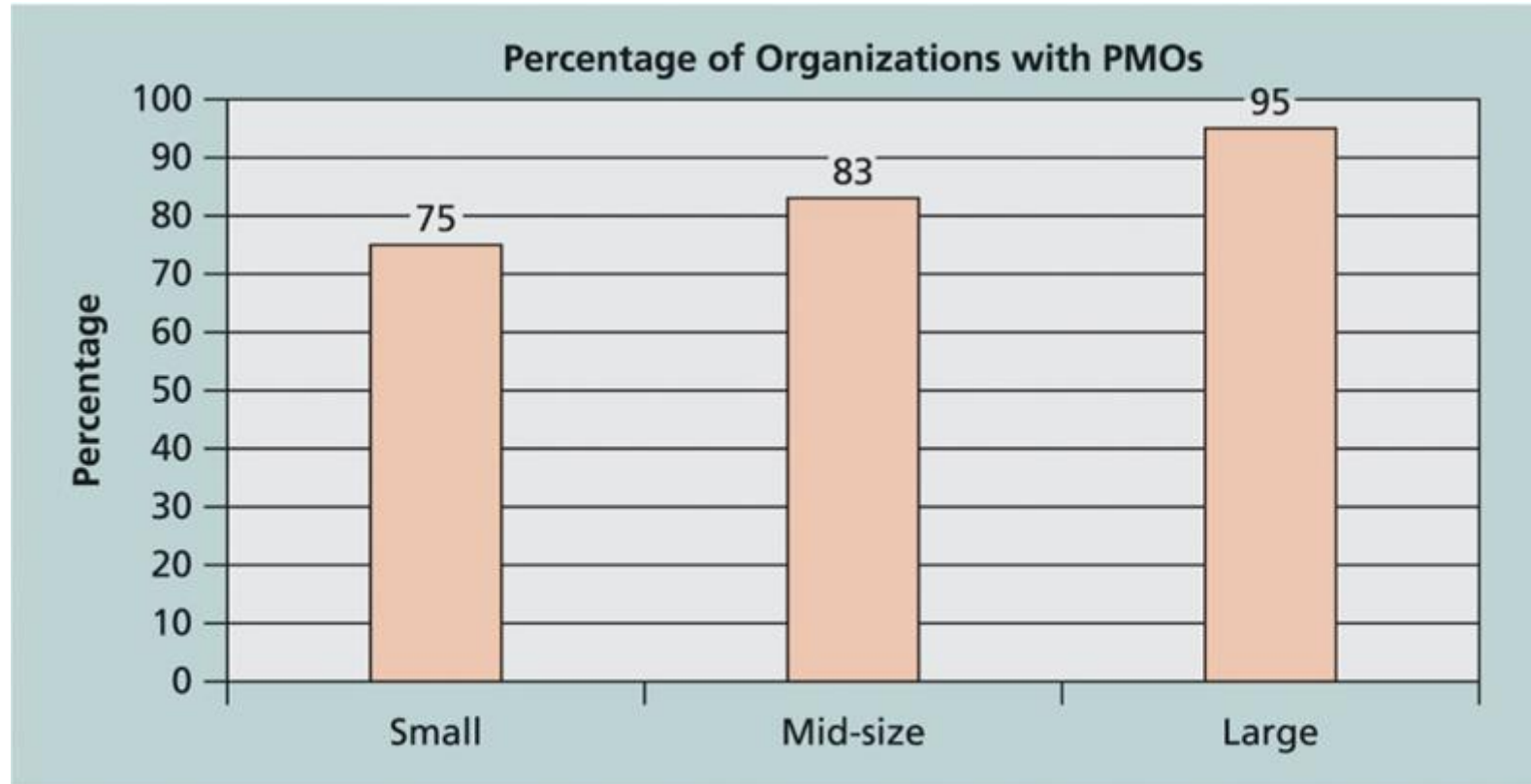
History of Project Management

- Some people argue that building the Egyptian pyramids was a project, as was building the Great Wall of China
- Most people consider the Manhattan Project to be the first project to use “modern” project management
 - This three-year, \$2 billion (in 1946 dollars) project had a separate project manager and a technical manager

History of Project Management

- In the 1990s, many companies began creating PMOs to help them handle the increasing number and complexity of projects
- A Project Management Office (PMO) is an organizational group responsible for coordinating the project management function throughout an organization

History of Project Management



Source: PM Solutions, "The State of the Project Management Office (PMO) 2016," 2016.

Summary

- A project is a temporary endeavor undertaken to create a unique product, service, or result
- Project management is the application of knowledge, skills, tools, and techniques to project activities to meet project requirements
- Project managers play a key role in helping projects and organizations succeed
- The project management profession continues to grow and mature