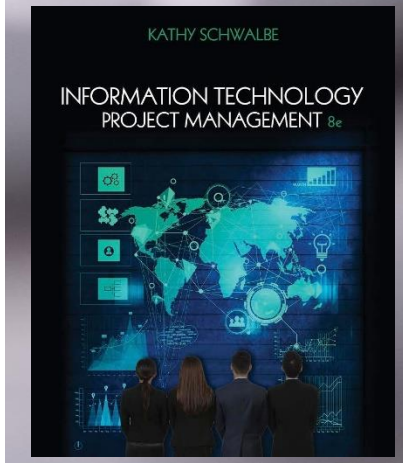
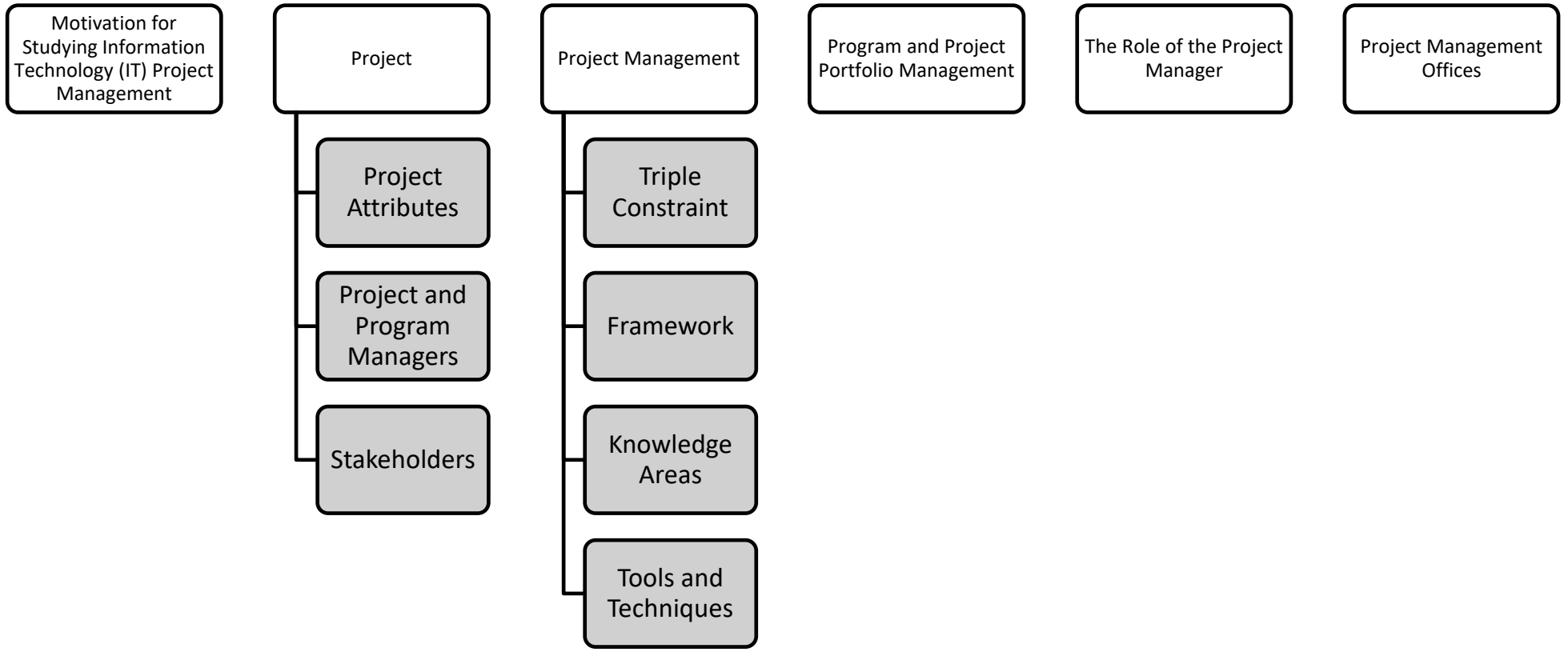
IT PROJECT MANAGEMENT

WEEK 1 : INTRODUCTION TO PROJECT MANAGEMENT



Note:
Adapted from slide of the textbook: Schwalbe, Kathy. Managing Information Technology Project – Eight Edition. Boston, MA: Thomson Course Technology, 2016.
See the text itself for full citations.

MIND MAP


Motivation for Studying Information Technology (IT) Project Management
Project
Project Attributes
Project and Program Managers
Stakeholders
Project Management
Triple Constraint
Framework
Knowledge Areas
Tools and Techniques
Program and Project Portfolio Management
The Role of the Project Manager
Project Management Offices

LEARNING OBJECTIVES

- 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

WEEK 1 : INTRODUCTION TO PROJECT MANAGEMENT

PART 1 -> Available in video material

- What is IT Project?
- Why is IT Project Management?
- Why do we study IT Project Management?

PART 2

- Project, Program, Portfolio Management
- What do project manager do?
- The Project Management Office

WHAT IS A PROJECT?

- A **project** is “a **temporary** endeavor undertaken to create a unique product, service, or result” (PMBOK® Guide, Fifth Edition, 2013)
  - Whereas, operations is work done to sustain the business
- Projects end when their **objectives have been reached** or the project has been terminated
- Projects can be **large or small** and take a **short or long** time to complete

PROJECT ATTRIBUTES

- has a **unique purpose**
- is **temporary**
- 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 STAKEHOLDERS

- **Stakeholders** are the people involved in or affected by project activities
- Stakeholders include
  - the project sponsor
  - the project manager
  - the project team
  - support staff
  - customers
  - users
  - suppliers
  - opponents to the project

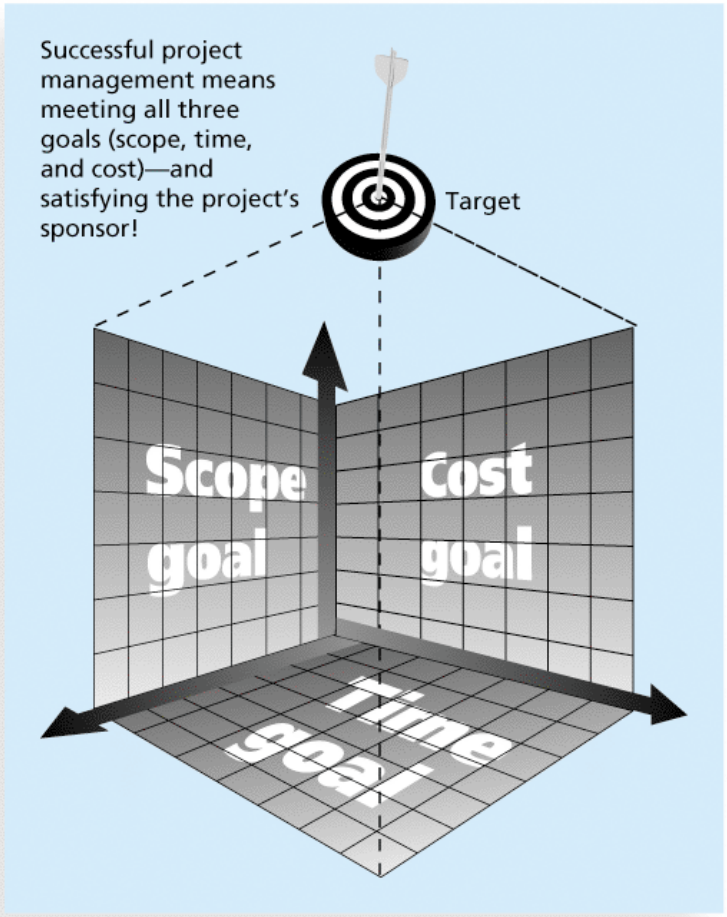
EXAMPLES OF IT PROJECTS

- 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

WHAT IS PROJECT MANAGEMENT?

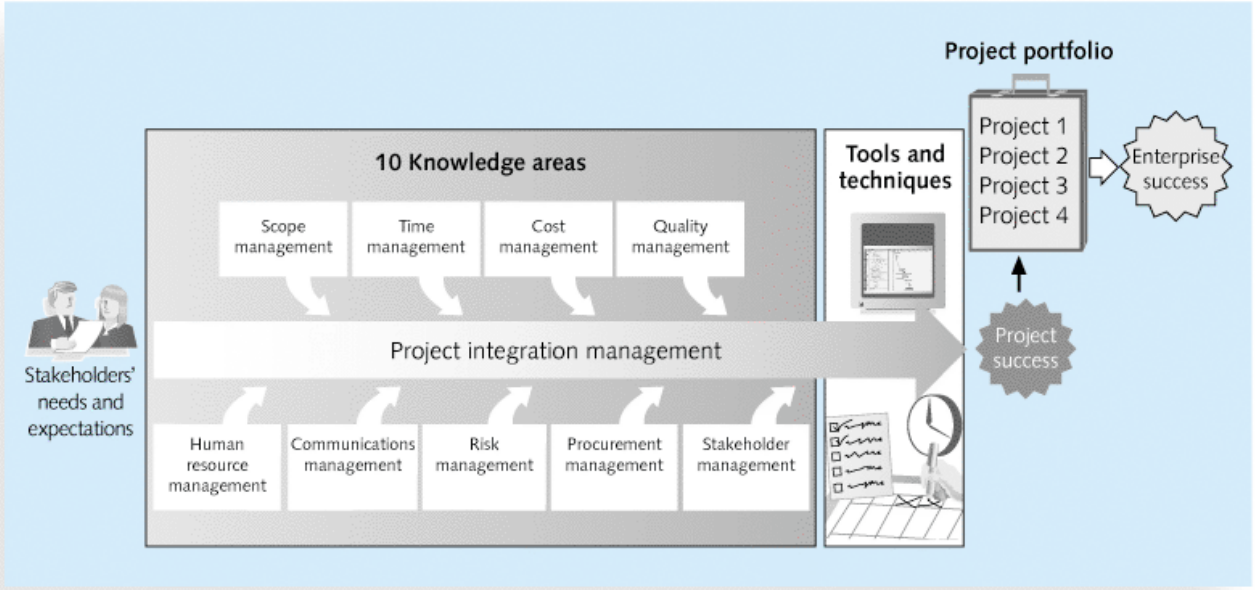
- **Project management** is “the application of knowledge, skills, tools and techniques to project activities to meet project requirements” (PMBOK® Guide, Fourth Edition, 2013)
- Project managers strive to meet the **triple constraint** (project scope, time, and cost goals) and also facilitate the entire process to meet the needs and expectations of project stakeholders

THE TRIPLE CONSTRAINT OF PROJECT MANAGEMENT



10 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 (project integration, scope, time, cost, quality, human resource, communications, risk, procurement, and stakeholder management)



PROJECT MANAGEMENT TOOLS AND TECHNIQUES

- **Project management tools and techniques** assist project managers and their teams in various aspects of project management
- Some specific ones include
  - Project charter, scope statement, and WBS (scope)
  - Gantt charts, network diagrams, critical path analysis, critical chain scheduling (time)
  - Cost estimates and earned value management (cost)
- "**Super tools**" are those tools that have high use and high potential for improving project success, such as:
  - Software for task scheduling (such as project management software), Scope statements, Requirements analyses, Lessons-learned reports
- Tools already extensively used that have been found to improve project importance include:
  - Progress reports, Kick-off meetings, Gantt charts, Change requests

WHY DO NEED TO STUDY PROJECT MANAGEMENT?

IT Projects have a terrible track record

MODERN RESOLUTION FOR ALL PROJECTS

	2011	2012	2013	2014	2015
SUCCESSFUL	29%	27%	31%	28%	29%
CHALLENGED	49%	56%	50%	55%	52%
FAILED	22%	17%	19%	17%	19%

The Modern Resolution (OnTime, OnBudget, with a satisfactory result) of all software projects from FY2011–2015 within the new CHAOS database. Please note that for the rest of this report CHAOS Resolution will refer to the Modern Resolution definition not the Traditional Resolution definition.

- Successful: delivered on time, on budget, with required features and functions
- Challenged: late, over budgeted, and/or with less than the required features and functions
- Failed: cancelled prior to completion or delivered and never used.

https://www.infoq.com/articles/standish-chaos-2015

REASONS FOR PROJECT FAILURE

1. Poor project and program management discipline
2. Lack of executive-level support
3. No linkage to the business strategy
4. Wrong team members
5. No measures for evaluating the success of the project
6. No risk management
7. Inability to manage change

ADVANTAGES OF USING FORMAL PROJECT MANAGEMENT

- 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

WHY DO NEED TO STUDY PROJECT MANAGEMENT?

Many organizations today have a new or renewed interest in project management

- The world as a whole spends nearly **$10 trillion** of its $40.7 trillion gross product on project of all kinds
- More than **16 million people** regard **project management** as their profession
- In Indonesia, IT Project Manager salary is around 220 millions per annum in 2020 (payscale.com)
- The top skills employers look for in new college graduates are all related to project management: **team-work**, **decision-making**, **problem-solving**, and **verbal communications**
- Organizations waste $109 million for every $1 billion spent on projects, according to PMI's Pulse of the Profession report

https://www.payscale.com/research/ID/Job=Project_Manager%2C_Information_Technology_(IT)/Salary/965cc773/Jakarta

END OF PART 1

TASK 1

- Give an example of an IT Project that you know. Describe the goals, duration and all stakeholder of the project. You can give assumption if necessary
- Work as a team of two-three students
- Write your answer in Forum Diskusi Week-1 before the scheduled zoom meeting

WEEK 1 : INTRODUCTION TO PROJECT MANAGEMENT

PART 1

- What is IT Project?
- Why is IT Project Management?
- Why do we study IT Project Management

PART 2

- Project, Program, Portfolio Management

DO YOU STILL REMEMBER THE REASONS FOR PROJECT FAILURE?

1. Poor **project** and **program** management discipline
2. Lack of executive-level support
3. **No linkage to the business strategy**
4. Wrong team members
5. No **measures for evaluating** the success of the project
6. No risk management
7. Inability to manage change

PROGRAM AND 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" (PMBOK® Guide, Fifth Edition, 2013)
  - Examples of common programs in the IT field include infrastructure, applications development, and user support

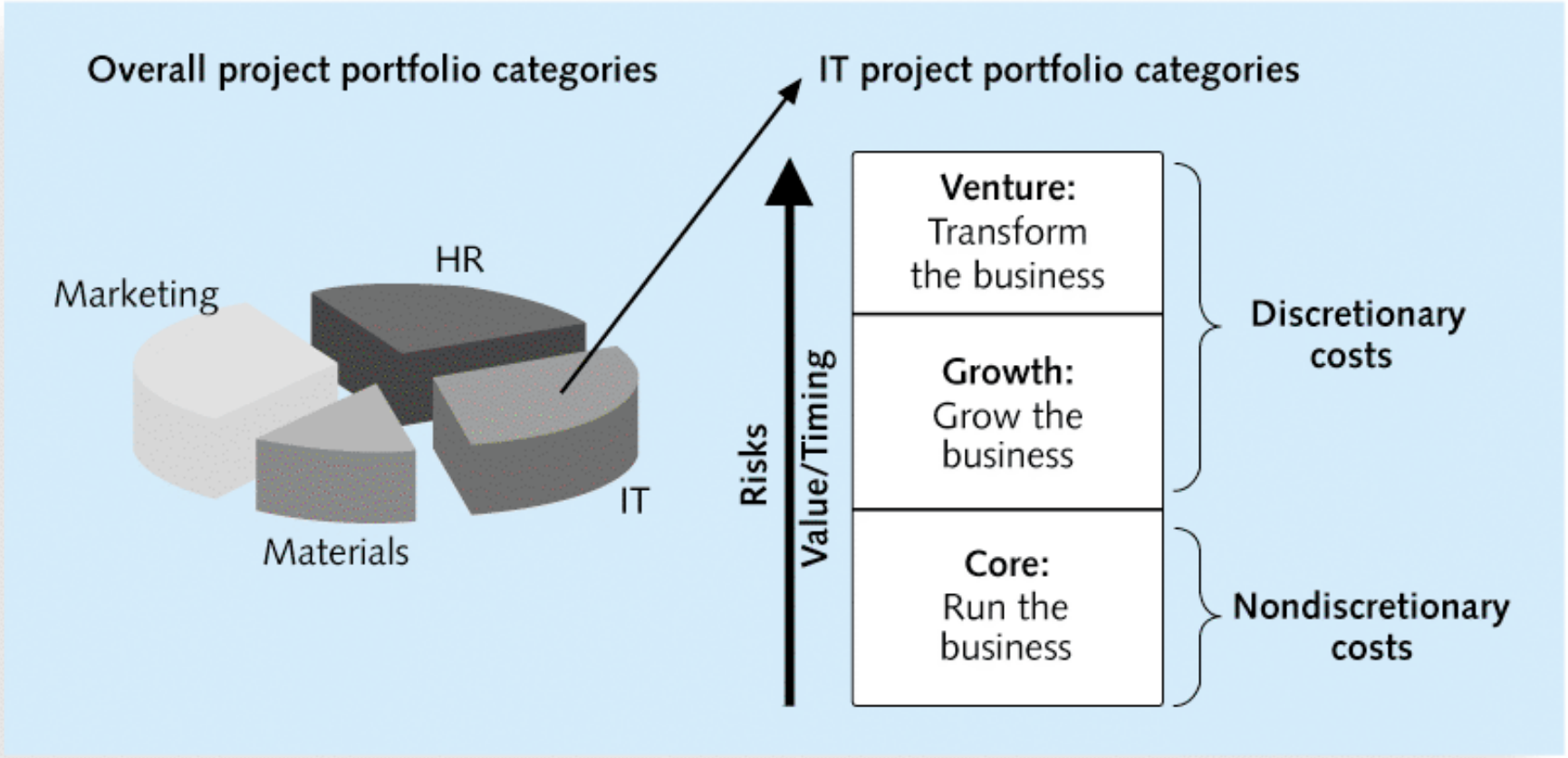
- A **program manager** provides leadership and direction for the project managers heading the projects within the program
- **Project managers** work with project sponsors, project team, and other people involved in a project to meet project goals
  - Program managers oversee programs; often act as bosses for project managers

PROJECT PORTFOLIO MANAGEMENT

- As part of **project portfolio management**, organizations group and manage projects and programs as a portfolio of **investments** that contribute to the entire enterprise's success
- Portfolio managers help their organizations make **wise investment decisions** by helping to **select and analyze projects from a strategic perspective**

PROJECT MANAGEMENT COMPARED TO PROJECT PORTFOLIO MANAGEMENT

SAMPLE PROJECT PORTFOLIO APPROACH



BEST PRACTICE

- Robert Butrick *suggests that organizations* need to follow basic principles of project management:
  - 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

* A **best practice** is "an optimal way recognized by industry to achieve a stated goal or objective"

Project Management Institute, *Organizational Project Management Maturity Model (OPM3) Knowledge Foundation (2003), p. 13.*

MICROSOFT PROJECT PORTFOLIO MANAGEMENT CAPABILITIES

Source: Microsoft, "PPM Solution Guide" (October 2013).

WHAT DEFINES THE SUCCESS OF A PROJECT

- 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

WHAT HELPS PROJECTS SUCCEED?*

1. Executive support
2. User involvement
3. Clear business objectives
4. Emotional maturity
5. Optimizing scope
6. Agile process
7. **Project management** expertise
8. Skilled resources
9. Execution
10. **Tools** and infrastructure

*The Standish Group, “CHAOS Manifesto 2013: Think Big, Act Small” (2013).

TOP THREE REASONS WHY FEDERAL TECHNOLOGY PROJECT SUCCEED

- Adequate funding
- Staff expertise
- Engagement from all stakeholders

WHAT THE WINNERS DO…

- Recent research findings show that companies that excel in project delivery capability:
  - Use an **integrated project management** toolbox (use standard/advanced PM tools, lots of templates)
  - Grow **project leaders**, emphasizing business and soft skills
  - Develop a streamlined project **delivery process**
  - Measure project health **using metrics**, like customer satisfaction or return on investment

THE STANDISH GROUP'S CHAOS STUDIES SHOW IMPROVEMENTS IN IT PROJECTS IN THE PAST DECADE:

- The number of successful IT projects has more than doubled, from 16 percent in 1994 to 39 percent in 2012
- The number of failed projects decreased from 31 percent in 1994 to 18 percent in 2012
- Success rates were much higher for small projects than large ones – 76 percent versus 10 percent

THE ROLE OF THE PROJECT MANAGER

- Job descriptions vary, but most include responsibilities like **planning, scheduling, coordinating, and working with people to achieve project goals**
- Remember that 97% of successful projects were led by experienced project managers, who can often help influence success factors

SUGGESTED SKILLS FOR PROJECT MANAGERS

- The Project Management Body of Knowledge
- Application area knowledge, standards, and regulations
- Project environment knowledge
- General management knowledge and skills
- Soft skills or human relations skills

TEN MOST IMPORTANT SKILLS AND COMPETENCIES FOR PROJECT MANAGERS

1. People skills
2. Leadership
3. Listening
4. Integrity, ethical behavior, consistent
5. Strong at building trust
6. Verbal communication
7. Strong at building teams
8. Conflict resolution, conflict management
9. Critical thinking, problem solving
10. Understands, balances priorities

DIFFERENT SKILLS NEEDED IN DIFFERENT 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

IMPORTANCE OF LEADERSHIP SKILLS

- Effective project managers provide leadership by example
- A **leader** focuses on long-term goals and big-picture objectives while inspiring people to reach those goals
- A **manager** deals with the day-to-day details of meeting specific goals
- Project managers often take on the role of both leader and manager

CAREERS FOR IT PROJECT MANAGERS

- In a 2014 survey, IT executives listed the “ten hottest skills” they planned to hire for in 2015
- Project management was second only to programming and application development
- Even if you choose to stay in a technical role, you still need project management knowledge and skills to help your team and organization

TEN HOTTEST IT SKILLS

- Cybersecurity
- Cloud computing
- Data analytics and data science
- Networking and wireless
- Software development
- AI and machine learning
- Project management
- Programming
- IT service management
- Virtualization

https://www.globalknowledge.com/us-en/resources/resource-library/articles/the-10-most-important-it-skills-for-2020/

13 HOTTEST IT SKILLS IN 2018 BY FORBES

- Experience With AI
- Skills To Envision, Design And Develop AR Apps
- Data Science Talent
- Mobile Application Development
- Excellence In Cybersecurity
- Talent For SaaS In The Cloud
- Ability To Adapt To New Tech
- Coding And Engineering Experience
- Applied Machine Learning
- Programming Knowledge
- Any Skills Related To Analytics
- Cross-Team Functionality And Communication
- Digital Transformation

https://www.forbes.com/sites/forbestechcouncil/2017/12/21/13-top-tech-skills-in-high-demand-for-2018/#4f8eb1d11e5c

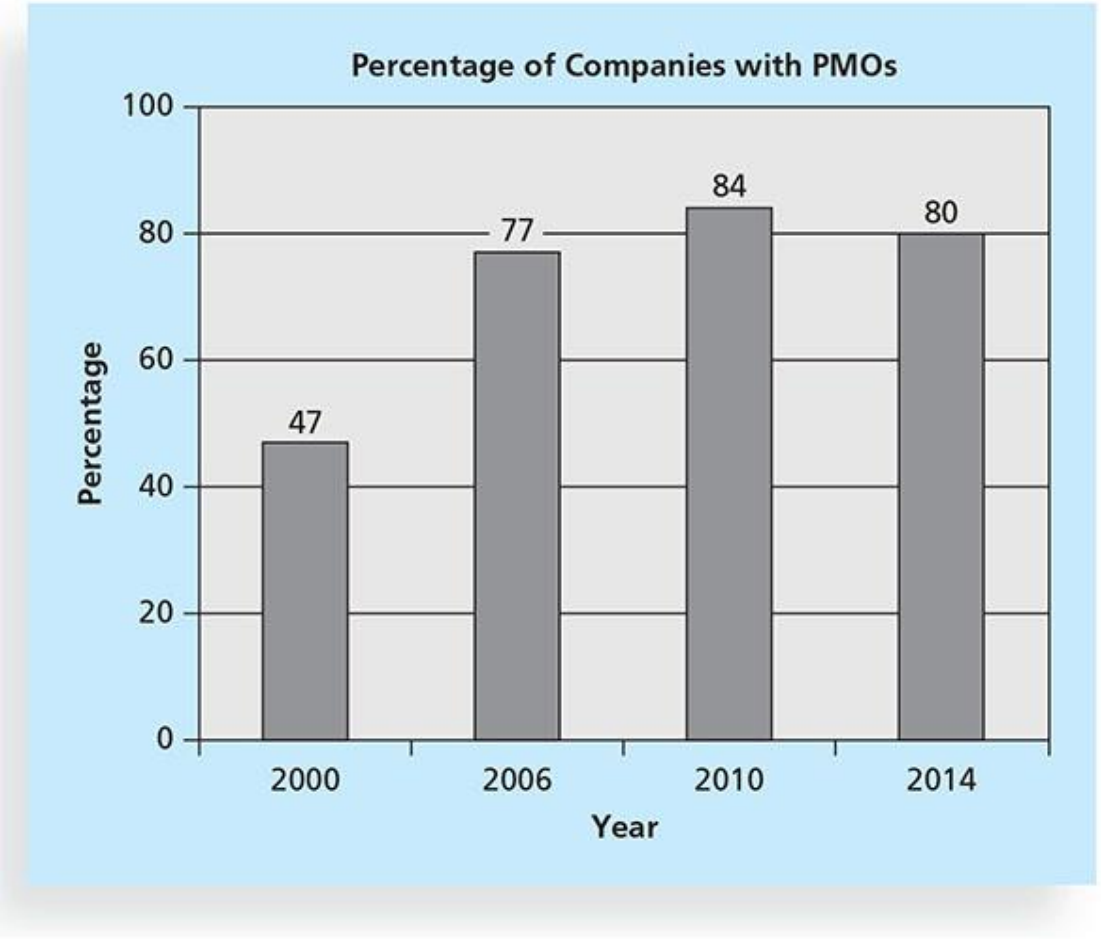
THE PROJECT MANAGEMENT PROFESSION

- The profession of project management is growing at a very rapid pace
- It is helpful to understand the history of the field, the role of professional societies like the Project Management Institute, and the growth in project management software

PROJECT MANAGEMENT OFFICES

- In the 100s, 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

GROWTH IN THE NUMBER OF PROJECT MANAGEMENT OFFICES



Source: PM Solutions, "The State of the PMO 2010" (2010).

MEDIA SNAPSHOT: UNPRODUCTIVE APPS

- Gartner predicted that by 2014, there would be more than 70 billion mobile application downloads every year, but it was almost double
- Facebook is by far the most downloaded app, and the most popular category of all apps continues to be games
- The challenge is to develop useful apps and get workers to focus on them instead of the many distracting options available

TOP STRATEGIC TECHNOLOGIES (GARTNER)

2012

- Computing everywhere
- The Internet of things
- 3D printing
- Advanced, pervasive, and invisible analytics

2018

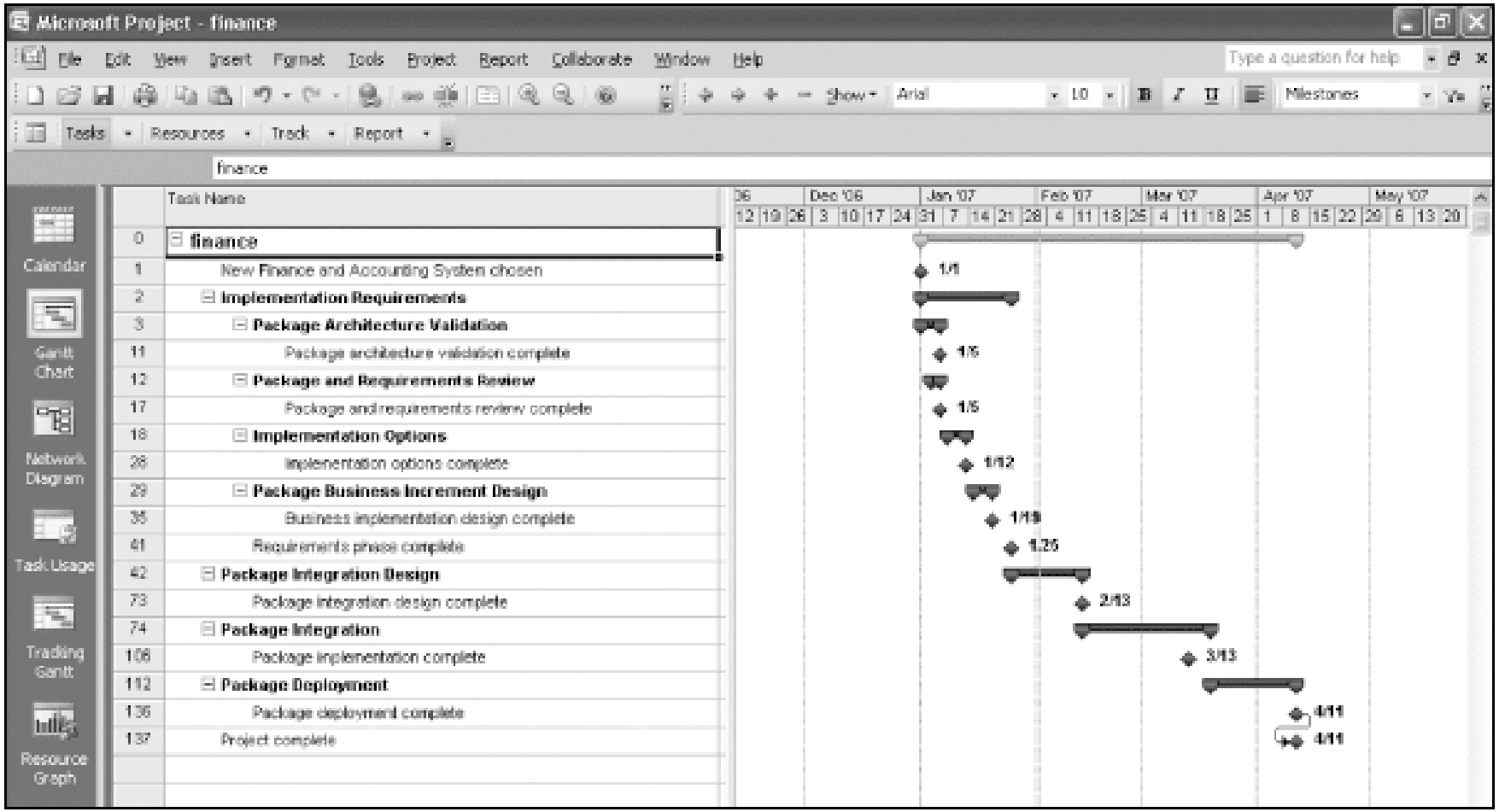
- Intelligent : AI Foundation, Intelligent Apps and Analytics, Intelligent Things
- Digital : Digital Twins, Cloud to the Edge, Conversational Platforms, Immersive Experience
- Mesh: Blockchain, Event driven, Continuous Adaptive Risk and Trust

https://www.gartner.com/smarterwithgartner/gartner-top-10-strategic-technology-trends-for-2018/

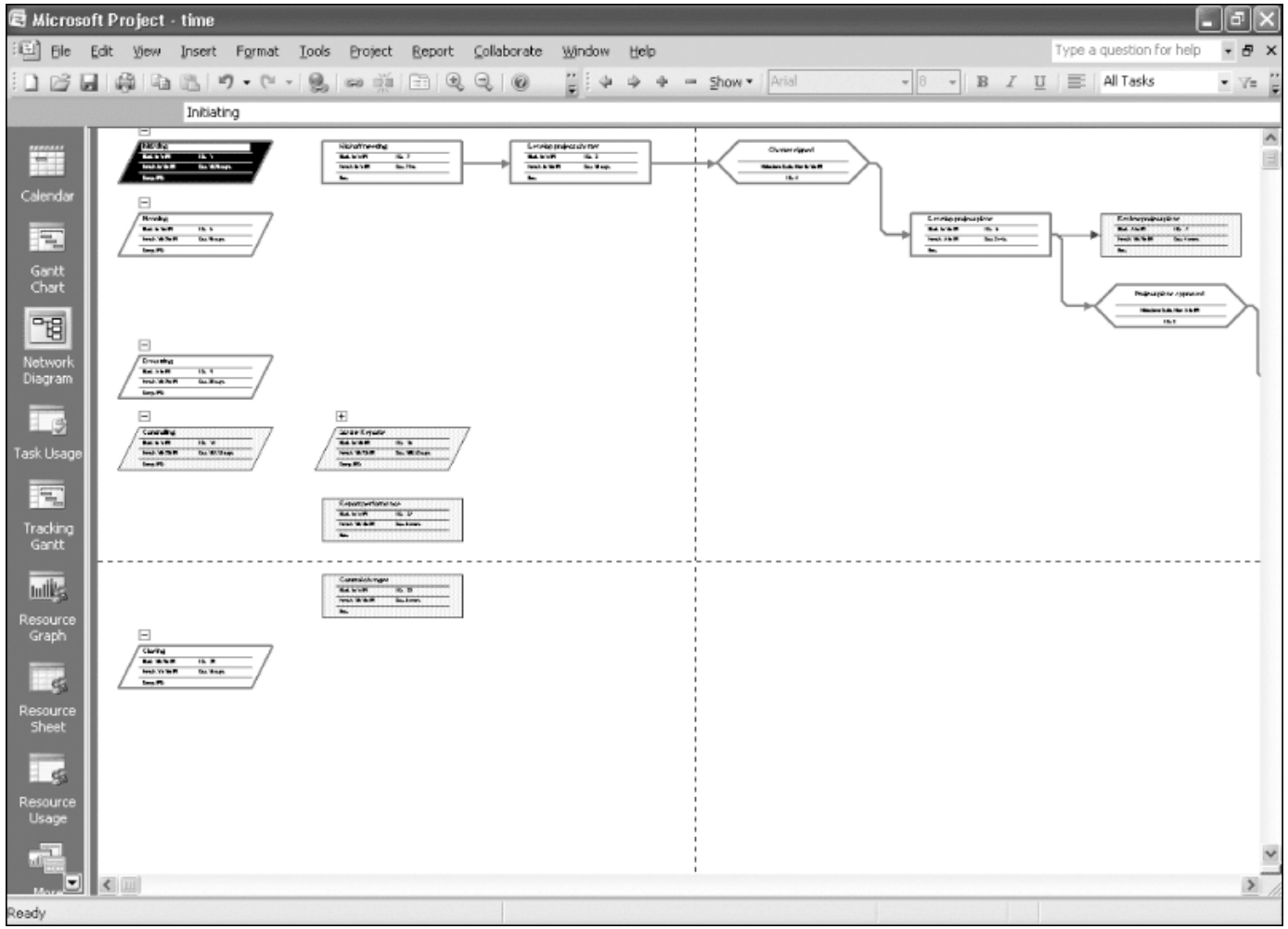
HISTORY OF PROJECT MANAGEMENT

- 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

SAMPLE GANTT CHART CREATED WITH PROJECT 2013



SAMPLE NETWORK DIAGRAM CREATED WITH PROJECT 2013



GLOBAL ISSUES

- Several global dynamics are forcing organizations to rethink their practices:
  - Talent development for project and program managers is a top concern
  - Good project portfolio management is crucial in tight economic conditions
  - Basic project management techniques are core competencies
  - Organizations want to use more agile approaches to project management
  - Benefits realization of projects is a key metric

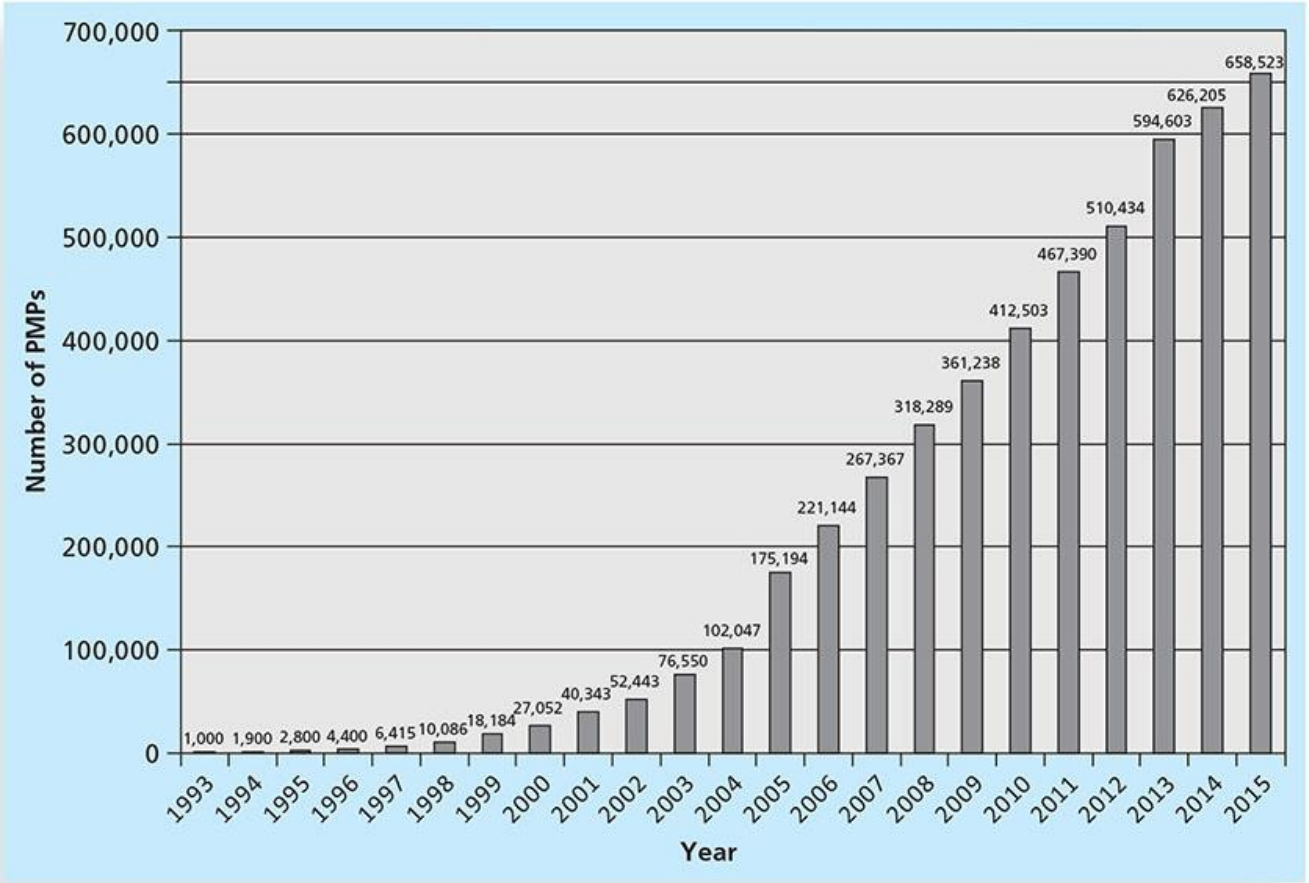
THE PROJECT MANAGEMENT INSTITUTE

- The Project Management Institute (PMI) is an international professional society for project managers founded in 1969
- PMI has continued to attract and retain members, reporting more than 449,000 members worldwide by late 2014
- There are communities of practices in many areas, like information systems, financial services, and health care
- Project management research and certification programs continue to grow
- Students can join PMI at a reduced fee and earn the Certified Associate in Project Management (CAPM) certification(see www.pmi.org for details)

PROJECT MANAGEMENT CERTIFICATION

- PMI provides certification as a **Project Management Professional** (**PMP**)
- A PMP has documented sufficient project experience, agreed to follow a code of ethics, and passed the PMP exam
- The number of people earning PMP certification is increasing quickly

FIGURE 1-9 GROWTH IN PMP CERTIFICATION, 1993-2014



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”
- Project managers often face ethical dilemmas
- In order to earn PMP certification, applicants must agree to PMI’s Code of Ethics and Professional Conduct
- Several questions on the PMP exam are related to professional responsibility, including ethics

PROJECT MANAGEMENT SOFTWARE

- There are hundreds of different **products** to assist in performing project management
- Three main categories of tools:
  - **Low-end tools**: Handle single or smaller projects well, cost under $200 per user
  - **Midrange tools**: Handle multiple projects and users, cost $200-$1,000 per user, Project 2013 most popular
  - **High-end tools:** Also called enterprise project management software, often licensed on a per-user basis
- Several **free** or open-source tools are also available

CHAPTER 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
- A **program** is a **group of related projects** managed in a coordinated way
- Project portfolio management involves **organizing and managing projects and programs as a portfolio of investments**
- Project managers play a **key role** in helping projects and organizations **succeed**
- The project management profession continues to **grow and mature**