

# Chapter 8: Project Quality Management

## Information Technology Project Management, Seventh Edition



Information Technology  
PROJECT MANAGEMENT | 7e

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Note: See the text itself for full citations.

# Learning Objectives

- ▶ Understand the importance of project quality management for information technology (IT) products and services
- ▶ Define project quality management and understand how quality relates to various aspects of IT projects
- ▶ Describe quality management planning and how quality and scope management are related
- ▶ Discuss the importance of quality assurance
- ▶ Explain the main outputs of the quality control process

# Learning Objectives

- ▶ Understand the tools and techniques for quality control, such as the Seven Basic Tools of Quality, statistical sampling, Six Sigma, and testing
- ▶ Summarize the contributions of noteworthy quality experts to modern quality management
- ▶ Describe how leadership, the cost of quality, organizational influences, expectations, cultural differences, and maturity models relate to improving quality in IT projects
- ▶ Discuss how software can assist in project quality management

# The Importance of Project Quality Management

- ▶ Many people joke about the poor quality of IT products (see cars and computers joke on pages 312-313)
- ▶ People seem to accept systems being down occasionally or needing to reboot their PCs
- ▶ But quality is very important in many IT projects

# What Went Wrong?

- ▶ In 1986, two hospital patients died after receiving fatal doses of radiation from a Therac 25 machine after a software problem caused the machine to ignore calibration data
- ▶ In one of the biggest software errors in banking history, Chemical Bank mistakenly deducted about \$15 million from more than 100,000 customer accounts
- ▶ In August 2008, the Privacy Rights Clearinghouse stated that more than 236 million data records of U.S. residents have been exposed due to security breaches since January 2005
- ▶ In March 2012, Consumer Reports listed several recalls on its Web site in less than 10 days, including LED lights overheating, five different models of cars having problems

# What Is Project Quality?

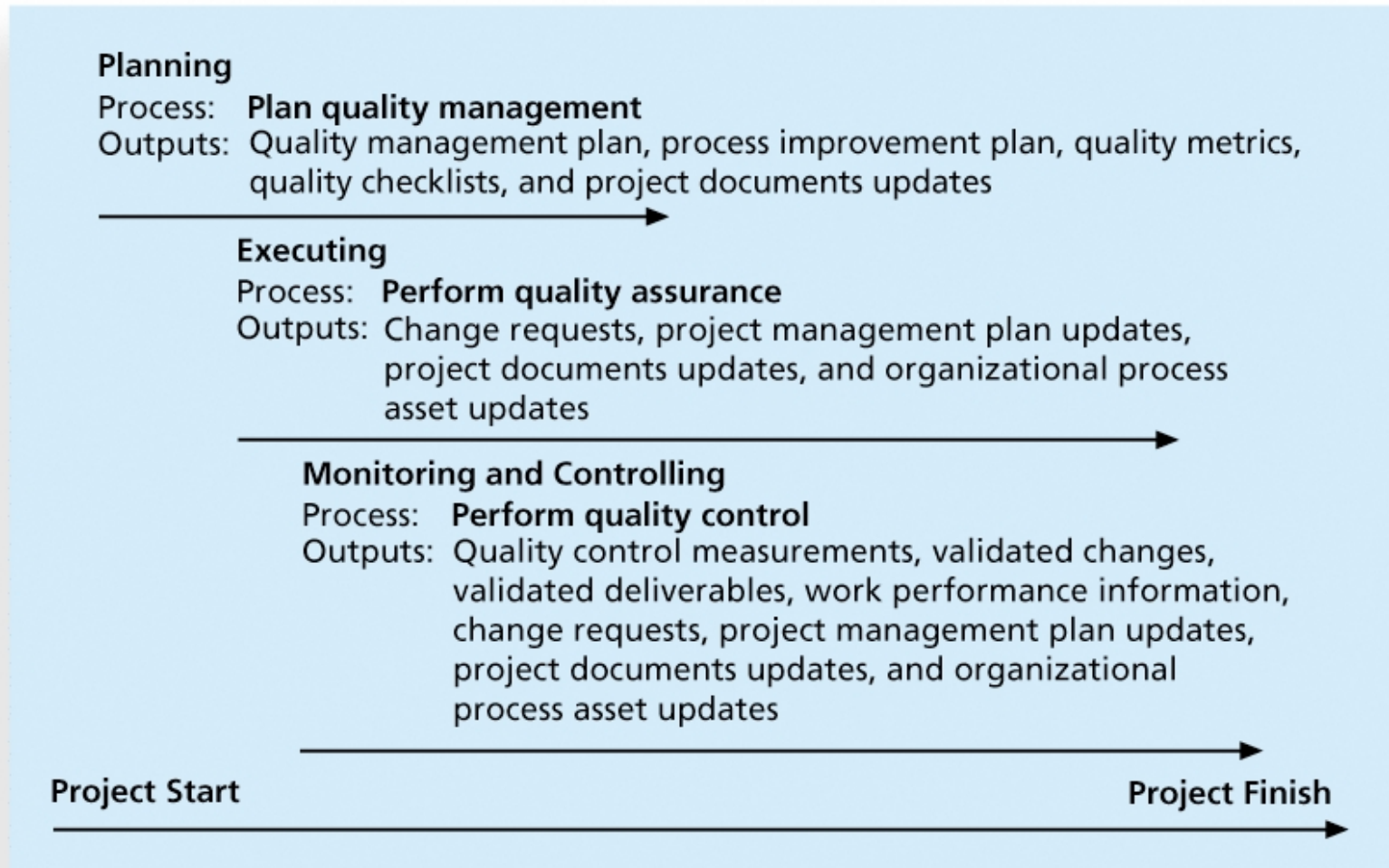
- ▶ The International Organization for Standardization (ISO) defines **quality** as “the degree to which a set of inherent characteristics fulfils requirements” (ISO9000:2000)
- ▶ Other experts define quality based on:
  - **Conformance to requirements:** The project’s processes and products meet written specifications
  - **Fitness for use:** A product can be used as it was intended

# What Is Project Quality Management?

- ▶ **Project quality management** ensures that the project will satisfy the needs for which it was undertaken
- ▶ Processes include:
  - **Planning quality management:** Identifying which quality standards are relevant to the project and how to satisfy them; a **metric** is a standard of measurement
  - **Performing quality assurance:** Periodically evaluating overall project performance to ensure the project will satisfy the relevant quality standards
  - **Performing quality control:** Monitoring specific project results to ensure that they comply with the relevant quality standards



# Figure 8-1. Project Quality Management Summary





# Planning Quality

- ▶ Implies the ability to anticipate situations and prepare actions to bring about the desired outcome
- ▶ Important to prevent defects by:
  - Selecting proper materials
  - Training and indoctrinating people in quality
  - Planning a process that ensures the appropriate outcome

# Scope Aspects of IT Projects

- ▶ **Functionality** is the degree to which a system performs its intended function
- ▶ **Features** are the system's special characteristics that appeal to users
- ▶ **System outputs** are the screens and reports the system generates
- ▶ **Performance** addresses how well a product or service performs the customer's intended use
- ▶ **Reliability** is the ability of a product or service to perform as expected under normal conditions
- ▶ **Maintainability** addresses the ease of performing maintenance on a product