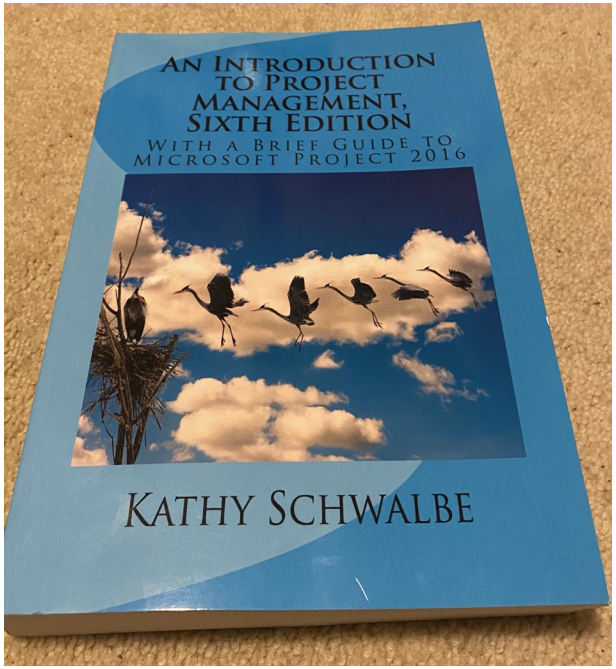
Introduction to IT Project Management

Behshid Behkamal

Textbook Details

- **Author: Kathy Schwalbe**
- **ISBN-10 :** 1544701896
- **ISBN-13 :** 978-1544701899
- **Publisher :** Schwalbe Publishing, 2017



- **More information about the course is available on Blackboard.**

Reflect on a time when you worked on a group assignment that didn’t go well. What were the main reasons the group project didn't go well?

- Poor communication between group members
- External distractions or personal issues
- Lack of necessary resources or support
- Lack of clearly defined roles and responsibilities
- Misalignment between tasks and team members' strengths, skills or work styles
- Ineffective project management or lack of proper coordination

Your turn

- How would you manage the project differently if you were the project manager?

- Do you consider yourself a good project manager or a valuable team member? How do you know?

Session 1

Project Management

What and Why

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 are 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 vs. Operation

Project	Operation
Objectives: specific, within a timeframe	**Objectives**: ongoing, long-term business goals
Unique Outcome: product, service	**Repetitive Outcome**: day-to-day functions.
Change-Oriented: changes or new developments to the organization	**Stability-Oriented**: stability and efficiency of existing processes
Resource Allocation: specifically for the duration of the project	**Resource Allocation**: continually
Risk: Higher risk, due to the nature of innovation or changes	**Risk**: Typically lower risk, focus on routine tasks and processes

Why 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

IT Projects vs. General Projects

Aspect	IT	General
Nature of Deliverable	Intangible (software, systems, infrastructure)	Tangible (physical products, construction)
Pace of Change	Fast (evolving technology, frequent updates)	More predictable
Skills Required	Technical expertise in software, systems + General project management skills	General project management skills (resource, cost, risk)
Risk	High (uncertainty in tech and evolving tools)	Moderate (more predictable risks)
Stakeholder Communication	Technical and detailed communication	Focus on outcomes and general progress
Methodologies	Agile, Scrum, Kanban	Waterfall, PRINCE2, Lean Six Sigma

Examples of IT Projects

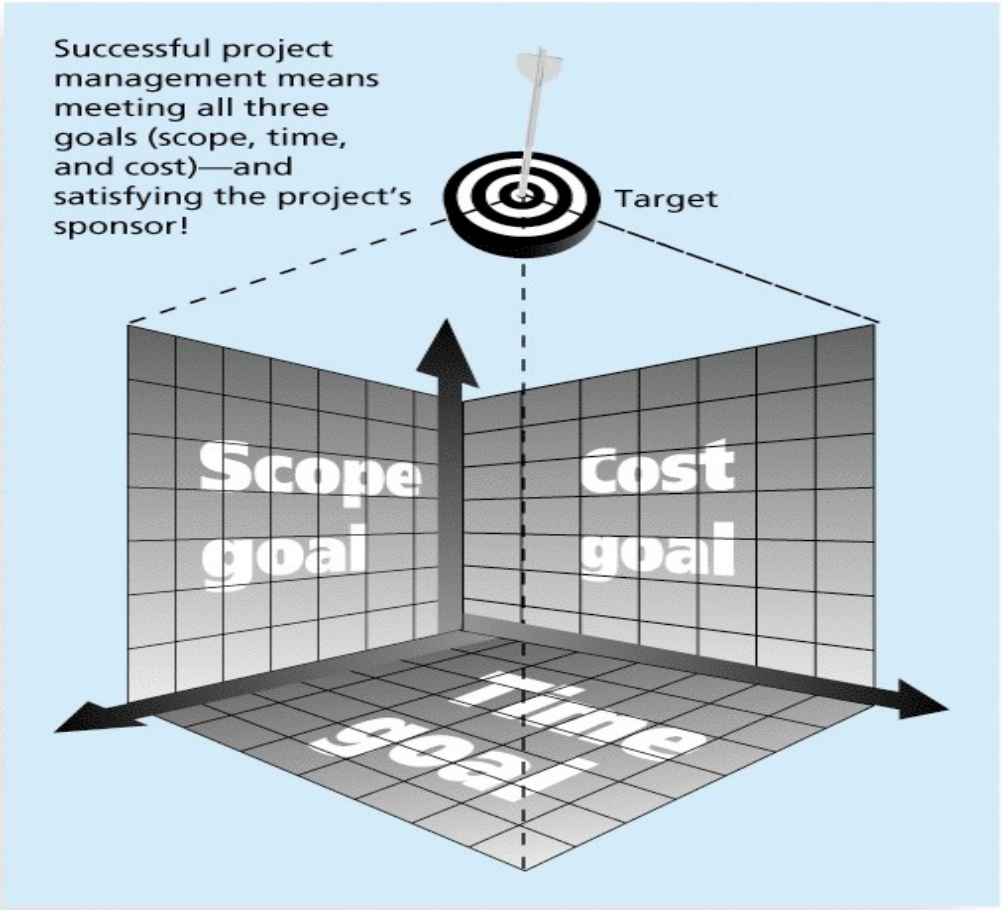
- A team of students creates a smartphone application and sells it online
- A company develops a driverless car
- A government group develops a system to track child immunizations
- A global bank acquires other financial institutions and needs to consolidate systems and procedures

What is Project Management?

- **Project management** is “the application of knowledge, skills, tools and techniques to project activities to meet project requirements”
  (PMBOK® Guide, 2017)

- 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

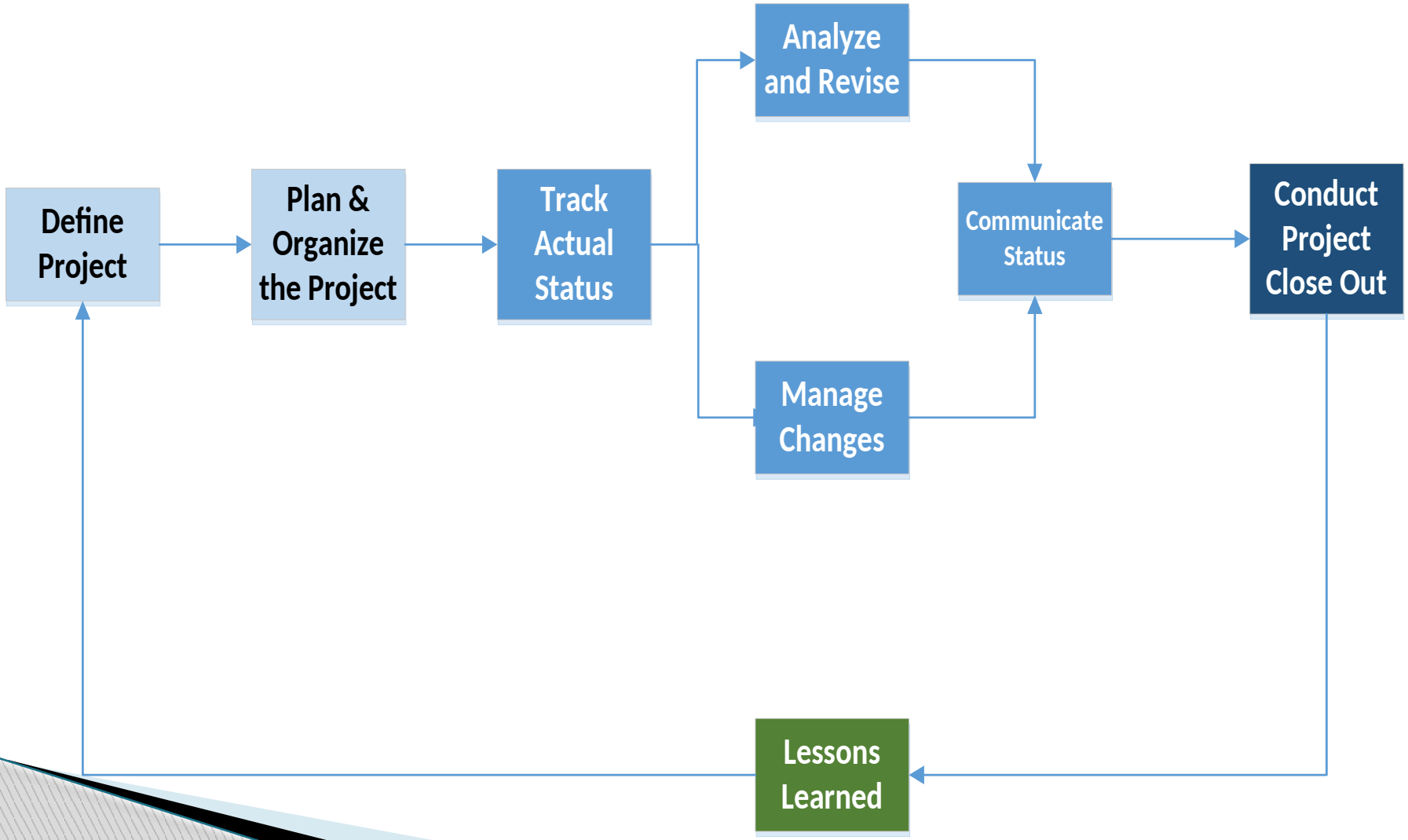
The Triple Constraint of Project Management



Session 2

Project Management

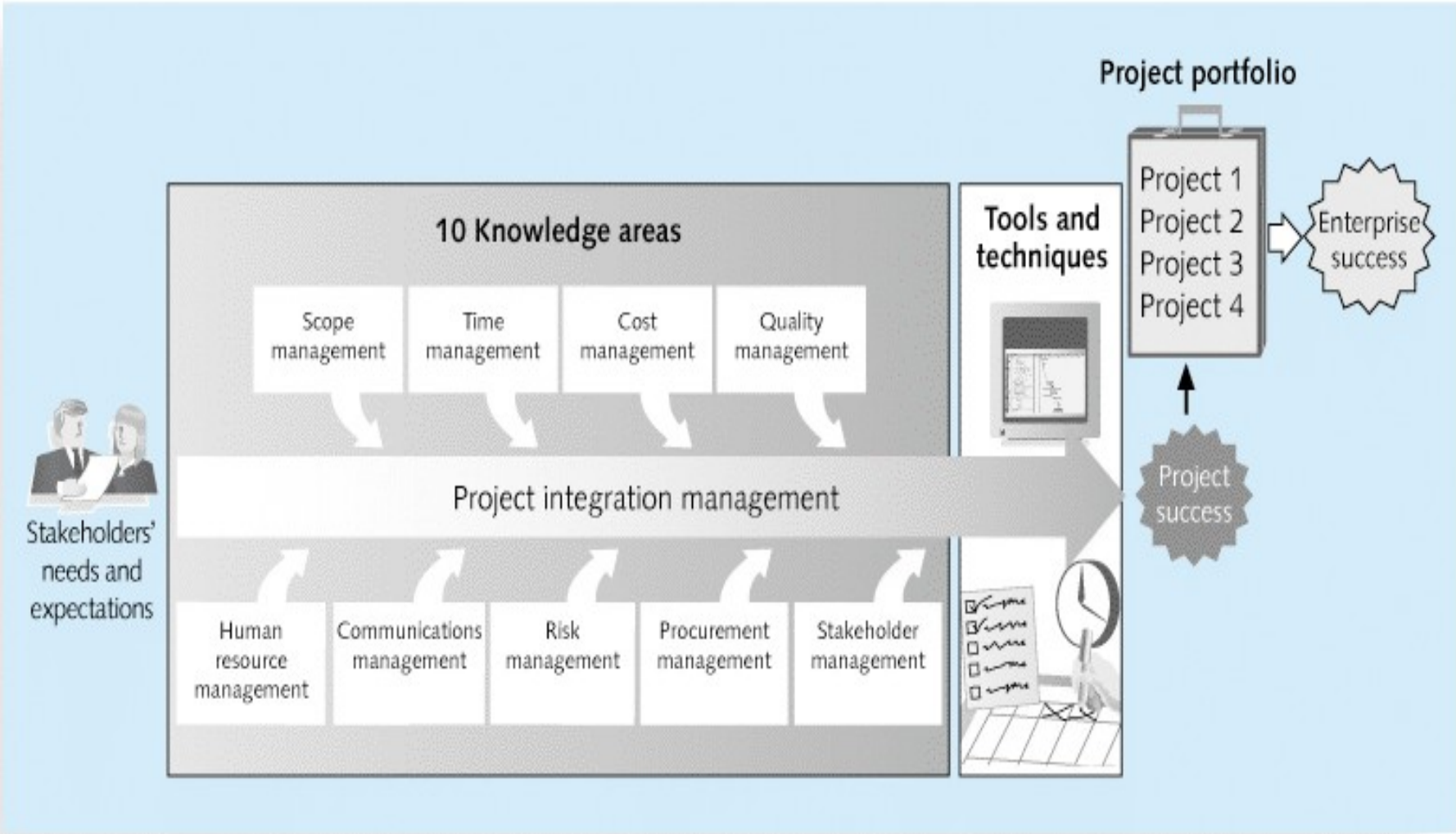
The Project Management Process



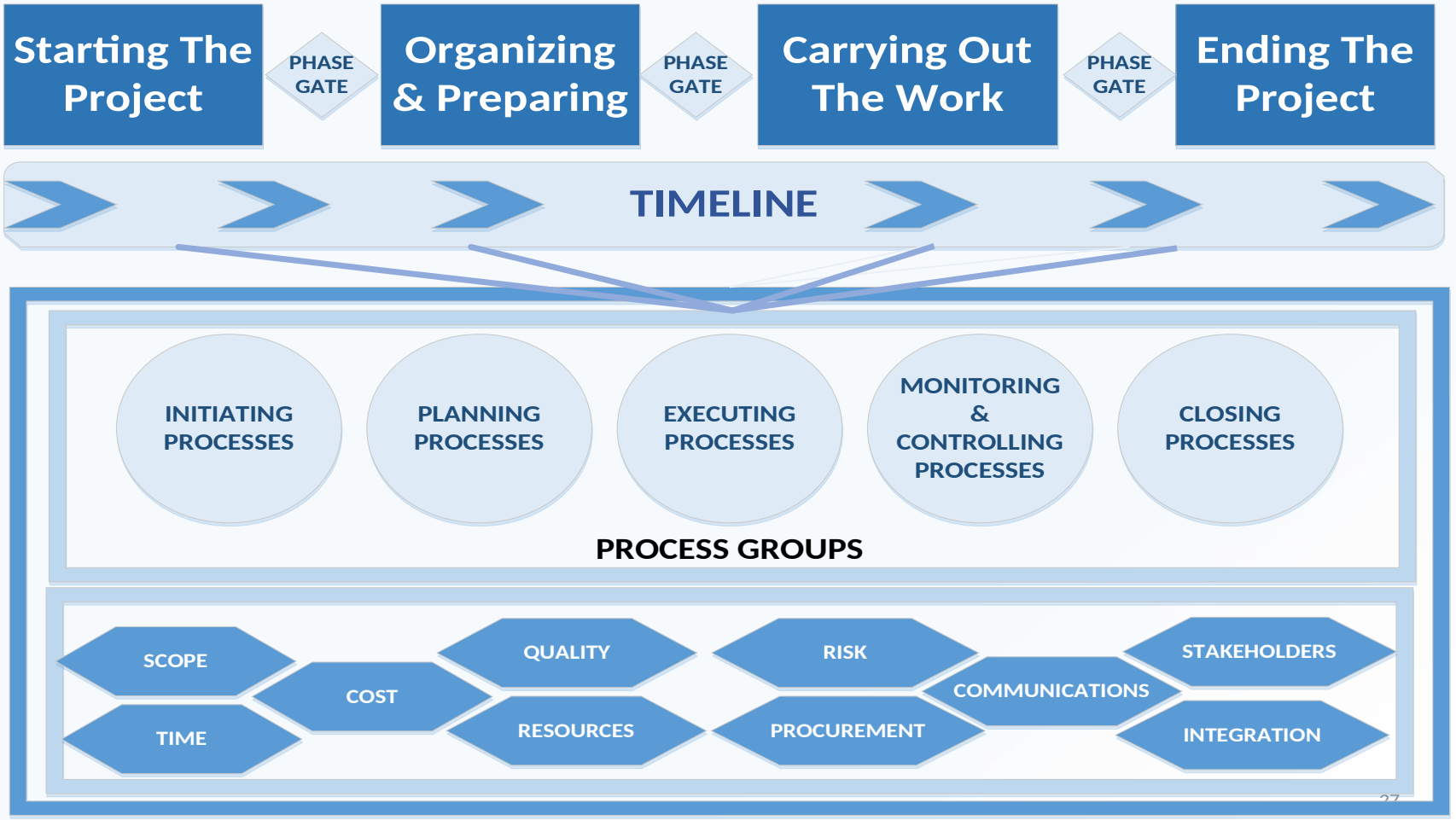
10 Project Management Knowledge Areas

- **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, resource, communications, risk, procurement, and stakeholder management)***
- This course includes an entire session on each knowledge area

Project Management Framework



PROJECT LIFE CYCLE



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

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

- "**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

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

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).*

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
- Notice 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

The 4 Principle of Effective Project Managers

Principle 1 • ***If you don't know where you're going, you probably won't get there***	**Solution** • ***Set effective project objectives, developed with inputs from clients and team members.***
Principle 2 • ***If you fail to plan, you plan to fail***	**Solution** • ***Learn to use project planning processes, tools and techniques developed by PMI***
Principle 3 • ***Problems caught early are easier to solve***	**Solution** • ***Proactively look for trouble, with an eye towards managing problems, rather than waiting to be victimized by them.***
Principle 4 • ***People and politics are the bigger variables in every project***	**Solution** • ***Remember to focus attention on people issues, both internal and external.***

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

Ethics in Project Management

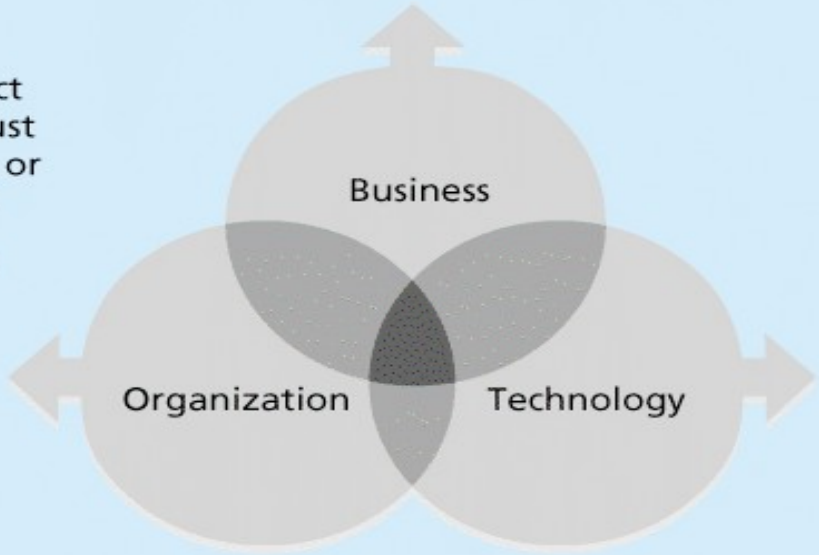
- **Ethics**, loosely defined, is a set of principles that guide our decision making based on personal values of what is “right” and “wrong”
- Project managers often face ethical dilemmas
- In order to earn PMP certification, applicants must agree to PMI’s Code of Ethics and Professional Conduct
- Several questions on the PMP exam are related to professional responsibility, including ethics

The Project Management and Information Technology Context

Three Sphere Model for Systems Management

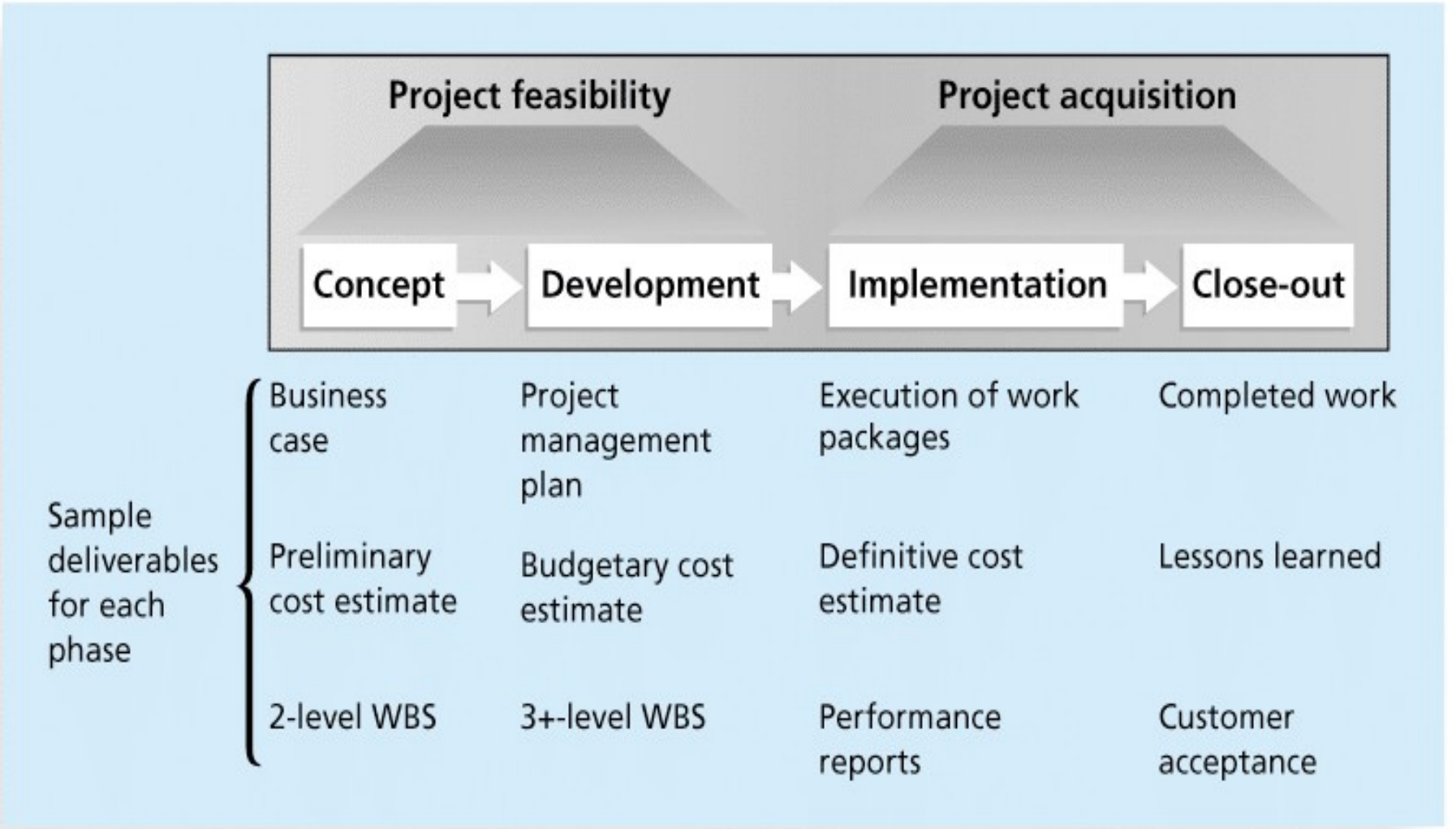
- What will the tablet project cost the college?
- What will it cost students?
- What will support costs be?
- What will the impact be on enrollments?

- Will the tablet project affect all students, just traditional students, or only certain majors?
- How will the project affect students who already have tablets or laptops?
- Who will develop special applications or books for the tablets?
- Who will train students, faculty, and staff?



- Should the tablets be based on Apple, Microsoft, Android, or another system?
- What applications will be required?
- What will the hardware specifications be?
- How will the tablets affect various networks and speed?
- Will more power cords be required in the classroom?

Phases of the Traditional Project Life Cycle



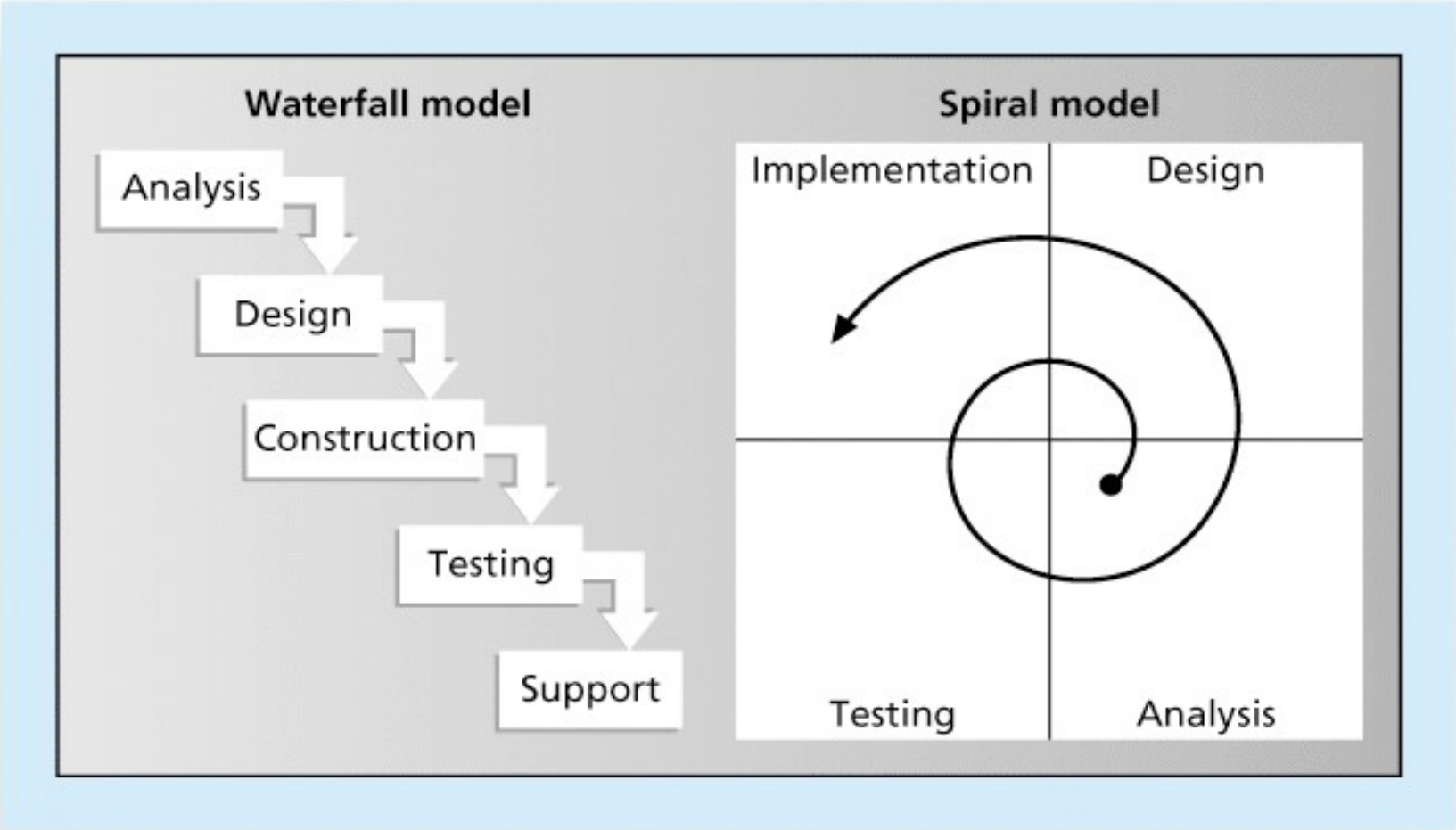
Product Life Cycles

- Products also have life cycles
- The **Systems Development Life Cycle (SDLC)** is a framework for describing the phases involved in developing and maintaining information systems
- Systems development projects can follow
  - **Predictive life cycle**: the scope of the project can be clearly articulated, and the schedule and cost can be predicted
  - **Adaptive Software Development (ASD) life cycle**: requirements cannot be clearly expressed, projects are mission driven and component based, using time-based cycles to meet target dates

Predictive Life Cycle Models

- ***Waterfall model***: has well-defined, linear stages of systems development and support
- ***Spiral model***: shows that software is developed using an iterative or spiral approach rather than a linear approach
- ***Incremental build model*** provides for progressive development of operational software
- ***Prototyping model***: used for developing prototypes to clarify user requirements
- ***Rapid Application Development (RAD) model***: used to produce systems quickly without sacrificing quality

Waterfall and Spiral Life Cycle Models



Agile Software Development

- Agile software development has become popular to describe new approaches that focus on close collaboration between programming teams and business experts

The Importance of Project Phases and Management Reviews

- A project should successfully pass through each of the project phases in order to continue on to the next
- Management reviews, also called **phase exits** or **kill points**, should occur after each phase to evaluate the project's progress, likely success, and continued compatibility with organizational goals

Recent Trends Affecting IT Project Management

- Globalization
- Outsourcing: **Outsourcing** is when an organization acquires goods and/or sources from an outside source. **Offshoring** is sometimes used to describe outsourcing from another country
- Virtual teams: A **virtual te**am is a group of individuals who work across time and space using communication technologies
- Agile project management

Agile Project Management

- Agile means being able to move quickly and easily, but some people feel that project management, as they have seen it used, does not allow people to work quickly or easily.
- Early software development projects often used a waterfall approach, as defined earlier in this chapter. As technology and businesses became more complex, the approach was often difficult to use because requirements were unknown or continuously changing.
- Agile today means using a method based on iterative and incremental development, in which requirements and solutions evolve through collaboration.

Manifesto for Agile Software Development

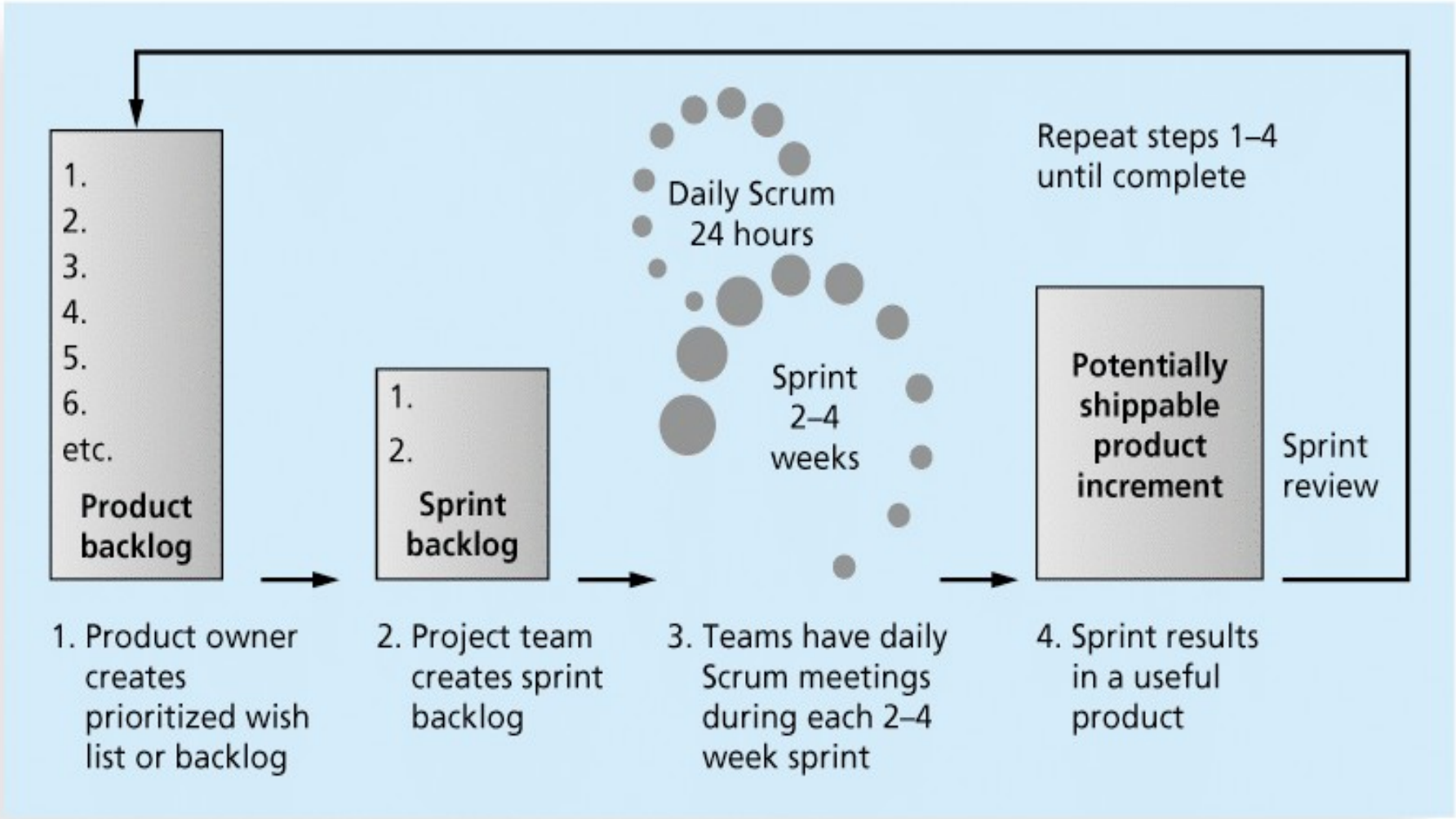
- In February 2001, a group of 17 people that called itself the Agile Alliance developed and agreed on the Manifesto for Agile Software Development, as follows:
- *"We are uncovering better ways of developing software by doing it and helping others do it. Through this work we have come to value:*
- ***Individuals and interactions over processes and tools***
- ***Working software over comprehensive documentation***
- ***Customer collaboration over contract negotiation***
- ***Responding to change over following a plan"****

*Agile Manifesto, www.agilemanifesto.org.

Scrum

- According to the Scrum Alliance, Scrum is the leading agile development method for completing projects with a complex, innovative scope of work.
- The term was coined in 1986 in a Harvard Business Review study that compared high-performing, cross-functional teams to the scrum formation used by rugby teams.

Scrum Framework



Kanban

- Technique that can be used in conjunction with scrum
- Developed in Japan by Toyota Motor Corporation
- Uses visual cues to guide workflow
- Kanban cards show new work, work in progress, and work completed

Thanks for your attention.

Any question?