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37E01500 Project Management and Consulting Practice

Introduction to project management and concepts

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Learning objectives

- **Understand the growing need for better project, program, and portfolio management**
- **Explain and use the general project management concepts and methodologies**
- **Describe a successful project**

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Contents

- **Introduction to project management**
- **Key concepts**
- **Project success**
- **Summary**

This lecture refers to the optional course book
- Schwalbe (2013) Revised An Introduction to Project Management, Fourth edition.
  - *Ch. 1: An Introduction to Project, Program, and Portfolio Management*

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Introduction to project management

History of project management

- **PM has developed as a discipline from the 1950's**
- **Background in military and construction industry**
- **Some milestones:**
  - 1957 Critical Path Method (CPM)
  - 1958 PERT (Program Evaluation and Review Technique)
  - Project Management Institute (PMI), founded in 1969
- **Today, PM is seen more than just a 'technical exercise'**
  - How to motivate people, how to set goals, etc.

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Project management today

- **Many organizations today have a new or renewed interest in project management.**
  - Projects account for about ¼ of the U.S. and the world's gross domestic product.*
- **Project management certification continues to be one of the most popular certifications throughout the world.**
- **Project management is also a vital for personal success.**
  - Managing a family budget, planning a wedding, remodeling the house, completing a college degree etc.

PMI, Inc., The PMI Project Management Fact Book, Second Edition, 2001.

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Advantages of using formal PM according to companies

- **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**

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Key concepts

Project

- **PMBOK: A project is "a temporary endeavor undertaken to create a unique product, service, or result with a defined start and end point and specific objectives that when attained, signify completion."***
- **Projects (unlike normal operations) end when their objectives have been reached or the project has been terminated.**
- **The deliverables are defined in the business case**
  - Business case includes strategic considerations and the benefits for the organization

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Project (cont.)

- **Definite beginning and end**
- **One project with a specific objective**
- **Defined budget**
- **Requires risk management**
- **Requires collaboration with several parties**
- **Managed by Project Manager**

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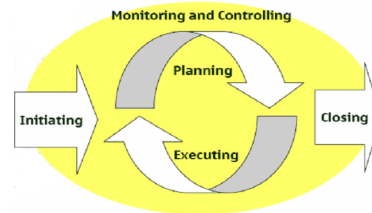School of Business

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Project categories

- **Internal development/change projects**
  - E.g. process renewal, adoption of new software (SAP adoption)
- **Supply projects**
  - E.g. large system installations (paper machine)
- **Research projects**
  - E.g. academic research projects
- **Implementation projects**
  - E.g. theater performances, sport events
- **Construction projects**
  - E.g. Civil engineering projects (e.g. buildings, roads)
- **Product development projects**
  - E.g. development of new mobile phone models

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Project attributes

- **A project has a unique purpose.**
- **A project is temporary.**
- **A project is developed using progressive elaboration, or in an iterative fashion.**
- **A project requires resources, often from various areas.**
- **A project should have a primary customer or sponsor. Sponsor usually provides the direction and funding for the project.**
- **A project involves uncertainty.**

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* Project Management Institute, Inc., *A Guide to the Project Management Body of Knowledge (PMBOK® Guide, 5th Ed.* (2013), p. 6.)

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Routine operations vs. Projects


Routine, repetitive work
- **Taking class notes**
- **Responding to a supply request (delivering goods)**
- **Practicing scales on the piano**
- **Routine manufacture of an Apple iPod (instance)**
- **Attaching RFID tags on manufactured products**

A project
- **Writing a bachelor's thesis**
- **Developing a supply chain management system**
- **Composing a new piano piece**
- **Designing an iPod with new specifications**
- **Planning how a company can utilize RFID technology**

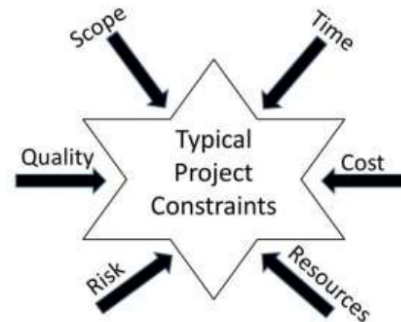**Aalto University**
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Project constraints

- **Successful project management means meeting all three goals – SCOPE, TIME and COST – and satisfying the project's sponsor!**
- **It's important to determine which aspects of the triple constraint are the most important.**
- **It may be good enough to hit the or target range of the triple constraint goals, but not the exact bull's-eye.**

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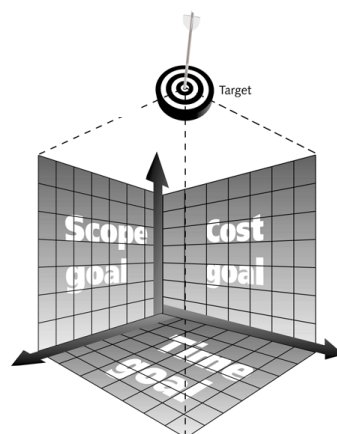
Project constraints (cont.)

- **Many focus on the "quadruple constraint" that includes *quality* as well as scope, time, and cost:** *How good does the quality of the output need to be? What do we need to do to satisfy the customer?*
- **4th ed. of PMBOK Guide adds one more constraint: *risk*, that is,** *how much uncertainty are we willing to accept on the project?*

Scope Time

Quality — Typical Project Constraints — Cost

Risk Resources

Source: Schwalbe (2013)

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Project management office (PMO)

- **Is a part of permanent organization**
- **Provides support, sets standards and guidelines for the managers of the different projects and programs**
- **Collects, consolidates and reports project management data from the projects**
- **Ensures that the projects are aligned to the organization's strategy and vision**
 - This is generally through business case management

Note: Project / Program office is often a part of the organization of a large project to support the project of program management team

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Source: IPMA

Project management tasks

Managing projects includes:
- Identifying requirements
- Establishing clear and achievable objectives
- Balancing the competing demands for quality, scope, time, and cost
- Adapting the specifications, plans, and approach to the different concerns and expectations of the various stakeholders.

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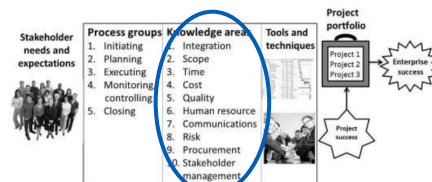**School of Business**

Project management framework
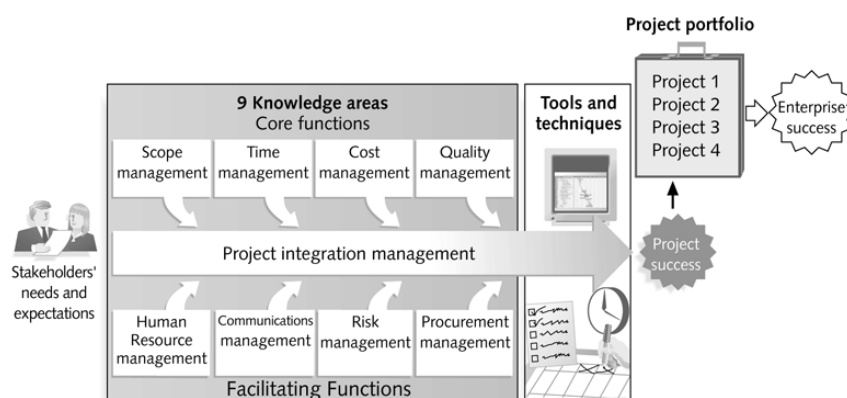
Facilitating functions: means through which project objectives are achieved

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Project management framework

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Project management knowledge areas

- **Four core knowledge areas lead to specific project objectives:**
  - Project **scope** management involves defining and managing all the work required to complete the project successfully.
  - Project **time** management includes estimating how long it will take to complete the work, developing an acceptable project schedule, and ensuring timely completion of the project.
  - Project **cost** management consists of preparing and managing the budget for the project.
  - Project **quality** management ensures that the project will satisfy the stated or implied needs for which it was undertaken.

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Project management knowledge areas

Four facilitating knowledge areas are the means through which the project objectives are achieved.

- Project human resource management is concerned with making effective use of the people involved with the project.
- Project communications management involves generating, collecting, disseminating, and storing project information.
- Project risk management includes identifying, analyzing, and responding to risks related to the project.
- Project procurement management involves acquiring or procuring goods and services for a project from outside the organization.

One knowledge area - project integration management - affects and is affected by all of the other knowledge areas.

All 9 knowledge areas are important!

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Project management knowledge areas

Project integration management

- Involves coordinating the work of all other PM knowledge areas throughout a project's life cycle.
- Ensures that all the elements of a project come together at the right times to complete a project successfully
  - *Project plan development: putting the results of other planning processes into a consistent document, project plan.*
  - *Project plan execution: involves carrying out the activities as stated in a project plan.*
  - *Integrated change control: involves coordinating changes*

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Project management tools and techniques

- **PM tools and techniques assist project managers and their teams in various aspects of project management (in all nine knowledge areas).**
- **Specific tools and techniques include:**
  - Project charters, scope statements, and WBS (scope).
  - Gantt charts, network diagrams, critical path analyses (time).
  - Net present value, cost estimates (cost).

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Project success

Project success

- **There are different ways to define project success:**
  - The project meets scope, time, and cost goals.
  - The project satisfies the customer/sponsor.
  - The project produces the desired results.

- Note: it is not always clear, whether the project is successful or not (e.g. project with long-term impact, multi-party projects, large scale information systems projects ERP etc.)

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What went wrong?

- 1995 Standish Group* study ("The CHAOS Report"):
  - *Only 16.2 % of information technology (IT) application development projects were successful in meeting scope, time, and cost goals.*
  - *Over 31 % of the projects were cancelled before completion, costing over $81 billion in the U.S. alone.*
- 2004 PricewaterhouseCoopers study**:
  - *Over 50 % of all projects fail (study included 200 companies from 30 different countries)*
  - *Only 2.5 % of companies consistently meet their targets for scope, time, and cost goals for all types of project.*
-
    * Standish Group, "The CHAOS Report" (www.standishgroup.com) (1995).
- ** PriceWaterhouseCoopers, "Boosting Business Performance through Programme and   Project Management" (June 2004).

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Major disasters and challenged projects

Finnish national railways ticketing system (2011)

Finnish national electronic patient record system and database (2002 – 201?)

Ajoneuvorekisteri (2000 – 2011)

Police systems (ongoing)

…

Nearly all major public sector IT initiatives in last 10 years have been seriously delayed and/or have exceeded their budgets

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Why some projects fail?

Some common pitfalls

- Lack of user involvement – no consensus on goals, failed mutual understanding, poor commitment
- Long or unrealistic time scales
- Poor requirements
- Scope creep
- No change control system
- Poor testing

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Typical problems

Delays
- e.g. New Taurus project manager after 5 years of development: "are we any closer to the end?"
- Project was scrapped in the end

Cost overruns
- e.g. Taurus initial estimate 11mil. £, final costs somewhere between 400 – 800 mil. £

Performance underruns
- e.g. Finnish national railways ticketing system problems

Delivering in time and on budget, but wrong system
- e.g. Finnish e-health records

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Summary

Summary

- **A project is a temporary endeavor undertaken to create a unique product, service, or result.**
- **Projects are risky, but the risk can be mitigated and managed through project management techniques**

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Links

- **Scope, cost and time: https://support.office.com/en-ca/article/Every-Project-plan-is-a-triangle-2b74c21b-a406-4727-8d74-26648a56924a**

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