

# **Semester 2 (06/01/2025-03/05/2025)**

## **IT Project Management**

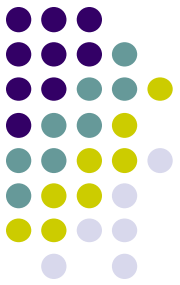
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- **Chapter 1: Introduction to IT Project management ([1], [6], [7], [8], [9])**
- **Chapter 2: The Organization and Process ([1], [6], [7], [8], [9])**
- **Chapter 3: Project Scope Management ([1], [4], [5], [6], [9])**
- **Chapter 4: Project Time Management ([1], [2], [3], [4], [5], [6], [9])**
- **Chapter 5: Project Cost Management ([1], [5], [6], [9])**
- **Chapter 6: Project Quality Management ([1], [6], [9])**

# Reference

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- [1]** Information Technology Project Management, Kathy Schwable, 2<sup>nd</sup> Edition, 2002
- [2]** IT Project Management: On track from start to finish, Joseph Phillips, 2003
- [3]** Software Project Management, Bob Hughes and Mike Cotterell, 2001
- [4]** Basic of Software Project Management, NIIT, Eastern Economy Edition, 2004
- [5]** Project Management: Planning & Control Techniques, Rory Burke, Third Edition, 1999
- [6]** PMBOK (Project Management Body of Knowledge) PDF File
- [7]** The Project Management Life Cycle: A complete step-by-step methodology for initiating, planning, executing & closing a project successfully, Jason Westland, 2006
- [8]** Document on Project Management, the steering committee for national program on information technology, Hanoi 1996
- [9]** Project Management Communications Bible, William Dow, PMP, and Bruce Taylor, Wiley India Edition, 2008

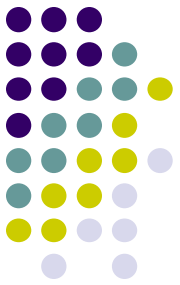


# **Chapter 1**

## **Introduction to IT Project Management**

# 1.1. Concepts

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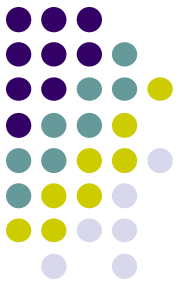
## ① Definition

### \* What is a Project?

- A project is “a temporary endeavor undertaken to accomplish a unique product or service” (PMBOK® Guide 2000, p. 4)
- Attributes of projects
  - unique purpose
  - temporary
  - require resources, often from various areas
  - should have a primary sponsor and/or customer
  - involve uncertainty

# 1.1. Concepts

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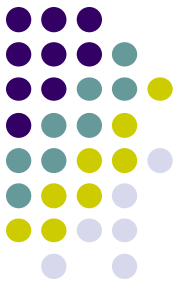


## Examples of projects include:

- Developing a new product or service.
- Effecting a change in structure, staffing, or style of an organization.
- Designing a new transportation vehicle.
- Developing or acquiring a new or modified information system.
- Constructing a building or facility.
- Building a water system for a community in a developing country.
- Running a campaign for political office.
- Implementing a new business procedure or process.

# 1.1. Concepts

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## \* What is Project Management?

Project management is “the application of knowledge, skills, tools, and techniques to project activities in order to meet project requirements” (PMI\*, Project Management Body of Knowledge (PMBOK® Guide), 2000, p. 6)

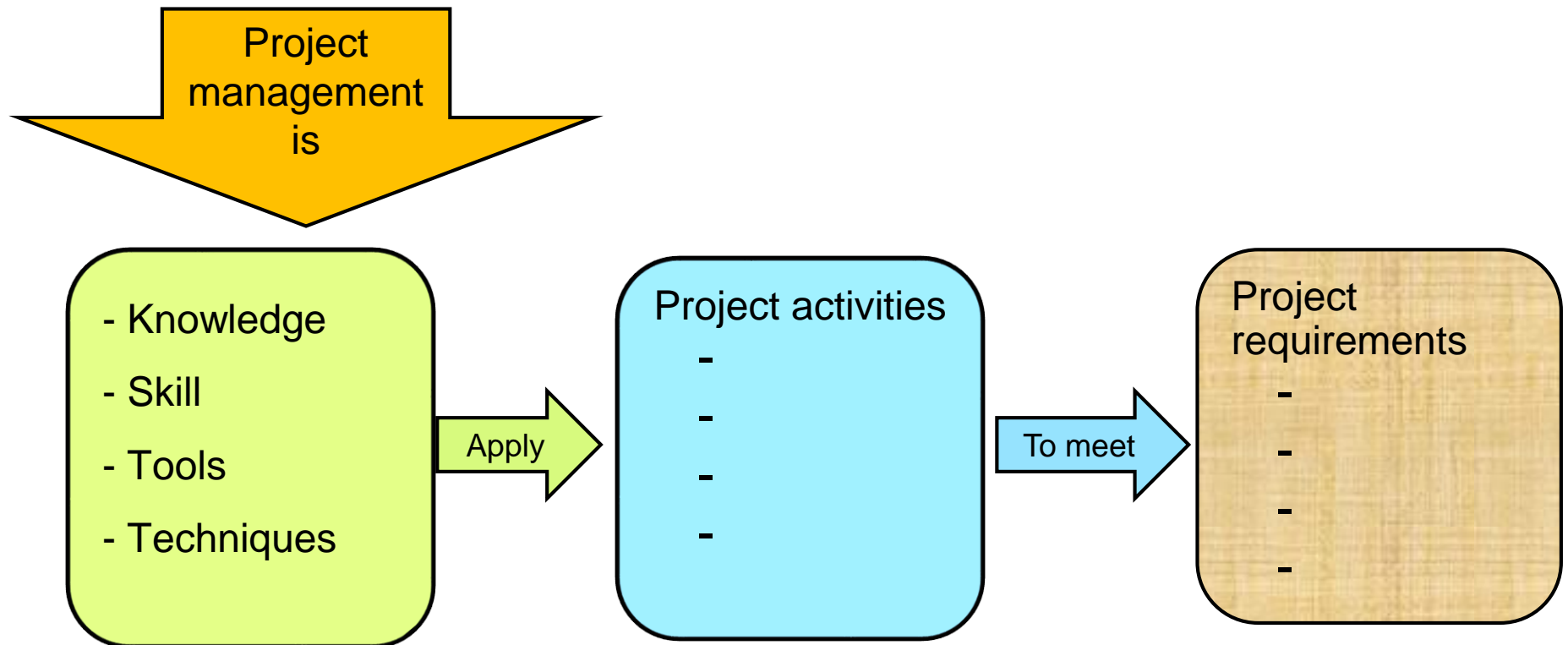
\*The Project Management Institute (PMI) is an international professional society. Their web site is [www.pmi.org](http://www.pmi.org).

# 1.1. Concepts

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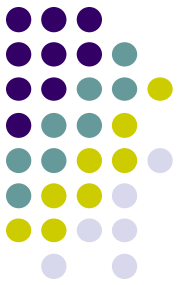


## \* What is Project Management?



# 1.1. Concepts

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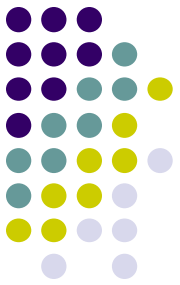
## \* What is an IT Project?

- IT: Hardware (HW), software (SW), integration and people
- Integrating the HW and SW, usually on a client server, networked computer system.
- IT projects involve:
  - evaluating and buying the HW
  - evaluating and buying existing SW, or, custom developing the SW



# 1.1. Concepts

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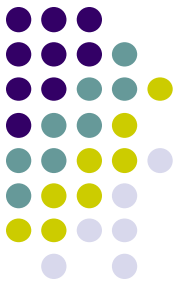


## \* The Context of IT Projects

- IT projects can be very diverse in terms of size, complexity, products produced, application area, and resource requirements
- IT project team members often have diverse backgrounds and skill sets
- IT projects use diverse technologies that change rapidly. Even within one technology area, people must be highly specialized

# 1.1. Concepts

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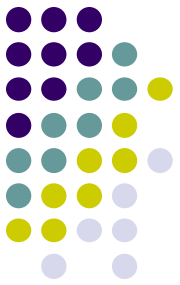


## ② Beginning, Ending

- All project begin with a problem statement. The solution of this problem must be the *objectives* for the project. The objectives of the project must be very clearly written down, otherwise the project may go on forever.
- Similarly, the project must have a very clearly defined ending point, otherwise it can go on forever. This is because there will always be changes by the time the project gets near the end. If the changes are done as part of the project, it never ends. So have a clear end point, and make the change into a new project.

# 1.1. Concepts

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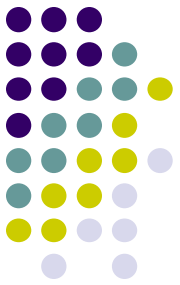


## ③ Scope

- Scope is the list of everything that the project will do (and may be a list of things it will not do). As before, the project must have a *Scope* clearly written down, otherwise it can go on forever.

# 1.1. Concepts

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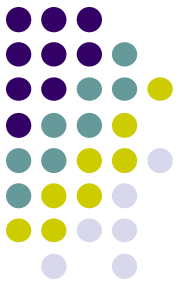


## ④ Time, Funds

- Every project must have a maximum time, or an ending point when it must be finished.
- Similarly, every project must have a maximum budget, or a maximum amount of money that can be spent

# 1.1. Concepts

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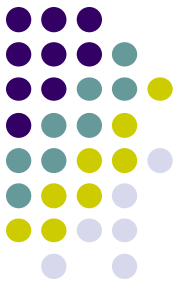


## ⑤ Human Resources

- Resources are the people that the project uses. Every project must have a list of resources that it can use.

# 1.1. Concepts

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## ⑥ Risk

- Risk is something that makes the project take longer than planned, or cost more than planned.

# 1.1. Concepts

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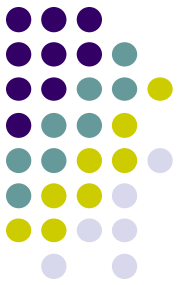
## ⑦ Why do Projects Fail?

From statistics in the world of IT projects:

- **Cancelled:** 33% of project are cancelled because they ran out of money or time. A project may get cancelled because the technology has changed so much that the project would be useful. Or, the business has changed and the client does not need it anymore. Politics: a new election or new manager does not like the project.
- **50 - 100% over:** A project that costs 50% over budget, or take 50% more time, is a failure.
- **Not used:** Many projects are never used. This is usually because they either do not solve the problem or they are too difficult to use, or no one teaches the user.

# 1.1. Concepts

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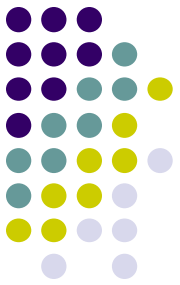
Examples of reasons for

- Failure in the Planning Part
- Failure in the Development Part
- Failure in the Ending Part



# 1.1. Concepts

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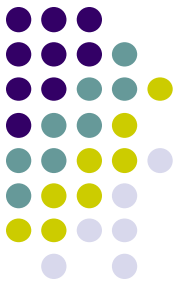
## ⑧ Why do Projects Succeed?

A project is successful if it is:

- On Time, on Budget (10-20% over is acceptable)
- Everyone is happy
- Project team is not over managed (Too much project management can disturb the development team).
- The client will be happy if **The product solves his problem**

# 1.1. Concepts

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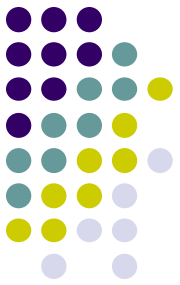
## \* What Helps Projects Succeed?

According to the Standish Group's report "CHAOS 2001: A Recipe for Success," the following items help IT projects succeed, in order of importance:

- Executive support
- User involvement
- Experienced project manager
- Clear business objectives
- Minimized scope
- Standard software infrastructure
- Firm basic requirements
- Formal methodology
- Reliable estimates

# 1.1. Concepts

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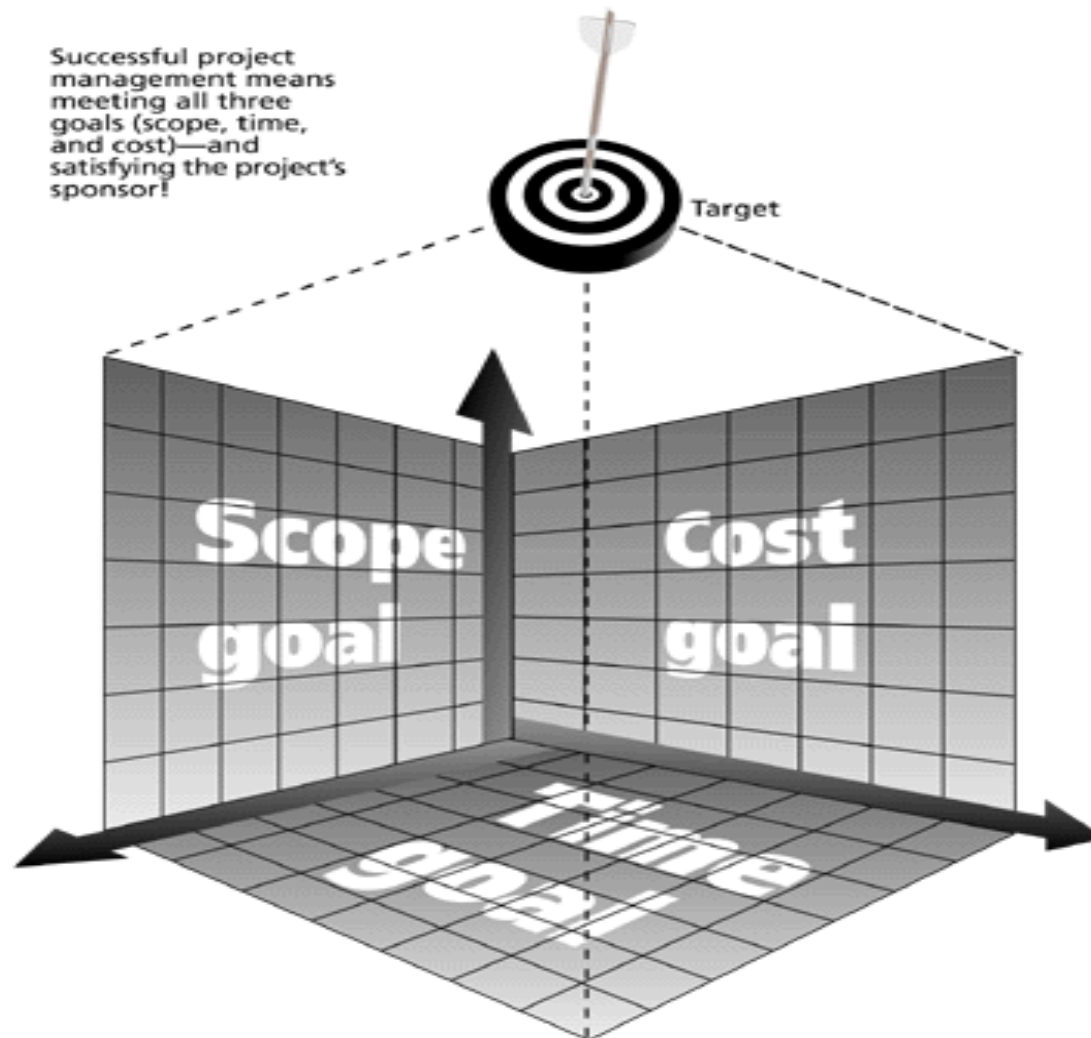
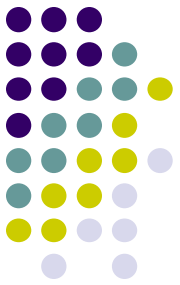


## ⑨ The Triple Constraint

- Every project is constrained in different ways by its
  - Scope goals: What is the project trying to accomplish?  
What unique product, service, or result does the customer or sponsor expect from the project?
  - Time goals: How long should it take to complete?  
What is the project's schedule?
  - Cost goals: What should it cost?  
What is the project's budget?
- It is the project manager's duty to balance these three often competing goals

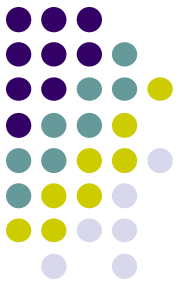
# Figure 1.1: The Triple Constraint of Project Management

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# 1.1. Concepts

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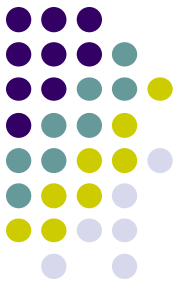


## ⑨ The Triple Constraint

- Successful project management means meeting all three goals (scope, time and cost) and satisfying the project sponsor (Quality).
- That is called the Quadruple Constraint: Scope, Time, Cost and Quality.
- A change in one constraint will automatically effect other constraints. (Find an example for group discussion)

# 1.1. Concepts

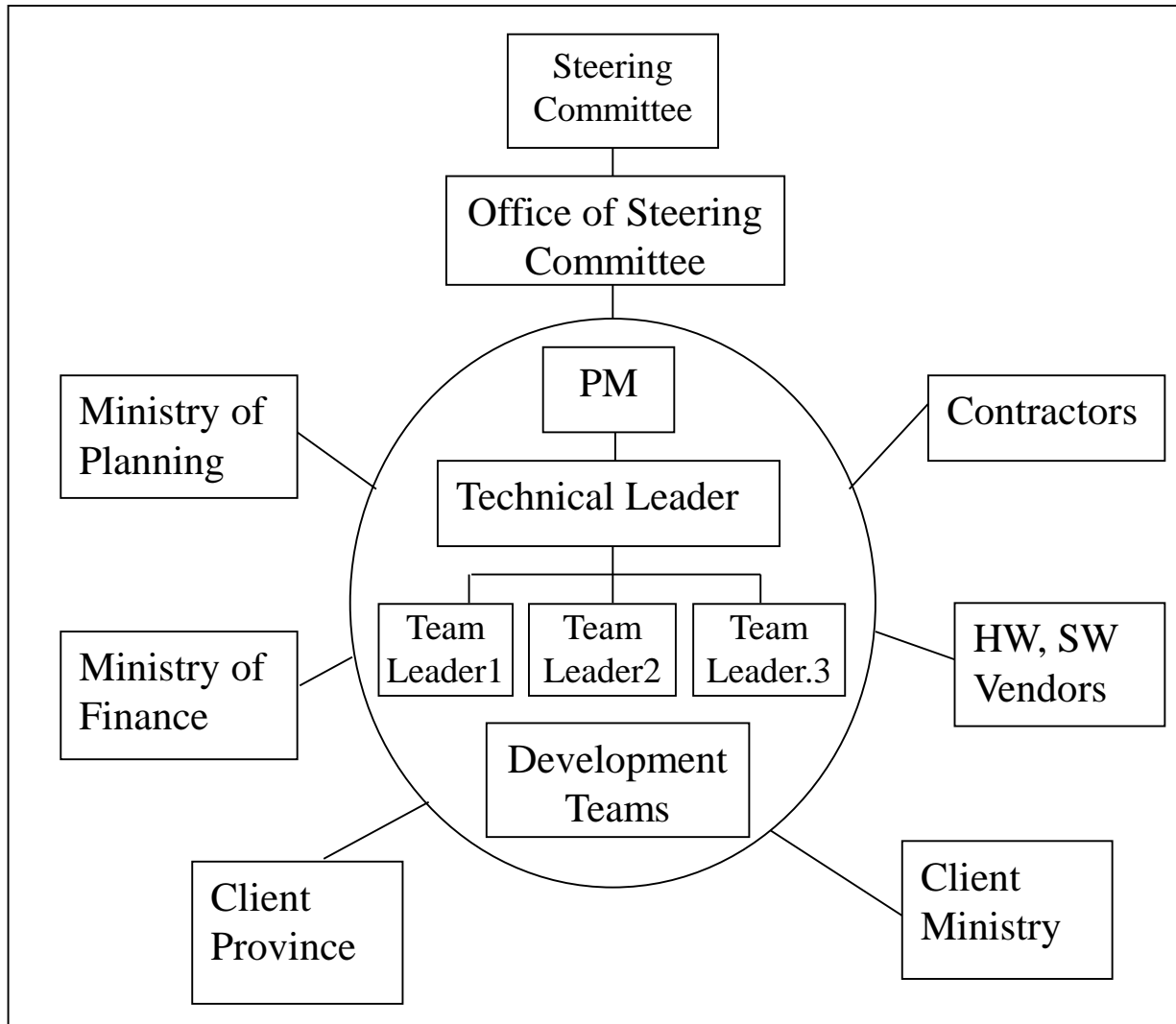
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## ⑩ Project Stakeholders

- Stakeholders are the people involved in or affected by project activities
- Stakeholders can be internal to the organization, external to the organization, directly involved in the project, or simply affected by the project.
- Stakeholders include
  - the project sponsor and project team
  - support staff
  - customers
  - users
  - suppliers
  - opponents to the project

# Figure 1.2: Project Stakeholders

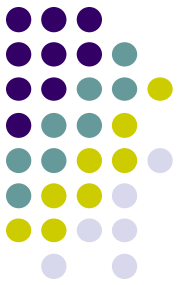


The IT Project Team must know the function of each of the following:

- **Program Manager**
- **Project Manager**
- **Technical Leader**
- **Team Leader**
- **Development Teams**

# 1.1. Concepts

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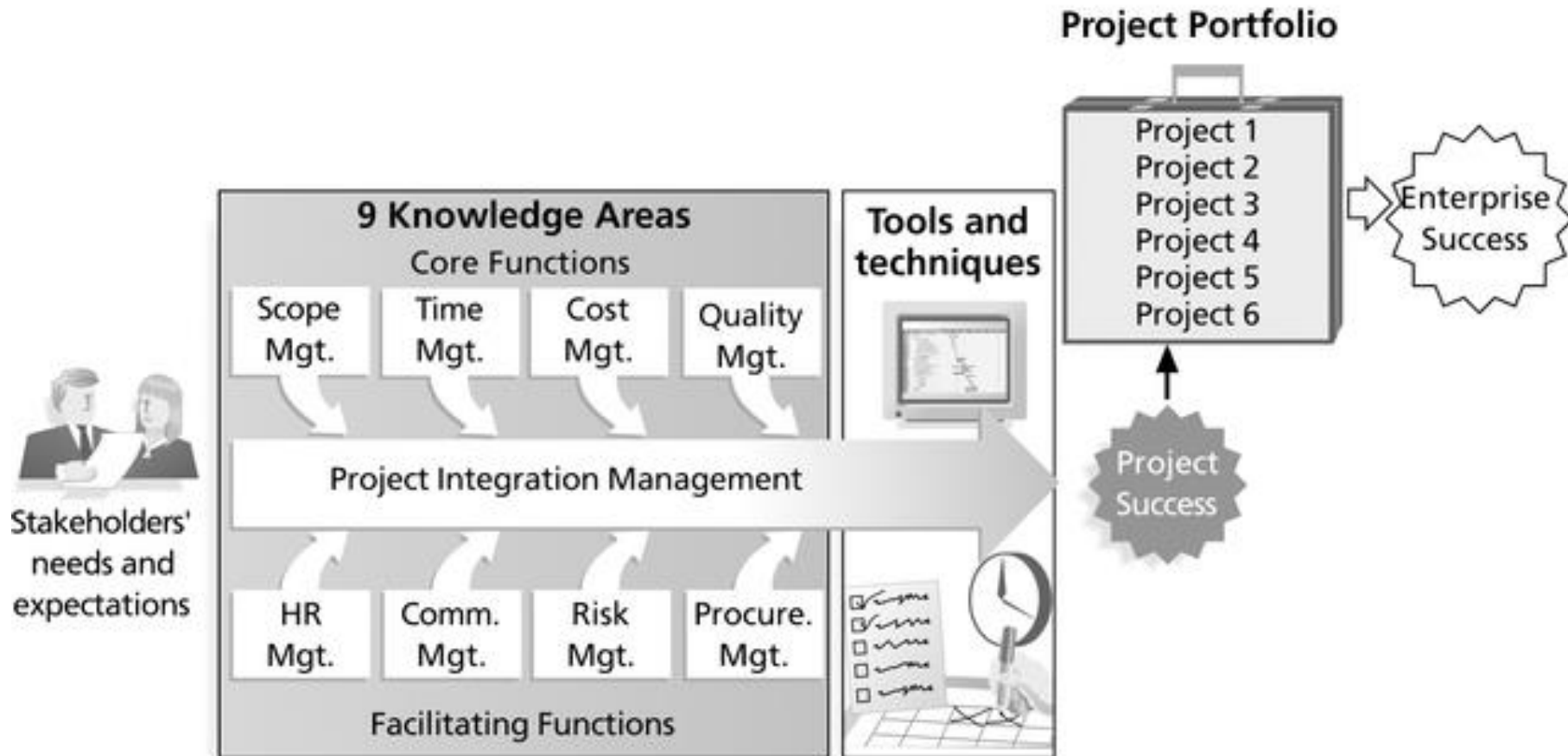
## 11 Project Management Knowledge Areas

Knowledge areas describe the key competencies that project managers must develop

- 4 core knowledge areas lead to specific project objectives (***scope, time, cost, and quality***)
- 4 facilitating knowledge areas are the means through which the project objectives are achieved (***human resources, communication, risk, and procurement management***)
- 1 knowledge area (project integration management) affects and is affected by all of the other knowledge areas

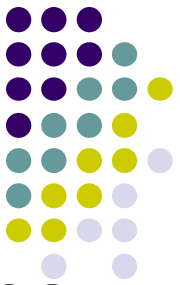


# Figure 1.3: Project Management Framework



# 1.1. Concepts

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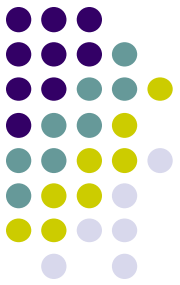


## 12 Project Management Tools and Techniques

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, Chapter 3)
- Gantt charts, network diagrams, critical path analysis, critical chain scheduling (time, Chapter 4)
- Cost estimates and earned value management (cost, Chapter 5)



## 1.2. Anticipating the Risk

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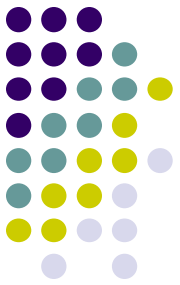
How do we look ahead? It is best to see a list of risks that happen in the IT industry. Here they are:

### A. GENERAL FACTORS

- **Lack of resources:** Not enough good technical people.
  - \* Third parties (we need them but no authority): A “third party” is anyone else except the user (first party), our organization (second party). It is most risk if we have no authority or control over this third party. For example, outside contractors, or other departments or ministries.

# 1.2. Anticipating the Risk

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## A. GENERAL FACTORS

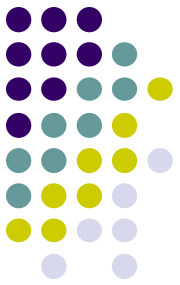
- **Crash project:**

Every project has three constraints:

- The project can be fast (Time),
- It can be good (quality), or
- It can be cheap (cost).

Every time one of the three constraints is emphasized, the other two may get worse. This is called a trade-off.

\* A crash project is a project where Fast is emphasized. For example, a project that would normally take 6 months has to be done in 3. The risk is that the good and the cheap will be traded.



## 1.2. Anticipating the Risk

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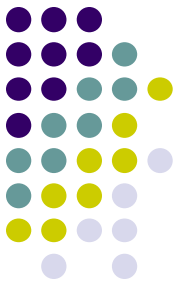
### A. GENERAL FACTORS

- **Special conditions** (law issues, regulatory agencies)

For example, there are many regulations about how we get data, who we keep data on, who we give data to, etc.

### B. TECHNICAL FACTORS

- No experience with the system (h/w, s/w, application)
- Bad requirements



## 1.2. Anticipating the Risk

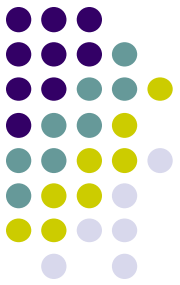
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### C. FINANCIAL FACTORS

The following usually takes longer, so cost more than estimated:

- Definition, testing, documentation
- “Distributed” project management

\* This is when the project manager is in one city, the technical experts in another, the users in a third, the contractor in a fourth, etc. Travel takes a lot of time.



## 1.2. Anticipating the Risk

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### C. FINANCIAL FACTORS

- Too much reporting to management
- User not available
- Crash project

\* You can usually make a project go faster by adding more people or using better tools. These all cost extra money. But to make a project go 50% faster, you usually have to spend 100% more money on it.

# Group discussion

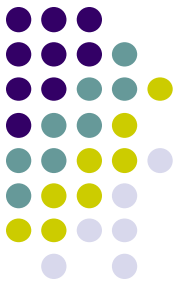
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- 1) In quadruple constraint: a change in one constraint will automatically effect other constraints. Find an example.
- 2) ដំណោះស្រាយចំពោះកង្វះធនធានមនុស្ស (Lack of resources)
- 3) ដំណោះស្រាយចំពោះ Crash Project
- 4) ដំណោះស្រាយចំពោះលក្ខខណ្ឌពិសេស (ច្បាប់ ទើបនឹងចេញ)
- 5) ដំណោះស្រាយចំពោះ “Distributed project management”



# Oral Questions

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- 1) What is a project?(Describe its attributes, more detail see on pages 2, 3 of text book)
- 2) Find out an example of IT project and use its attributes to explain
- 3) What is the triple constraint? Quadruple constraint?
- 4) What is the trade-off of project?
- 5) What is “Distributed” project management?

# Top Ten Most in Demand IT Skills

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Rank	IT Skill/Job	Average Annual Salary
1	SQL Database Analyst	\$80,664
2	Oracle Database Analyst	\$87,144
3	C/C++ Programmer	\$95,829
4	Visual Basic Programmer	\$76,903
5	E-commerce/Java Developer	\$89,163
6	Windows NT/2000 Expert	\$80,639
7	Windows/Java Developert	\$93,785
8	Security Architect	\$86,881
9	Project Manager	\$95,719
10	Network Engineer	\$82,906

Paul Ziv, "The Top 10 IT Skills in Demand," Global Knowledge Webcast ([www.globalknowledge.com](http://www.globalknowledge.com)) (11/20/2002).