INFO6007
Project Management in IT

Lecture 1
Introduction to IT Project Management: Part-B

Semester 2, 2020

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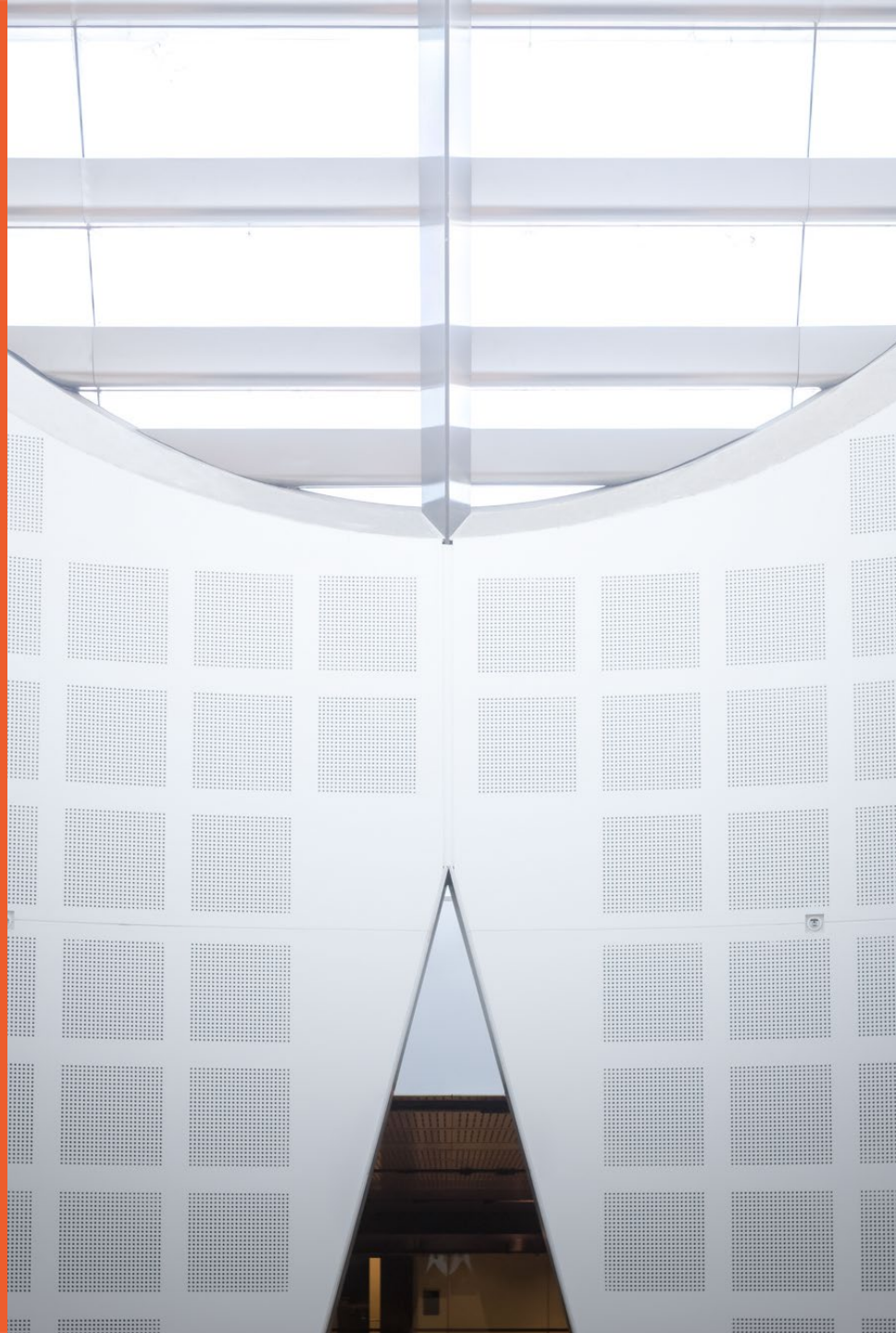
THE UNIVERSITY OF SYDNEY

Source:
Schwalbe, K, Information Technology Project Management (9th Edition). Cengage Learning, 2018



The Role of a 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

Anyone Here Works as a PM? Or Want to Be ?

- Have you ever managed any project?
- What's your strategy of taking this course?
- Where do you see yourself in the future?

Suggested Skills for Project Managers

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

Critical Thinking Exercise 1:

Most Important Skill for Project Managers ?

- Please answer them at AnswerGarden:

  ONE WORD ONLY

  https://answergarden.ch/1362240

Facts About IT Project Manager

- IT Project Manager doesn't do programming, but should understand programming
- IT Project Manager usually become enemy of programmers
- Project Manager see what programmers don't see
- Project Manager should explain "strange" language to client using natural language
- Project Manager should understand what client wants and what programmer can do
- Project Manager should be always available
- Project Manager should convey bad news in good way

Source (texts & image): https://medium.com/skyshidigital/7-facts-about-it-project-manager-3744710f72b8

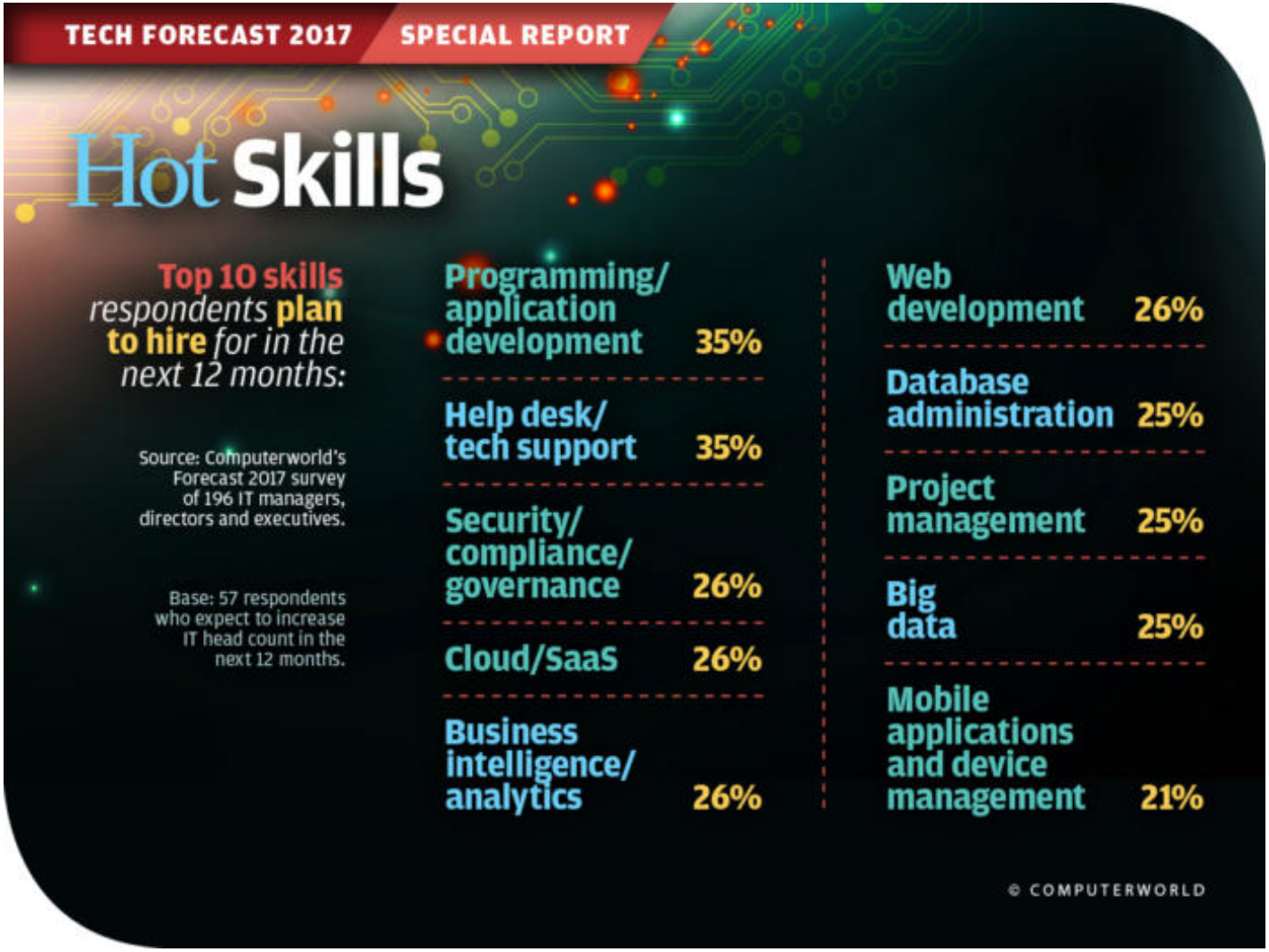
Careers for IT Project Managers

- **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

Project Management in 10 Hottest Tech Skills for 2017



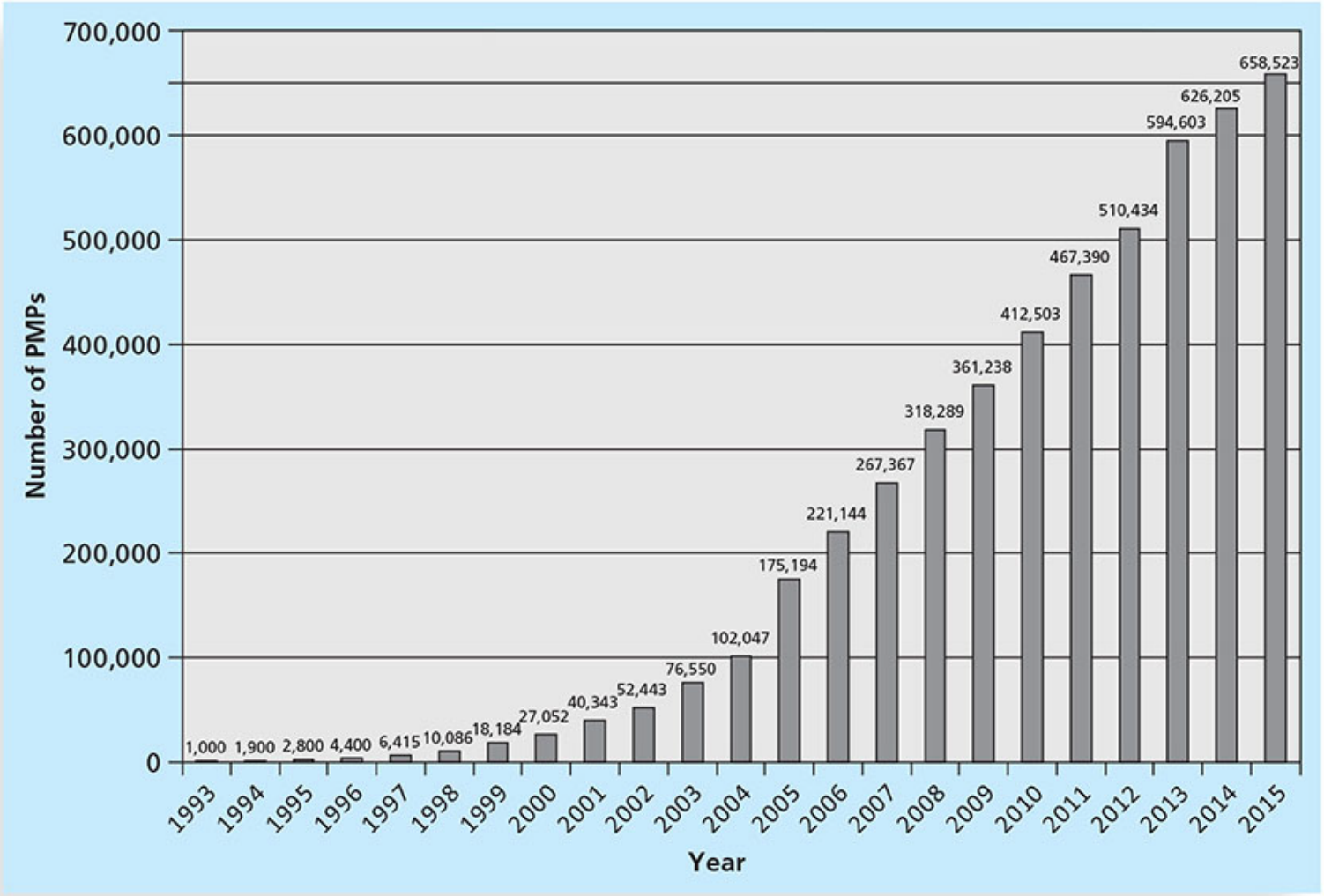
Source: Mary K. Pratt (2016). https://www.computerworld.com/article/3147427/it-skills-training/10-hottest-tech-skills-for-2017.html?page=2

Project Management Certification

- The Project Management Institute (PMI) is an international professional society for project managers founded in 1969

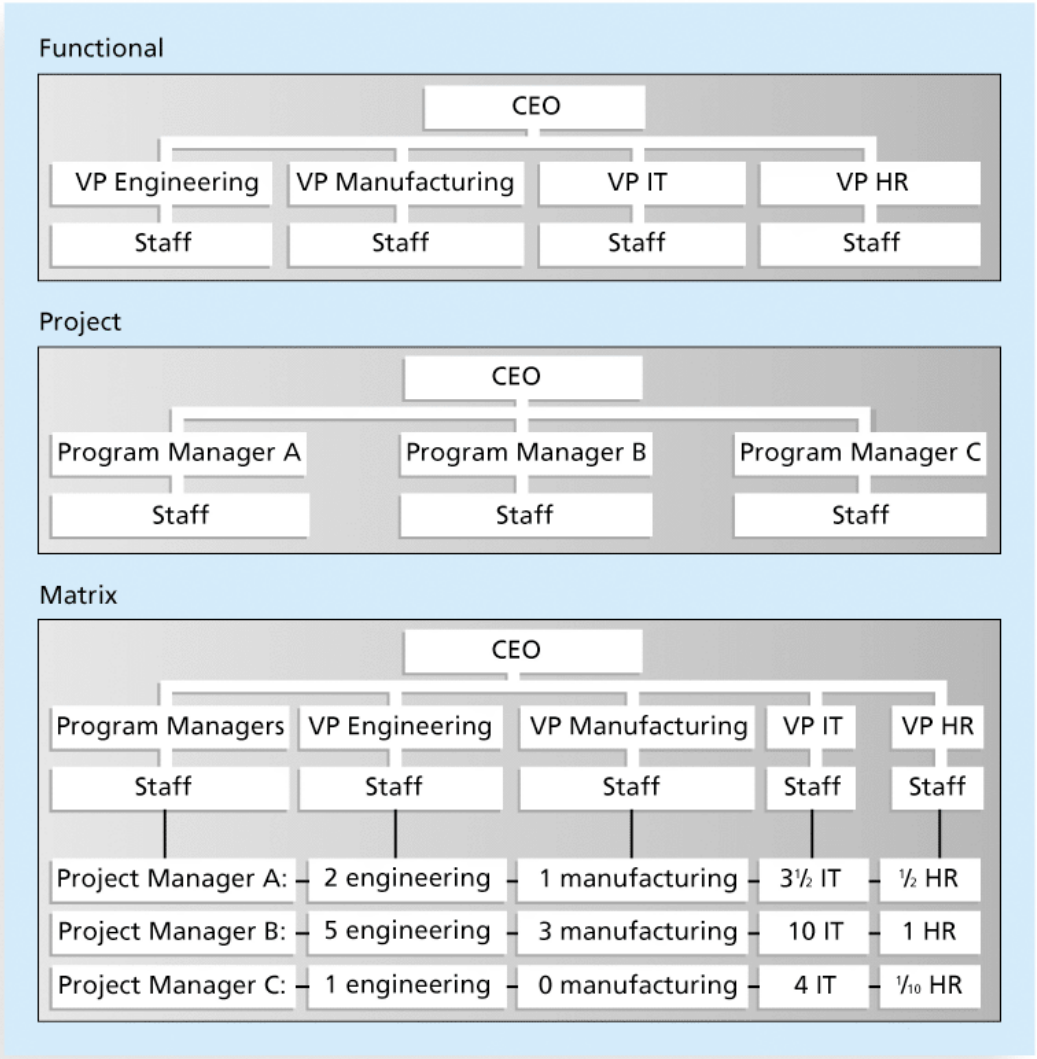
- PMI provides certification:
  - Project Management Professional (**PMP**)
  - Certified Associate in Project Management (**CAPM**)

Project Management Certification 1993-2015



About You !

Organizational Structures: Functional, Project, and Matrix



Organizational Structure Influences on Projects

Project Characteristics	Organizational Structure Type				
	Functional	Matrix			Project
		Weak Matrix	Balanced Matrix	Strong Matrix	
Project manager's authority	Little or none	Limited	Low to moderate	Moderate to high	High to almost total
Percent of organization's personnel assigned full-time to project work	Virtually none	0–25%	15–60%	50–95%	85–100%
Who controls the project budget	Functional manager	Functional manager	Mixed	Project manager	Project manager
Project manager's role	Part-time	Part-time	Full-time	Full-time	Full-time
Common title for project manager's role	Project coordinator/ project leader	Project coordinator/ project leader	Project manager/ project officer	Project manager/ program manager	Project manager/ program manager
Project management administrative staff	Part-time	Part-time	Part-time	Full-time	Full-time

Project Management Body of Knowledge (PMBOK)

- The PMBOK® Guide describes best practices for *what* should be done to manage projects.

- PMBOK defines project management as application of knowledge, tools and techniques to project activities to meet project requirements.

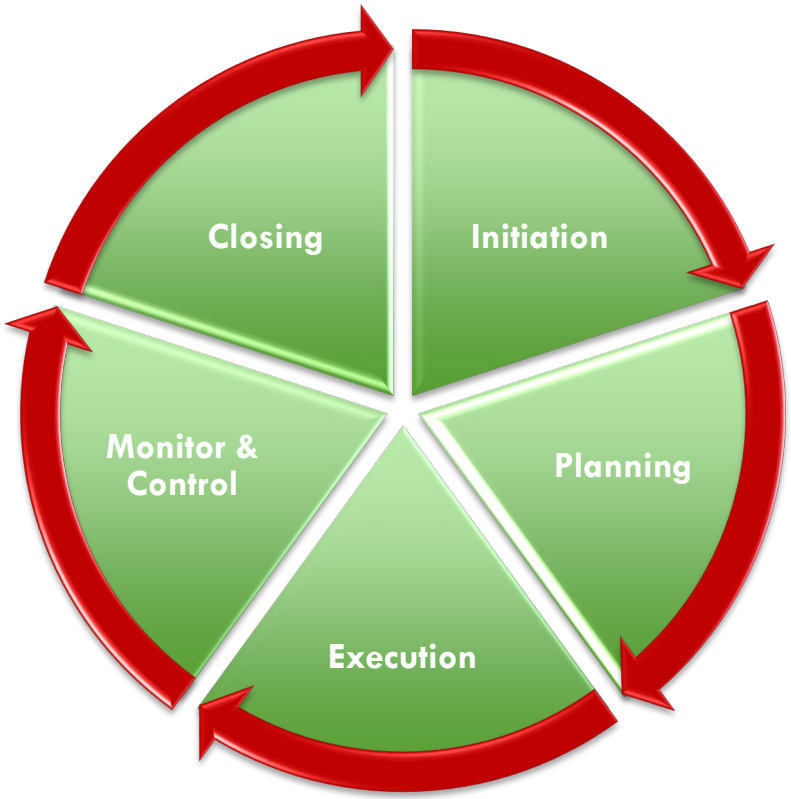
- PMBOK organised across Knowledge Areas and Processes (managed through PM Process Groups)

PM Knowledge Areas

1. Project Integration Management
2. Project Scope Management
3. Project Time Management
4. Project Cost Management
5. Project Quality Management
6. Project HR Management
7. Project Communications Management
8. Project Risk Management
9. Project Procurement Management
10. Project Stakeholder Management

Project Management Process Groups:

- Initiating
- Planning
- Executing
- Monitoring and control
- Closing



PMBOK PM Process Groups

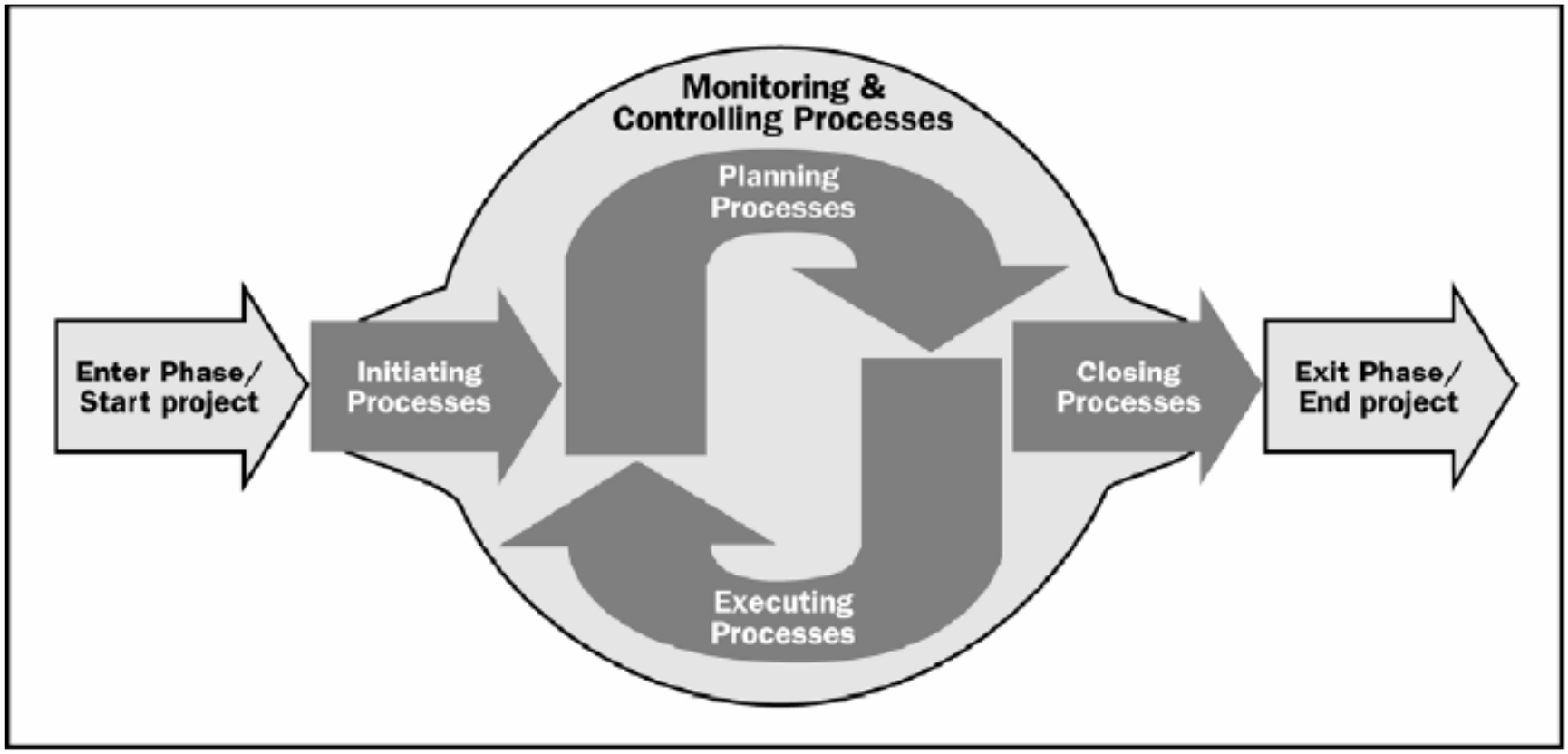


Figure 3-1. Project Management Process Groups

PMBOK Project Management Process Groups: Initiating

- Project Management Process Groups:
  - **Initiating**
  - Planning
  - Executing
  - Monitoring and control
  - Closing

Figure 4-2. Develop Project Charter: Inputs, Tools and Techniques, and Outputs

PMBOK Project Management Process Groups: Planning

- Project Management Process Groups:
  - Initiating
  - **Planning**
  - Executing
  - Monitoring and control
  - Closing

Figure 4-4. Develop Project Management Plan: Inputs, Tools and Techniques, and Outputs

PMBOK Project Management Process Groups: Executing

- Project Management Process Groups:
  - Initiating
  - Planning
  - **Executing**
  - Monitoring and control
  - Closing

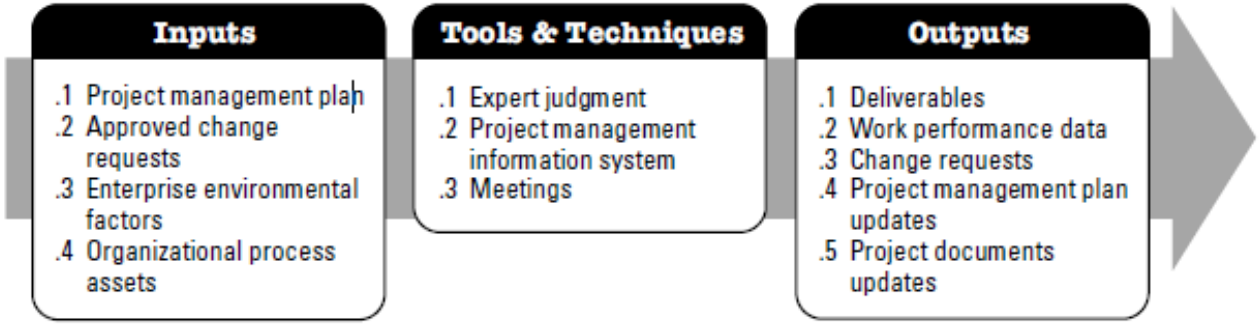


Figure 4-6. Direct and Manage Project Work: Inputs, Tools and Techniques, and Outputs

PMBOK Project Management Process Groups: Monitoring and Control

- Project Management Process Groups:
  - Initiating
  - Planning
  - Executing
  - **Monitoring and control**
  - Closing

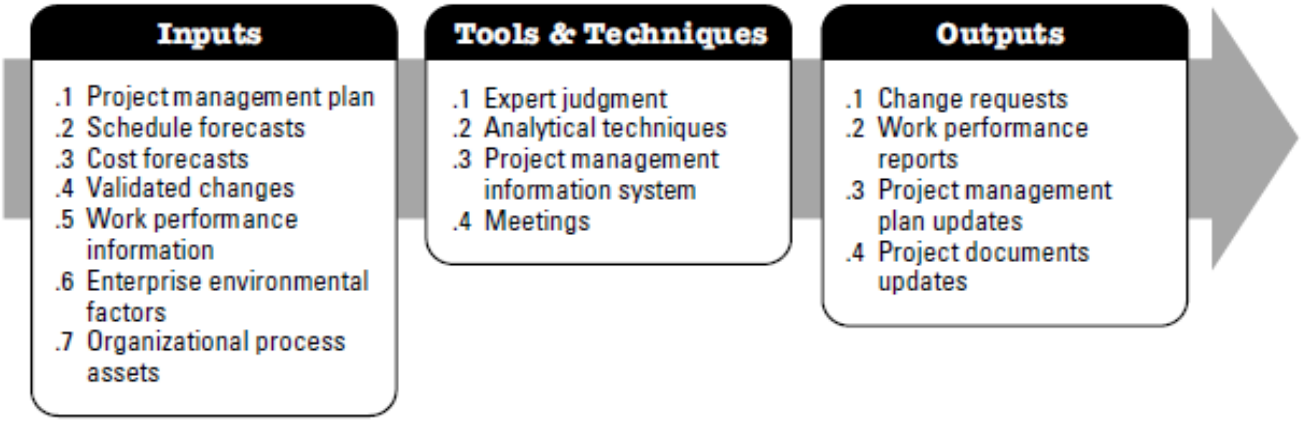


Figure 4-8. Monitor and Control Project Work: Inputs, Tools & Techniques, and Outputs

PMBOK Project Management Process Groups: Closing

- Project Management Process Groups:
  - Initiating
  - Planning
  - Executing
  - Monitoring and control
  - **Closing**

Figure 4-12. Close Project or Phase: Inputs, Tools & Techniques, and Outputs

PMBOK Knowledge Areas and PM Process Groups

Knowledge Areas	Project Management Process Groups				
	Initiating Process Group	Planning Process Group	Executing Process Group	Monitoring and Controlling Process Group	Closing Process Group
4. Project Integration Management	4.1 Develop Project Charter	4.2 Develop Project Management Plan	4.3 Direct and Manage Project Work	4.4 Monitor and Control Project Work 4.5 Perform Integrated Change Control	4.6 Close Project or Phase
5. Project Scope Management		5.1 Plan Scope Management 5.2 Collect Requirements 5.3 Define Scope 5.4 Create WBS		5.5 Validate Scope 5.6 Control Scope	
6. Project Time Management		6.1 Plan Schedule Management 6.2 Define Activities 6.3 Sequence Activities 6.4 Estimate Activity Resources 6.5 Estimate Activity Durations 6.6 Develop Schedule		6.7 Control Schedule	
7. Project Cost Management		7.1 Plan Cost Management 7.2 Estimate Costs 7.3 Determine Budget		7.4 Control Costs	

PMBOK Knowledge Areas and PM Process Groups

Knowledge Area Processes	Project Management Process Groups				
	Initiating Process Group	Planning Process Group	Executing Process Group	Monitoring & Controlling Process Group	Closing Process Group
8. Project Quality Management		8.1 Plan Quality Management	8.2 Perform Quality Assurance	8.3 Control Quality	
9. Project Human Resource Management		9.1 Plan Human Resource Management	9.2 Acquire Project Team 9.3 Develop Project Team 9.4 Manage Project Team		
10. Project Communications Management		10.1 Plan Communications Management	10.2 Manage Communications	10.3 Control Communications	
11. Project Risk Management		11.1 Plan Risk Management 11.2 Identify Risks 11.3 Perform Qualitative Risk Analysis 11.4 Perform Quantitative Risk Analysis 11.5 Plan Risk Responses		11.6 Control Risks	
12. Project Procurement Management		12.1 Plan Procurement Management	12.2 Conduct Procurements	12.3 Control Procurements	12.4 Close Procurements
13. Project Stakeholder Management	13.1 Identify Stakeholders	13.2 Plan Stakeholder Management	13.3 Manage Stakeholder Engagement	13.4 Control Stakeholder Engagement	

Class Quiz 1

- What type of organizational structure has project team members reporting to at least two bosses?

- Answer at AnswerGarden:
- https://answergarden.ch/1362253

Class Quiz 2

- What type of organizational structure gives the least amount of authority to project managers?

- Answer at AnswerGarden:
- https://answergarden.ch/1362255

Class Quiz 3

- What type of organizational structure gives the most authority to project managers?

- Answer at AnswerGarden:
- https://answergarden.ch/1362258

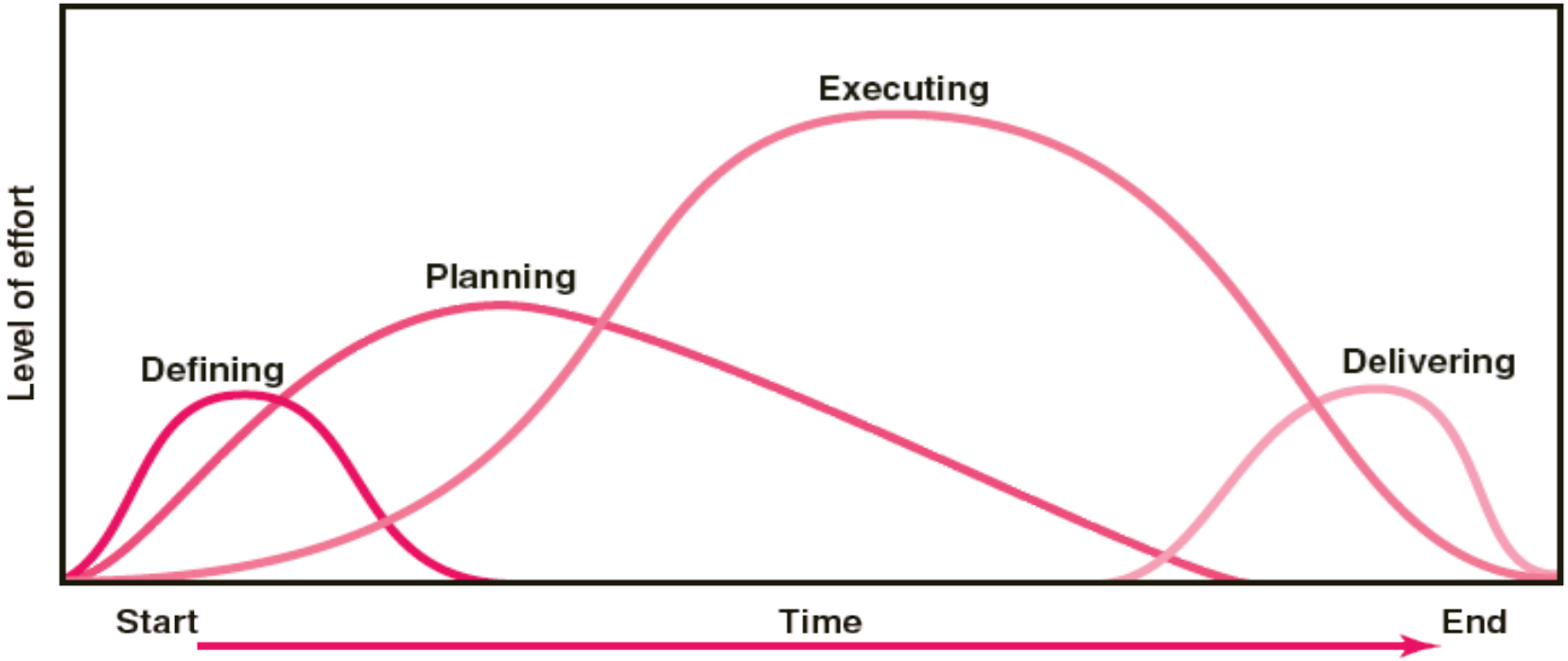
Class Quiz 4

- What makes IT projects different from other types of projects? How should project managers adjust to these differences?

Project Life Cycle

- A **project life cycle** is a collection of project phases that defines
  - what work will be performed in each phase
  - what deliverables will be produced and when
  - who is involved in each phase, and
  - how management will control and approve work produced in each phase

Project Lifecycle



Defining
1. Goals
2. Specifications
3. Tasks
4. Responsibilities

Planning
1. Schedules
2. Budgets
3. Resources
4. Risks
5. Staffing

Executing
1. Status reports
2. Changes
3. Quality
4. Forecasts

Delivering
1. Train customer
2. Transfer documents
3. Release resources
4. Release staff
5. Lessons learned

Source: Larson, E.W. & Gray, C.F. 2011, *Project Management: The Managerial Process, 5th edn., McGraw-Hill, Boston, USA, inside back cover*

What Happens in Different Project Phases

- In early phases of a project life cycle
  - **resource** needs are usually **lowest**
  - the level of **uncertainty** (risk) is **highest**
  - project **stakeholders** have the **greatest** opportunity to **influence** the project
- In middle phases of a project life cycle
  - the **certainty** of completing a project **improves**
  - **more resources** are needed
- The final phase of a project life cycle focuses on
  - ensuring that project **requirements were met**
  - the sponsor approves **completion** of the project

Project Management Methodologies

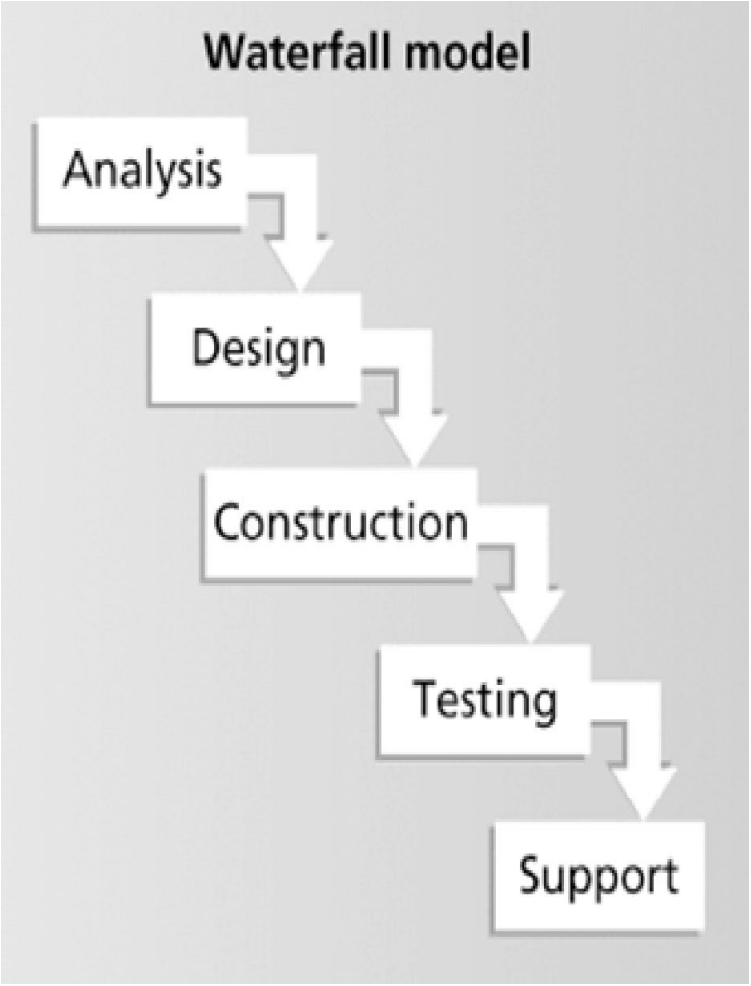
- A methodology is a system of practices, techniques, procedures and rules used by those who work in a discipline.
  - Lean practices, Kanban and Six Sigma are examples of methodologies (pmi.org).

Popular PM Methodologies

- Popular PM Methodologies:
  - Waterfall Project Management
  - Agile Project Management
  - PRINCE2
  - Kanban

Waterfall Project Management

- Traditional, or "**waterfall**" project management handles things sequentially, from the concept and planning phase through to development and quality assurance and finally project completion and maintenance.
- Waterfall methodology is most often applied to large software development projects as thorough planning and predictability are supreme to the project process and success.



Source: (Katcherovski, 2012). (Baker, n.d.)

Agile Project Management

- Agile project management focuses on adaptability to changing situations and constant, regular feedback – whether it's from the client or from other members of the team.

- This is ideal when clients or management need to be in on the production process, resulting in **changing requirements and drastic shifts** in team assignments.

- Agile project management is usually ideal for smaller software projects and/or those with accelerated development schedules.

Source: Katcherovski, 2012

Agile Project Management … continue

- **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 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.

Agile Project Management … continue

- Agile Scope Management
  - Scope is not well understood, but needs to be controlled
- Agile Time Management
  - Schedule must be flexible due to changes
- Agile Cost Management
  - Costs are more difficult to estimate
- Agile Risk Management
  - Higher risk aspects of project are completed first
- Agile Quality Management
  - Quality assessed after each iteration

PRINCE2

- PRINCE2 is a government-endorsed project management methodology, released and supported by the UK government in 1996.

- It is a very process-oriented methodology, dividing projects into multiple stages, each with their own plans and processes to follow (Katcherovski, 2012).

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

- Kanban focuses more on work to be carried out on time instead of focusing on who did what. People work together, but they don't work at the same speed, do not have the same knowledge and skills and must be synchronized.

- In Kanban, the work is organized in tasks or processes and allows team members to self-detect the workflow in the most efficient way (Maneva et al 2016).

Kanban … continue

- Kanban rules are such that we don't need to consider the requests of the software product we don't need immediately.

- We no longer need to write specifications, but only what can be developed.

- We no longer need to develop more than can be tested, tested more than can be deployed.
- David Anderson identified five core properties in successful implementations of the Kanban method:
  - **Visualize the workflow,**
  - **Limit WIP (Work in progress),**
  - **Manage flow,**
  - **Make Process Policies Explicit,**
  - **and Improve Collaboratively** (Maneva et al 2016).

Scrum

- An iterative project management methodology that thrives in situations where requirements constantly shift (Icasas, 2014).
- Scrum is part of the Agile movement.
- The Scrum approach to agile software development marks a dramatic departure from waterfall management.
- Scrum and other agile methods were inspired by shortcomings of waterfall method.
- Scrum emphasizes collaboration, functioning software, team self management, and the flexibility to adapt to emerging business realities.

Source: http://scrummethodology.com/

Critical Thinking Exercise 2: Managerial Perspectives

- **Which Project Management Method should you choose?**
  - **With short time schedule**

- Please submit your answer here at AnswerGarden:

https://answergarden.ch/1378745 . Write **ONE WORD** Only

Critical Thinking Exercise 3: Managerial Perspectives

- **Which Project Management Method should you choose?**
  - **With unclear user requirements**

- Please submit your answer here at AnswerGarden:

https://answergarden.ch/1378750 . Write **ONE WORD** Only

Critical Thinking Exercise 4: Managerial Perspectives

- **Which Project Management Method should you choose?**
  - **With unfamiliar technology and environment**

- Please submit your answer here at AnswerGarden:

https://answergarden.ch/1378755 . Write **ONE WORD** Only