

INFO3333

Computing 3 Management

Lecture 1

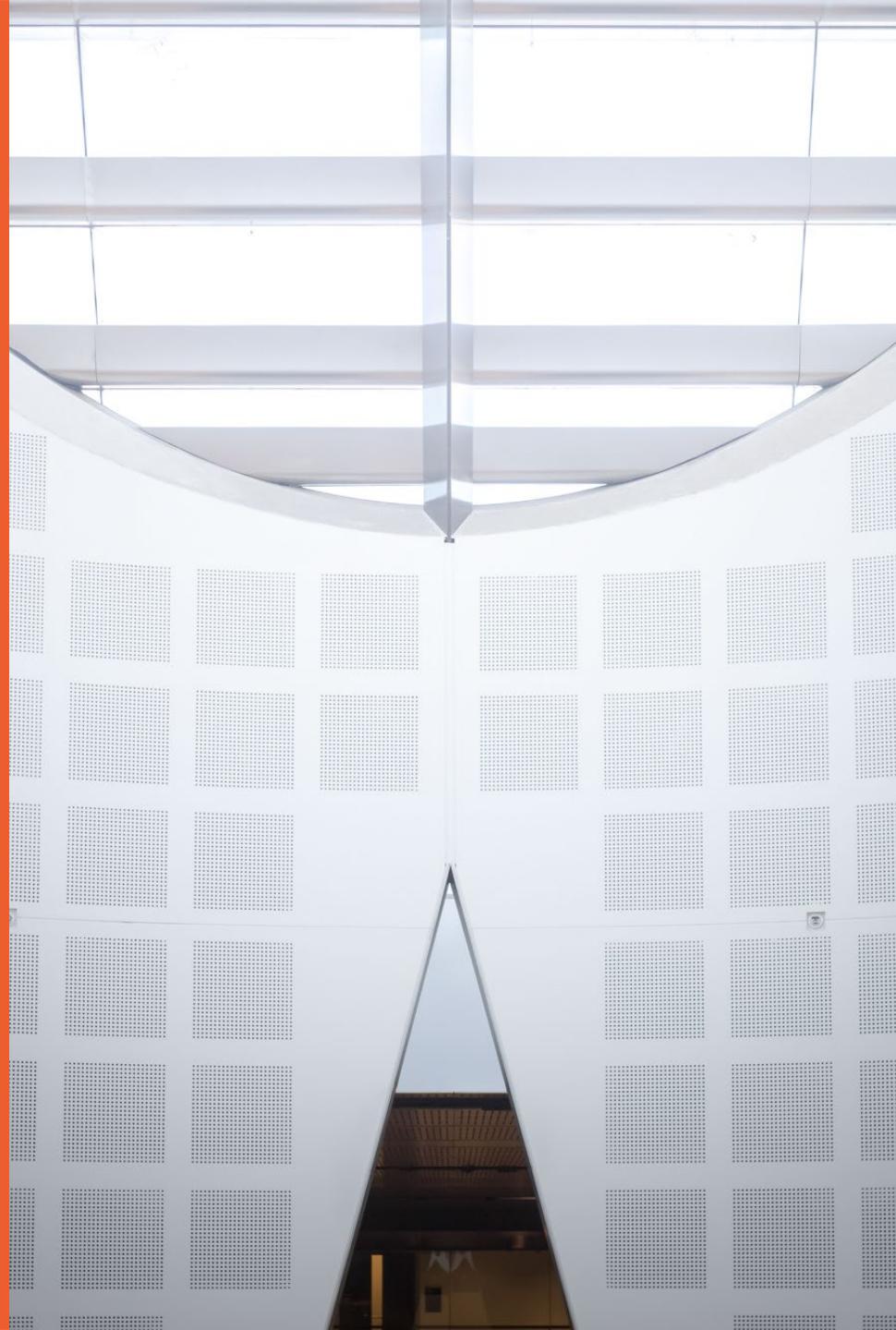
Introduction to IT Project Management: Part-B

Semester 1, 2021

Dr Rabiul Hasan



Source:
Schwalbe, K, Information Technology Project Management (9th Edition). Cengage Learning, 2019



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/1787649>

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

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

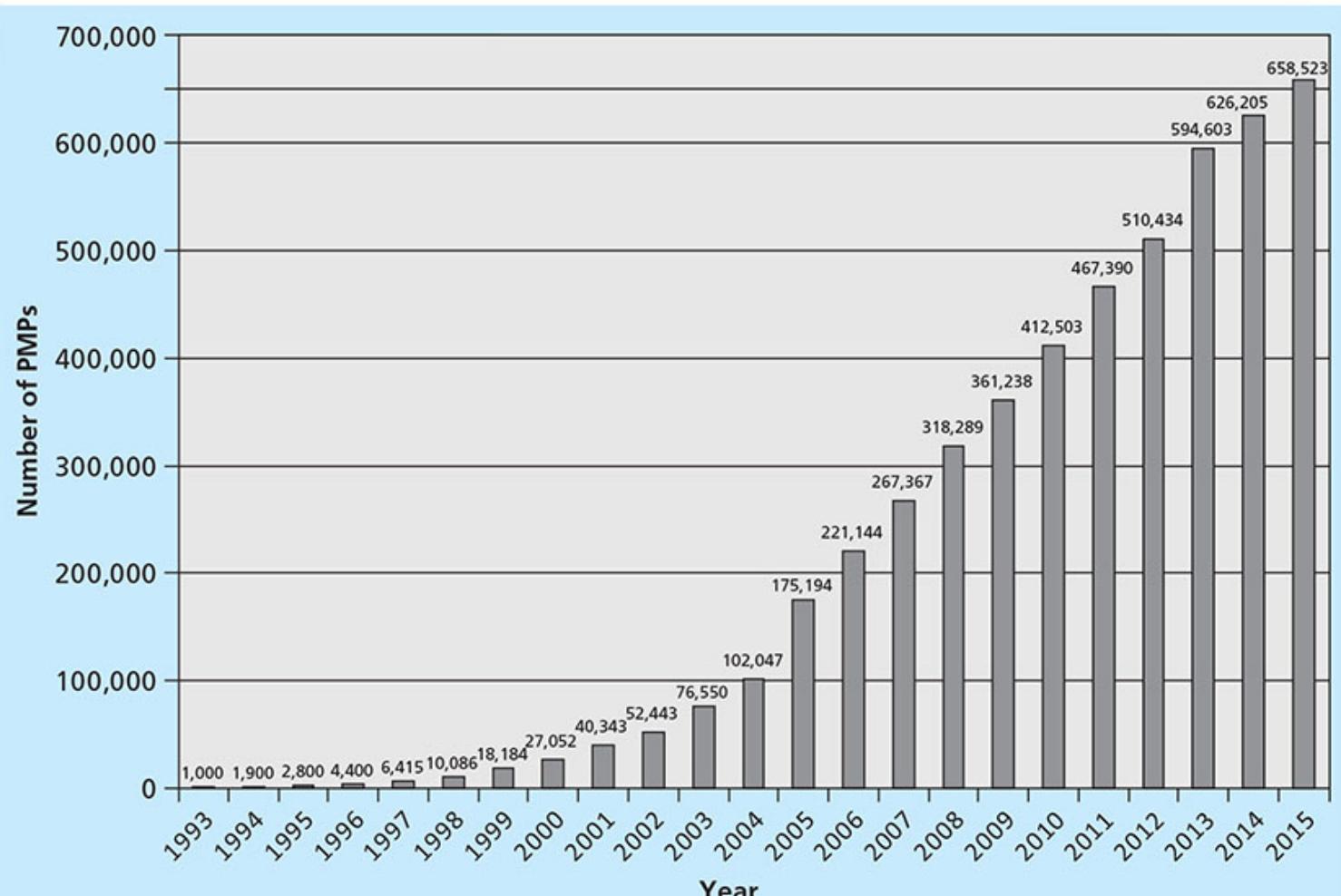
Project Management in 10 Hottest Tech Skills for 2017



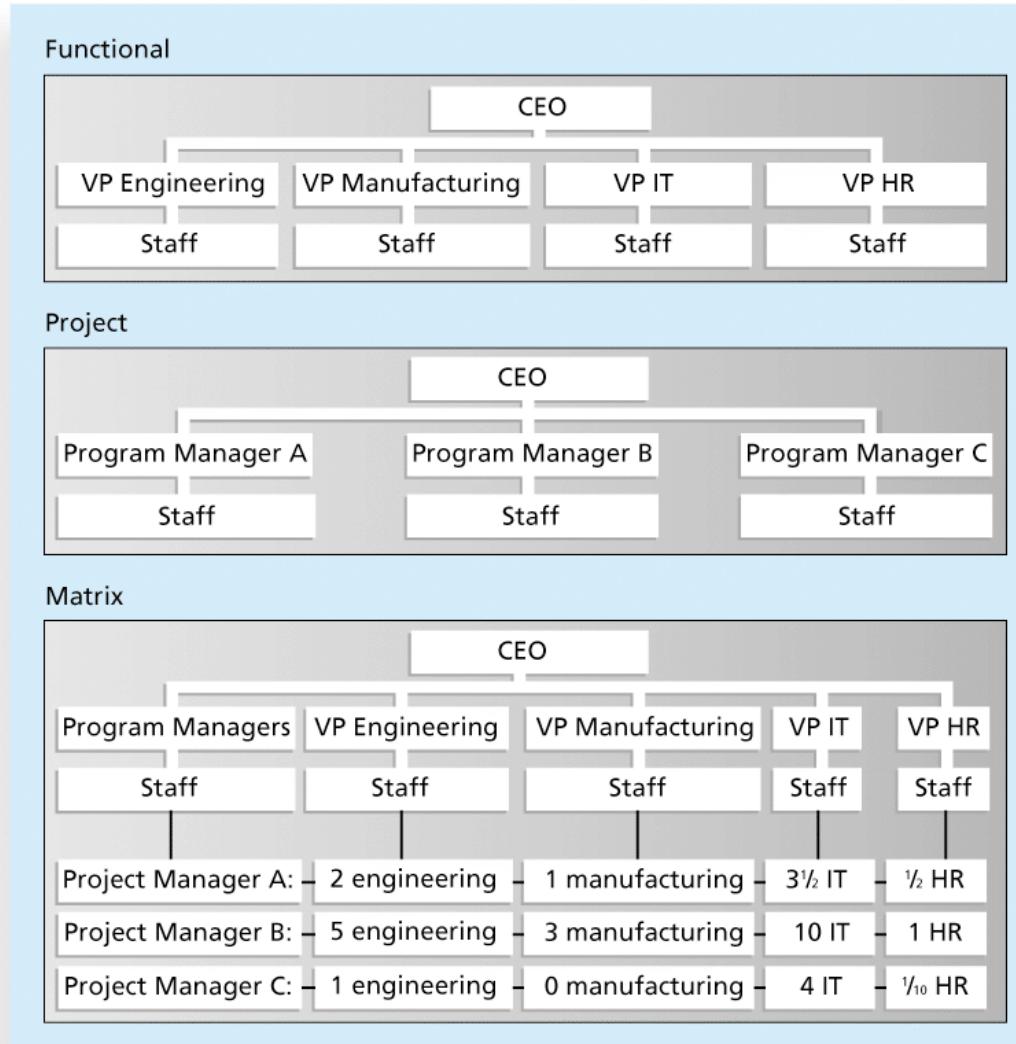
Project Management Certification

- 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



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)

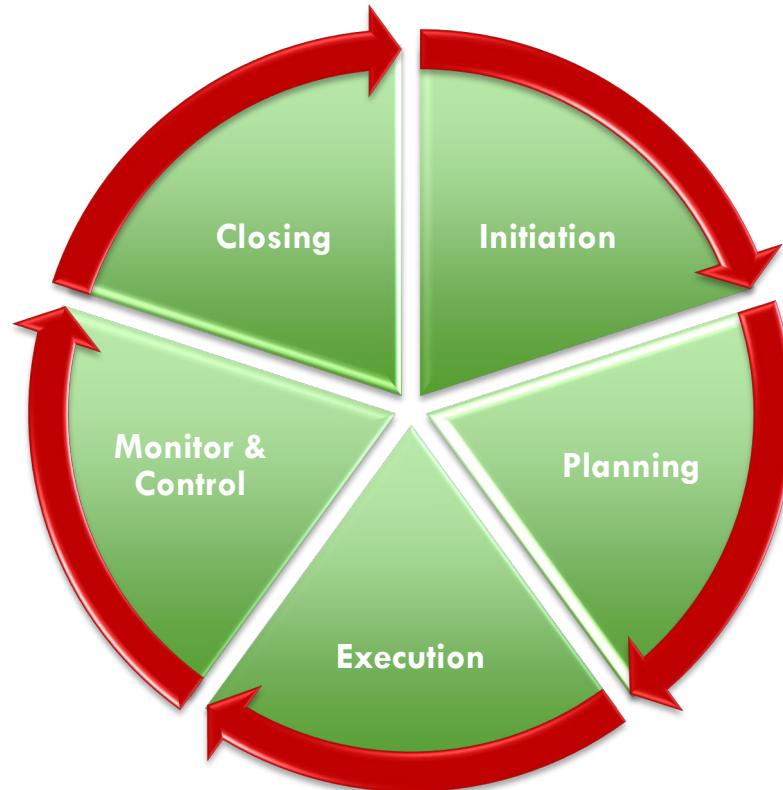
- The PMBOK® Guide describes **best practices** for what should be done to manage projects.
- PMBOK defines project management as application of knowledge, tools and techniques to project activities to meet project requirements.
- PMBOK organised across Knowledge Areas and Processes (managed through 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

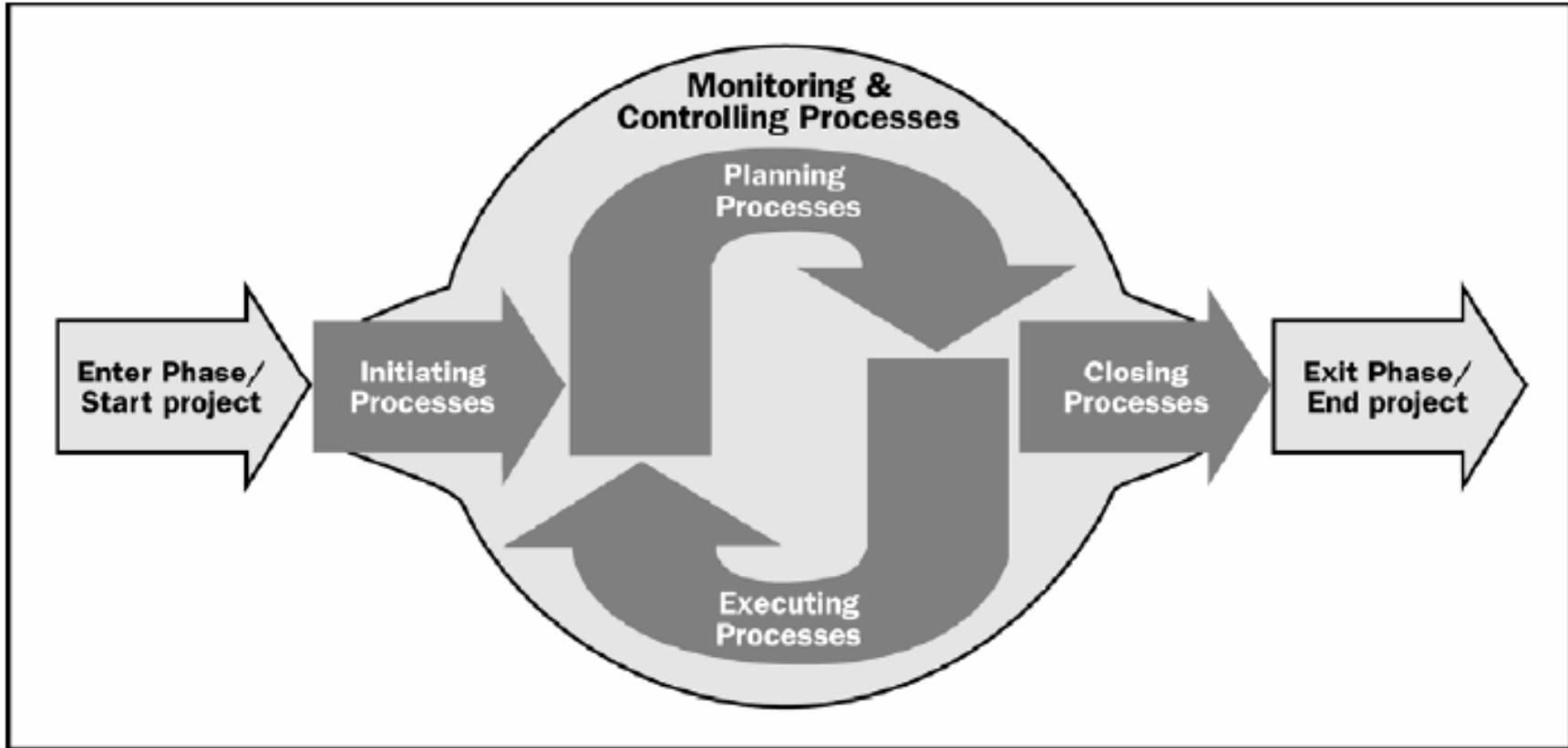


Figure 3-1. Project Management Process Groups

A Guide to the Project Management Body of Knowledge, Fifth Edition (PMBOK® Guide) © 2013 Project Management Institute, Inc. All Rights Reserved. Figure 3-1, Page 50.

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

A Guide to the Project Management Body of Knowledge, Fifth Edition (PMBOK® Guide) © 2013 Project Management Institute, Inc. All Rights Reserved. Figure 4-2, Page 66.

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

A Guide to the Project Management Body of Knowledge, Fifth Edition (PMBOK® Guide) © 2013 Project Management Institute, Inc. All Rights Reserved. Figure 4-4, Page 71.

PMBOK Project Management Process Groups: Executing

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

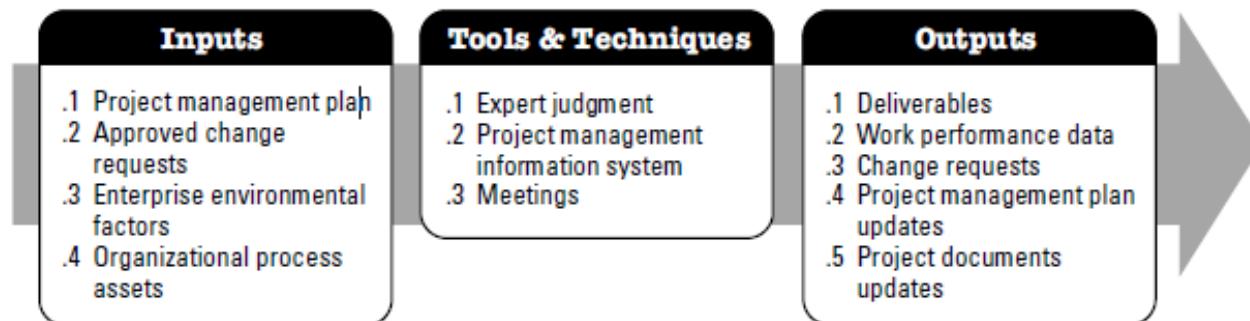


Figure 4-6. Direct and Manage Project Work: Inputs, Tools and Techniques, and Outputs

A Guide to the Project Management Body of Knowledge, Fifth Edition (PMBOK® Guide) © 2013 Project Management Institute, Inc. All Rights Reserved. Figure 4-6, Page 79.

PMBOK Project Management Process Groups: Monitoring and Control

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

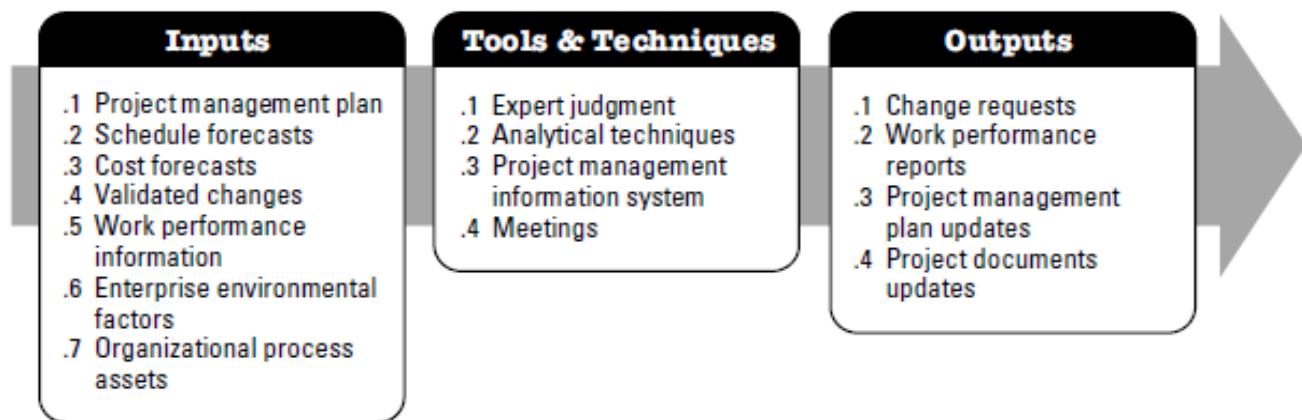


Figure 4-8. Monitor and Control Project Work: Inputs, Tools & Techniques, and Outputs

PMBOK Project Management Process Groups: Closing

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

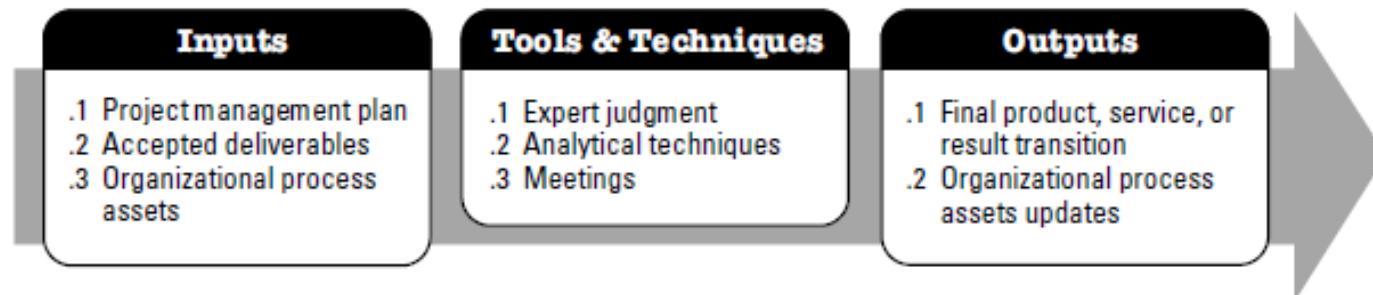


Figure 4-12. Close Project or Phase: Inputs, Tools & Techniques, and Outputs

A Guide to the Project Management Body of Knowledge, Fifth Edition (PMBOK® Guide) © 2013 Project Management Institute, Inc. All Rights Reserved. Figure 4-12, Page 100.

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	

A Guide to the Project Management Body of Knowledge, Fifth Edition (PMBOK® Guide) © 2013 Project Management Institute, Inc. All Rights Reserved. Table 3-1, Page 60.

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	

A Guide to the Project Management Body of Knowledge, Fifth Edition (PMBOK® Guide) © 2013 Project Management Institute, Inc. All Rights Reserved. Table 3-1, Page 60.

Class Quiz 1

- What type of organizational structure has project team members reporting to at least two bosses?
- Answer at AnswerGarden:
- <https://answergarden.ch/1787651>

Class Quiz 2

- What type of organizational structure gives the least amount of authority to project managers?
- Answer at AnswerGarden:
- <https://answergarden.ch/1787653>

Class Quiz 3

- What type of organizational structure gives the most authority to project managers?
- Answer at AnswerGarden:
- <https://answergarden.ch/1787654>

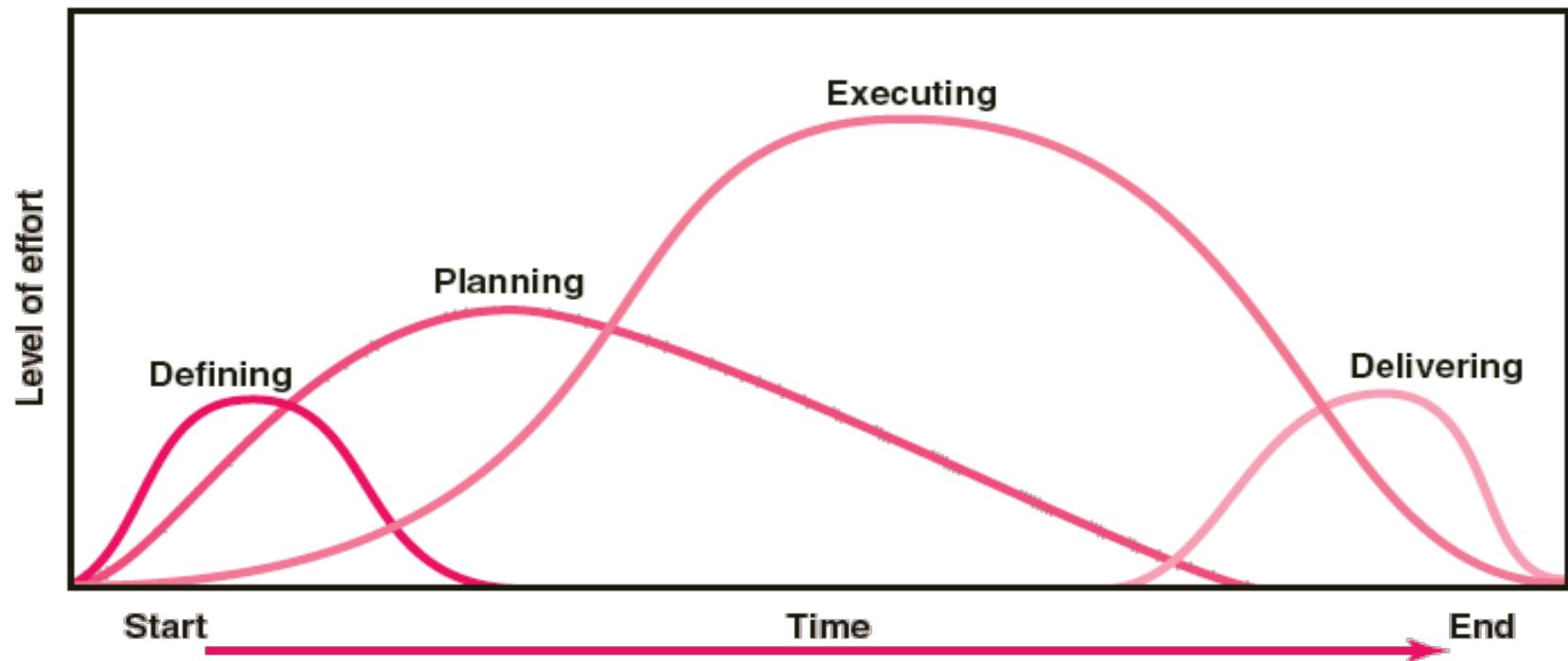
Class Quiz 4

- 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

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

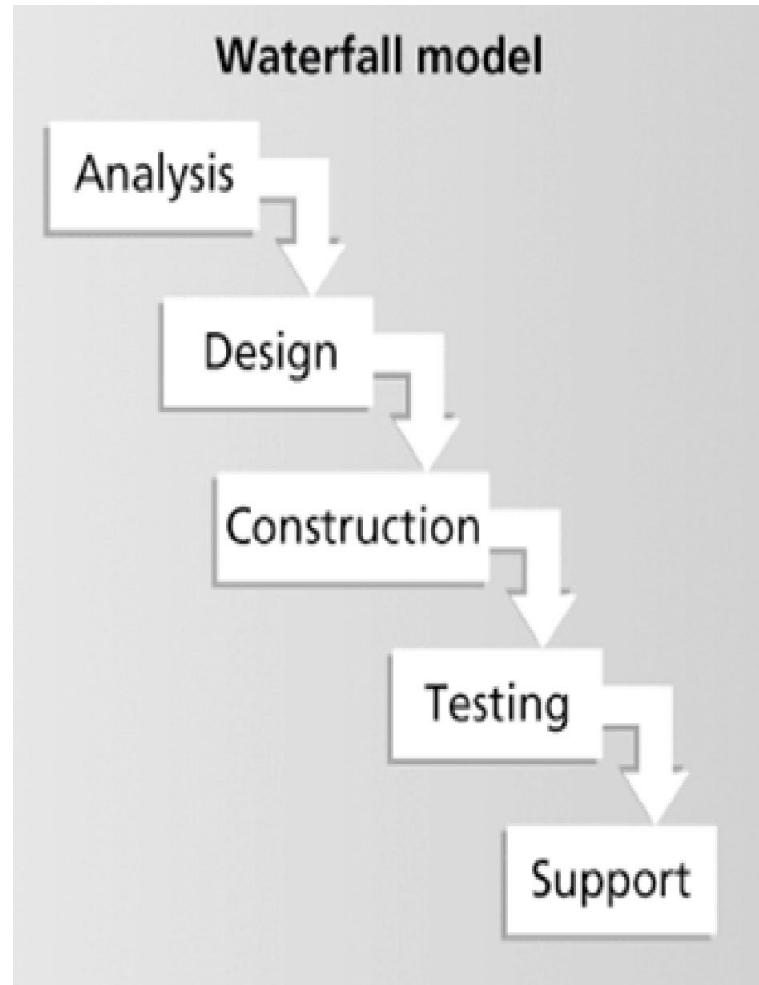
- A methodology is **a system of practices, techniques, procedures and rules used by those who work in a discipline.**
 - Lean practices, Kanban and Six Sigma are examples of methodologies (pmi.org).

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.



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.

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.

Critical Thinking Exercise 2: Managerial Perspectives

- **Q1: Which Project Management Method should you choose?**

- **With short time schedule**

Please write your answer here at AnswerGarden. Write ONE WORD Only

<https://answergarden.ch/1805729>

- **Q2: Which Project Management Method should you choose?**

- **With unclear user requirements**

Please write your answer here at AnswerGarden. Write ONE WORD Only

<https://answergarden.ch/1805730>

- **Q3: Which Project Management Method should you choose?**

- **With unfamiliar technology and environment**

Please write your answer here at AnswerGarden. Write ONE WORD Only

<https://answergarden.ch/1805732>

INFO3333

Computing 3 Management

Lecture 2

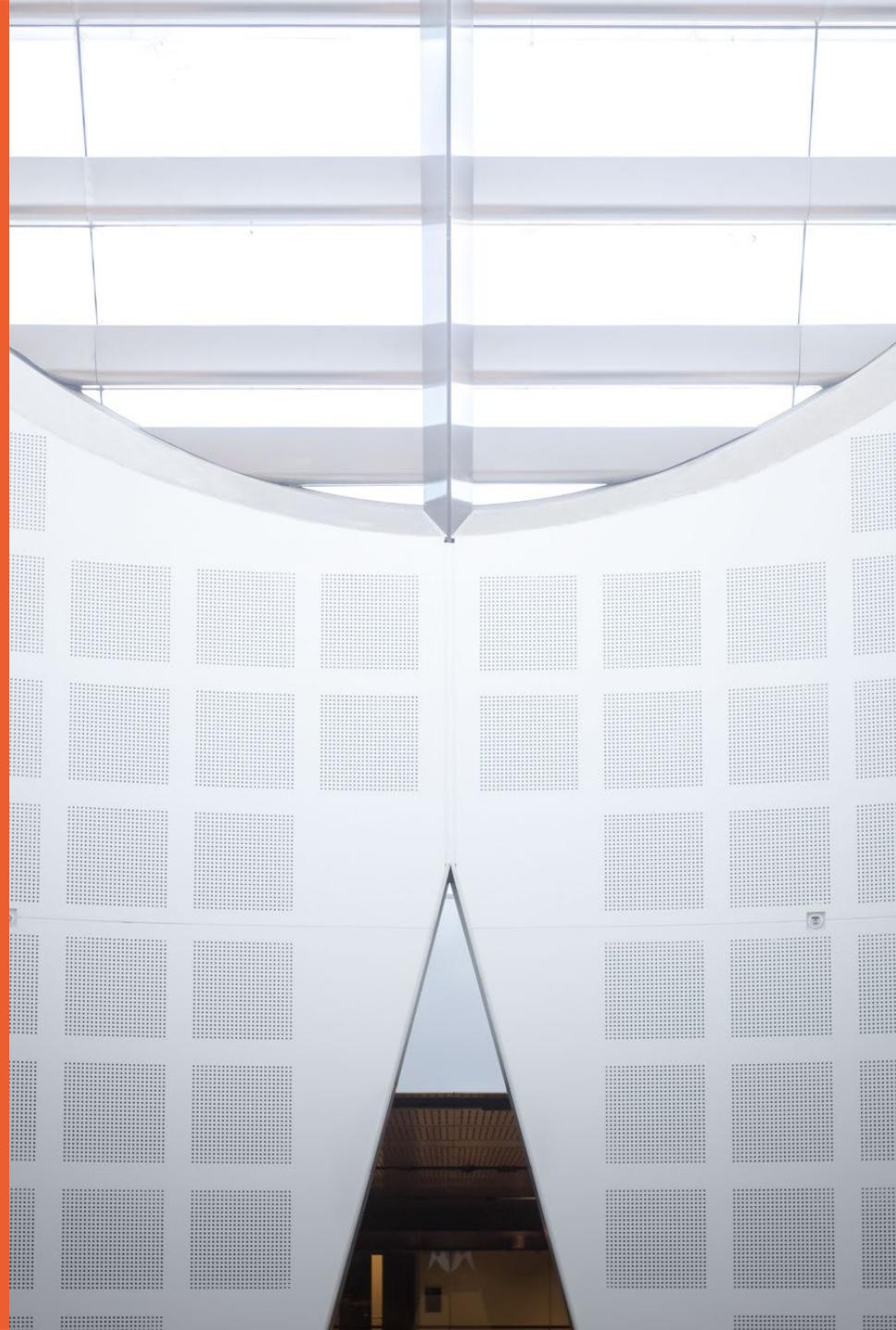
Managing IT Project: requirements and scope

Semester 1, 2021
Dr Rabiul Hasan



THE UNIVERSITY OF
SYDNEY

Source:
Schwalbe, K, Information Technology Project Management (9th Edition). Cengage Learning, 2019



Recapture From Lecture 1

It was an overview of PM in IT:

- Attributes of a Project
 - Why Project or Project Management?
 - IT Project Management
-
- IT Project Manager
 - PMBOK Knowledge Areas
 - Project Life Cycle
 - PM Methodologies

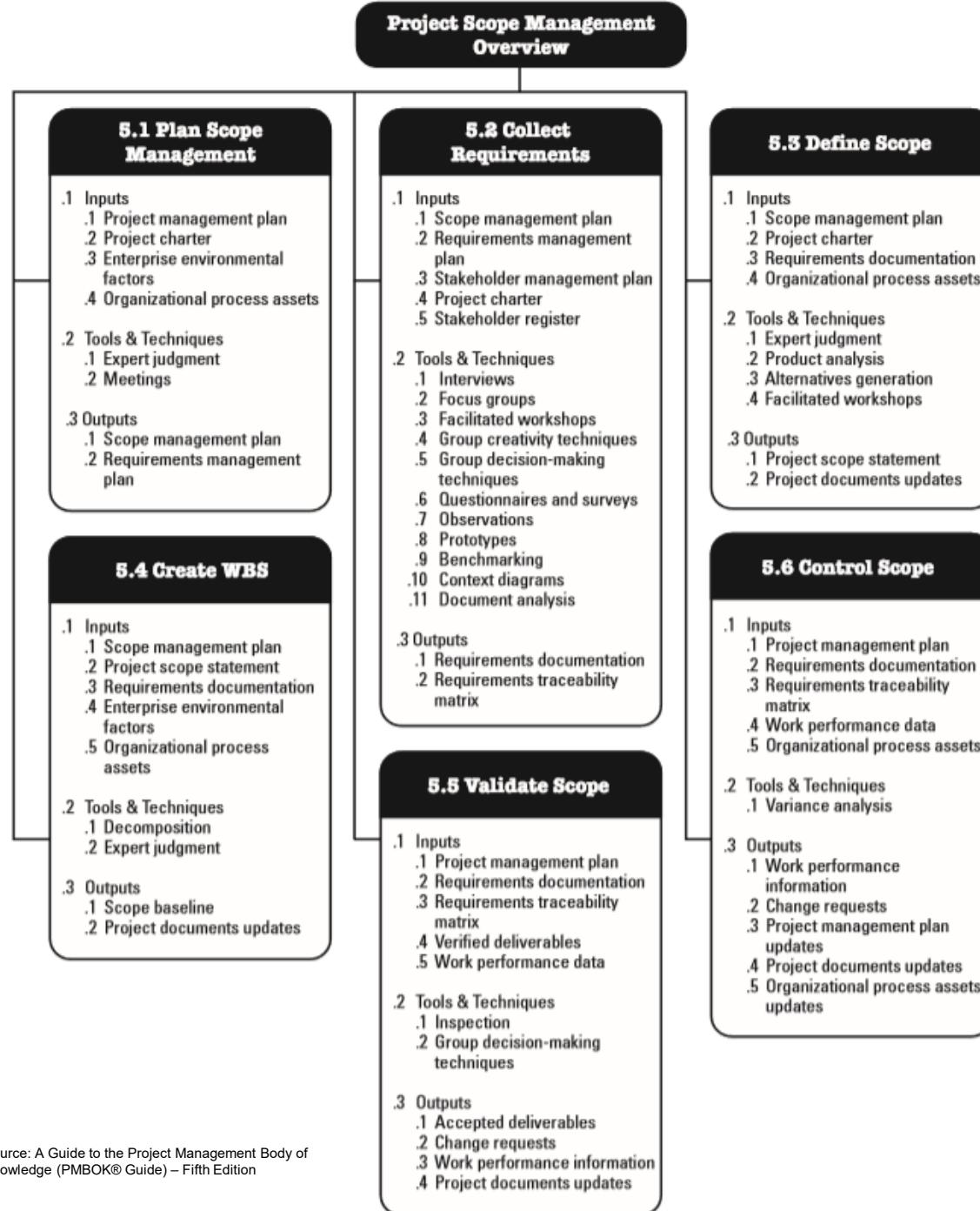
Learning Objectives

- Understand project goal, objectives, deliverables, and scope
- Describe and understand the processes of project scope management
- Discuss methods of investigating and collecting requirements to meet stakeholder needs and expectations
- Discuss the process for creating a work breakdown structure
- Discuss and understand the importance and method of validating and controlling project scope

Project Goal, Objectives, Deliverable, and Scope

- **Project Goal:** Long-term
- **Objectives:** Short-term and practical
- A **deliverable** is a **product produced** as part of a project, such as **hardware or software, planning documents, or meeting minutes**
- **Scope** refers to **all the work involved in creating the products** of the project and the **processes used to create them.**

Project Scope Management Overview



Source: A Guide to the Project Management Body of Knowledge (PMBOK® Guide) – Fifth Edition

Project Scope Management Processes:

(1) Plan Scope Management

- Plan Scope Management is the process of **creating a scope management plan** that documents how the project scope will be defined, validated, and controlled



Scope Management Plan Contents

- How to prepare a detailed project scope statement
- How to create a WBS work breakdown structure

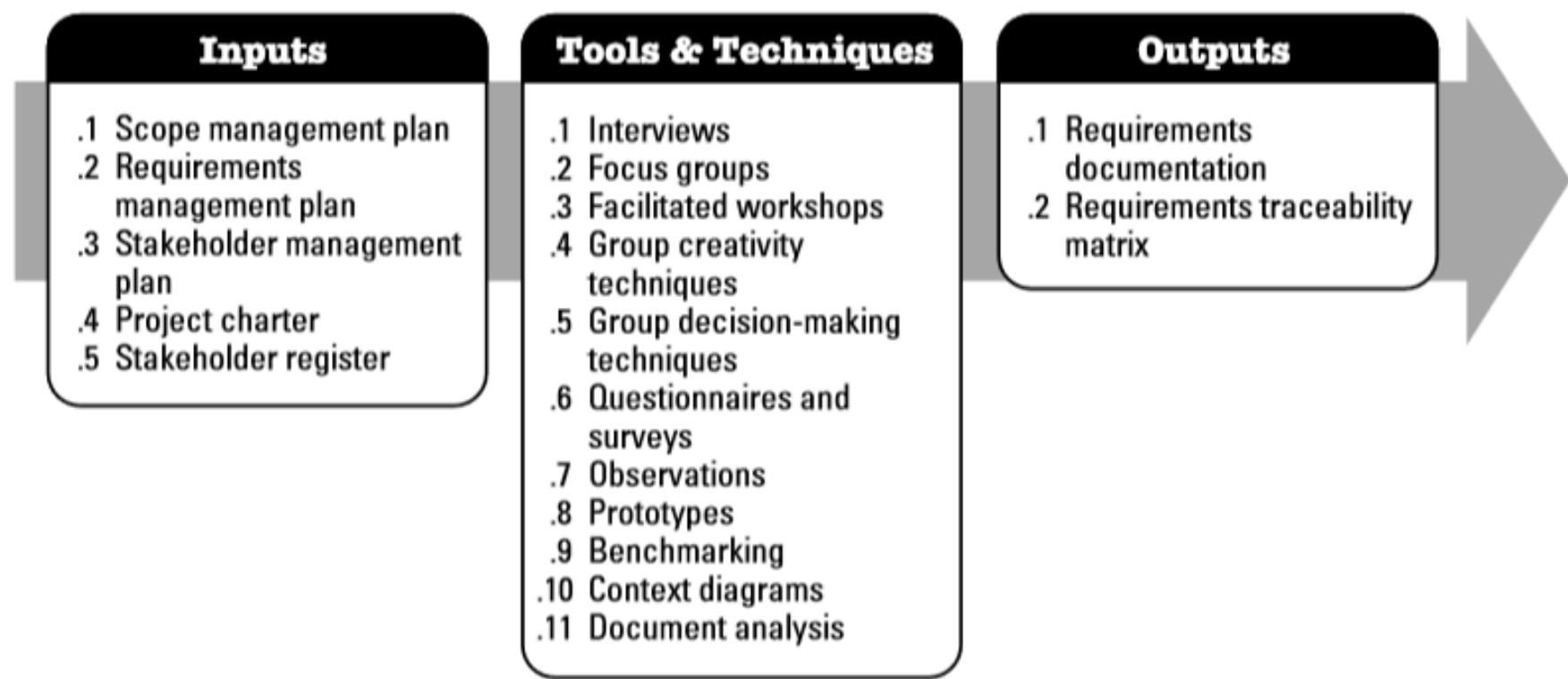
- How to maintain and approve the WBS
- How to obtain formal acceptance of the completed project deliverables

- How to control requests for changes to the project scope

Project Scope Management Processes:

(2) Collect Requirements

- Collect Requirements is the process of determining, documenting, and managing stakeholder needs and requirements to meet project objectives.



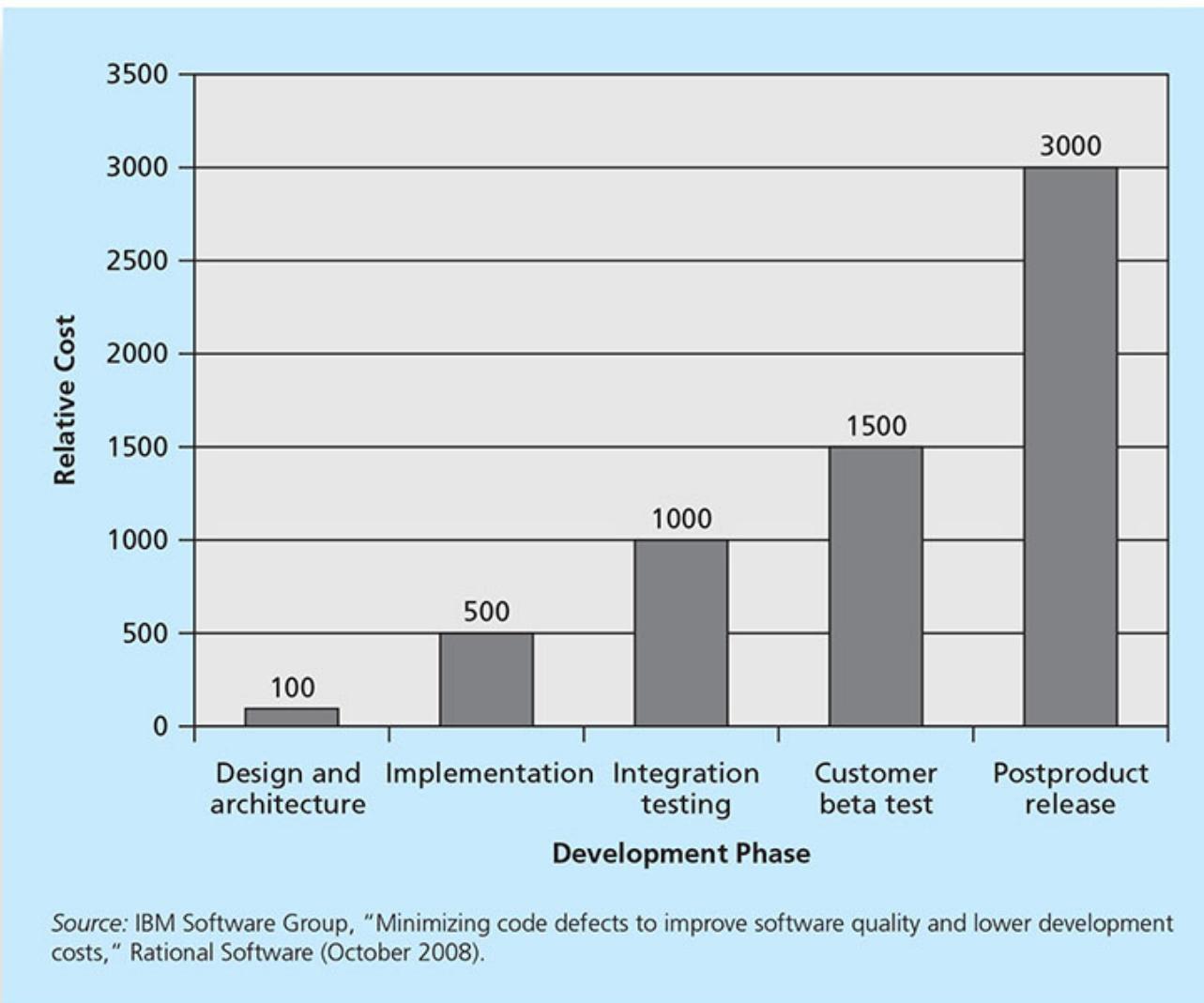
Requirements Management Plan

- The PMBOK describes requirements as “conditions or capabilities that must be met by the project or present in the product, service, or result to satisfy an agreement or other formally imposed specification”
- The **requirements management plan** documents how project requirements will be analyzed, documented, and managed

Collect Requirements

- For some IT projects, it is helpful to divide requirements development into categories called elicitation, analysis, specification, and validation
- It is important to use an iterative approach to defining requirements since they are often unclear early in a project

Relative Cost to Correct a Software Requirement Defect



Methods for Collecting Requirements

- Interviewing
- Focus groups and facilitated workshops
- Using group creativity and decision-making techniques

- Questionnaires/surveys
- Observation
- Prototyping

- Benchmarking, or generating ideas by comparing specific project practices or product characteristics to those of other projects or products inside or outside the performing organization, can also be used to collect requirements

Requirements Traceability Matrix

- A **requirements traceability matrix (RTM)** is a table that lists requirements, various attributes of each requirement, and the status of the requirements to ensure that all requirements are addressed
- Sample entry in an RTM

Requirement No.	Name	Category	Source	Status
R32	Laptop memory	Hardware	Project charter and corporate laptop specifications	Complete. Laptops ordered meet requirement by having 4GB of memory.

Project Scope Management Processes

(3) Define Scope

- Define Scope is the process of developing a **detailed description** of the project and product.



Define Scope

Input: Project Charter

Output: Scope Statement

Project Charter

- Project purpose or justification
- Measurable project objectives and related success criteria
- High-level requirements
- High-level project description
- High-level risks
- Summary milestone schedule
- Summary budget
- Stakeholder list
- Project approval requirements (what constitutes success, who decides it, who signs off)
- Assigned project manager, responsibility, and authority level
- Name and authority of the sponsor or other person(s) authorizing the project charter

Project Scope Statement

- Project scope description (progressively elaborated)
- Acceptance criteria
- Project deliverables
- Project exclusions
- Project constraints
- Project assumptions

Sample Project Charter (partial)

Project Title: Information Technology (IT) Upgrade Project

Project Start Date: March 4

Projected Finish Date: December 4

Key Schedule Milestones:

- Inventory update completed April 15
- Hardware and software acquired August 1
- Installation completed October 1
- Testing completed November 15

Budget Information: Budgeted \$1,000,000 for hardware and software costs and \$500,000 for labor costs.

Project Manager: Kim Nguyen, (310) 555-2784, knguyen@course.com

Project Objectives: Upgrade hardware and software for all employees (approximately 2,000) within nine months based on new corporate standards. See attached sheet describing the new standards. Upgrades may affect servers as well as associated network hardware and software.

Main Project Success Criteria: The hardware, software, and network upgrades must meet all written specifications, be thoroughly tested, and be completed in nine months. Employee work disruptions will be minimal.

Approach:

- Update the IT inventory database to determine upgrade needs
- Develop detailed cost estimate for project and report to CIO
- Issue a request for quote to obtain hardware and software
- Use internal staff as much as possible for planning, analysis, and installation

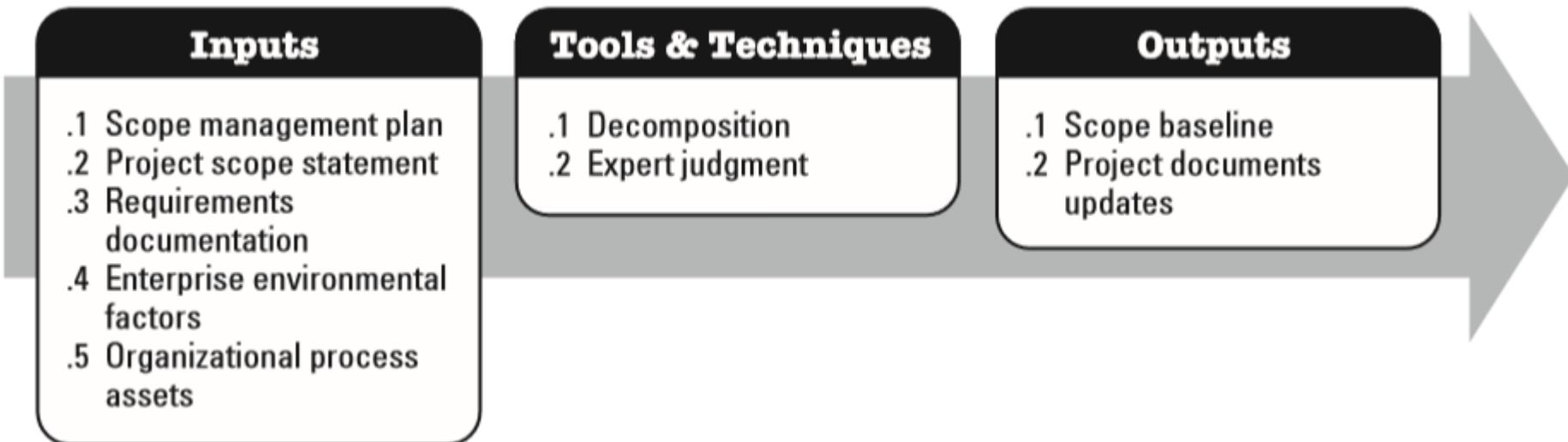
Scope Statement

- **Project scope statements** should include **at least** a product scope description, product user acceptance criteria, and detailed information on **all project deliverables**.
- As time progresses, the scope of a project should become more clear and specific

Project Scope Management Processes:

(4) Create WBS

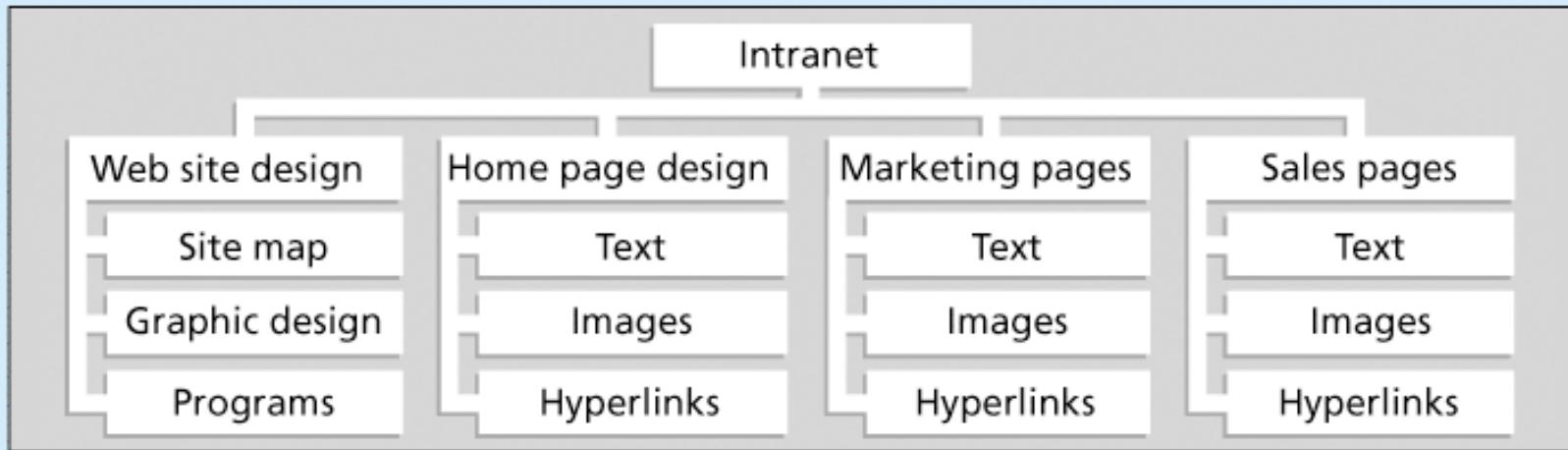
- Create WBS is the process of subdividing project deliverables and project work into smaller, more manageable components.



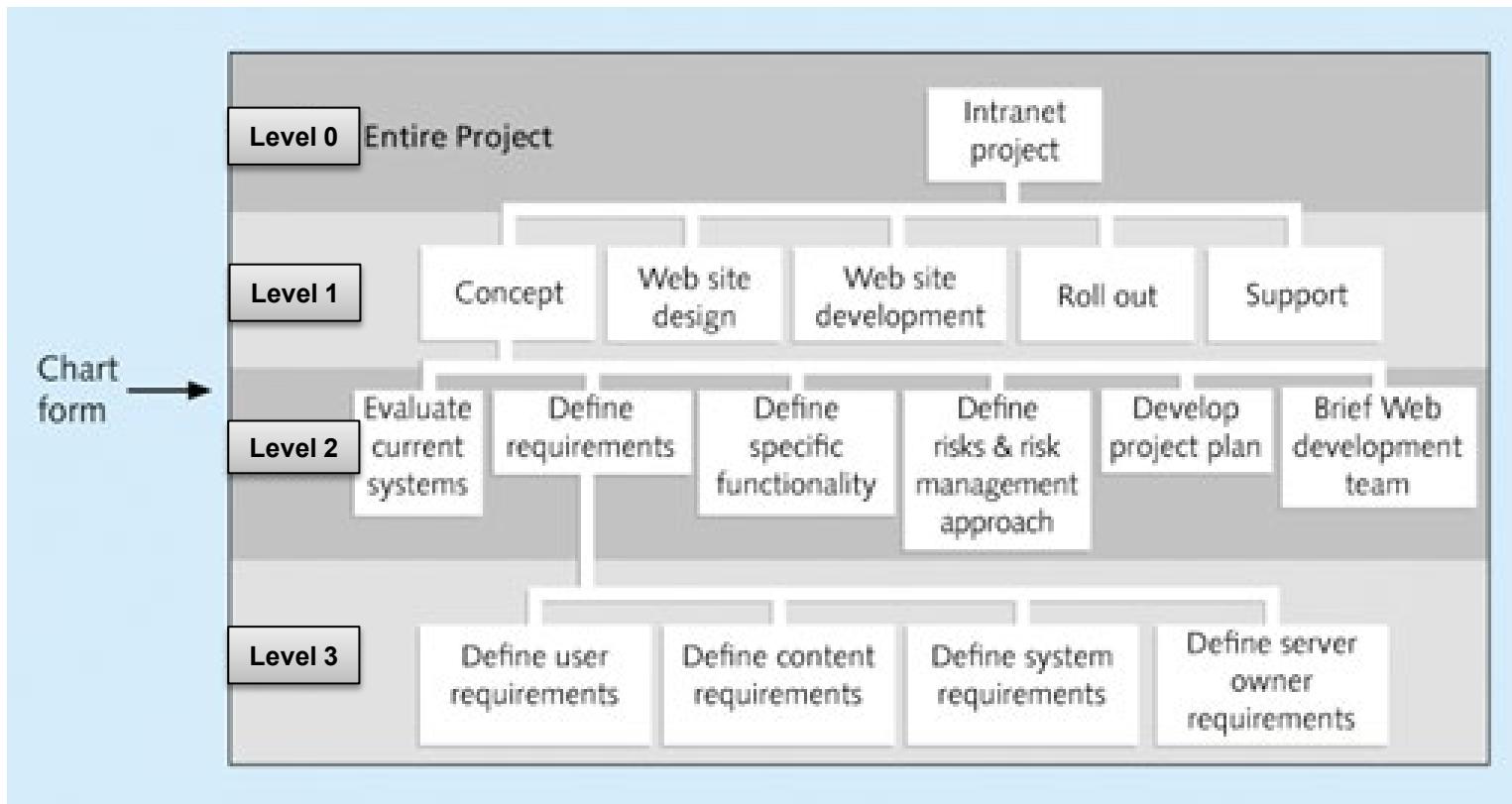
Creating the Work Breakdown Structure (WBS)

- A **WBS** is a deliverable-oriented grouping of the work involved in a project that defines the total scope of the project
- WBS is a foundation document that provides the basis for planning and managing project schedules, costs, resources, and changes
- **Decomposition** is subdividing project deliverables into smaller pieces
- A **work package** is a task at the lowest level of the WBS
- The **scope baseline** includes the approved project scope statement and its associated WBS and WBS dictionary

WBS Organized by Product



WBS Organized by Phase



WBS Organized in Tabular Form

Tabular form with PMI numbering

1.1 Concept

- 1.1.1 Evaluate current systems**
- 1.1.2 Define requirements**
 - 1.1.2.1 Define user requirements**
 - 1.1.2.2 Define content requirements**
 - 1.1.2.3 Define system requirements**
 - 1.1.2.4 Define server owner requirements**
- 1.1.3 Define specific functionality**
- 1.1.4 Define risks and risk management approach**
- 1.1.5 Develop project plan**
- 1.1.6 Brief Web development team**

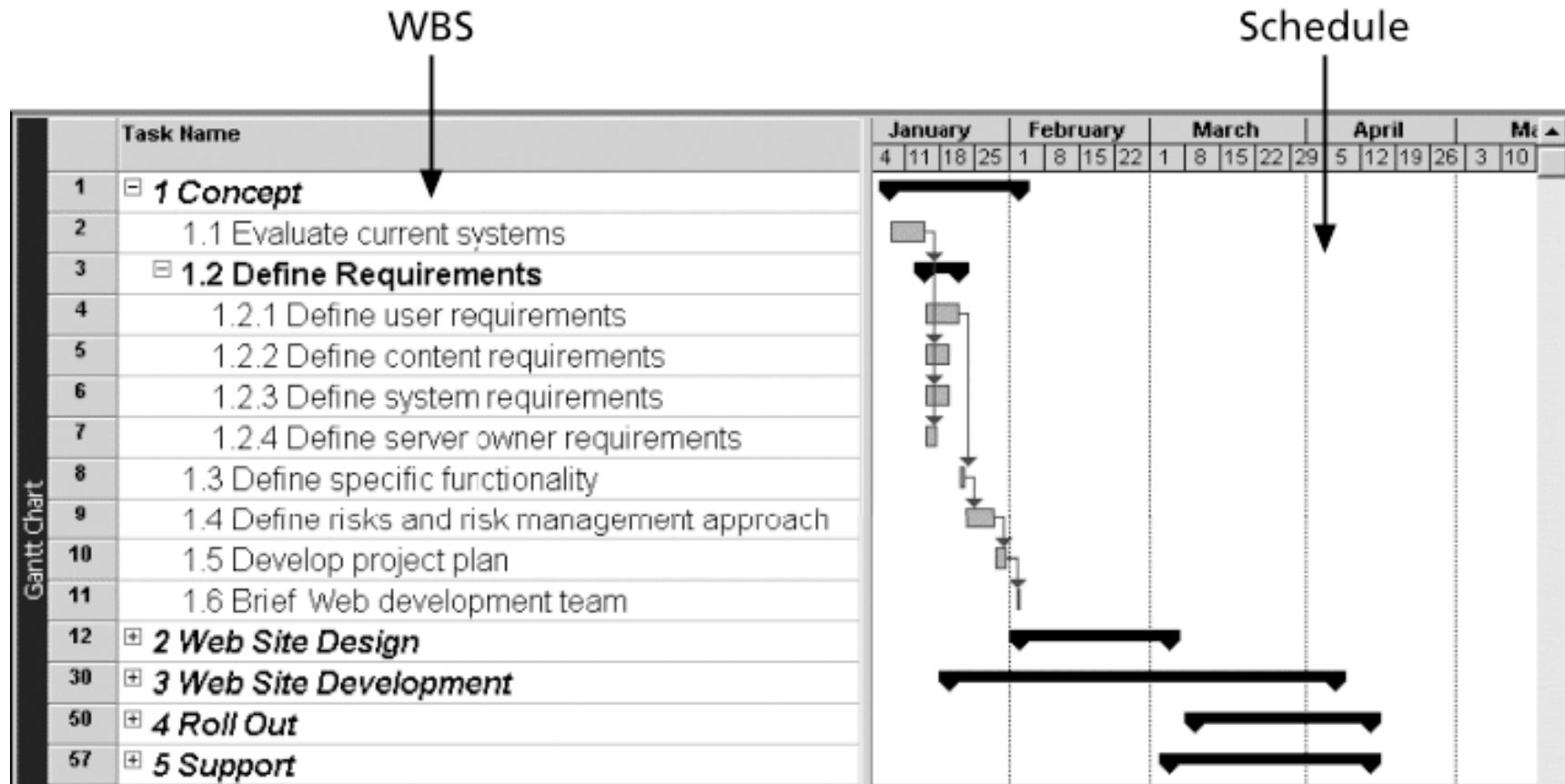
1.2 Web site design

1.3 Web site development

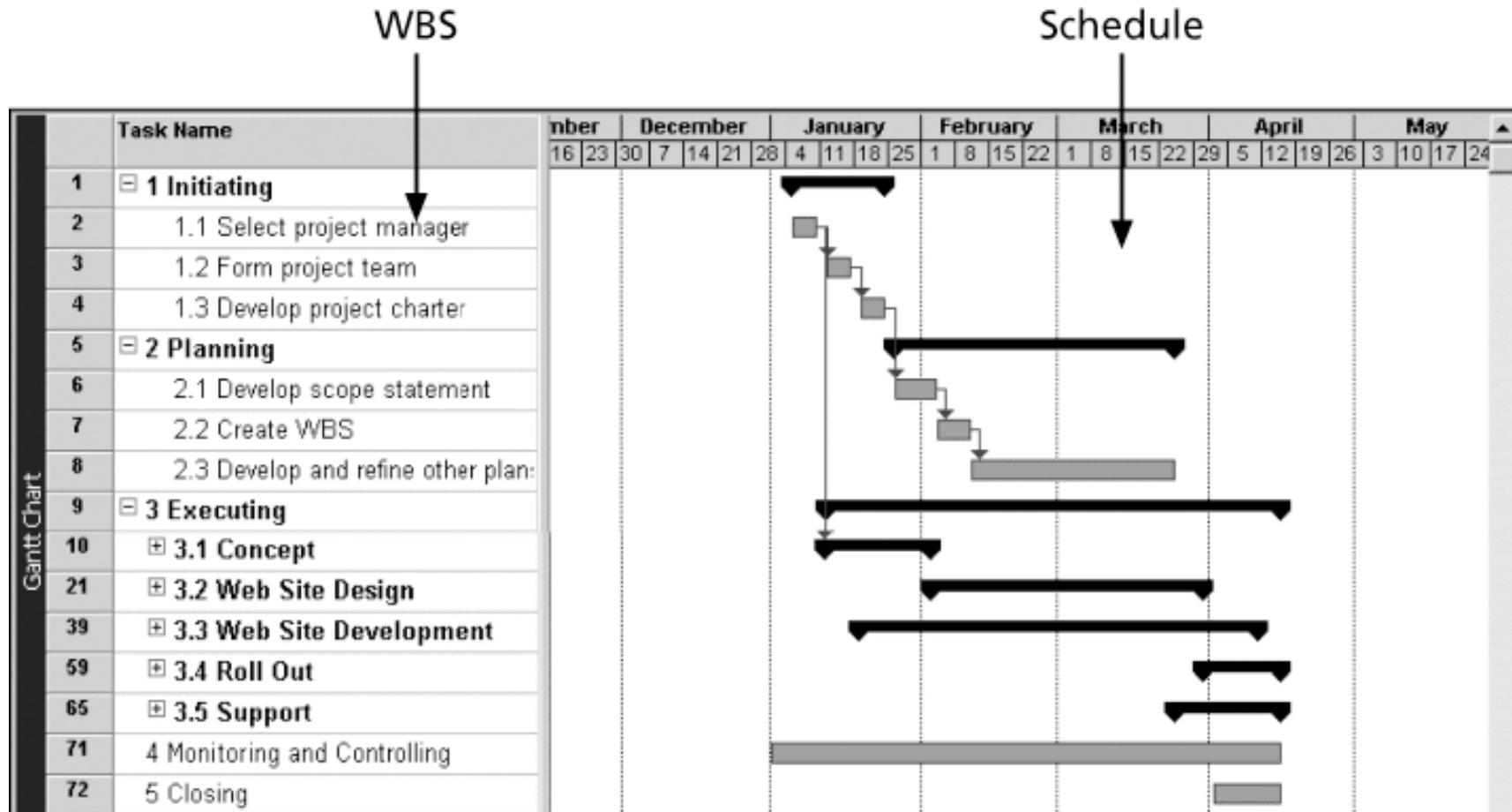
1.4 Roll out

1.5 Support

Intranet WBS and Gantt Chart in Microsoft Project



Intranet Gantt Chart Organized by Project Management Process Groups



Detailed WBS for Executing Section (Process)

3.0 Executing

 3.1 Survey

 3.2 User inputs

 3.3 Intranet site content

 3.3.1 Templates and Tools

 3.3.2 Articles

 3.3.3 Links

 3.3.4 Ask the Expert

 3.3.5 User requests feature

 3.4 Intranet site design

 3.5 Intranet site construction

 3.6 Site testing

 3.7 Site promotion

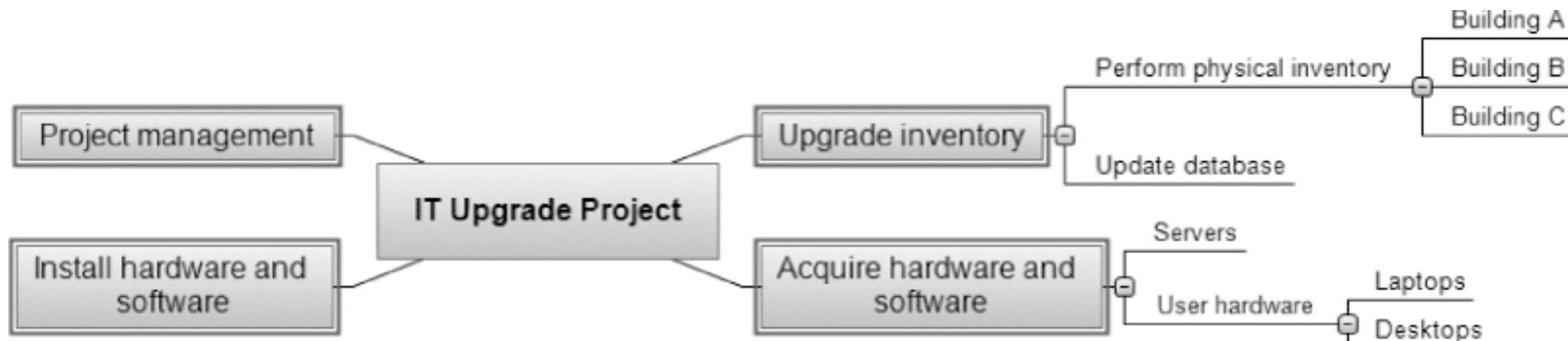
 3.8 Site roll out

 3.9 Project benefits measurement

Approaches to Developing WBSs

- Using **guidelines**: Some organizations, like the Department of Defense (DOD), provide guidelines for preparing WBSs
- The **analogy approach**: Review WBSs of similar projects and tailor to your project
- The **top-down approach**: Start with the largest items of the project and break them down
- The **bottom-up approach**: Start with the specific tasks and roll them up
- Mind-mapping approach: **Mind mapping** is a technique that uses **branches radiating out from a core idea** to structure thoughts and ideas

Mind-Mapping Approach for Creating a WBS



Source: MatchWare's MindView 4 Business Edition

The WBS Dictionary

- Many WBS tasks are vague and must be explained more so people know what to do and can estimate how long it will take and what it will cost to do the work
- A **WBS dictionary** is a document that describes detailed information about each WBS item

WBS Dictionary

WBS Dictionary Entry March 20

Project Title: Information Technology (IT) Upgrade Project

WBS Item Number: 2.2

WBS Item Name: Update Database

Description: The IT department maintains an online database of hardware and software on the corporate intranet. However, we need to make sure that we know exactly what hardware and software employees are currently using and if they have any unique needs before we decide what to order for the upgrade. This task will involve reviewing information from the current database, producing reports that list each department's employees and location, and updating the data after performing the physical inventory and receiving inputs from department managers. Our project sponsor will send a notice to all department managers to communicate the importance of this project and this particular task. In addition to general hardware and software upgrades, the project sponsors will ask the department managers to provide information for any unique requirements they might have that could affect the upgrades. This task also includes updating the inventory data for network hardware and software. After updating the inventory database, we will send an e-mail to each department manager to verify the information and make changes online as needed. Department managers will be responsible for ensuring that their people are available and cooperative during the physical inventory. Completing this task is dependent on WBS Item Number 2.1, Perform Physical Inventory, and must precede WBS Item Number 3.0, Acquire Hardware and Software.

Things to Remember for Creating a WBS

- A unit of work should appear at only one place in the WBS.
- The work content of a WBS item is the sum of the WBS items below it
- A WBS item is the responsibility of only one individual, even though many people may be working on it
- The WBS must be consistent with the way in which work is actually going to be performed; it should serve the project team first, and other purposes only if practical

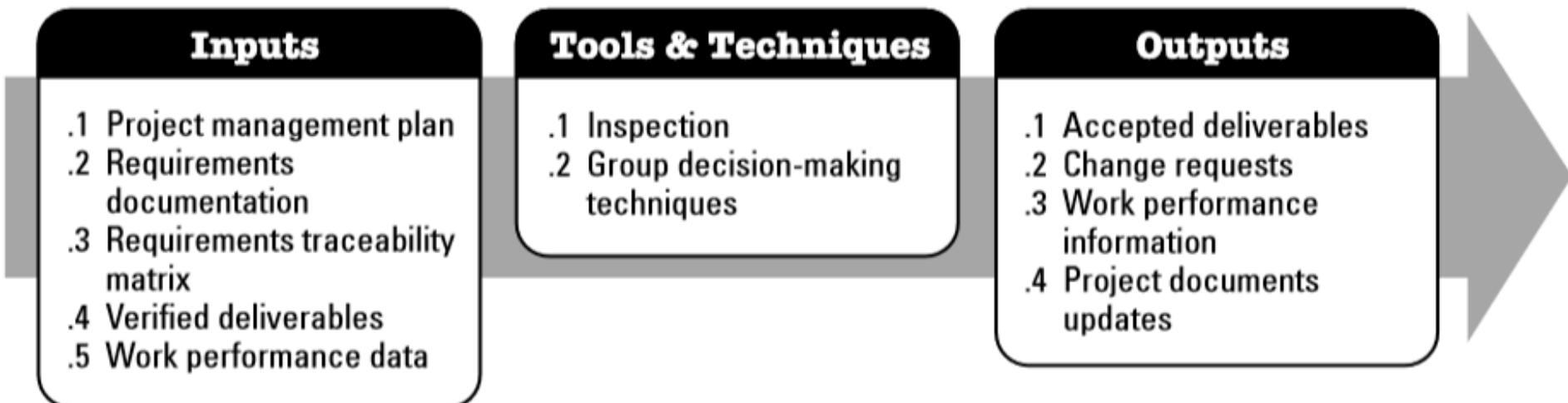
Things to Remember for Creating a WBS (cont'd)

- Project team members should be involved in developing the WBS to ensure consistency and buy-in
- Each WBS item must be documented in a WBS dictionary to ensure accurate understanding of the scope of work included and not included in that item
- The WBS must be a flexible tool to accommodate inevitable changes while properly maintaining control of the work content in the project according to the scope statement

Project Scope Management Processes:

(5) Validate Scope

- Validate Scope is the process of formalizing acceptance of the completed project deliverables.



Validating Scope

- It is very difficult to create a good scope statement and WBS for a project
- It is even more difficult to verify project scope and minimize scope changes
- **Scope validation** involves formal acceptance of the completed project deliverables
- Acceptance is often achieved by a customer inspection and then sign-off on key deliverables

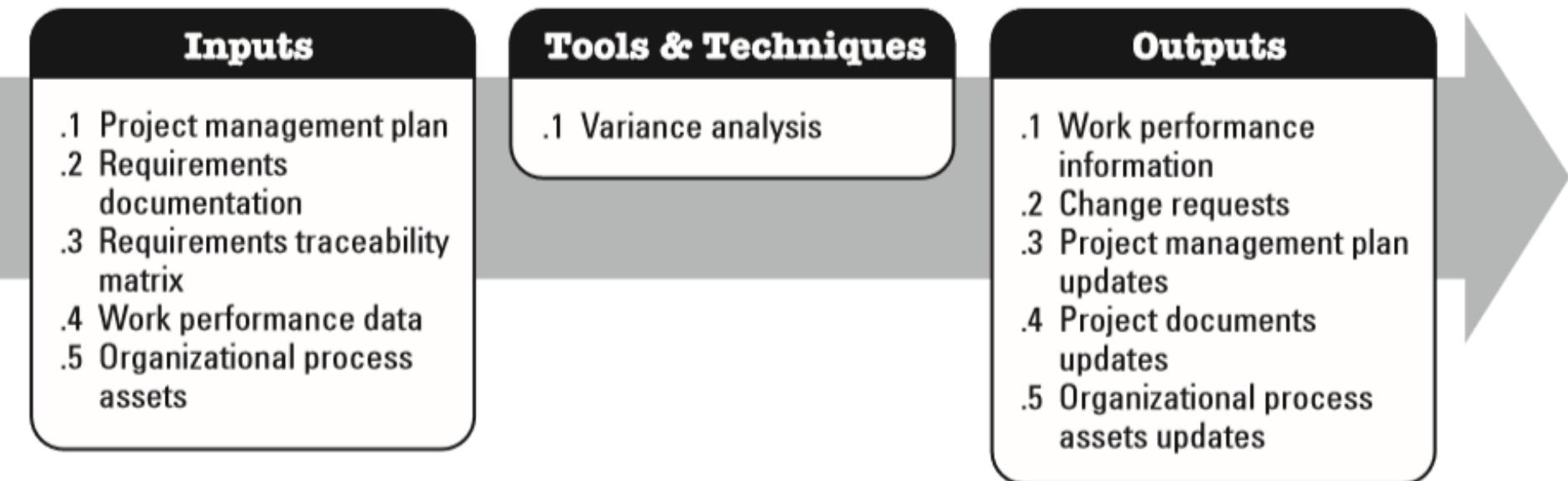
Scope Management Issues

- Many countries have had difficulties controlling the scope of large projects, especially those that involve advanced technologies and many different users
- For example, the **state government of Victoria, Australia**, has a Web site for its public transportation smart card at <https://www.ptv.vic.gov.au/>
- There were many problems in developing and implementing the smart card
- How about **Opal Card? Or any other projects?**
- Did you experience any issues on user requirements?

Project Scope Management Processes:

(6) Control Scope

- Control Scope is the process of monitoring the status of the project and product scope and managing changes to the scope baseline.



Controlling Scope

- Scope control involves controlling changes to the project scope
- Goals of scope control are to
 - control the factors that cause scope changes
 - assure changes are processed according to procedures developed as part of integrated change control, and
 - manage changes when they occur

Lecture Summary

- Project scope management includes the processes required to ensure that the project addresses all the mandatory work, to complete the project successfully
- Scope Management processes include
 - **Plan** scope management
 - **Collect** requirements
 - **Define** scope
 - **Create** WBS
 - **Validate** scope
 - **Control** scope