

Project Management Technologies PMG 312

Prepared by Dr. Majid Saad

Lecture 1



The background features a series of vertical panels with rounded ends. The first panel shows hands typing on a laptop. The second panel has a graduation cap icon. The third panel has a play button icon. The fourth panel has a target icon. The fifth panel has an open book icon. The sixth panel has a magnifying glass icon. The seventh panel has a group of people icon. The eighth panel has a bar chart icon. The ninth panel has a line graph icon. The tenth panel has a pie chart icon. The eleventh panel has a scatter plot icon. The twelfth panel has a bar chart icon. The thirteenth panel has a line graph icon. The fourteenth panel has a pie chart icon. The fifteenth panel has a scatter plot icon. The sixteenth panel has a bar chart icon. The seventeenth panel has a line graph icon. The eighteenth panel has a pie chart icon. The nineteenth panel has a scatter plot icon. The twentieth panel has a bar chart icon. The twenty-first panel has a line graph icon. The twenty-second panel has a pie chart icon. The twenty-third panel has a scatter plot icon. The twenty-fourth panel has a bar chart icon. The twenty-fifth panel has a line graph icon. The twenty-sixth panel has a pie chart icon. The twenty-seventh panel has a scatter plot icon. The twenty-eighth panel has a bar chart icon. The twenty-ninth panel has a line graph icon. The thirtieth panel has a pie chart icon. The thirty-first panel has a scatter plot icon. The thirty-second panel has a bar chart icon. The thirty-third panel has a line graph icon. The thirty-fourth panel has a pie chart icon. The thirty-fifth panel has a scatter plot icon. The thirty-sixth panel has a bar chart icon. The thirty-seventh panel has a line graph icon. The thirty-eighth panel has a pie chart icon. The thirty-ninth panel has a scatter plot icon. The fortieth panel has a bar chart icon. The forty-first panel has a line graph icon. The forty-second panel has a pie chart icon. The forty-third panel has a scatter plot icon. The forty-fourth panel has a bar chart icon. The forty-fifth panel has a line graph icon. The forty-sixth panel has a pie chart icon. The forty-seventh panel has a scatter plot icon. The forty-eighth panel has a bar chart icon. The forty-ninth panel has a line graph icon. The fiftieth panel has a pie chart icon. The fifty-first panel has a scatter plot icon. The fifty-second panel has a bar chart icon. The fifty-third panel has a line graph icon. The fifty-fourth panel has a pie chart icon. The fifty-fifth panel has a scatter plot icon. The fifty-sixth panel has a bar chart icon. The fifty-seventh panel has a line graph icon. The fifty-eighth panel has a pie chart icon. The fifty-ninth panel has a scatter plot icon. The sixtieth panel has a bar chart icon. The sixty-first panel has a line graph icon. The sixty-second panel has a pie chart icon. The sixty-third panel has a scatter plot icon. The sixty-fourth panel has a bar chart icon. The sixty-fifth panel has a line graph icon. The sixty-sixth panel has a pie chart icon. The sixty-seventh panel has a scatter plot icon. The sixty-eighth panel has a bar chart icon. The sixty-ninth panel has a line graph icon. The seventieth panel has a pie chart icon. The seventy-first panel has a scatter plot icon. The seventy-second panel has a bar chart icon. The seventy-third panel has a line graph icon. The seventy-fourth panel has a pie chart icon. The seventy-fifth panel has a scatter plot icon. The seventy-sixth panel has a bar chart icon. The seventy-seventh panel has a line graph icon. The seventy-eighth panel has a pie chart icon. The seventy-ninth panel has a scatter plot icon. The eightieth panel has a bar chart icon. The eighty-first panel has a line graph icon. The eighty-second panel has a pie chart icon. The eighty-third panel has a scatter plot icon. The eighty-fourth panel has a bar chart icon. The eighty-fifth panel has a line graph icon. The eighty-sixth panel has a pie chart icon. The eighty-seventh panel has a scatter plot icon. The eighty-eighth panel has a bar chart icon. The eighty-ninth panel has a line graph icon. The ninetieth panel has a pie chart icon. The ninety-first panel has a scatter plot icon. The ninety-second panel has a bar chart icon. The ninety-third panel has a line graph icon. The ninety-fourth panel has a pie chart icon. The ninety-fifth panel has a scatter plot icon. The ninety-sixth panel has a bar chart icon. The ninety-seventh panel has a line graph icon. The ninety-eighth panel has a pie chart icon. The ninety-ninth panel has a scatter plot icon. The hundredth panel has a bar chart icon.

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Lecture 1

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AGENDA

- ❖ Introduction
- ❖ What is the project?
- ❖ Methodology

Introduction

Project management in a nutshell

Methodology

Project life cycle

Project
requirements
definition

Understanding the
project business
case

Project
ranking
matrix

How to
evaluate and
prioritize IT
project
proposals

Quality
managemen
t

Sponsor and
supplier
agreements

Microsoft
Project 2010

Challenging

Chapter objectives

- ❑ **Looks at the big picture of project management and how to get projects started by using a methodology.**
- A good starting point for having a methodology is to look at the PMBOK Guide (PMI 2008).
- Many organizations use this model methodology as a starting point and modify it to meet their unique needs.
- Included in the methodology is to define the project's requirements and evaluating its business case.
- Addresses useful brainstorming techniques such as brown papers (as-is and to-be model), process charting, decision logic table (DLT) (displays an entire situation visually), RACI (responsible–accountable–consult–inform) charting, and how to evaluate and prioritize projects.

Introduction

- The book try to find realistic ways to eliminate the negative effects of developing systems using tools and techniques and to look at key ways that are needed to have successful projects that help improve organizations (Smith 1983).

Introduction

- The writing style here uses mostly nontechnical language, which includes a heavy usage of graphics and tables for easy reading and as much as possible adheres to the “KISS” principle.



Introduction

- The "keep it simple stupid" (KISS) principle is a design rule that states that systems perform best when they have simple designs rather than complex ones. KISS is not meant to imply stupidity.
- On the contrary, it is usually associated with intelligent systems that may be misconstrued as stupid because of their simplistic design.
- The KISS Principle hinders and/or prevents creeping featurism, system failover and other IT issues.

Introduction

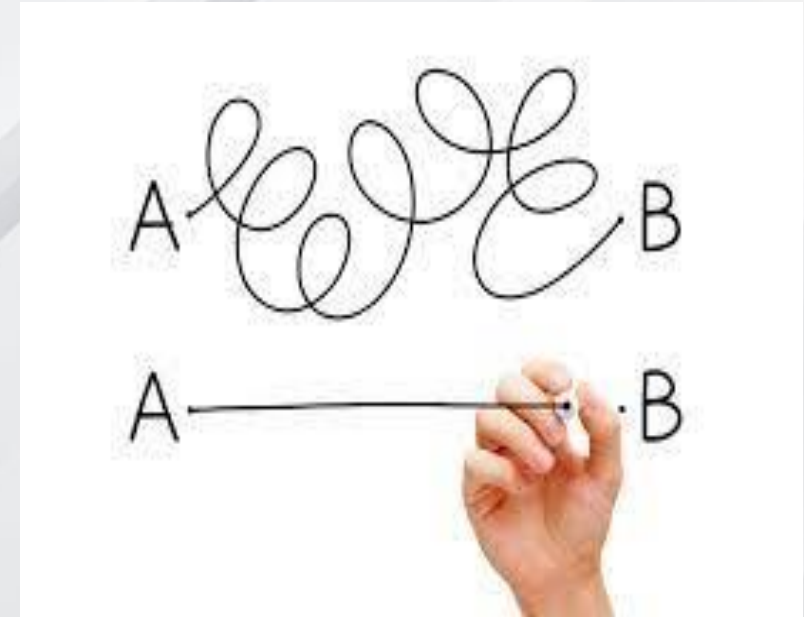
- KISS is an old information-processing acronym that stands for “keep it simple stupid” and more recently has been modified or updated to mean “keep it short and simple.” It is usually referred to the building of new software applications.



Introduction

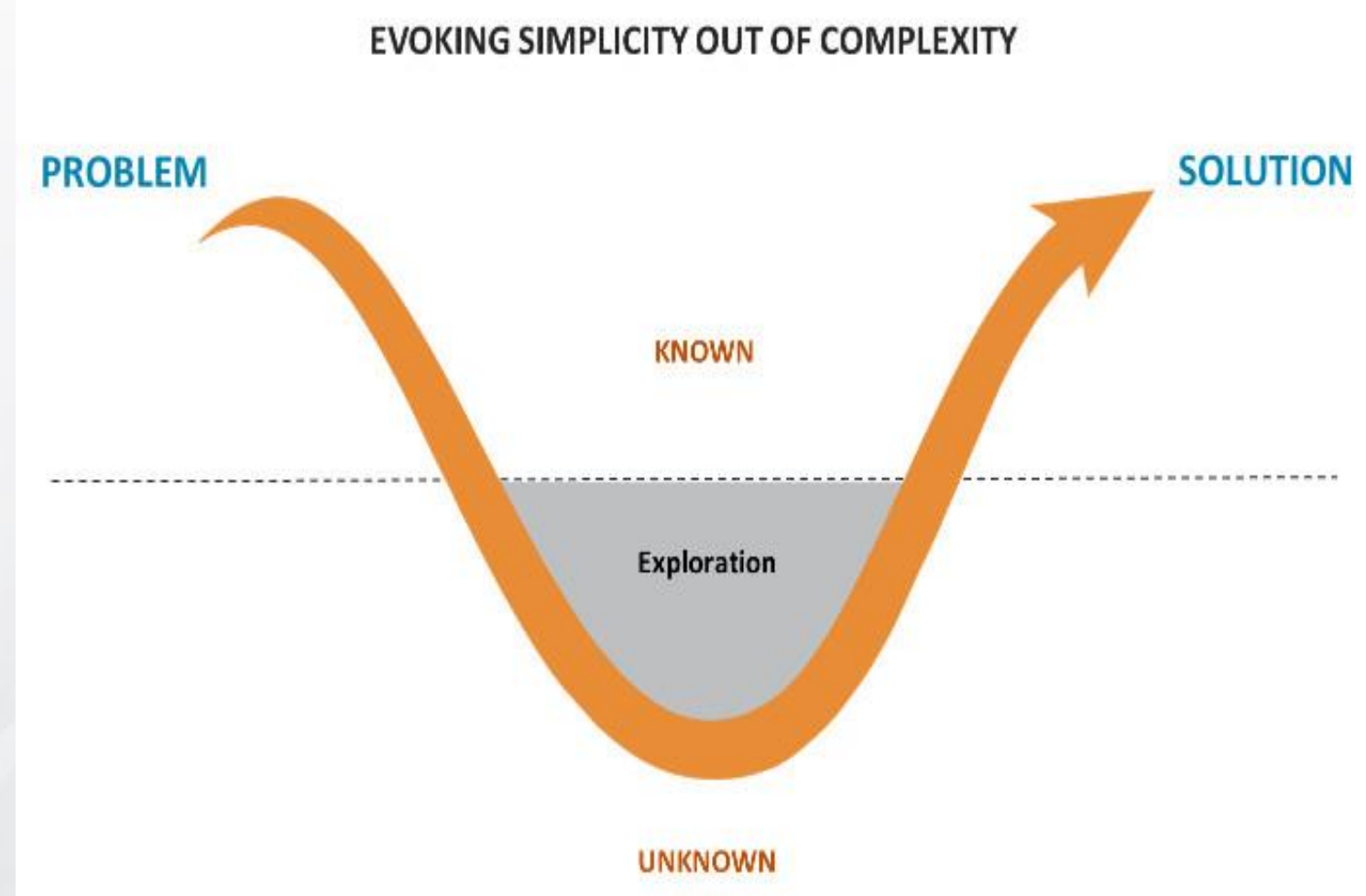
❑ The following is an expanded and updated definition of the elements that make up the KISS principle (Smith 1983):

- If you are fortunate to have a simple solution to a problem—keep it that way.

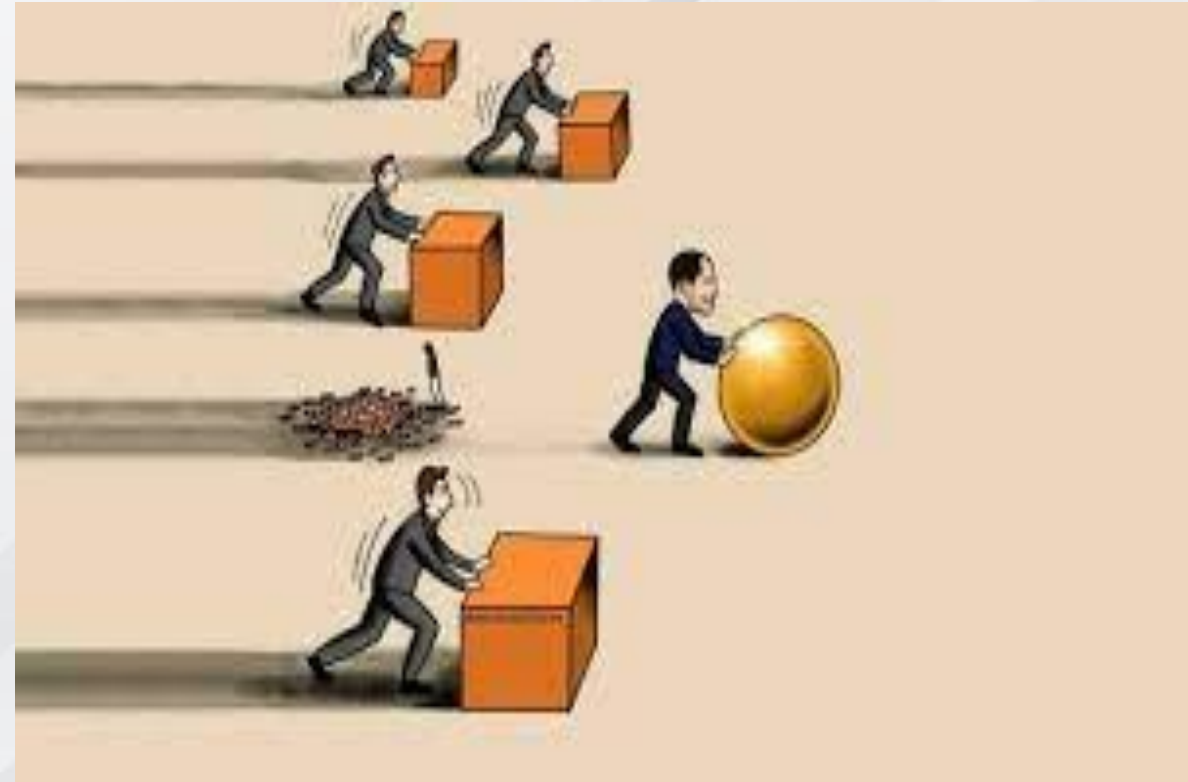


Introduction

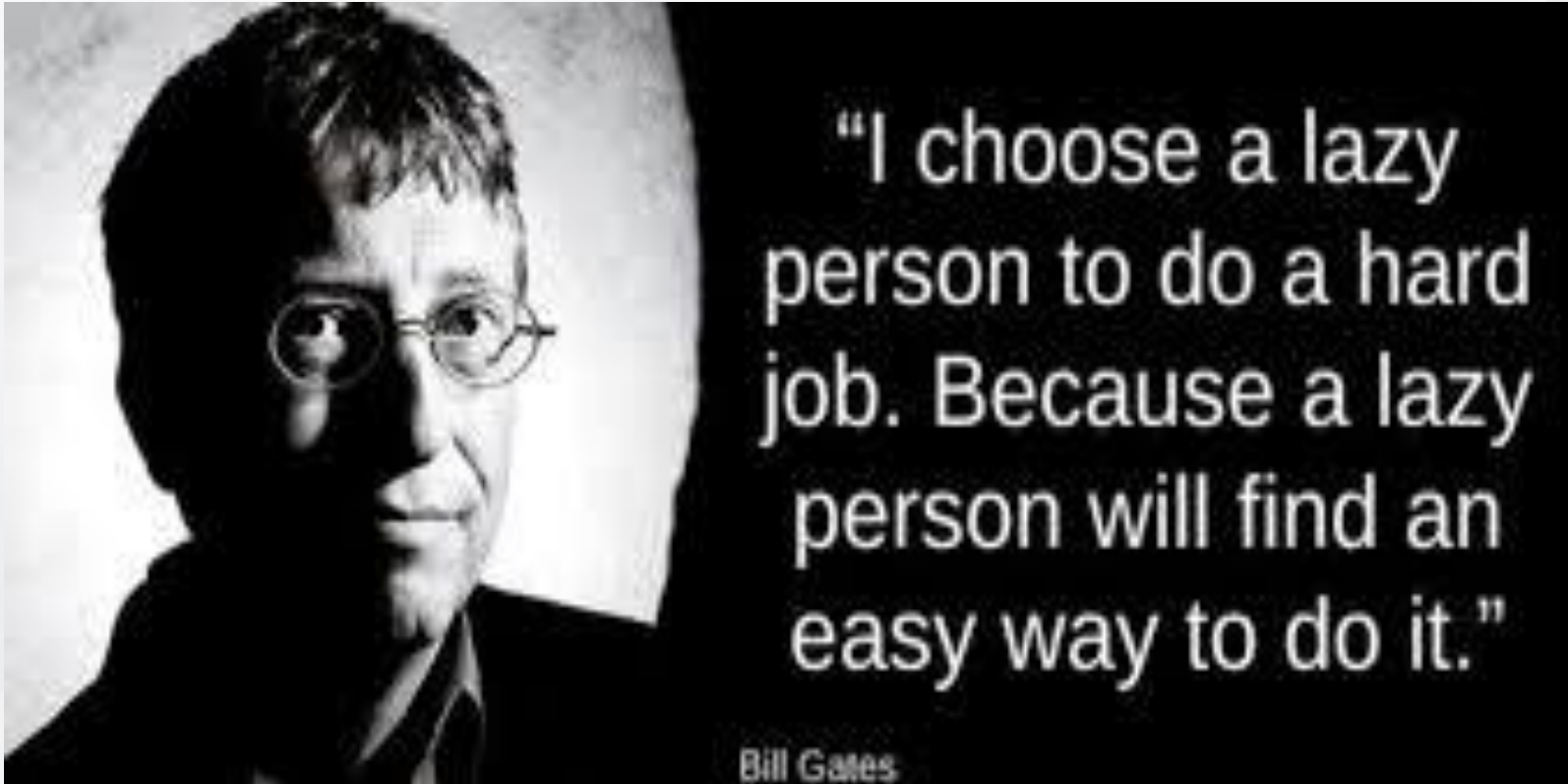
- Sometimes, it is human nature to take a simple solution to a problem and complicate it.



Introduction



Introduction



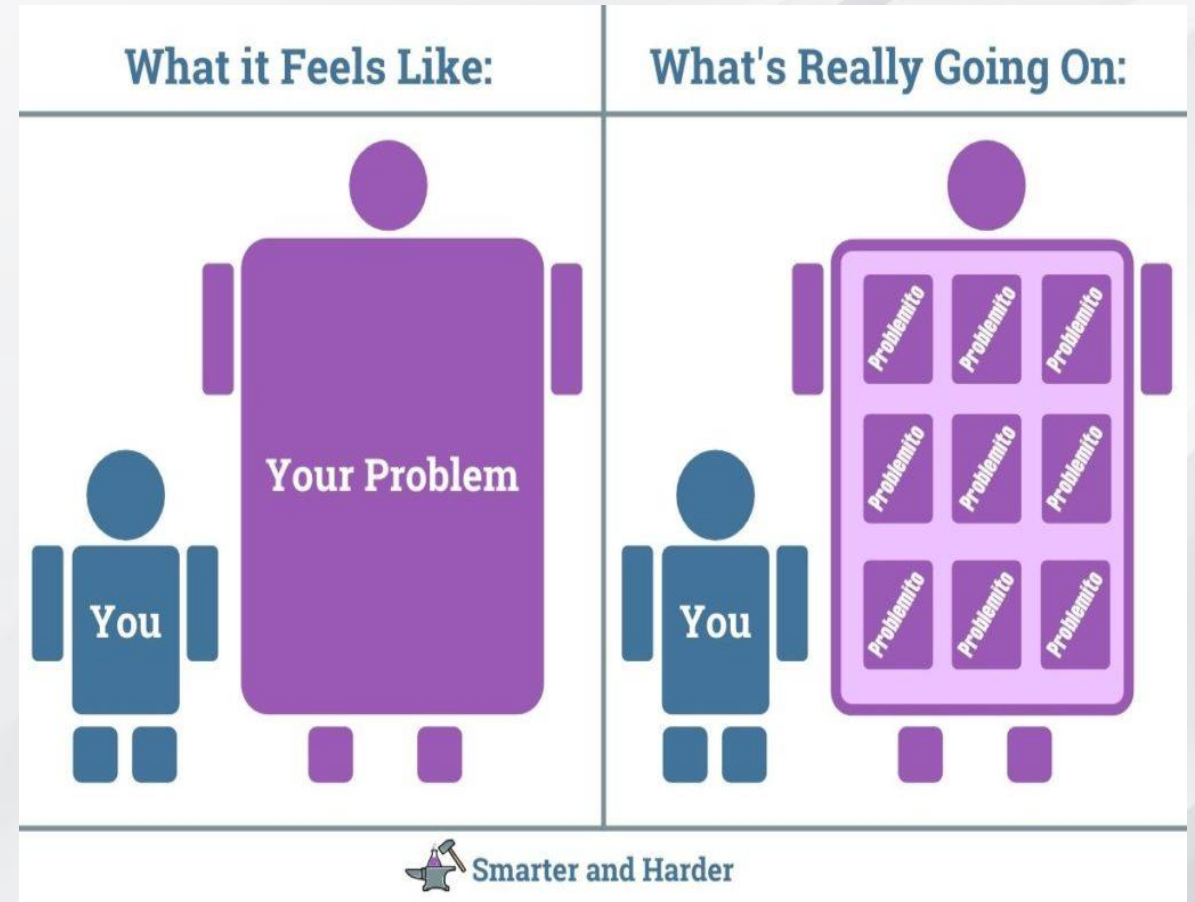
Introduction

- Quite often, today's complicated solutions create tomorrow's problems.



Introduction

- If the only solution to a problem is a complicated one, then the solution should be divided into simple and workable parts that interface with each other.



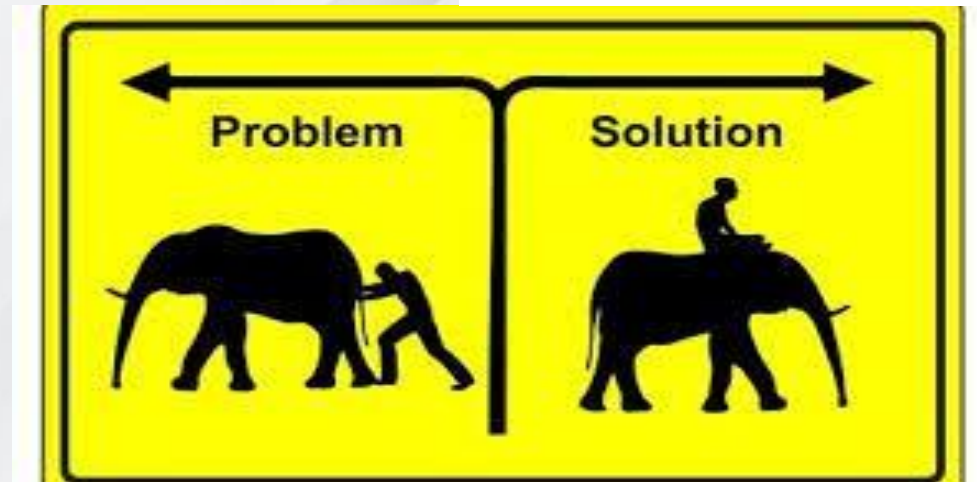
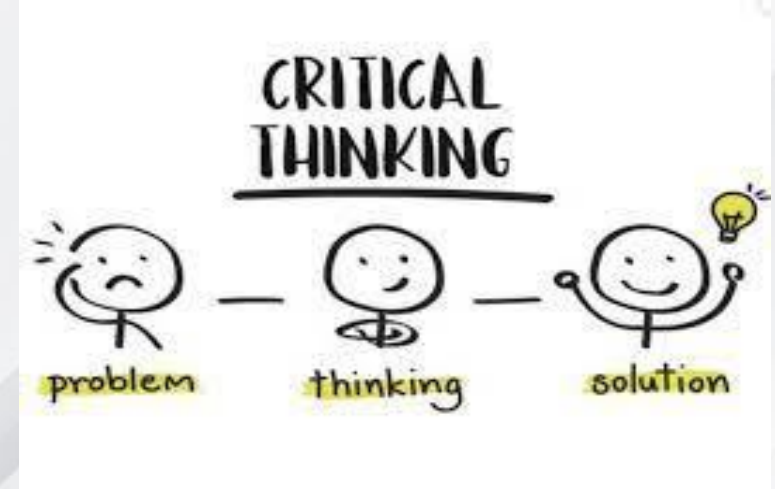
Introduction

- The complicated solution should be like putting the pieces of a puzzle together.



Introduction

- Once you have defined your solution, there will be many levels of approaches in planning, designing, and implementing that alternative.



Introduction

- The difficult part is to choose the overall approach.
- In today's highly sophisticated industrial environment, it is often best to partner with other organizations that can perform special segment better than doing it all in-house.



Introduction

- The term for this strategy is “outsourcing” and it is increasingly employed in projects

Key Strategies for
Successful Project
Delivery When
Outsourcing



Introduction

- ❑ What are the odds of having a successful product that is delivered within the budget and schedule? ما هي احتمالات الحصول على منتج ناجح يتم تسليمه ضمن الميزانية والجدول الزمني؟

Introduction

❑ Various surveys indicate that:



✓ 25% of all projects are completed on time



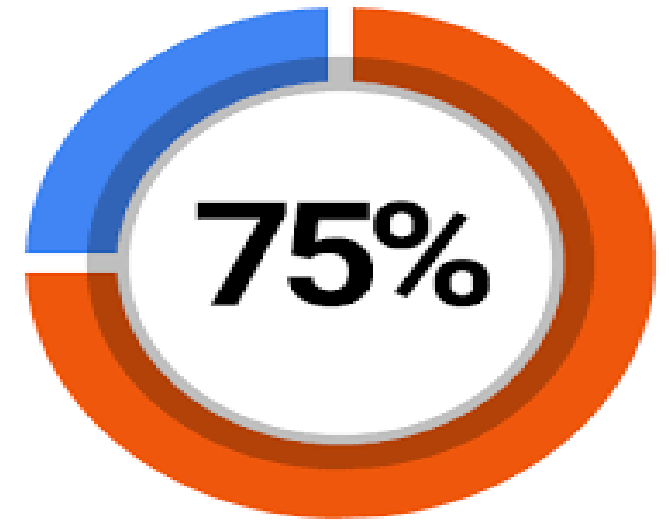
✓ 50% have late completion dates and/or go over budget



✓ 25% are canceled.

Introduction

- ✓ This means that approximately 75% of all projects undertaken will probably come in late or be canceled!

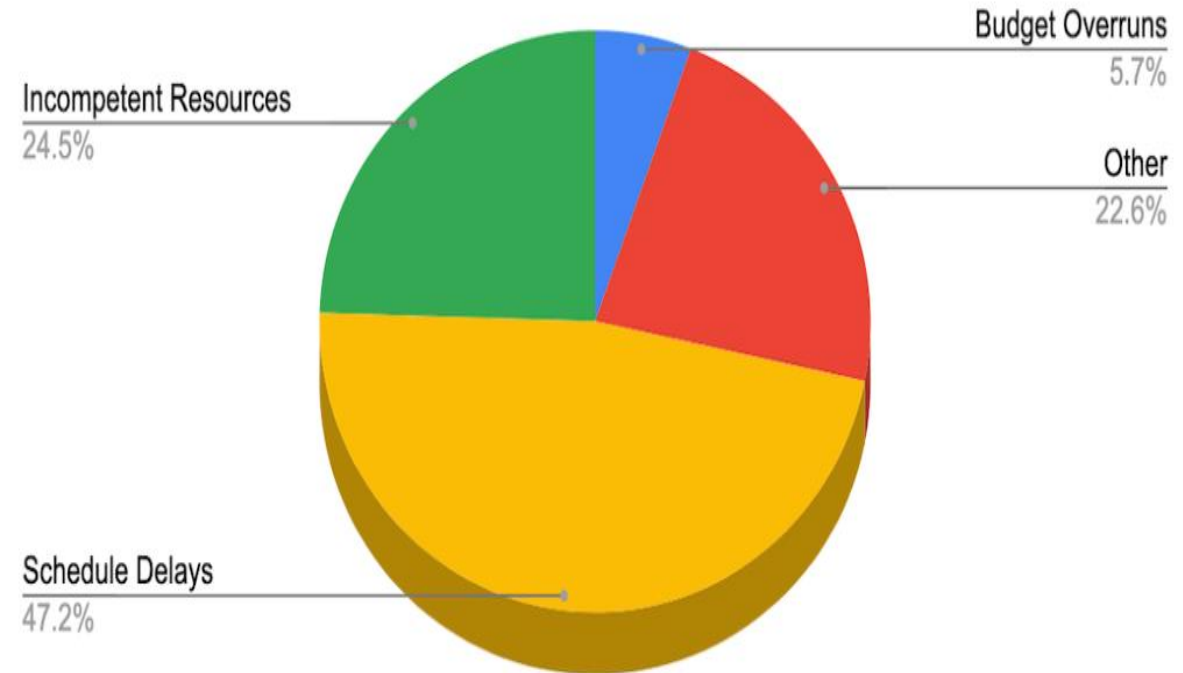


Introduction

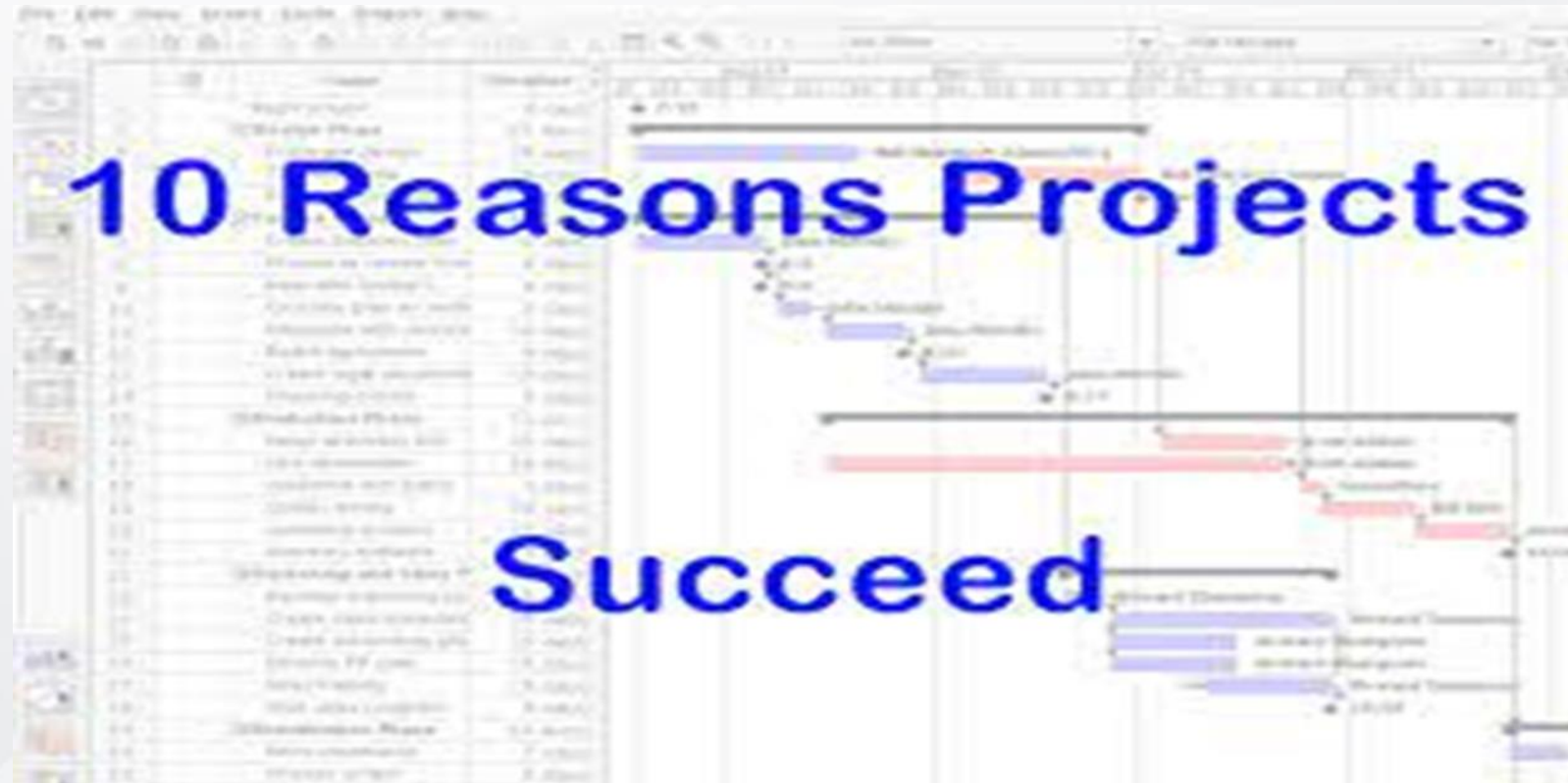
- ❑ Also, the projects that are completed (on time or late) usually end up having fewer features and functions than originally specified to save development time and/or costs.



What were the biggest issues in terms of project management in your organization before the training?



Introduction



Introduction

The top 10 reasons why projects are successful and the first five make up 72% of the total.

Table 2.1 Summary of Factor Rankings for Successful Projects

Rank	Factor	%
1	User involvement	17
2	Executive management support	15
3	Experienced project management	14
4	Clean business objectives	14
5	Minimized scope	12
6	Agile requirement process	7
7	Standard infrastructure	6
8	Formal methodology	5
9	Reliable estimates	5
10	Skilled staff	5
	Total	100

Source: Adapted from Standish Group from *InformationWeek Magazine*, December 15, 2003.

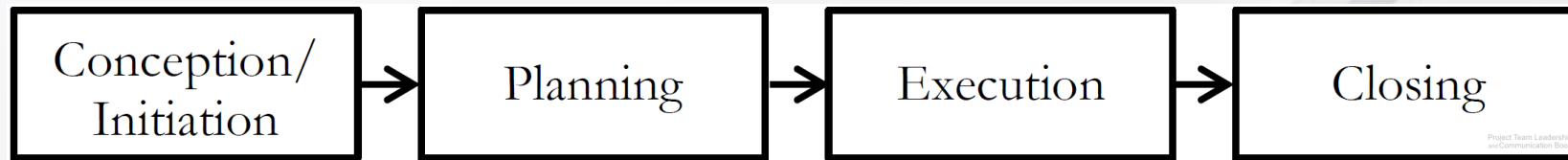
What is Project Management?

- ❑ Project Management is the process of defining, Planning ,organizing, leading and controlling the development of an Information System Project.
- ❑ The goal of Project Management is to deliver an Information System that is acceptable to Users and is developed on time and within budget

What is Project Management?

- Based on a business need or opportunity
- Often explored and initiated by the *Project Sponsor(s)*, who writes or approves the *Project Charter*
- Has the following features:
 - A defined beginning and end
 - Unique goals and outcomes
 - Typically requires team members with varied skills
- Contrasts with *Operational Work*, which is repetitive ‘business as usual’

Project Management Phases

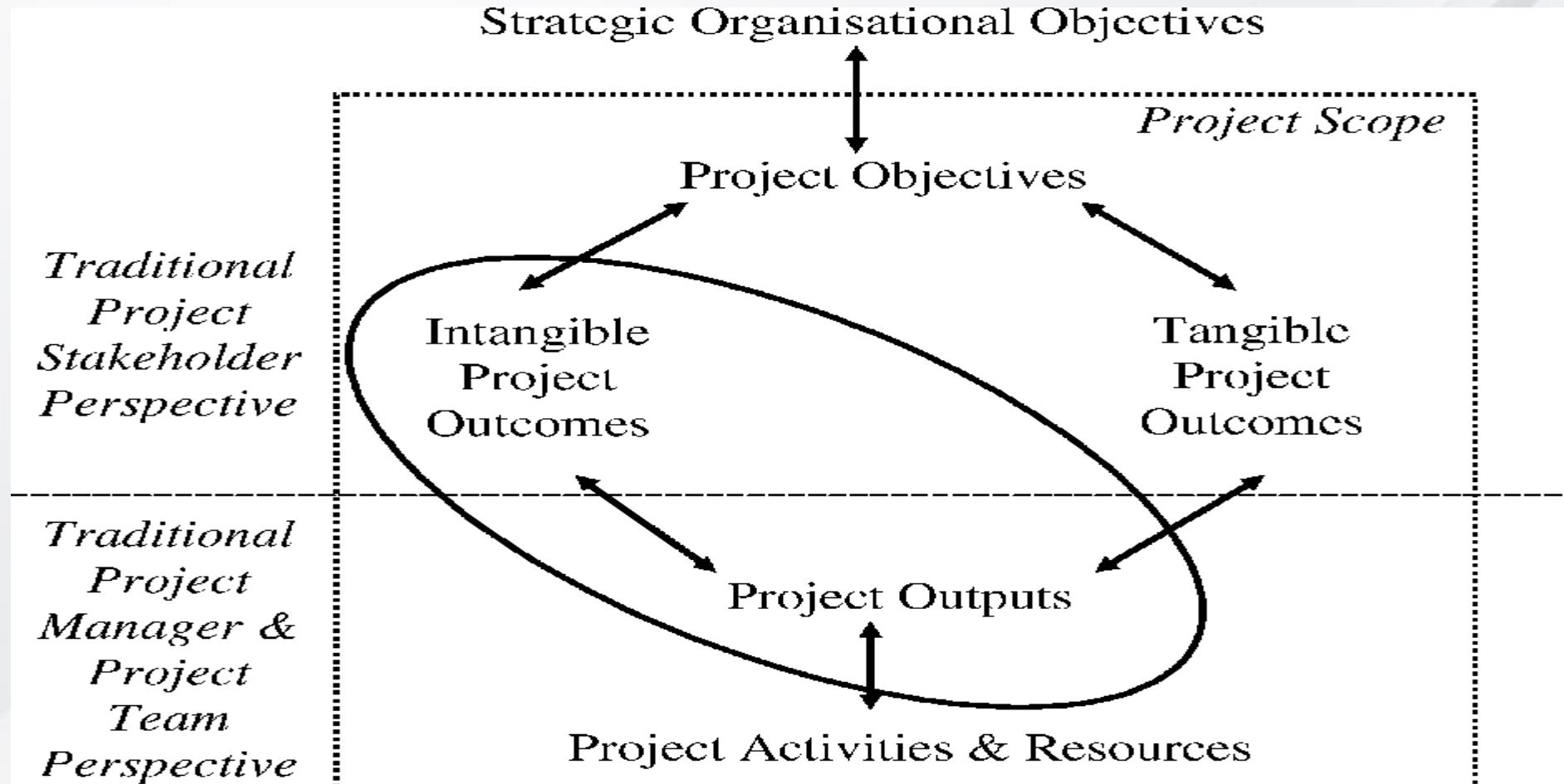


- INITIATING/Defined THE PROJECT
- PLANNING THE PROJECT
- EXECUTING THE PROJECT
- CLOSING DOWN THE PROJECT

1. PROJECT INITIATION/ Defined

- The first phase of Project Management
- Process in which activities are performed to assess the Size, Scope, and Complexity of the Project and to establish procedures to support later Project activities.

1. PROJECT INITIATION/ Defined



2. PROJECT PLANNING

- The Project Planning provides an overall framework for managing Project Costs and schedules.
- Project Planning takes place at the beginning and at the end of each Project Phase.
- Project Planning **involves** defining clear, discrete “Activities” or “Tasks” and the work needed to complete each Activity.

IF YOU FAIL TO PLAN, YOU PLAN TO FAIL!

3. EXECUTING THE PROJECT

- The third Phase in Project Management Process in which the Plans created in the prior Project Phases are put to action.
- If you develop a high quality Project Plan, it is much more likely that the Project will be successfully executed

4. CLOSING DOWN THE PROJECT

- The final Phase of Project Management process which focuses on bringing a Project to an end.
- Closedown is a very important activity since a Project is not complete until it is closed and it is at closedown that projects are deemed a success or failure.

Methodology

❑ Every project should follow some form of standardized approach.

Agile

Agile project management methodology provides flexible, iterative design and build process.

Kanban

Tasks are represented visually on a board, allowing team members to see the state of every piece of work at any time.

Lean

Lean is a problem-solving tool for eliminating wastes and removing wasteful activities that don't add value to the process.

Waterfall

Waterfall provides a simple framework for planning projects. Tasks are in sequential order. The team completes one task or step then performs the next step

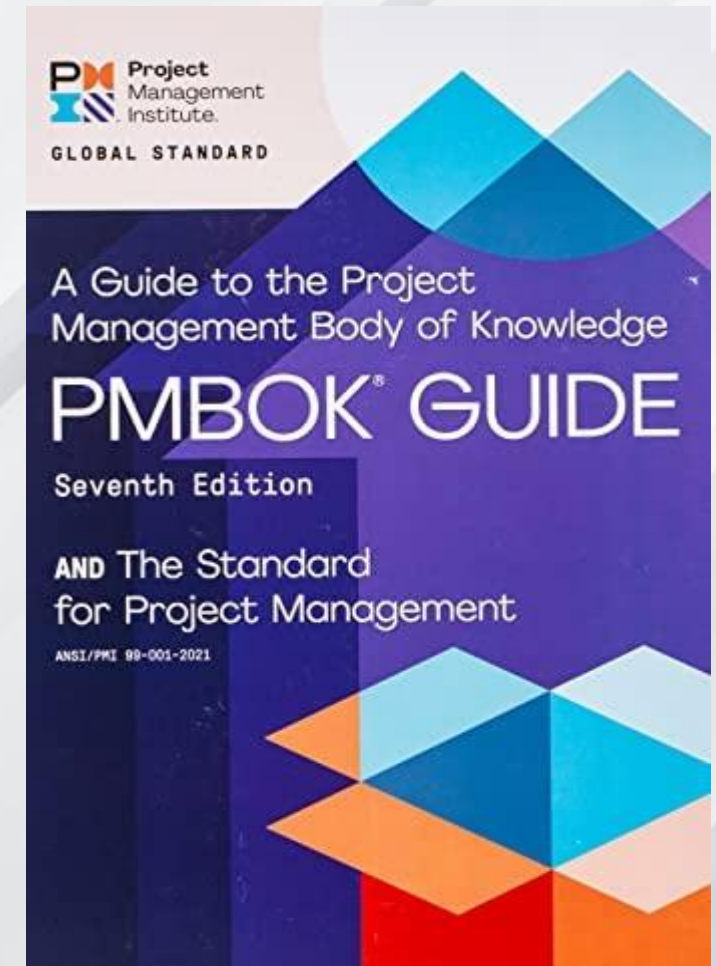
Six Sigma

Six Sigma is a method that provides organizations tools to improve the capability of their business processes.

Methodology

- There are many options to look at for guidance in this.

Some notable examples of project management definition are found in the Project Management Body of Knowledge (PMBOK) from the PMI, PRINCE2 (UK), or the more contemporary



Methodology

- ❑ Agile methodology (prototyping or taking development shortcuts to release more quickly).
- ❑ Each of these approaches attempts to model a project life cycle and through this guidance helps produce a more successful outcome.

Methodology

□ These groups are briefly defined as follows:

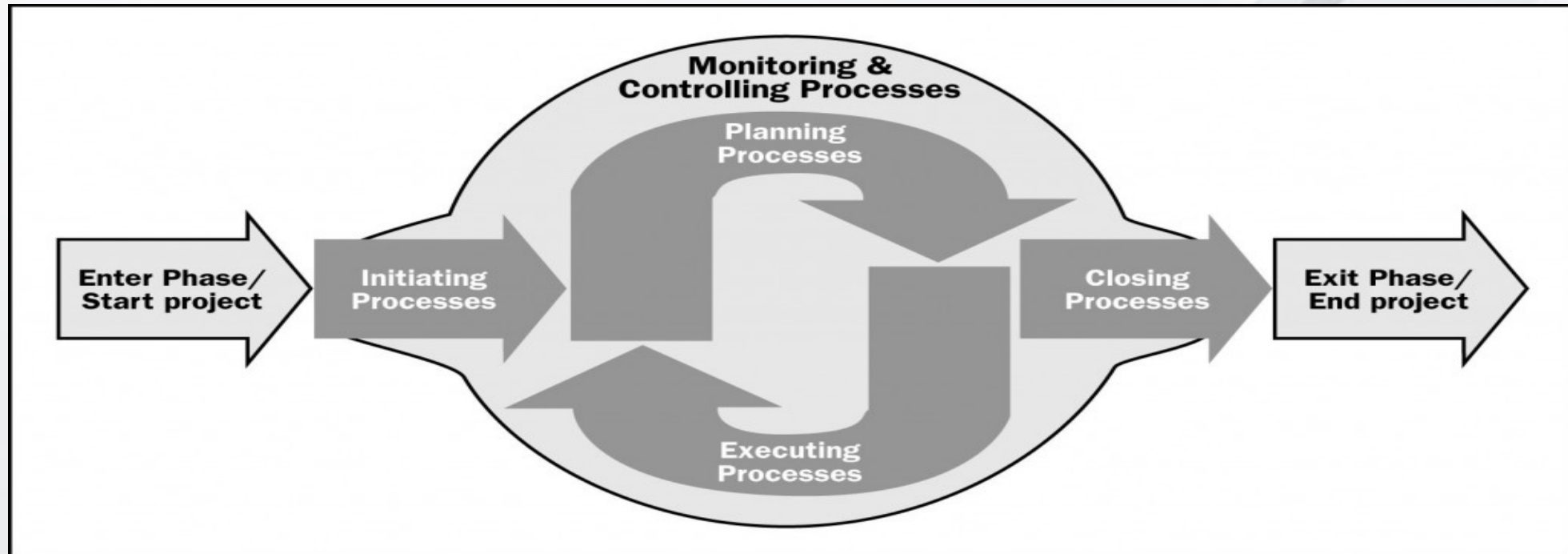


Figure 3-1. Project Management Process Groups

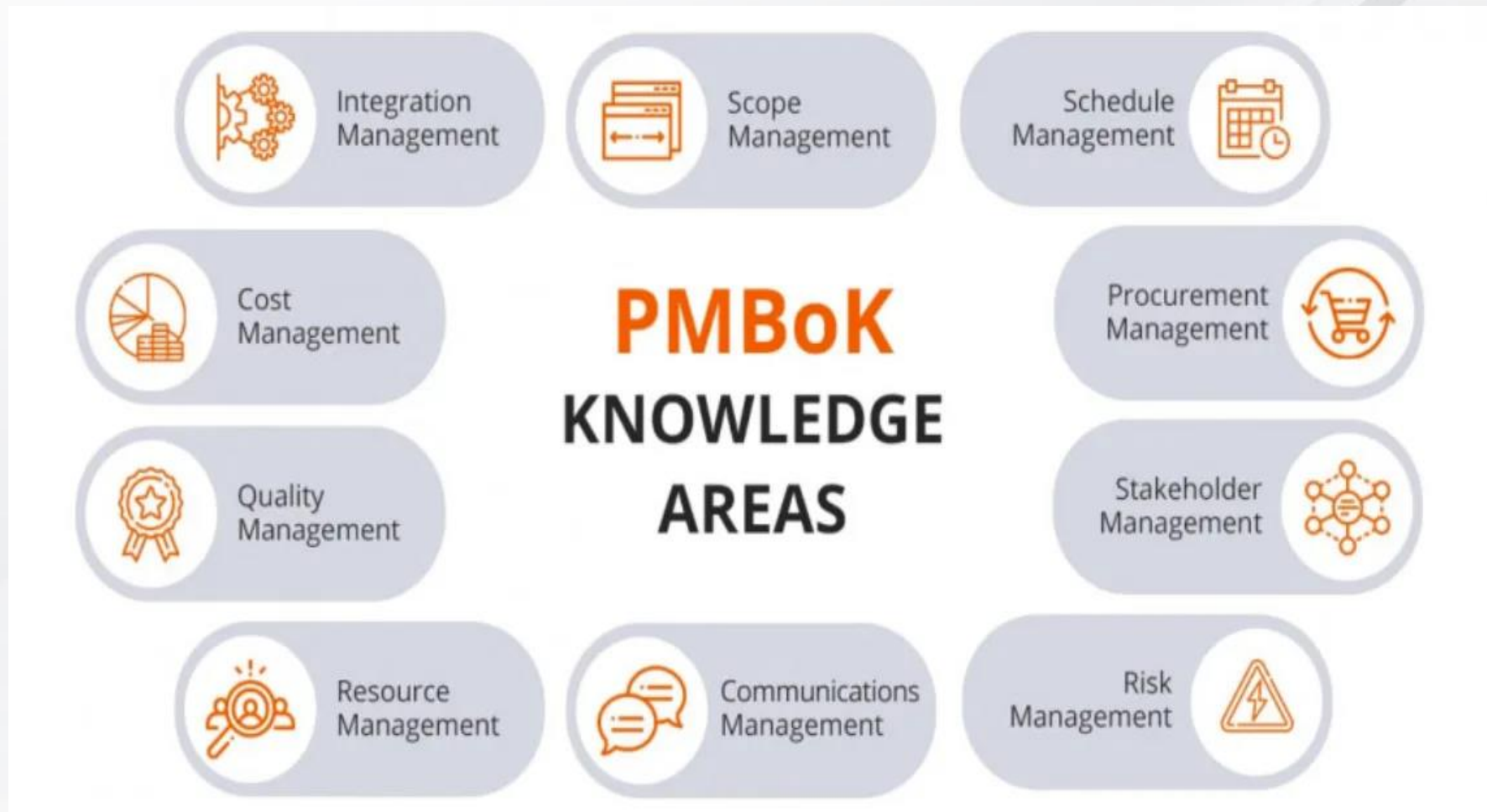
A Guide to the Project Management Body of Knowledge (PMBOK® Guide) – Fourth Edition. ©2008 Project Management Institute, Inc. All Rights Reserved.

Methodology

□ These groups are briefly defined as follows:

1. **Initiating:** Tasks and activities that conceptualize and/or authorize the project or phase.
2. **Planning:** Activities and related tasks that define and refine objectives within the project.
3. **Executing:** Activities and related tasks that coordinate resources to carry out the plan.
4. **Monitoring and controlling:** Monitoring and measuring progress regularly to identify variances within the plan, so corrective actions can be taken if needed.
5. **Closing:** Finalize all activities/tasks and above processes to close the project.

The nine organizational knowledge management areas covered in PMBOK



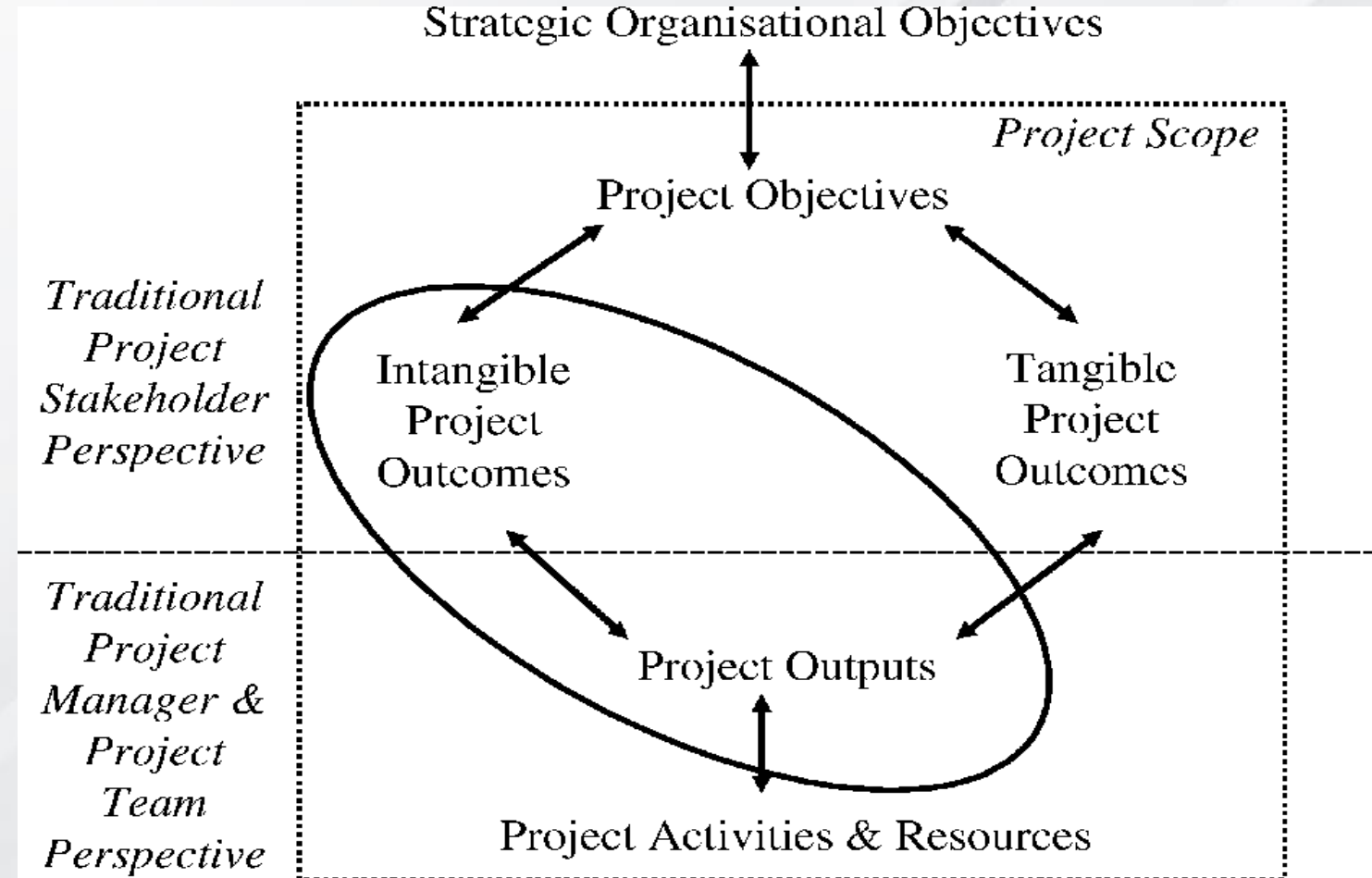
The nine organizational knowledge management areas covered in PMBOK

1. **Project integration**—These are processes (i.e., coordination of procedures and phases) in place to develop, manage, and monitor your project, which includes change control.

Process	Project Phase	Key Deliverables
Develop Project Charter	Initiating	Project Charter
Develop Preliminary Scope Statement	Planning	Scope Statement
Develop Project Management Plan	Planning	Project Management Plan
Direct and Manage Project	Execution	Deliverables
Monitor and Control Project Work	Monitoring and Control	Change Requests
Perform Integrated Change Control	Monitoring and Control	Change Requests Status Updates
Close Project or Phase	Closure	Final Product

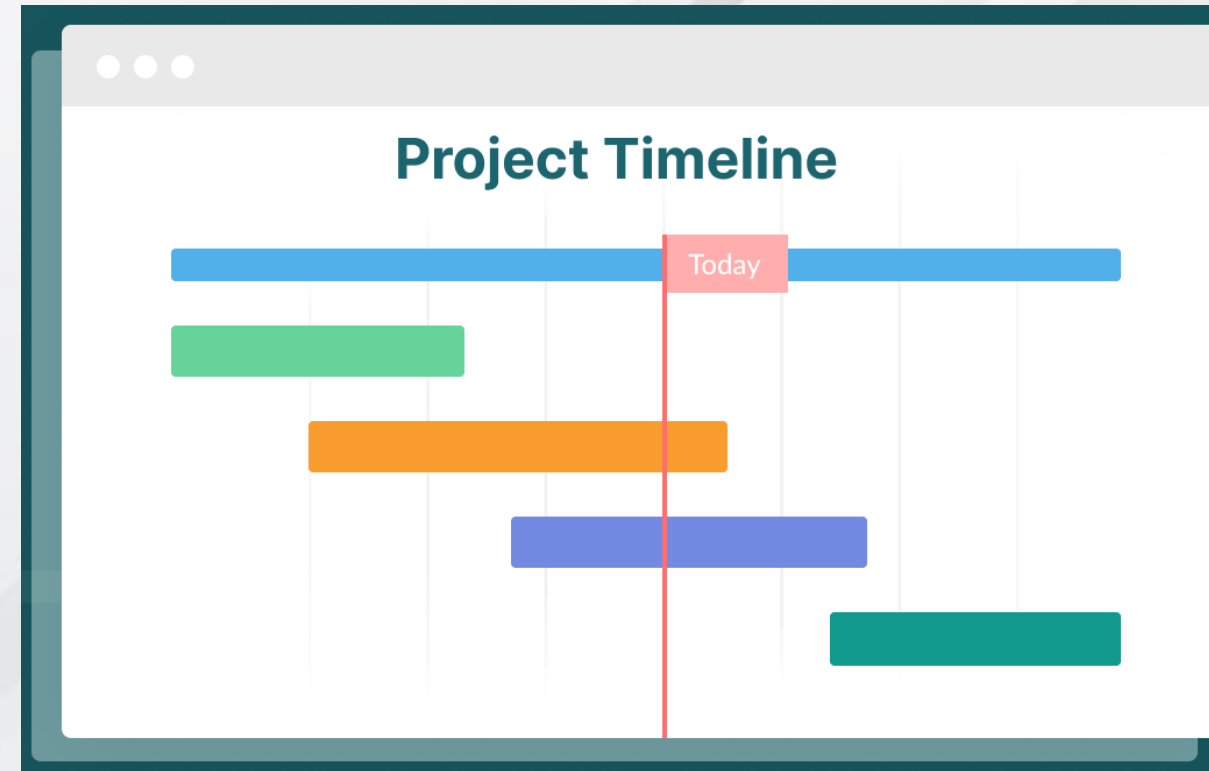
The nine organizational knowledge management areas covered in PMBOK

2. **Scope**—These are processes (work included and excluded) in place to define the project work.



The nine organizational knowledge management areas covered in PMBOK

3. **Time** :These are processes (i.e., estimating and scheduling) in place to make to support schedule development and status tracking.



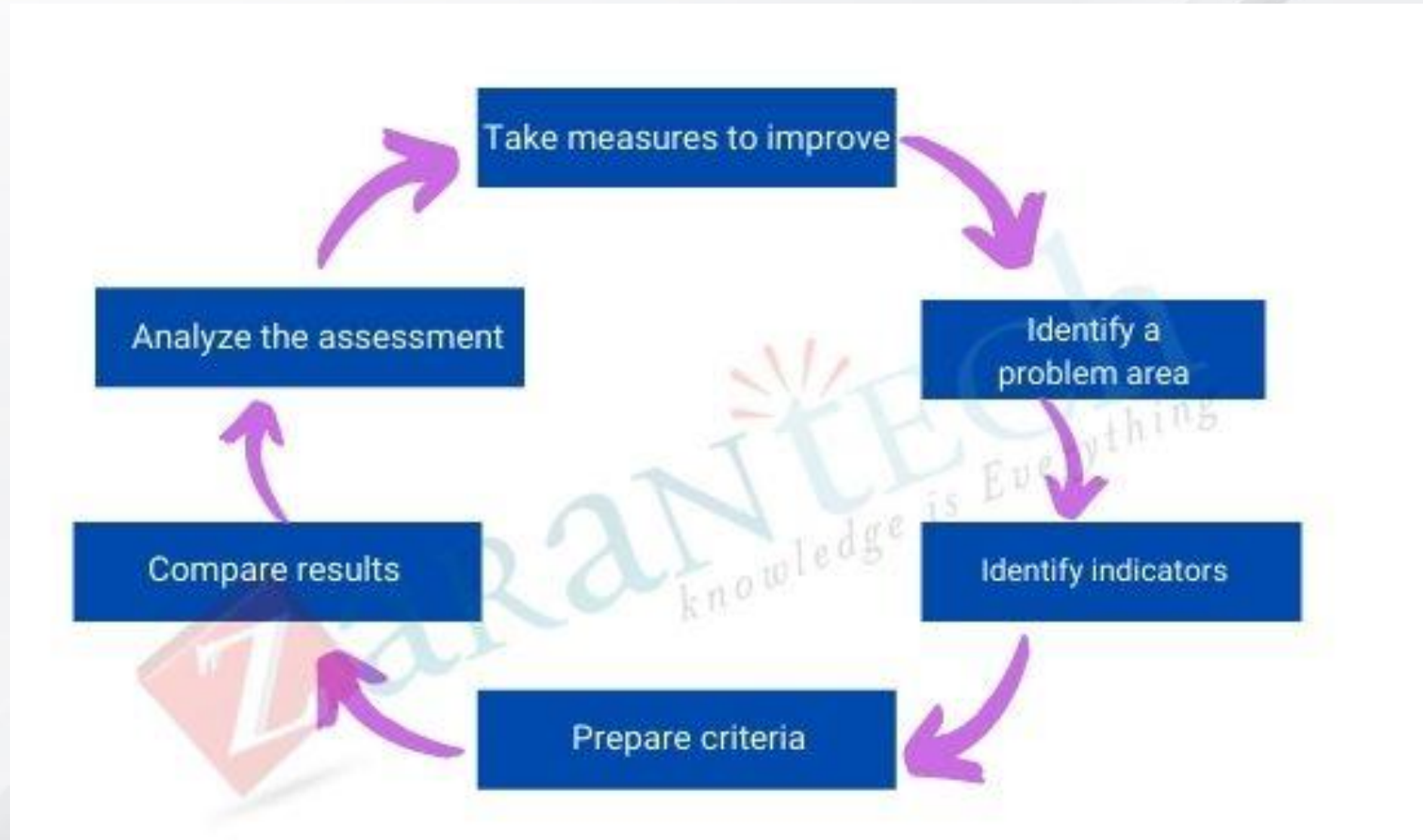
The nine organizational knowledge management areas covered in PMBOK

4. **Cost:** These are processes (i.e., costing and cost control) in place to support budget planning and status tracking.



The nine organizational knowledge management areas covered in PMBOK

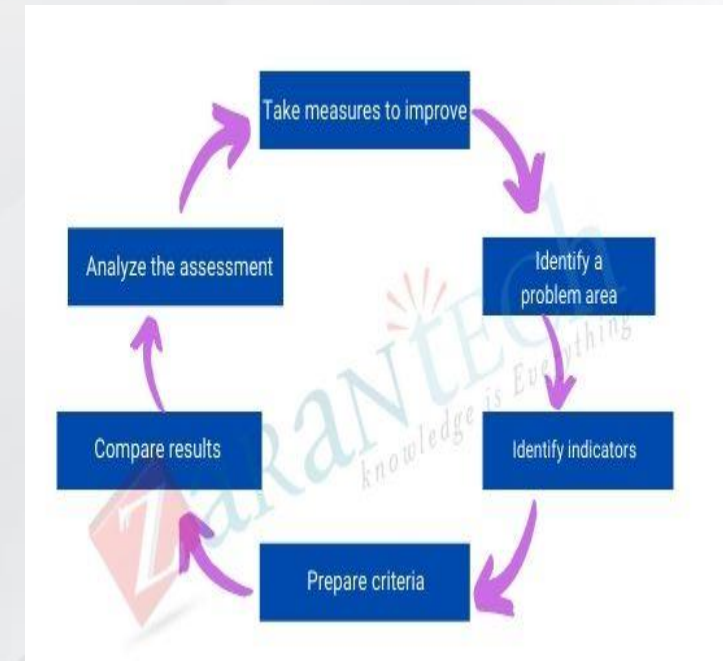
5. Quality:



The nine organizational knowledge management areas covered in PMBOK

5. **Quality**: These are processes in place to support meeting quality goals.

- There are **three types of quality assurance (QA)** project reviews: **deliverable, compliance, and health**.



The nine organizational knowledge management areas covered in PMBOK

➤ There are **three types of quality assurance (QA)** project

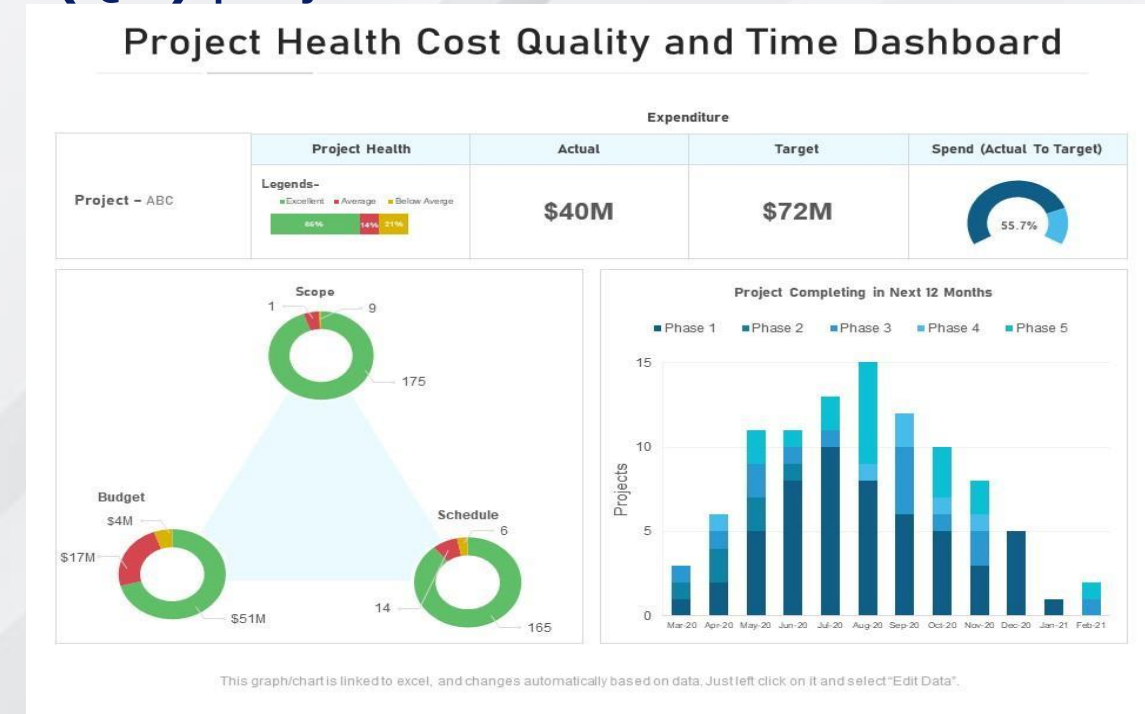
❖ **Deliverable** is any tangible outcome or item produced to complete a project; this can range from a client's approval of a project plan to completion sign-off.



The nine organizational knowledge management areas covered in PMBOK

➤ There are **three types of quality assurance (QA) project**

- **Health** tells how well a project is doing; if it has run off the rails, the team can use the review to decide which actions to take to get the project back on track.



The nine organizational knowledge management areas covered in PMBOK

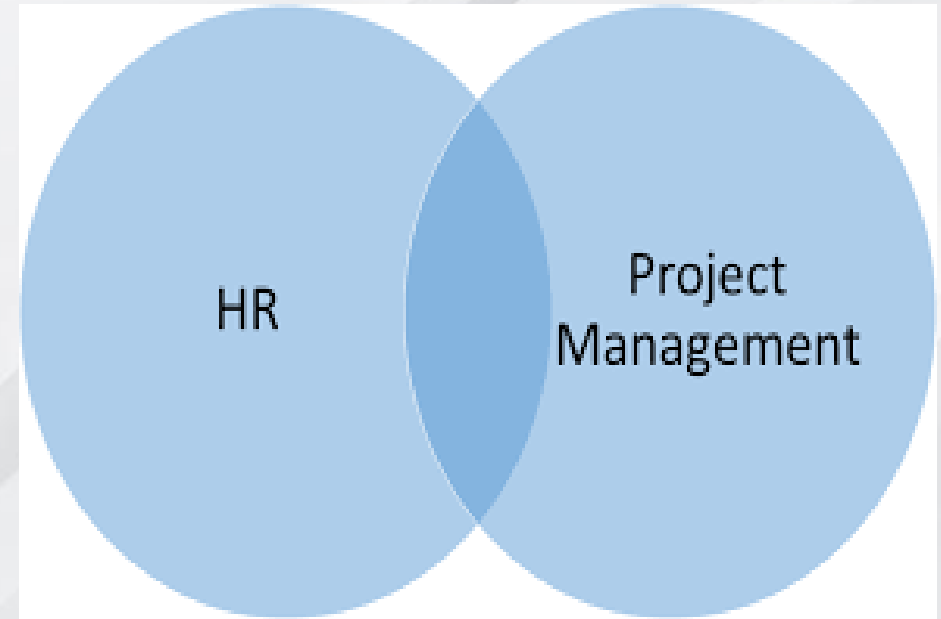
Project Health Cost Quality and Time Dashboard



This graph/chart is linked to excel, and changes automatically based on data. Just left click on it and select "Edit Data".

The nine organizational knowledge management areas covered in PMBOK

6. **Human resources**—These are processes (i.e., acquiring, developing and managing) in place to make sure you have the right project team and support people (i.e., sponsors, stakeholders, and end users).



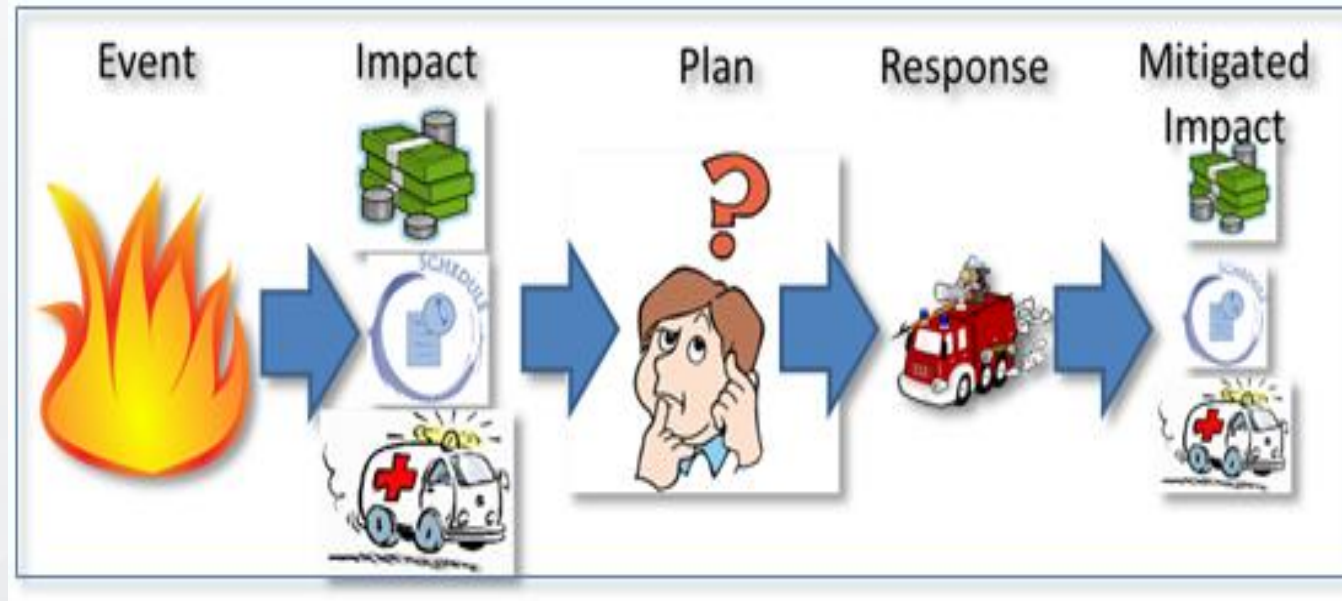
The nine organizational knowledge management areas covered in PMBOK

7. **Communication**—These are processes (i.e., planning and managing team, user expectations, and performance) in place to support meeting your information needs.



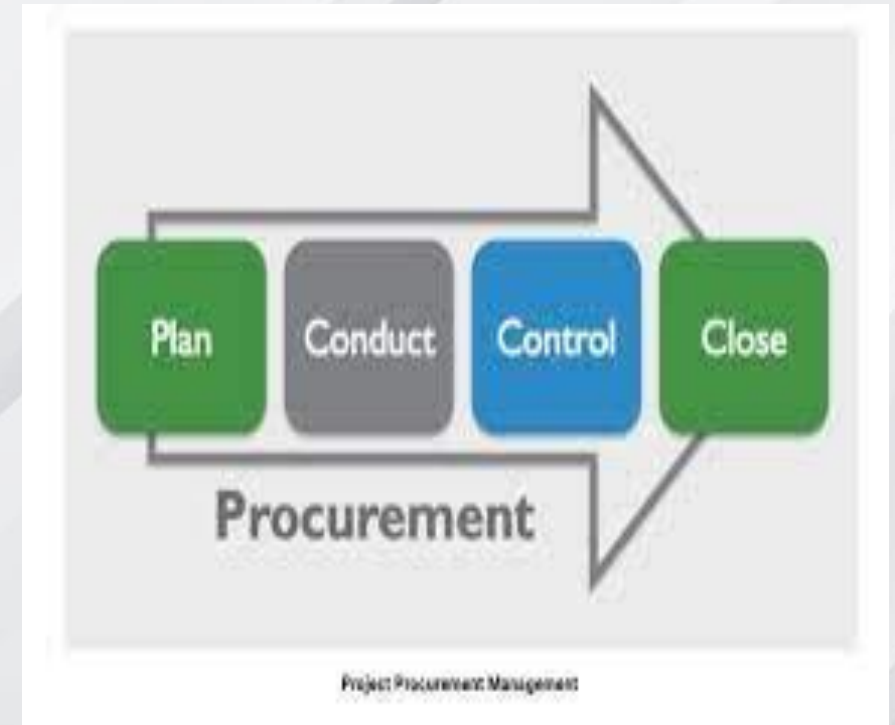
The nine organizational knowledge management areas covered in PMBOK

8. Risk: These are processes in place (i.e., identifying, performing qualitative analysis, and planning responses) to support preventing a potential event or future situation that may adversely affect the project.



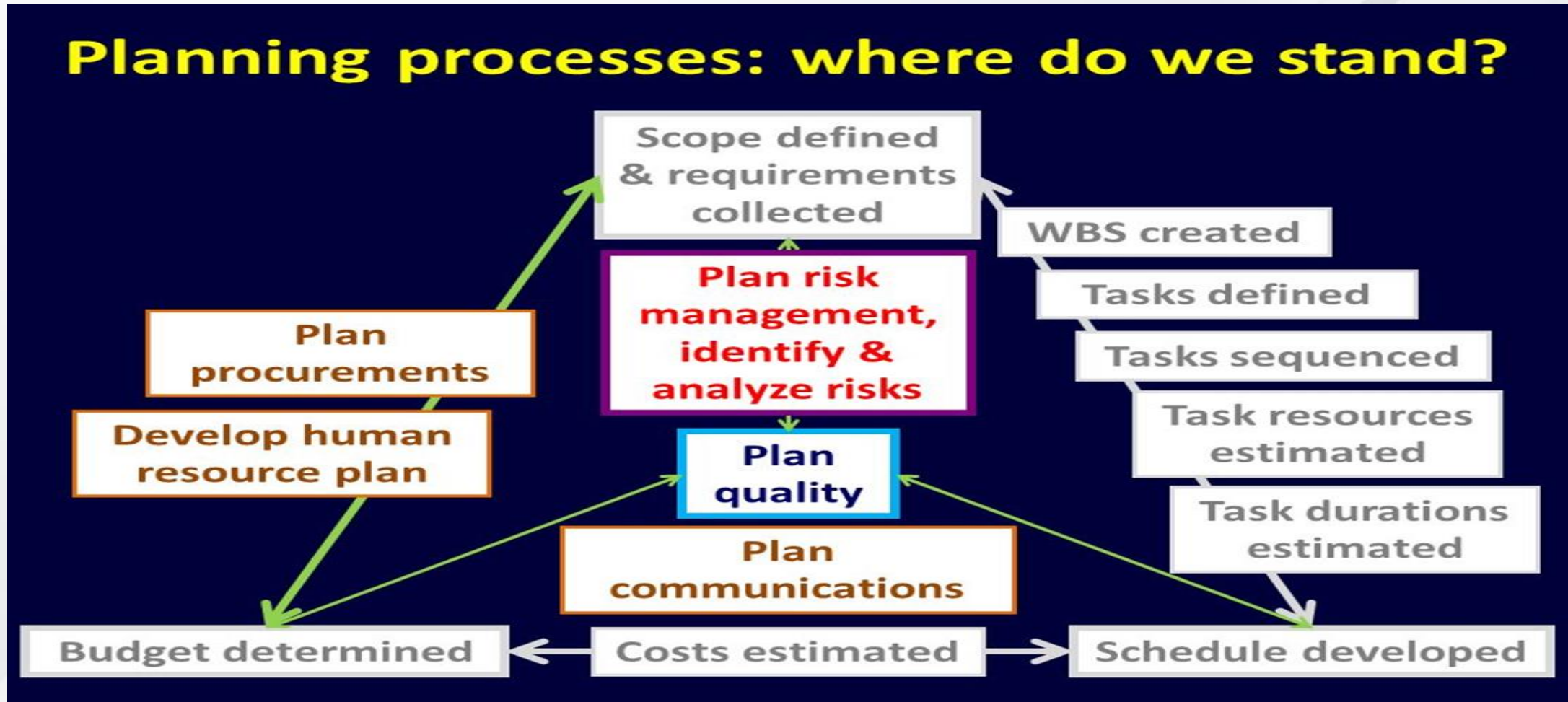
The nine organizational knowledge management areas covered in PMBOK

9. Procurement: These are processes (i.e., planning the solicitation and obtaining) in place to support the procuring of goods and services, which includes good contract management.



Planning processes: where do we stand?

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graph TD; A[Plan risk management, identify & analyze risks] --> B[Scope defined & requirements collected]; A --> C[Plan quality]; B --> D[WBS created]; B --> E[Tasks defined]; B --> F[Tasks sequenced]; B --> G[Task resources estimated]; B --> H[Task durations estimated]; D --> E; E --> F; F --> G; G --> H; H --> I[Schedule developed]; C --> J[Plan communications]; C --> K[Plan procurements]; C --> L[Develop human resource plan]; J --> M[Costs estimated]; K --> N[Budget determined]; L --> I; M --> N; M --> I; N --> I;
```



The nine organizational knowledge management areas covered in PMBOK

Integration	• Coordinate activities across all project management areas and process groups
Scope	• Ensure the project work includes all elements required to complete the work
Schedule	• Ensure the project work is completed in a timely way
Cost	• Plan, estimate, manage and control project finances
Quality	• Ensure the project delivers a quality output that is fit for purpose
Resource	• Secure, manage and monitor use of resources throughout the project
Communications	• Ensure communications on the project are planned and carried out appropriately
Risk	• Identify, assess and manage risk
Procurement	• Carry out purchasing and contracting as required
Stakeholder	• Identify and engage stakeholders throughout the project

Conclusion

- ❑ A good methodology encompasses standard policies, processes, and procedures that incorporate a suite of tools and techniques to help guide the process through its life cycle in an efficient, consistent, and repeatable manner.
- ❑ Even though a methodology is described as a standard approach, it should be viewed as a living organism that constantly needs to be reviewed and updated for improvements based on experience.

The nine organizational knowledge management areas covered in PMBOK

- ❑ A large part of improving a methodology is keeping a documented history of lessons learned from project outcomes.
- ❑ Unfortunately, most companies do not do this or they record it and just let it collect dust.
- ❑ Using lessons learned is a way of benchmarking and collecting best practices to help you improve your methodology by updating your policies, processes, and procedures along with your associated tools and techniques.

The practical aspects of this process from the author's experiences.

Table 2.2 Part 1—Key Lessons Learned

Number	Project guidelines	Lessons learned
1	A project runs best when employee morale is high	Positive employee morale will add great value and effectiveness to your project
2	It is important that the project team and business units understand the “big picture” of the project	Involved or affected people need to know the “big picture” (goals, objectives, master schedule, system architecture, and major milestones) of your project
3	Project plan	Team members need to know that a project plan is their “friend” because it defines what their role is in building/ delivering the system
4	Work breakdown schedule	A project plan must be developed from the scope with input from the participants

The practical aspects of this process from the author's experiences.

5 First build a schedule-constrained plan, and then transition to a resource-constrained plan

Your project schedule needs to reflect the impact (i.e., changing scheduled durations) of staffing on each activity

6 Wherever possible, tasks for testing should be included for any task in the plan for which feasibility is questionable

If you do not have extra testing tasks for related "risky" tasks (doing something that has not been done before), you raise the probability of going over schedule or failure

The practical aspects of this process from the author's experiences.

- | | | |
|----|---|---|
| 7 | Project buffers | Be sure that project risks are fully understood and correctly quantified. Add sufficient contingency in time and cost to cover the project risks should they turn into issues |
| 8 | Major milestones | You need to be able to present a one-page high-level overview and current status of your project to your team and the management |
| 9 | Critical path activities in a project plan should be identified | Your project team needs to know the sequence of activities, which has the least amount of flexibility (float) in your schedule |
| 10 | Maintain a current view of the plan | Always run a baseline to preserve your original approved dates to show project history of revision dates, which will reflect how the project schedule is going |

The practical aspects of this process from the author's experiences.

Table 2.2 (continued) Part 1—Key Lessons Learned

Number	Project guidelines	Lessons learned
11	Project control book	You need a project control book (could be online), so anyone can go to one place to find all the various documents that relate to your project and for historical reasons
12	Work plan discipline	Team members who are not working activities from the approved plan do not have any project discipline. Project discipline is the “glue” that holds it all together!
13	Updating project plan	Overdue tasks should elicit immediate response from the management to solve the problem. It is a choice between being proactive or reactive
14	Variance analysis	You need to have weekly project status meetings to put recovery plans in place to eliminate potential problems
15	Status dashboard	A one-page weekly project-tracking “dashboard” is a fast way to send an overall project status message to the management and the entire team



Thank You