

Project Management Technologies

Prepared by:

Dr. Mona Moustafa Elashry



جامعة الجميع الذكية
EVERYONE'S SMART UNIVERSITY

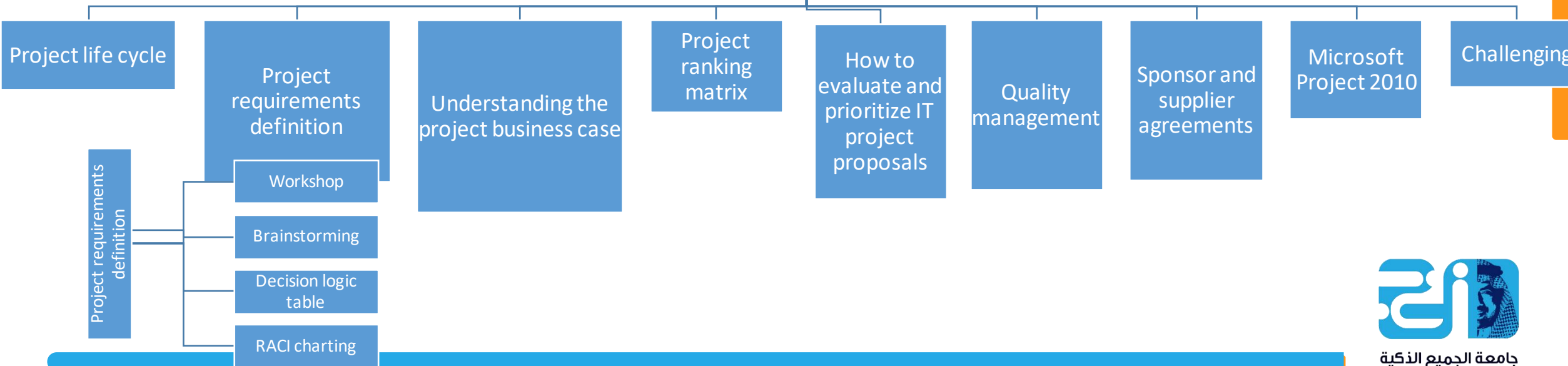
PMG 312- L2

Ch.2 Project management in a nutshell (Cont.)

CH2- Lecture 2

Project management in a nutshell

Methodology



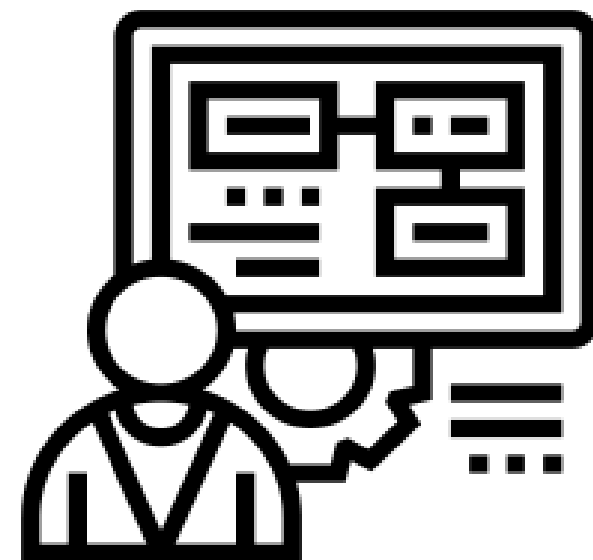
☐ Project requirements definition

- ✓ Workshop
- ✓ Brainstorming
- ✓ Decision logic table
- ✓ RACI charting

☐ Understanding the project business case

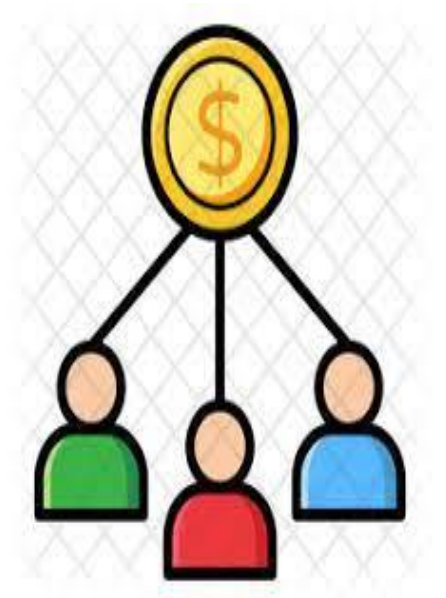
Project requirements definition

- ❑ One of the major issues in starting the project is getting good requirements!
- ❑ Project requirements are the further breakdown of the client's deliverables that are described in detail.



Project requirements definition

- ❑ This process cannot be done in a vacuum, and the requirements collecting process is mostly the client's or shareholder's responsibility.
- ❑ It is the responsibility of the PM to facilitate this requirements collecting process and there are many techniques (or combination of) for doing this.



Project requirements definition

❑ The following are some of the popular techniques that are used for this collecting process.

- Workshops
- Brainstorming (Brown paper; Process chart)
- Decision logic table
- RACI charting



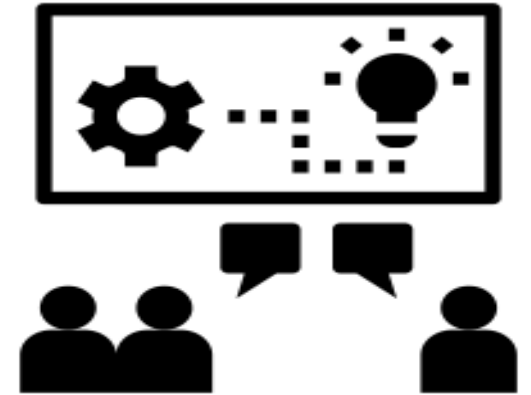
Workshops

- ❑ The PM could have designed workshops with the stakeholders and subject matter experts to gather the detailed requirements, which usually enhance user participation, expediting development and improving the quality of the specifications.



Workshops

- ❑ These workshops have a set of detailed agenda to eliminate uncertainties between parties and help improve communication between all parties.

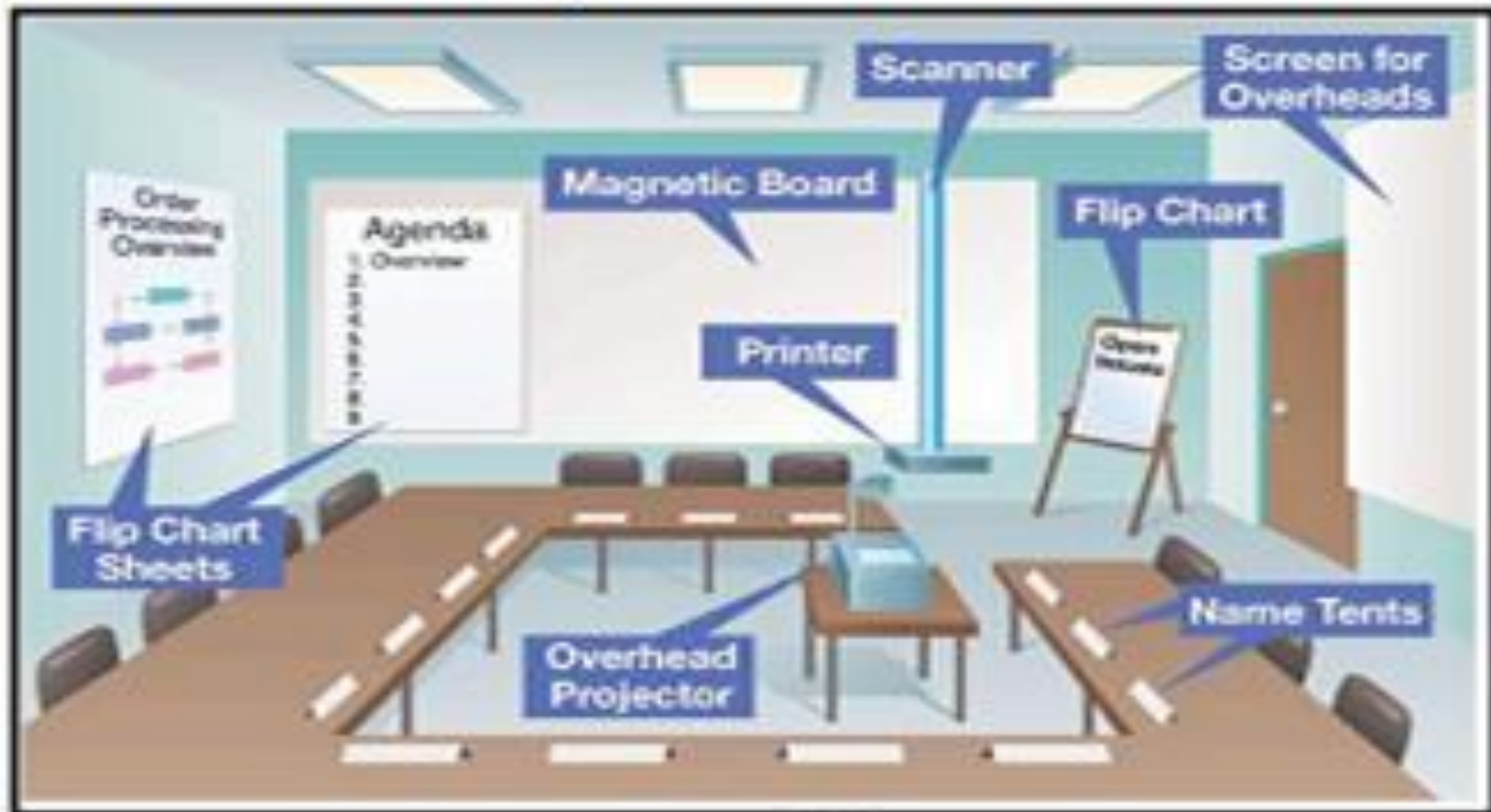


Workshops

- ❑ A popular workshop process is joint application design (JAD), which is a group meeting-based process for requirements collection
- ❑ JAD is usually more effective in small, clearly defined projects and less effective in large complex projects.



- Special type of group meeting
- Reduced time for requirements collection



Brainstorming

- ❑ A requirement gathering is a group brainstorming exercise that needs to be facilitated by the PM.
- ❑ The group consists mostly of the clients or shareholders.



Brainstorming

Rules of Brainstorming



Defer Judgment



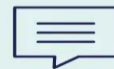
Encourage Wild Ideas



Build on the Ideas of Others



Stay Focused on the Topic



One Conversation at a Time



Be Visual



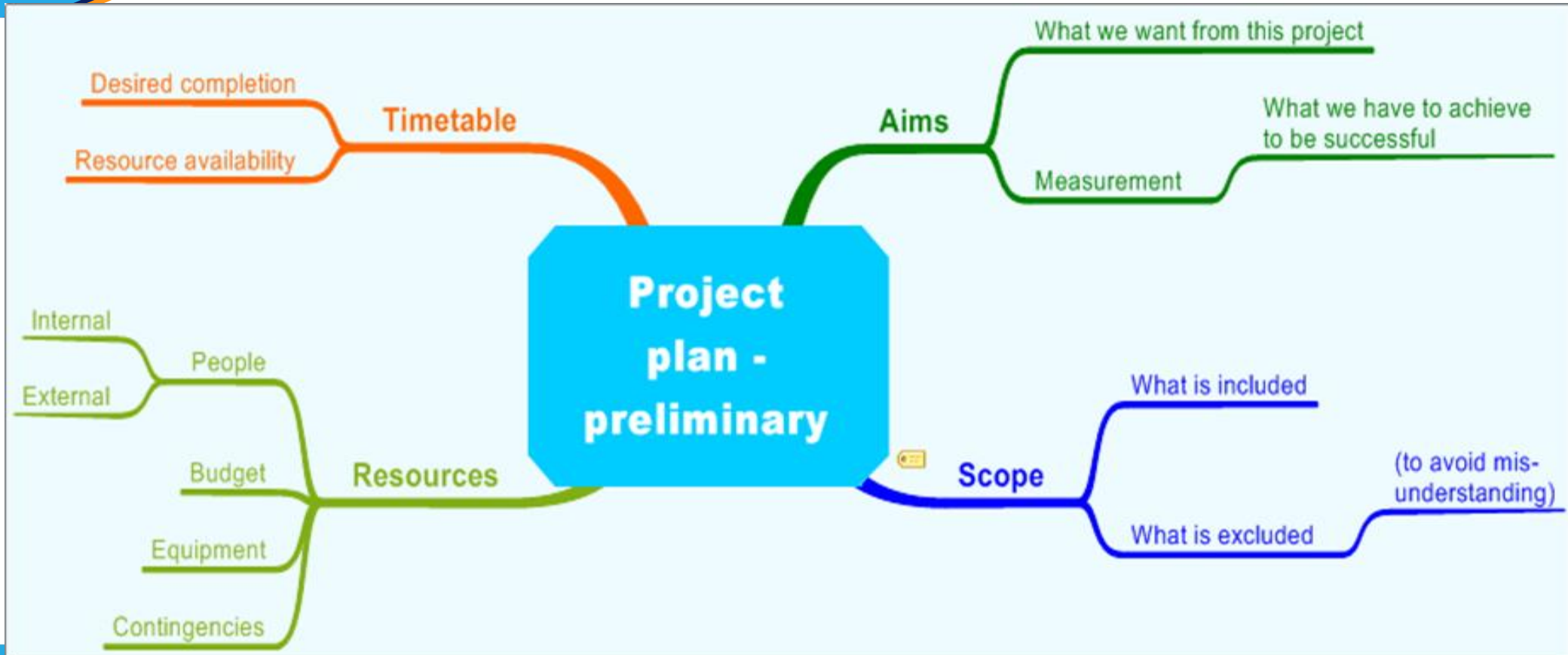
Go for Quantity



Brainstorming

- ❑ It is always smart if the PM sends surveys along with the project's charter to key stakeholders to list their requirements or have individual interviews with the key stakeholders before the brainstorming session(s) begins to save time and have a more effective meeting.

Brainstorming



Brainstorming

Project Charter

A Project Charter is a living document for an improvement team that outlines the presenting problem, the target and the boundaries of a process improvement effort.



Problem Statement

The problem captured in the form of a measurement



Business Case

The business reasons for doing the project



Goal Statement

The target of the process measurement



Timeline

When each project phase will be completed



Scope

What's in and what's out of the project



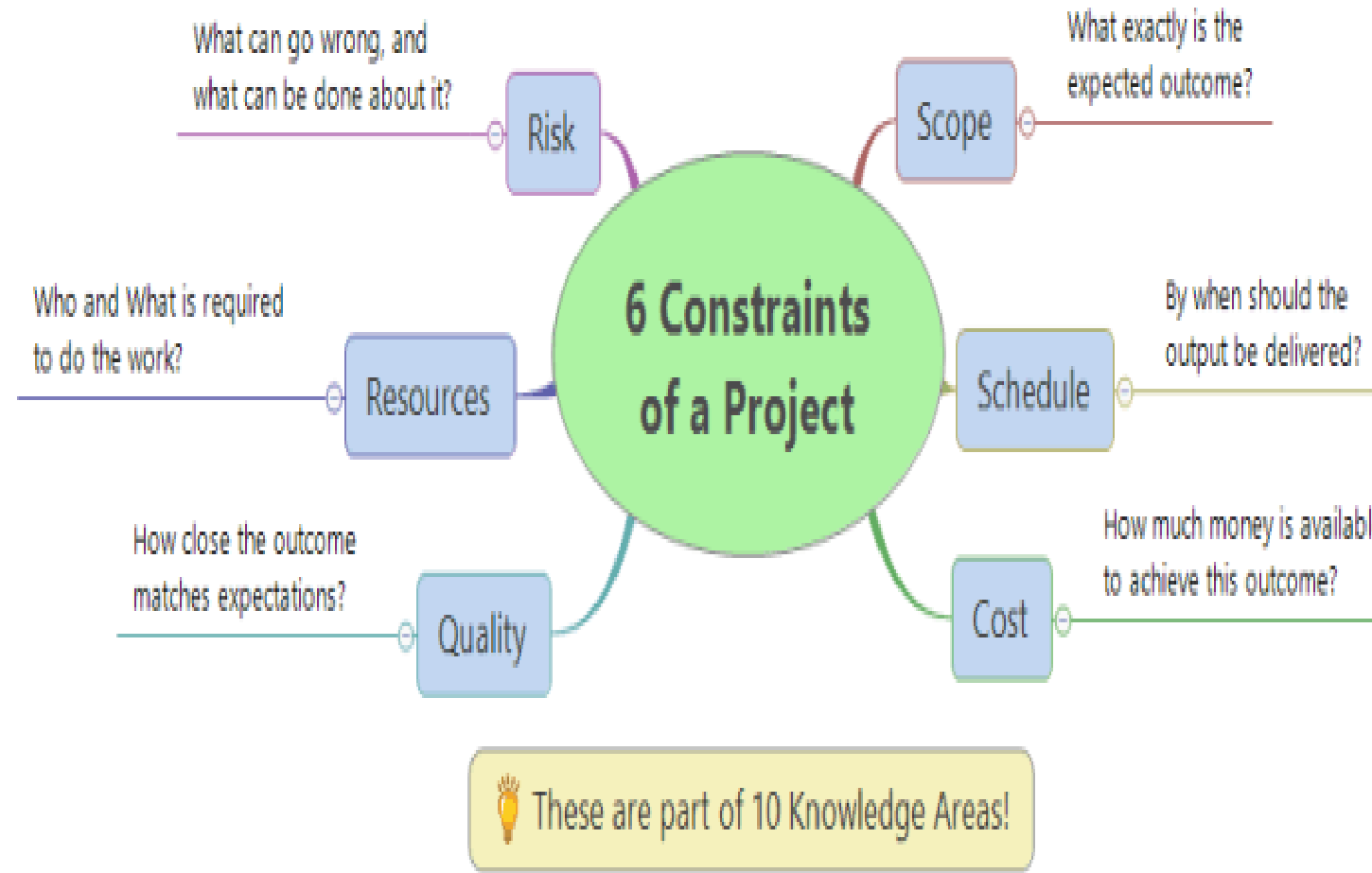
Team Members

The people who will participate in the project



Brainstorming

- ❑ Brainstorming should also include the areas of assumptions, constraints, and potential risks.
- ❑ As for risk identification, the group could look at risks from past projects.



Brainstorming

❖ The following are some techniques that could be used during the brainstorming session:

- A. Brown paper
- B. Process chart

A- Brown paper

- ❑ Brown paper is a form of flow-charting used to capture a complete process for evaluation (e.g., finding ways to streamline the system)
- ❑ Including highlights of key activities, interfaces, documentation, data sources, strengths, and problems.



A- Brown paper

- ❑ Brown papers are generally used in the “as-is” and “to-be” model definition phases of a project.
- ❑ They can also be used to develop “should-be” and “could-be” models for evaluation.

A- Brown paper (Material needed)

Materials needed:

- Brown paper (e.g., 3 feet by 5

feet)



- Post-it notes of two different colors (e.g., yellow and blue)



- Masking tape



- Ruler



- Pencils



- Master color markers



- Flipchart



A- Brown paper (How it works?)

- ❑ **Use the yellow Post-it notes** on the top half of the brown paper(s) to define the “as-is” process steps and have the users review and validate the flow.
- ❑ Next, look for problems or flaws in the process and brainstorm on ways that steps in the process can be reduced, eliminated, or simplified.
- ❑ **Using the blue Post-it notes** on the bottom half of the brown paper(s), develop a new and improved “to-be” process while using the strengths from the “as-is” process.

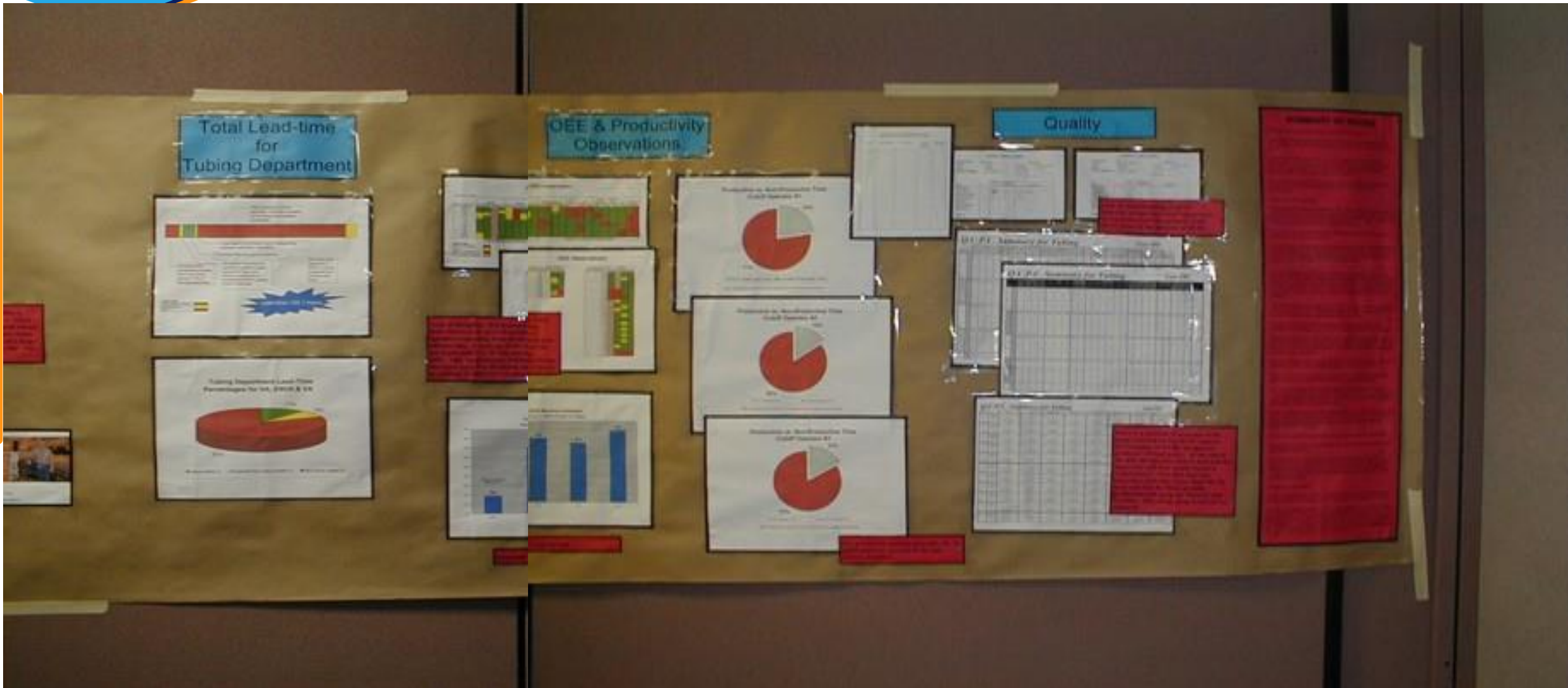
A- Brown paper (How it works?)

Main components:

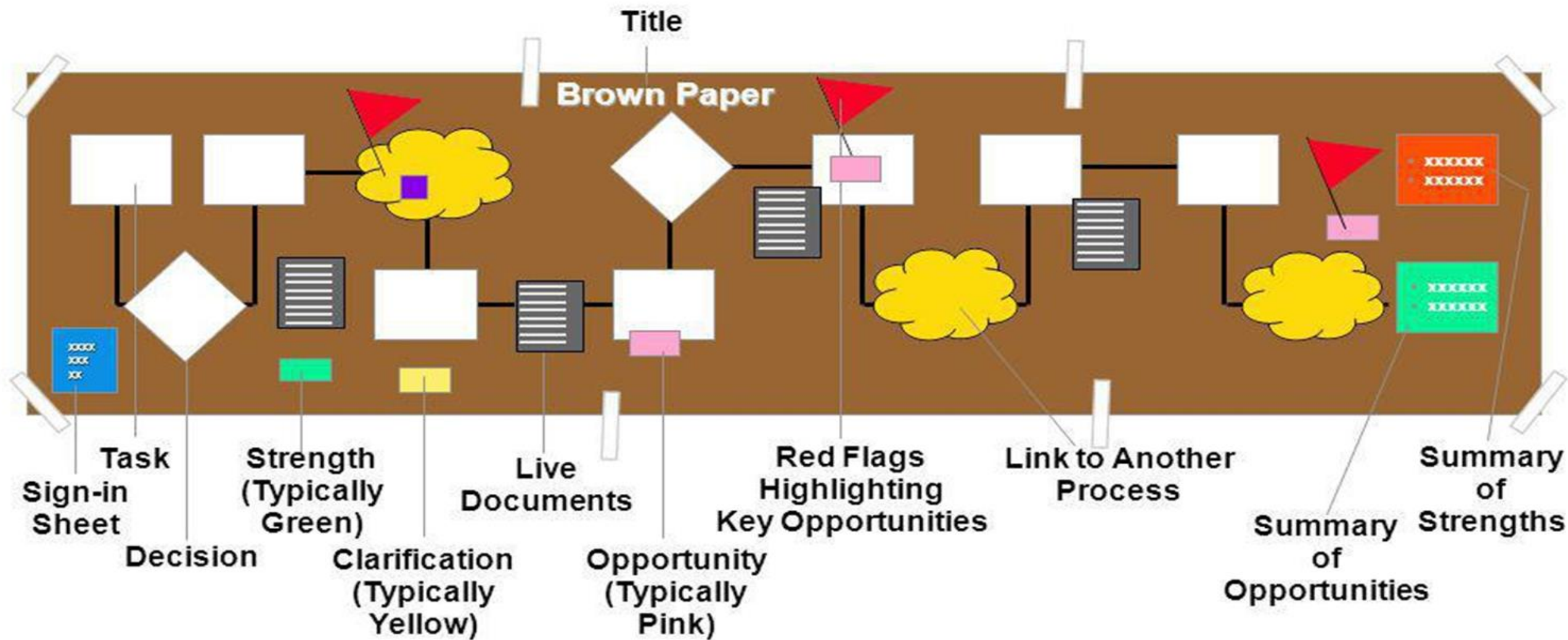
- ❑ “as-is” process
- ❑ Problems/ how can be reduced, eliminated, or simplified.
- ❑ “to-be” process

The strengths from the “as-is” process.

A- Brown paper (How it works?)



What Does a Brown Paper Process Map Look Like?



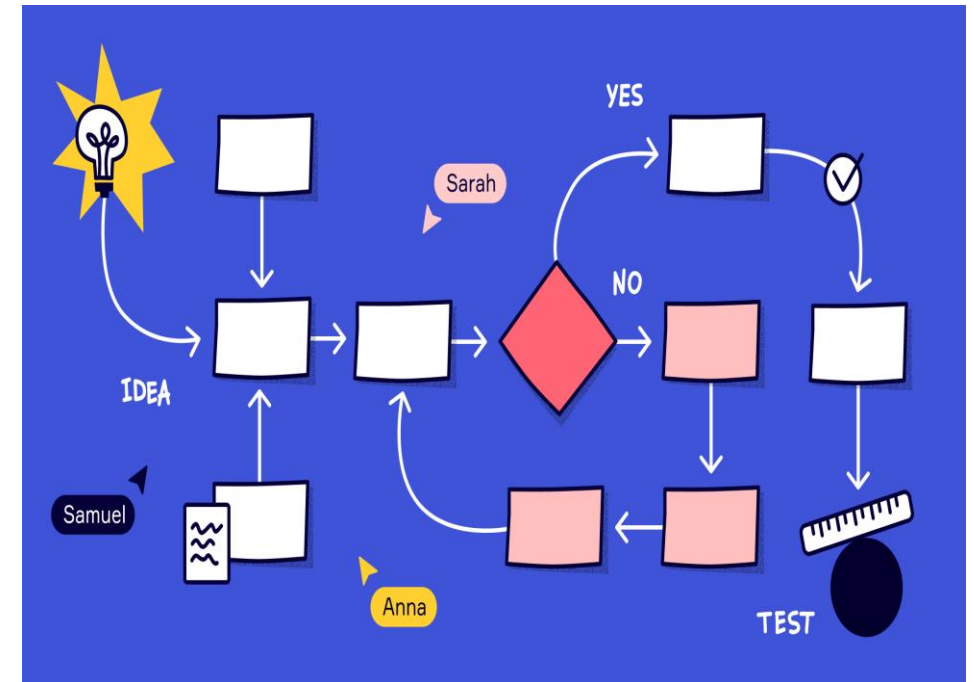
But for every standard there are exceptions — check what's preferred by the client or the project manager!

A- Brown paper (Advantage)

- ❑ It is important to gather the right people to develop a model of the process or system under evaluation.
- ❑ Another advantage in having the users involved in this exercise is that you usually will get “buy in” and support from them on changing the process.
- ❑ A feeling of ownership is important to users!

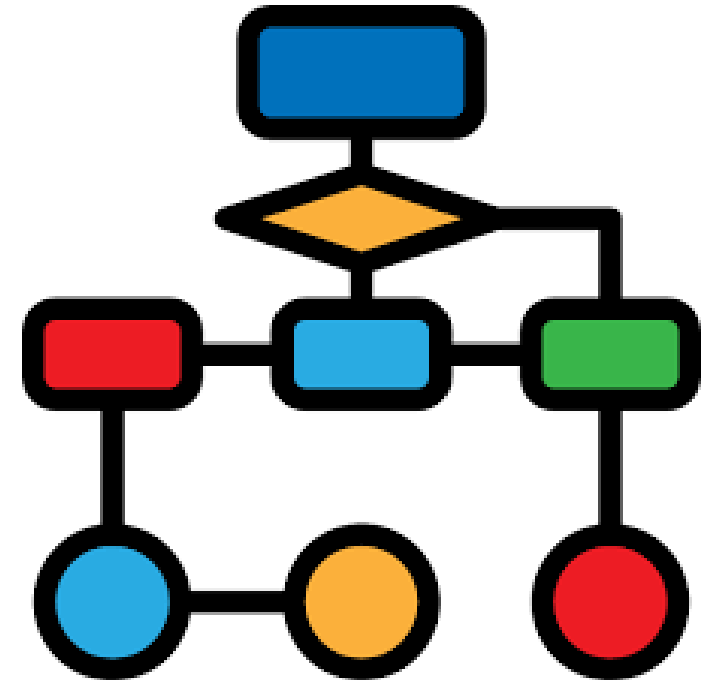
B- Process chart

- ❑ If you want to learn in detail what happens in a situation involving a document, request, material, or even the actions of a person, consider using a process chart.



B- Process chart

- ❑ The process chart documents the detailed steps of the flow and categorizes the type of action taken.



PROJECT MANAGEMENT



B- Process chart

- ❑ The Process Flow chart provides a visual representation of the steps in a process.
- ❑ Flow charts are also referred to as Process Mapping or Flow Diagrams.

B- Process chart

❑ Constructing a flow chart is often one of the first activities of a process improvement effort, because of the following benefits:

- Gives everyone a clear understanding of the process
- Helps to identify non-value-added operations
- Facilitates teamwork and communication
- Keeps everyone on the same page

B- Process chart

- ❑ With this information, you can analyze the process for potential improvements.
- ❑ To add value, you should try to reduce a complex process to its lowest common denominator to a series of simple steps to save time and reduce costs.

B- Process chart

❑ There are many symbols used to construct a process chart; the more common symbols are shown below:

- ✓ Operation
- ✓ Transportation
- ✓ Inspection
- ✓ Delay
- ✓ Storage

B- Process chart

	Operation	When something is changed or created
	Transportation	When something is moved
	Inspection	When something is verified or checked
	Delay	When something waits
	Storage	When something is kept

Figure 2.1 Process chart symbols. (Shade the appropriate symbol with a connector.)



B- Process chart (Example 1)

Steps of present (or proposed) system	Operation	Transportation	Inspection	Delay	Storage	Notes
1. Sales person creates bill						
2. Sales person places in out basket						
3. Taken to finance						
4. Placed in basket						
5. Accountant places in pending file						
Number of steps/action	1	1	0	2	1	

Figure 2.2 Sample situation: Minimal bill process chart.

B- Process chart (Example 2)

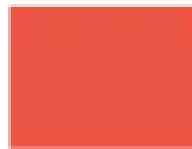
❑ There are many other symbols used to construct a process chart;



Beginning
or End



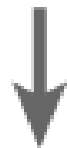
Decision



Activities



Delay



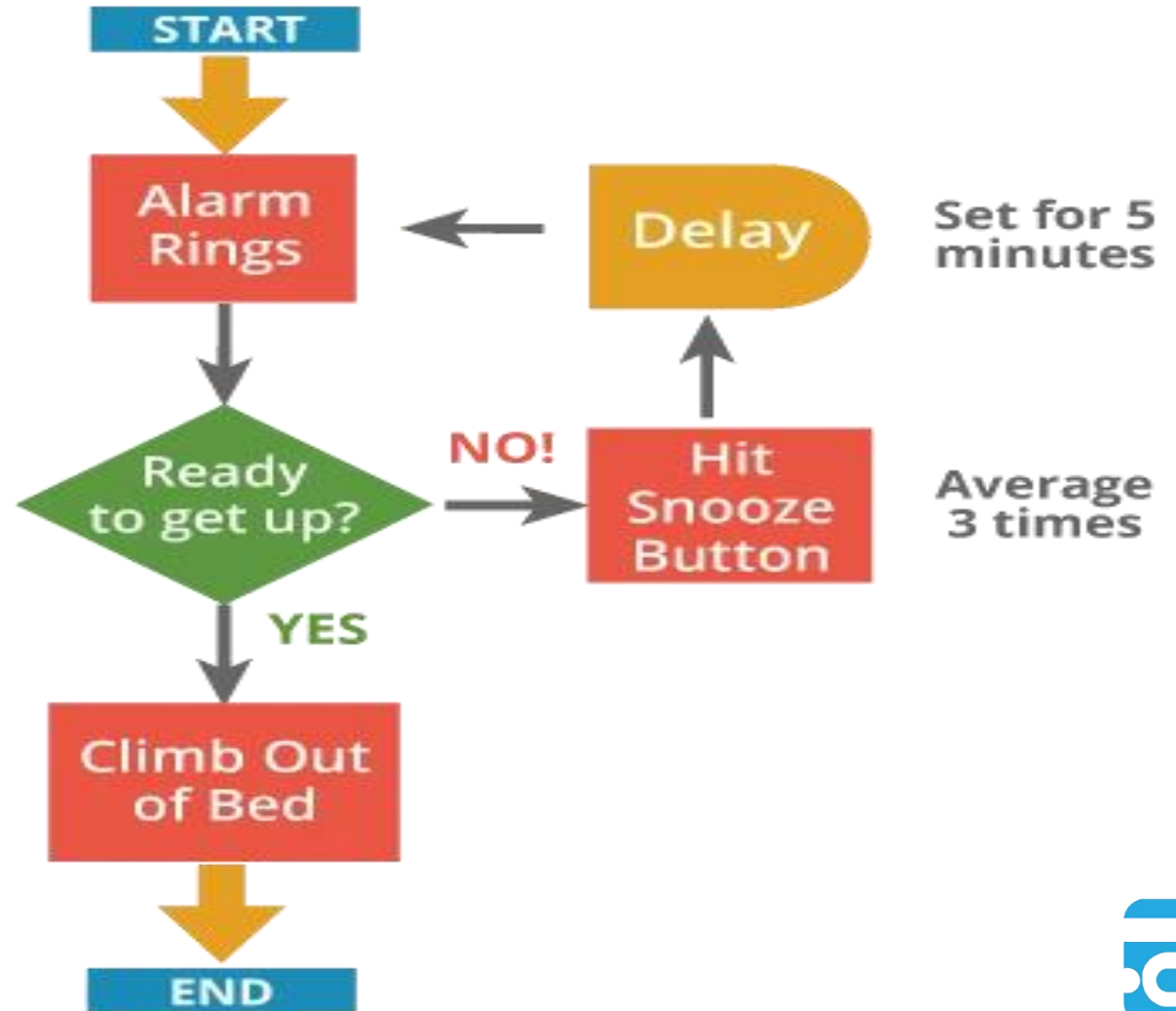
Process Flow
Direction



Document

B- Process chart (Example 2)

- ❑ The following is an example of a very simple flow chart for the process of getting out of bed in the morning:



Flow chart (Will be discussed later)

Symbol	Name	Function
	Start/end	An oval represents a start or end point
	Arrows	A line is a connector that shows relationships between the representative shapes
	Input/Output	A parallelogram represents input or output
	Process	A rectangle represents a process
	Decision	A diamond indicates a decision

Decision logic table

- ❑ A decision logic table (DLT) is a documentation technique that can display an entire situation visually, with all alternatives shown side by side.
- ❑ If you do not use a DLT, you may miss some alternatives that you never thought of which could sink your project.



Decision logic table

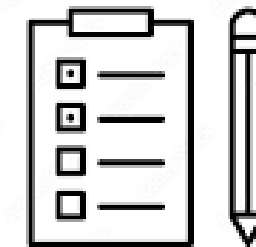
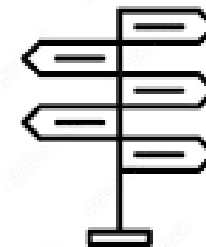
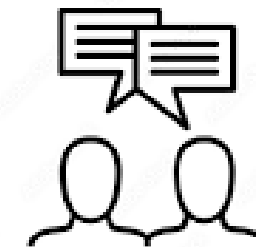
❑ The following describes the characteristics of a DLT, which increases team communication:

- a) Displays all the elements of a problem.
- b) Shows all the conditions affecting the solution.
- c) Reveals all the relationships that exist among the defined conditions.
- d) Indicates which action is appropriate for each set of circumstances.
- e) Illustrates the IF (condition) and THEN (conclusion or action) concept.



Decision logic table

- ❑ A decision table lists the various values for all the factors that influence some aspect of a system's behavior and indicates the expected system actions in response to each combination of factors.



Decision logic table

- ❑ These factors can be shown either as statements with possible answers of true or false, as questions with possible answers of yes or no, or as conditions that can have two or more possible values.



Decision logic table (Example)

❑ As an illustration, let's consider a chemical tracking system that I worked on once.

This system managed the inventories of chemicals in a large company's research labs.

❑ It allowed scientists to request new chemicals, tracked the location and status of individual chemical containers, provided health and safety information, and so forth.



Decision logic table (Example)

❑ Whether or not the chemical tracking system should accept a request for a new chemical from an

individual depends on four factors:

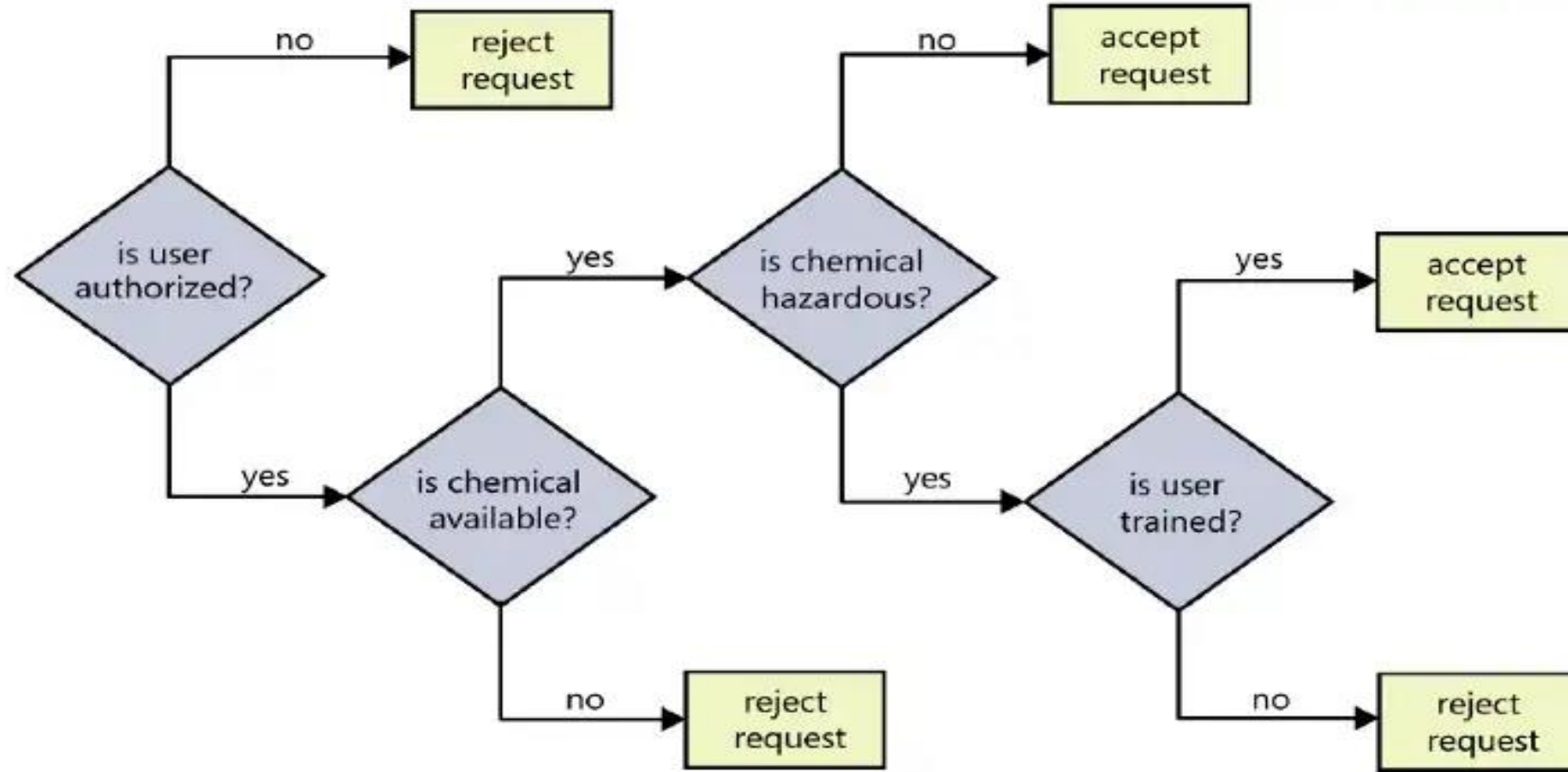
- ✓ Whether the user who is creating the request is authorized to request the chemical.
- ✓ Whether the chemical is available either in the chemical stockroom or from a vendor.
- ✓ Whether the chemical is on the list of hazardous chemicals that require special training in safe handling.
- ✓ Whether the user who is creating the request has been trained in handling this type of hazardous chemical.

Decision logic table (Example)

- ❑ The table shows that only five distinct functional requirements arise from the various combinations.
- ❑ It's always nice when a problem turns out to be smaller than you thought it was.
- ❑ The decision table is a compact and efficient way to communicate the outcome of these various logic combinations unambiguously.

Requirement Number					
Condition	1	2	3	4	5
User is authorized	F	T	T	T	T
Chemical is available	—	F	T	T	T
Chemical is hazardous	—	—	F	T	T
Requester is trained	—	—	—	F	T
Action					
Accept request			X		X
Reject request	X	X		X	

Decision Tree (Example)



RACI charting

□ Responsible, Accountable, Consult and Inform (RACI) charting is an effective means of analyzing and assigning roles and responsibilities.

	 FECCO	 EEM	 SANDALF	 ARRODIN	 BURORD
decide on what to do with ring	C	I	A	C	R
Create Fellowship	R	C	A	C	R
Get the ring to Mount Doom	R	C	A	C	I
Destroy and defeat enemies	I	R	C	R	I

RACI charting

- ❑ It correlates functional roles or individuals to their level of participation in an activity by assigning codes for responsibility, accountability, and communication interfaces.

	 FREDD	 BEN	 GUNDALEP	 ABASCHN	 ELCHOD
Reside on what to do with ring	C	I	A	C	R
Create Fellowship	R	C	A	C	R
Get the ring to Mount Doom	R	C	A	C	I
Disrupt and defeat enemies	I	R	C	R	I

RACI charting

❑ Establishing participation for each activity, for all roles, by assigning codes as described below:

- **R (responsible)**—The individual working on the activity (the doer)
- **A (accountable)**—The individual with yes/no authority; approval or veto power (Note: If two or more A's exist, this could be a sign of problems.)
- **C (consult)**—The individual must be consulted prior to action; two-way communication occurs
- **I (inform)**—The individual receives one-way communication and will use the information or take subsequent action



RACI charting

R

Responsible — Person working on activity

A

Accountable — Person with decision authority

C

Consult — Key stakeholder who should be included in decision or work activity

I

Inform — Needs to know of decision or action

Code	RACI	Summary	Details
R	Responsible	"The doer"	The individual who actually completed the task. This person is responsible for action / implementation of the deliverable.
A	Accountable	"The buck stops here"	The individual who is ultimately accountable for the correct and thorough completion of the deliverable. Includes "yes" or "no" authority and veto power. Only one "A" can be assigned for a deliverable, often the Project Manager / Approver Authority
C	Consult	"In the loop"	The individual to be consulted prior to a final decision or action – this incorporates two-way communication. Often the end user or client.
I	Inform	"Keep in the picture"	The individual who needs to be informed after a decision or action is taken. This incorporates one-way communication. Could be wider project team.

RACI charting

Project Acme	Person 1	Person 2	Person 3	Person 4
Deliverable 1	Responsible	Accountable	Consulted	Informed
Deliverable 2	Accountable	Consulted	Informed	Responsible
Activity 1	Consulted	Informed	Responsible	Accountable
Activity 2	Accountable	Consulted	Informed	Responsible

RACI charting

- ❑ It is a quick means of bringing redundancies and misunderstandings to light, so that better communication can occur.

	 FREDO	 SAM	 GANDALF	 ARAGORN	 EUROA
Decide on what to do with ring	C	I	A	C	R
Create Fellowship	R	C	A	C	R
Get the ring to Mount Doom	R	C	A	C	I
Destroy and defeat enemies	I	R	C	R	I

Traditional RACI charting

☐ Steps to complete a chart include (Traditional RACI Matrix):

- Selecting a business process to be analyzed.
- Listing all of the activities associated with that process in the lefthand column of the chart.
- Identifying all functional roles associated with the process and listing them in the top row on the chart.

Recent RACI charting

6 Steps To Create A RACI Chart

1 Identify Project Roles

Make a list of everyone involved in the project: names and their roles.

2 Identify Project Tasks or Deliverables

Review the project and break it down into clear tasks and deliverables.

3 Assign The RACI To Each Role and Task

Work through each task and think about which role should be Responsible, Accountable, Consulted, and Informed.

Every task or deliverable should have a Responsible and Accountable at least.

Make sure there's only one name assigned to Accountable.

4 Get Alignment With Your Team

Have a meeting with your team to correct any assumptions you might have made and get buy-in. Don't do this in a silo!

5 Get Alignment With Your Core Project Stakeholders

Have a call or meeting to go over the RACI chart and get buy-in from your stakeholders.

6 Make It Useful

Throughout the life of your project, refer back to the RACI and align on who is responsible for what. Keep it updated.

<https://thedigitalprojectmanager.com/projects/raci-chart-made-simple/>

Recent RACI charting

❑ Steps to complete a chart (Modern RACI) include:

❖ Step 1: Identify Project Roles

- Think about who is involved. First, the table listing out the names at the top. This highlights the first thing to decide when creating a RACI: do you list roles or specific people?
- Traditionally, you should define the functional roles along the top. However, there are cases when using names is better, and that's often my preference.

	 FRODO	 SAM	 GANDALF	 ARAGORN	 ELROND

RACI charting

☐ Step 2: Identify Project Tasks Or

Deliverables

- ☐ Review the project and break it down into clear tasks and deliverables.
- ☐ Put these down the left-hand column of your chart.

	 FRODO	 SAM	 GANDALF	 ARAGORN	 ELROND
Decide on what to do with ring					
Create Fellowship					
Get the ring to Mount Doom					
Distract and defeat enemies					

RACI charting

☐ Step 3: Assign The RACI To Each Role And Task

- ☐ Work through each task and think about the different roles and what they should be responsible for.
- ☐ Every task or deliverable should have Responsible and Accountable at least.
- ☐ Make sure there is only one role or name assigned to Accountable—this is really important.
- ☐ Think carefully about who should be Consulted whilst the task is ongoing, and who should be Informed once the task is complete.

	 FRODO	 SAM	 GANDALF	 ARAGORN	 ELROND
Decide on what to do with ring	C	I	A	C	R
Create Fellowship	R	C	A	C	R
Get the ring to Mount Doom	R	C	A	C	I
Distract and defeat enemies	I	R	C	R	I



RACI charting

- ❑ Step 4: Agree on This With Your Team
- ❑ Step 5: Agree on This With The Core Project Stakeholders
- ❑ Step 6: Make It Useful Throughout The Life Of The Project

	 FRODO	 SAM	 GANDALF	 ARAGORN	 ELROND
Decide on what to do with ring	C	I	A	C	R
Create Fellowship	R	C	A	C	R
Get the ring to Mount Doom	R	C	A	C	I
Distract and defeat enemies	I	R	C	R	I

RACI charting (Example)

Table 2.5 Help Desk RACI Chart

Roles activities (PC problem resolution)	Client	Help desk	Local support staff
Calls centralized help desk in Dallas	A		
Help desk opens resolution		R	
Help desk resolves problem	C	R	
Help desk closes resolution		R	
Help desk assigns resolution to location		A	I
Location resolves problem	C		R
Location closes resolution			R

Table 2.5 is an example of a RACI chart that depicts what happens when a client with a problem in a remote location (or located in Dallas, Texas) calls the help desk.

Understanding the project business case

- ❑ From many recent studies, the major reason for project failures is not the specifics of what went wrong, but rather the lack of procedures, methodology, and standards for managing the project.
- ❑ The PM who is asked to manage a project with no methodology, standards, procedures, and processes will have a difficult time keeping the project under control and has a high probability of being unsuccessful.

Understanding the project business case

❑ Also keep in mind that technical oriented projects have unusually high degrees of uncertainty for the following reasons:

❖ Technology is changing every 6–12 months—new programming languages, new interface mechanisms, hardware platforms, tools, and version compatibility issues

❖ Immature methodologies

Understanding the project business case

- ❖ Resource turnover is high—new teams for each project
- ❖ No standard benchmarks for abilities/skill levels of resources
- ❖ Dependencies on customer for good requirements and project plan task completions
- ❖ Fast-changing business environment

Understanding the project business case

- ❖ Unfortunately, most projects have no linkage to corporate strategy (i.e., a set of short- and long-range goals), which remains revolutionary thinking in many corporations today.
- ❖ So, in ranking a new project request, you should ask: does this project have any linkage to your corporate strategy? If it does, there is a high probability that you want to execute this project.
- ❖ Also, if the new project request has nothing to do with your corporate strategy, there is a much lower probability that you would execute the project.

Understanding the project business case

- ❖ Going this way shows maturity in your project management process and adds more overall long-term value to your organization.
- ❖ Another advantage of linking projects to your corporate strategy is having more executive support in gaining resources and needed budget monies.

In summary, projects need to have more of a business focus that is aligned to strategic business goals!



Conclusion

- The goal of Project Management is to deliver an Information System that is acceptable to Users and is developed on time and within budget
- 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.
- Project requirements are the further breakdown of the client's deliverables that are described in detail.
- This process cannot be done in a vacuum, and the requirements collecting process is mostly the client's or shareholder's responsibility.
- It is the responsibility of the PM to facilitate this requirements collecting process and there are many techniques (or combination of) for doing this.
- Projects need to have more of a business focus that is aligned to strategic business goals!



Thank You



جامعة الجميع الذكية
EVERYONE'S SMART UNIVERSITY