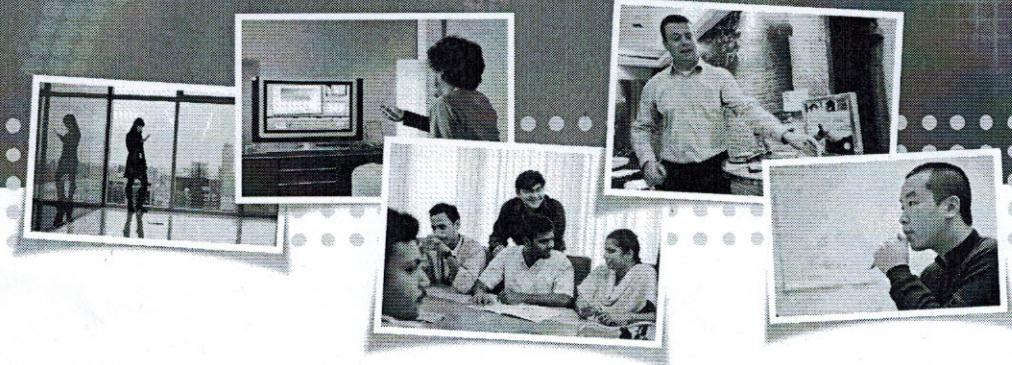
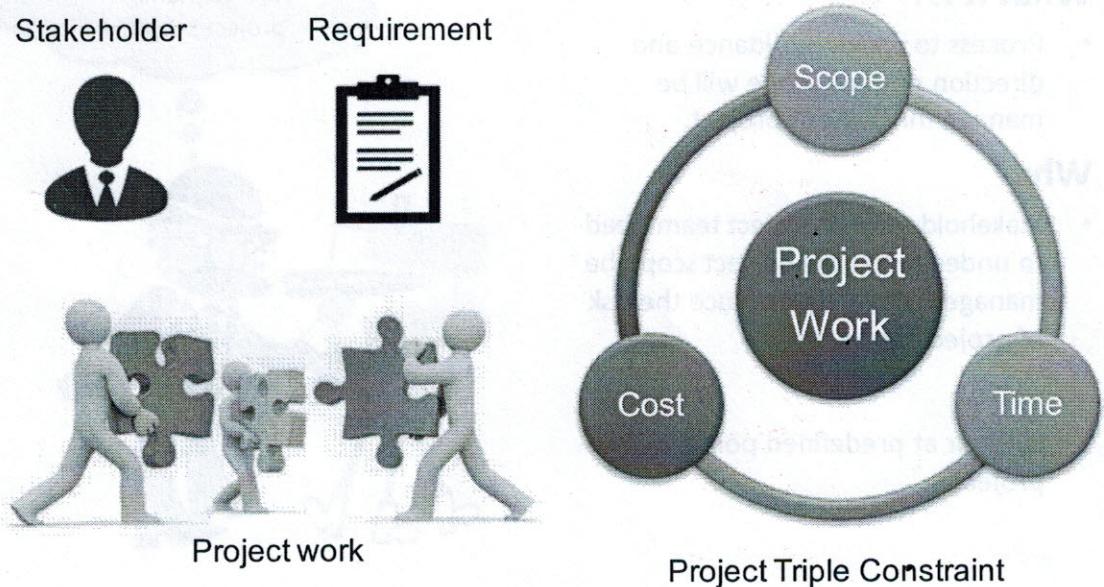


Project Scope Management

Instructor: Phùng Thanh Cường Msc, PMP



Requirement and Project work



Initiating	Planning	Executing	Monitoring & Controlling	Closing
	5.1 Plan Scope Management		5.5 Validate Scope	
	5.2 Collect Requirements		5.6 Control Scope	
	5.3 Define Scope			
	5.4 Create WBS			

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5.1 Plan Scope Management

What it is?

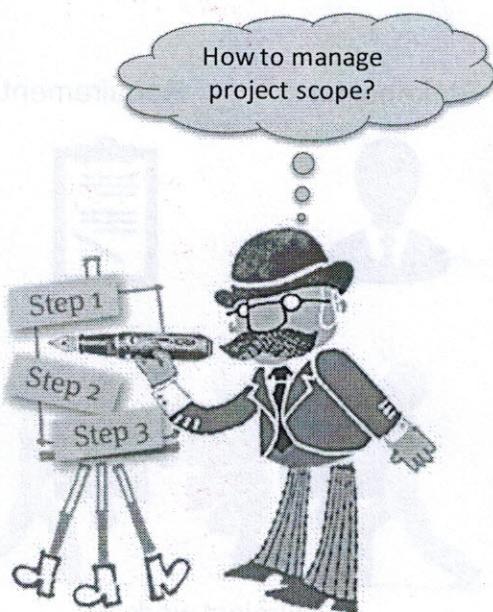
- Process to provide guidance and direction on how scope will be managed throughout project.

Why?

- Stakeholders and project team need to understand how project scope will be managed. This helps reduce the risk of project scope creep.

When?

- Once or at predefined points in the project.

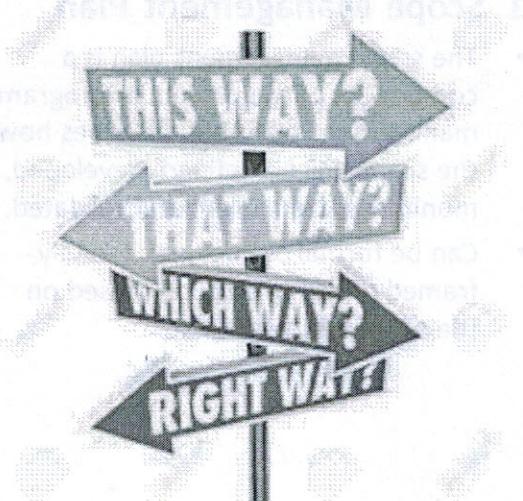


5.1 Plan Scope Management

PHIA

How?

- Analysis of project charter, the latest approved subsidiary plans of the project management plan, historical information, and any other relevant enterprise environmental factors.
- Determine way of collecting requirements, elaborating the project and product scope, creating the product, validating the scope, and controlling the scope are evaluated.



5.1 Plan Scope Management - Tools & techniques

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1. Data analysis

- **Alternatives analysis.** Evaluate the different ways to manage project requirement and project scope

2. Expert Judgment

- Any group or person with expertise in developing scope management plan



3. Meetings

- Attendees at these meetings may anyone with responsibility for any of the scope management processes



5.1 Plan Scope Management - Outputs



1. Scope Management Plan

- The scope management plan is a component of the project or program management plan that describes how the scope will be defined, developed, monitored, controlled, and validated.
- Can be formal or informal, broadly framed or highly detailed, based on the needs of the project.

SCOPE MANAGEMENT PLAN		
Project Title:	Date:	
Roles and Responsibilities		
Name	Role	Responsibilities
Scope Statement Development:		
WB S and WBS Dictionary:		
Scope Baseline maintenance:		
Scope Change:		
Deliverable Acceptance:		
Scope and requirement Integration:		

5.1 Plan Scope Management - Outputs



2. Requirement Management Plan

- Describes how project and product requirements will be analyzed, documented, and managed.
- Requirements management plan components are strongly influenced by phase-to-phase relationship

REQUIREMENTS MANAGEMENT PLAN	
Project Title:	Date:
Requirements Collection:	
Categories:	
Prioritization:	
Traceability:	
Configuration Management:	
Verification:	

5.1 Plan Scope Management - Inputs



1. Project charter

- Project purpose, high-level project description, assumptions, constraints, and high-level requirements

2. Project management plan

- Project life cycle description.
- Development approach. Waterfall, iterative, adaptive, agile, or a hybrid development approach will be used.
- Quality management plan. Quality policy, methodologies, and standards are implemented on the project.

3. Enterprise environmental factors

- Organization's culture,
- Infrastructure, personnel administration, and marketplace conditions.

4. Organizational process assets

- Policies and procedures, and
- Historical information and lessons learned repositories.

5.1 Plan Scope Management



Input	Tools & Techniques	Outputs
1. Project charter	1. Data analysis	1. Scope management plan
2. Project management plan	2. Expert judgment	2. Requirements management plan
3. Enterprise environmental factors	3. Meetings	
4. Organizational process assets		

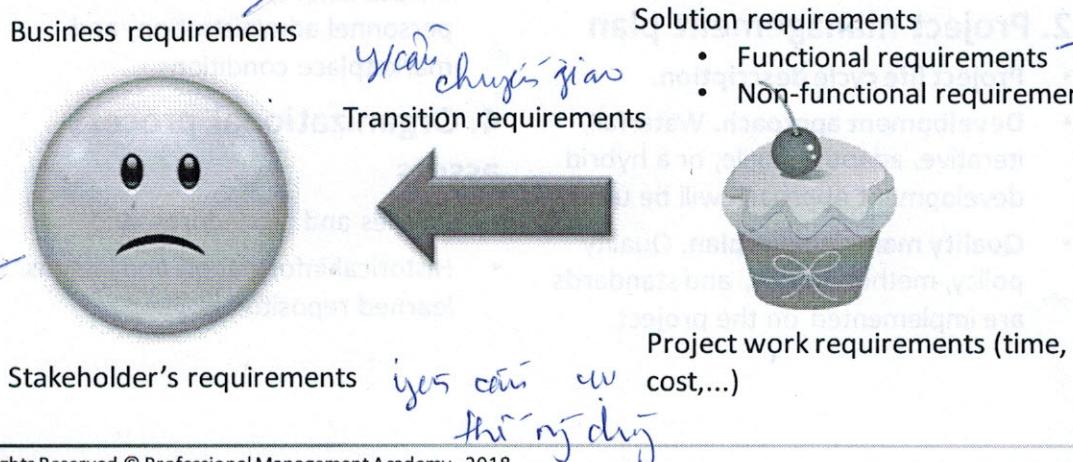
May need, expect

What is Requirement?



- A condition or capability needed by a stakeholder to solve a problem or achieve an objective.
- A condition or capability that must be met or possessed by a solution or solution component to satisfy a contract, standard, specification, or other formally imposed documents.

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UR



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5.2 Collect Requirements



What?

- Collect the requirements for the project based on the stakeholders' needs, which will determine the product scope and project scope.

Why?

- The basis for defining the product scope and project scope.

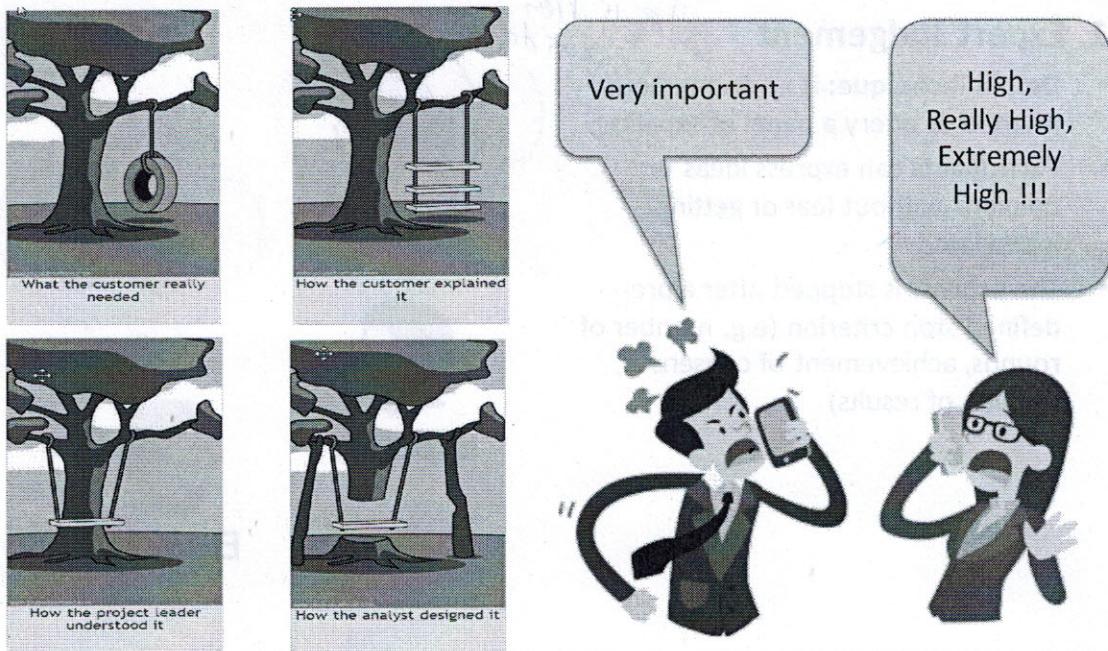
When?

- Once or at predefined points in the project

Missing requirements

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Common mistakes in requirement management



Requirement Management Processes

- **Requirement elicitation:** communicating with customers and users to determine what their requirements are. This is sometimes also called requirements gathering.
- **Requirement analysis:** determining whether the stated requirements are unclear, incomplete, ambiguous, or contradictory, and then resolving these issues.
- **Requirements specification/ modeling:** Requirements might be specified in various forms, such as natural-language documents, use cases, user stories, or process specifications.
- **Requirement Validation:** ensuring the specified requirements meet the stakeholders' needs.
- **Requirement Verification:** confirming that the specification addresses organization's standard.
- **Requirement Categorization:** Organizing requirements according to different viewpoints, and the needs of different audiences
- **Requirement Prioritization:** determining which candidate requirements of product should be included in a certain release.

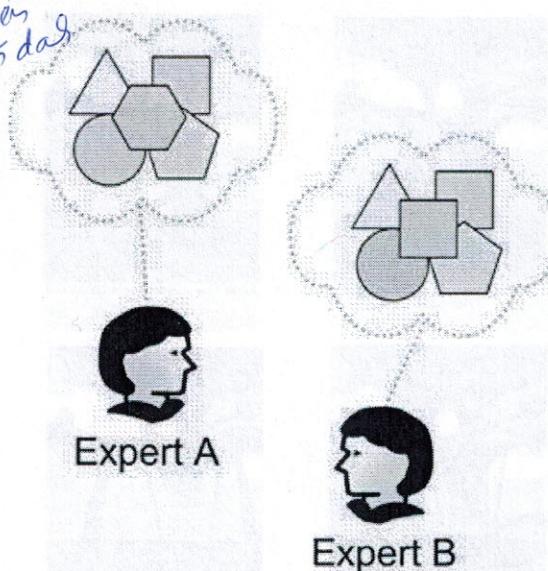
5.2 Collect Requirements - Tools & Techniques



1. Expert Judgement

- **Delphi Technique:** is an anonymous method to query a panel of experts.
- Participants can express ideas or opinions without fear or getting intimidated.
- The process is stopped after a pre-defined stop criterion (e.g. number of rounds, achievement of consensus, stability of results)

*Lay ý kiến
tín dụng*



5.2 Collect Requirements - Tools & Techniques



2. Data gathering (1)

- **Interviews:** Is a formal or informal approach to discover information from stakeholders by talking to them directly
- **Individually meeting** between an interviewer and an interviewee



2. Data gathering (2)

- **Focus Groups:** Group of prequalified stakeholders or the subject matter experts
- A trained moderator guides the group through an interactive conversational than a discussion , designed to be more conversational than a one-on-one interview



5.2 Collect Requirements - Tools & Techniques

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Team Meeting

2. Data gathering (3)

- **Brainstorming:** Gathering a list of ideas spontaneously contributed by its members.
- Rules for brainstorming :
 - Go for **quantity**
 - Withhold **criticism**
 - Welcome wild ideas
 - Combine and improve ideas



5.2 Collect Requirements - Tools & Techniques

PHIA

Yes cái kia - note

tin hieu / thay doi
tren duoc rat hub

2. Data gathering (4)

• Questionnaires and

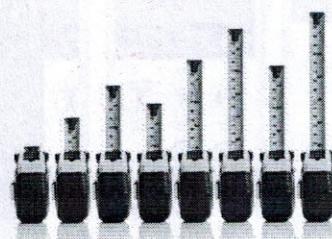
Surveys: Questionnaires and surveys are written sets of questions designed to quickly accumulate information from a wide number of respondents .



2. Data gathering (5)

- **Benchmarking:** Generate ideas for improvement, and provide a basis for measuring performance by comparing actual or planned practices, such as processes and operations, to those of comparable organizations to identify best practices

So sánh với
tác phẩm

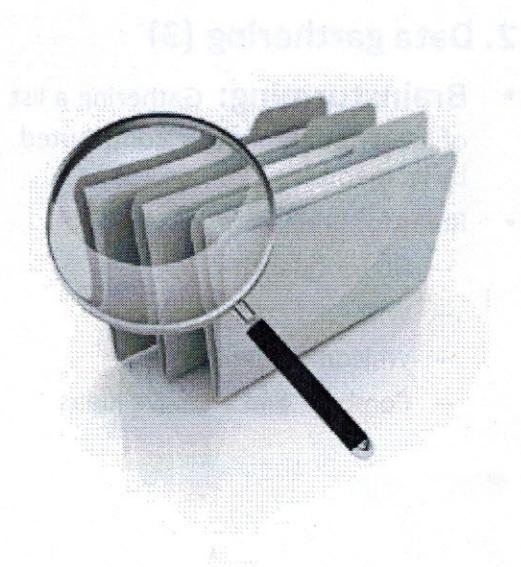


5.2 Collect Requirements - Tools & Techniques

Khảo sát / Pencil the survey now yes do

3. Data analysis

- **Document analysis:** There are a wide range of documents that may be analyzed to help elicit relevant requirements.
- **Example:** business plans, marketing literature, agreements, requests for proposal, current process flows, logical data models, business rules ...



5.2 Collect Requirements - Tools & Techniques

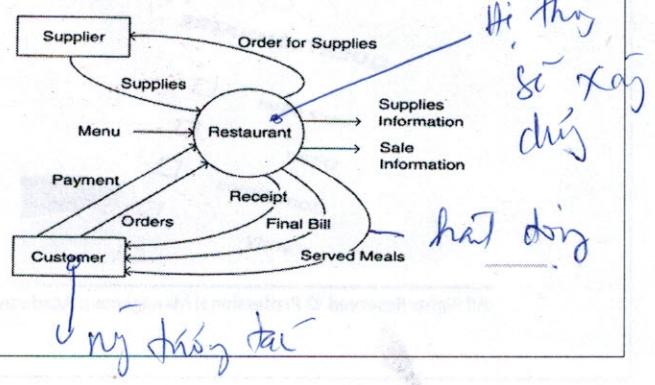
4. Prototypes *(lưu ý)*

- Concept, Mock up, Storyboard, Demo...a working model of the expected product before actually building it
- The requirements obtained from the prototype are sufficiently complete to move to a design or a build phase



5. Context diagrams

- A diagram that represents the Actors outside a system that could interact with that system.
- The actor(s) providing the input to and receiving the output from business system.
- This diagram is the highest level view of a system



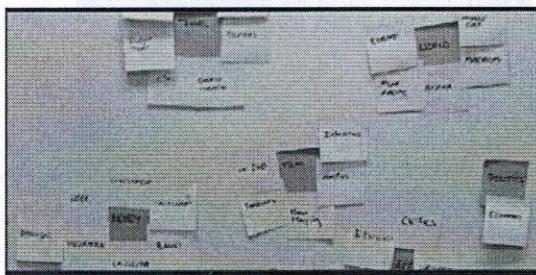
5.2 Collect Requirements - Tools & Techniques



6. Data Representation (1)

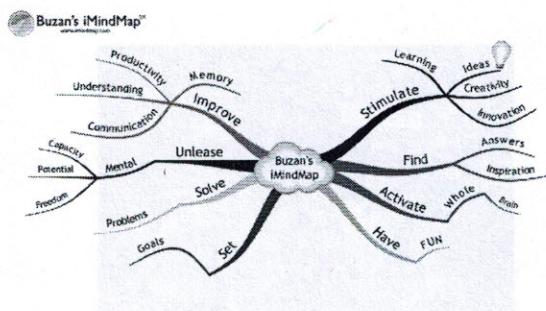
- **Affinity Diagram:**

Brainstorming + Grouping



6. Data Representation (2)

- **Mind Map:** Brainstorming + Mapping

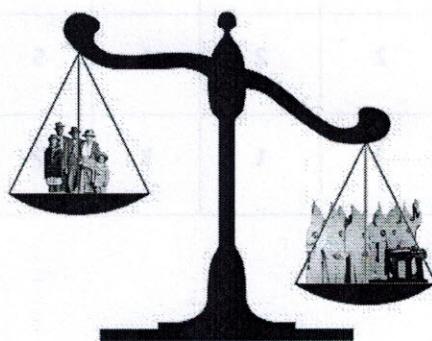


5.2 Collect Requirements - Tools & Techniques



7. Decision Making (1)

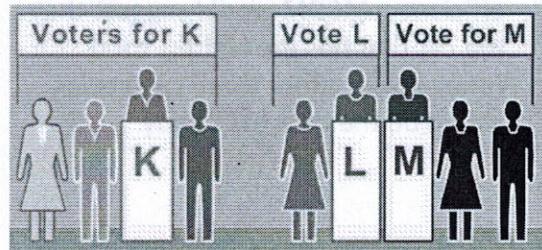
- **Voting - Majority:** support from more than 50% of the members of the group



7. Decision Making (2)

- **Voting - Plurality:** the largest block in a group decides even if a majority is not achieved

Nhóm nào có số phiếu
đa số sẽ quyết định.



7. Decision Making (3)

- Voting - Unanimity** : everyone agrees on a single course of action



7. Decision Making (4)

- Autocratic** : one individual makes the decision for the group



Adolf Hitler

5.2 Collect Requirements - Tools & Techniques

7. Decision Making (5)

- Multi-criteria decision analysis**
- Explicitly considers multiple criteria in decision-making environments.
- Example:**
 - considering three different types of car and evaluating them for criteria such as speed, cost and fuel efficiency. MCDM would suggest that the car that has the highest total rating across those three categories would be the best car to buy.

	Criteria			
	X	Y	Z	
Car A	1	3	2	6
Car B	2	2	1	5
Car C	3	1	3	7

5.2 Collect Requirements - Tools & Techniques

PHIA

Brainstorming Xem

the vote

8. Interpersonal and team skills

- **Nominal Group Technique:** (Brainstorming + Voting)
- **Introduction and explanation:** The facilitator pose the question and explains the purpose and procedure of the meeting.
- **Silent generation of ideas:** Each participant write down all ideas that come to mind when considering the question.
- **Sharing ideas:** Facilitator records each idea on a flip chart using the words spoken by the participant.
- **Group discussion:** Participants ask for further details about any of the ideas that colleagues have produced that may not be clear to them.
- **Voting and ranking:** Each participant vote privately to prioritize the ideas, usually using a scale of 1 – 5, with 1 being the lowest and 5 being the highest.

- The highest voted idea in response to the question is available to participants so the meeting concludes having reached a specific outcome.

Solution Options	Voting by Team Member			Ranking
	Ray	Robin	Fred	
EZTrain	4	5	4	13
WebCast	8	7	8	23
B2BLearn	6	3	5	14
BlendNow	1	1	2	4
LearnFast	3	4	3	10
CBTRun	7	8	6	21
NowClick	2	2	1	5
MyTrainer	5	6	7	18

5.2 Collect Requirements - Tools & Techniques

PHIA

8. Interpersonal and team skills (2)

- **Observation/conversation**
- Observation (also called “job shadowing”) is usually done externally by the observer viewing the user performing his or her job .
- It can also be done by a “participant observer” who actually performs a process to experience how it is done to uncover hidden requirements



5.2 Collect Requirements - Tools & Techniques



8. Interpersonal and team skills (3)

- **Facilitation:** Well-facilitated sessions can build trust, foster relationships, and improve communication among the participants, which can lead to increased stakeholder consensus.
- **Facilitated workshops** can be used to quickly define **cross-functional** requirements and reconcile stakeholder differences.

- Examples of facilitated workshops:
- **Joint application design/development (JAD):** in the software development industry.
- **Quality function deployment (QFD):** In the manufacturing industry



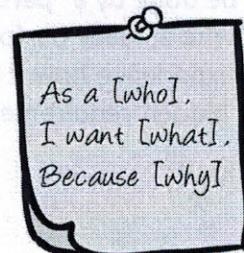
5.2 Collect Requirements - Outputs



1. Requirements Documentation

- Describe how individual requirements relate to the project
- Requirements need to be unambiguous (measurable and testable), traceable, complete, consistent, and acceptable to key stakeholders.
- May range from a simple listing form to more elaborate forms
- **User stories:** are often developed during a requirements workshop.

REQUIREMENTS DOCUMENTATION				
Project Title:	Date Prepared:			
Stakeholder	Requirement	Category	Priority	Acceptance Criteria



5.2 Collect Requirements - Outputs

PUMA

\neq linke Regeln, wo für oder

2. Requirements Traceability Matrix

- It is a matrix that links requirements to the business and project objectives and the deliverables that satisfy them.
 - That helps to trace them throughout the project life cycle .

5.2 Collect Requirements - Inputs

PHEA

1. Business documents

- Describe required, desired, and optional criteria for meeting the business needs.

2. Project charter

- Contain high-level description of the product, service, or result

3. Project management plan

- **Stakeholder management plan:** to assess and to adapt to the level of stakeholder participation in requirements activities.
 - **Scope management plan**
 - **Requirements management plan**

3. Project documents

- **Stakeholder Register:** Provide information on detailed project and product requirements. *Tin mà - K° Verijgeg*
 - **Assumption Log.** assumptions about factors that can influence requirements. *điều*
 - **Lessons learned register.** effective requirements collection lessons learned.

5. Agreements

- Agreements can contain project and product requirements.

6. Enterprise environmental factors

7. Organizational process assets

5.2 Collect Requirements



Inputs	Tools & Techniques	Outputs
1. Project charter 2. Project management plan 3. Project documents 4. Business documents 5. Agreements 6. Enterprise environmental factors 7. Organizational process assets	1. Expert judgment 2. Data gathering 3. Data analysis 4. Context diagram 5. Prototype data representation 6. Decision making 7. Interpersonal and team skills	1. Requirements Documentation 2. Requirements Traceability matrix

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Project Scope and Product Scope

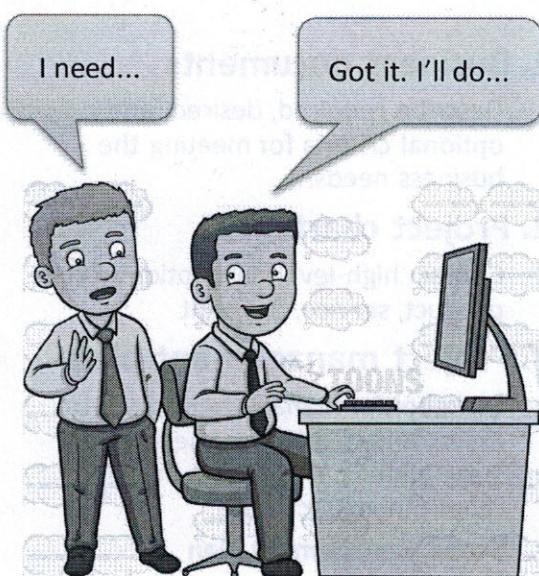


Project Scope

- The work that must be done to deliver a product, service, or result with the specified features and functions.
- Completion is measured against the project management plan.
- Project scope is sometimes viewed as including product scope.*

Product Scope

- The features and functions that are to be included in your products or service or result of the project.
- Completion is measured against the product requirements.



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5.3 Define Scope

PIIA

What?

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

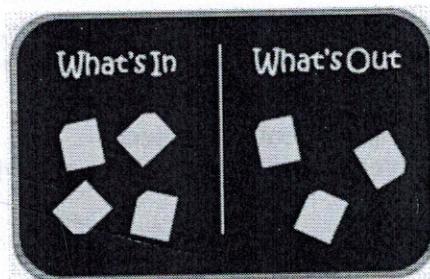
Why?

- Stakeholders and project team need to have a **common understanding** of what is included in and excluded from the project work and what factors define its success.

When?

- Depends on project lifecycle, Define scope process can be used once or highly iterative

- During project initiation, the major deliverables, assumptions, and constraints that are documented
- During project planning, the project scope is defined and described with greater specificity as more information about the project is known.

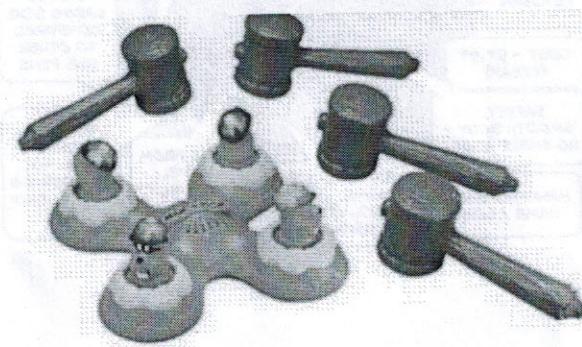


Common mistakes in project scope management

PIIA

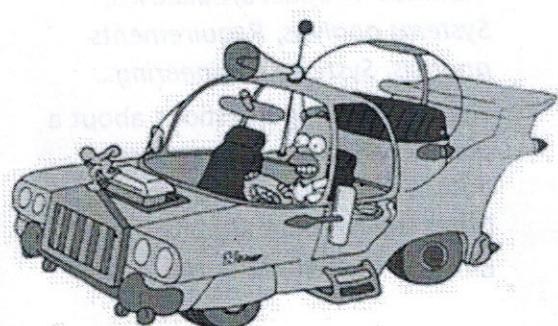
Scope Creep

- is also known as requirement creep, which refers to the uncontrolled changes in the project's or product's scope.



Gold Plating

- Adding extra features or functions to the products which were not asked by the customer.

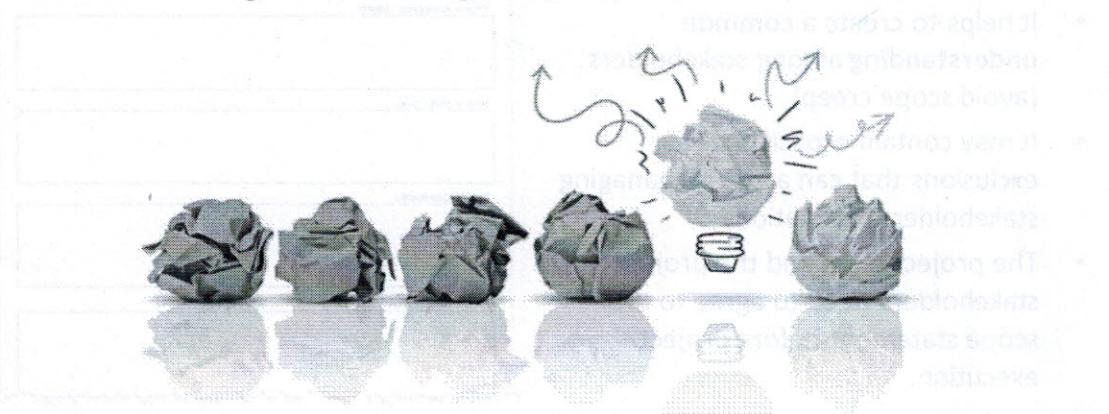


5.3 Define Scope - Tools and Techniques

PHIA

2. Data Analysis

- **Alternative analysis:** Generate and analysis different approaches to execute and perform the work of the project.
- A variety of general management techniques can be used, such as:
 - Brainstorming, Lateral thinking, Analysis of alternatives...



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5.3 Define Scope - Tools and Techniques

PHIA

3. Decision making

- **Multi-criteria decision analysis:** systematic analytical approach refine the project and product scope for the project

	Criterion A	Criterion B	Criterion C	Criterion D	Total Benefit
Solution 1					
Solution 2					
Solution 3					
	Criteria Weights				

4. Interpersonal and team skills

- **Facilitation:** to reach a cross-functional and common understanding of the project deliverables and project and product boundaries.



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5.3 Define Scope - Outputs

1. Project Scope Statement

- Project scope statements documents the entire scope, including project and product scope. It describes the project's deliverables in detail.
- It helps to create a **common understanding** among stakeholders (avoid scope creep).
- It may contain explicit scope exclusions that can assist in managing stakeholder expectations.
- The project team and the project stakeholders need to agree to the scope statement before project execution.

PHIA

Ms. từ chối xác nhận, điều chỉnh sau.

PROJECT SCOPE STATEMENT	
Project Title:	Item 1
Date Prepared: _____	
Product Scope Description:	
Project Deliverables:	
Project Acceptance Criteria:	
Project Exclusions:	
Project Constraints:	
Project Assumptions:	

5.3 Define Scope - Outputs

PHIA

2. Project Document Updates

Project documents that may be updated include

- Assumption log.
- Stakeholder register
- Requirements documentation
- Requirements traceability matrix

5.3 Define Scope - Inputs



1. Project Charter

- Goals and objectives of the project,
- Description of the scope,
- Any constraints and assumptions, and project approval requirements .

2. Project management plan

- Scope Management Plan

3 Project documents

- Assumption log
- Requirements documentation: The Define scope process will translate the requirements into more detail.
- Risk register

4. Enterprise environmental factors

- Factors that can influence the define scope

5. Organizational process assets

- Policies, procedures and templates.
- Historical information and lessons learned from previous phase or projects.

5.3 Define Scope



Inputs	Tools & Techniques	Outputs
<ol style="list-style-type: none">1. Project charter2. Project management plan3. Project documents4. Enterprise environmental factors5. Organizational process assets6. Assets	<ol style="list-style-type: none">1. Product analysis2. Data analysis<ul style="list-style-type: none">• Alternatives generation3. Decision making4. Interpersonal and team skills5. Expert judgment	<ol style="list-style-type: none">1. Project scope statement2. Project document Updates

Review



- Requirements management plan
- Requirements gathering techniques
- Requirements documentation
- Requirements traceability matrix

- Product scope
- Project scope
- Deliverable
- Assumption
- Constraint

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