

Requirements Elicitation

SE 311

Outline

- Elicitation goals
- Sources of Requirements
- Requirements Elicitation Process
- Elicitation Challenges
- Elicitation Best Practices

Elicitation Goals

- Determine sources of requirements and select appropriate techniques
- Elicit information on domain, problem, needs, and constraints
- Produce a *first document*
 - Mainly user requirements and elicitation notes
 - Potentially incomplete, disorganized, and inconsistent but one must start somewhere

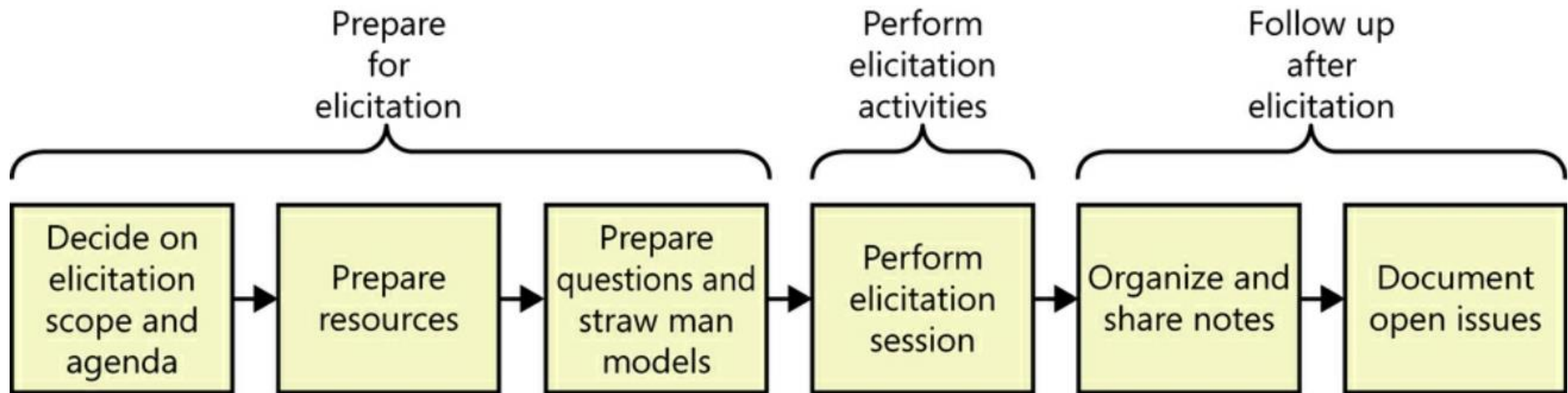
Sources of Requirements

- Stakeholders
- Existing systems
- Existing documentation
- Competing systems
- Documentation about interfacing systems
- Standards, policies, collective agreements, and legislation

Sources of Requirements - Stakeholders

Client	User	Domain Expert	Developer	Others
<ul style="list-style-type: none">• Pays for SW• Project sponsor	<ul style="list-style-type: none">• Current or future• Various classes	<ul style="list-style-type: none">• Familiar with problem and environment	<ul style="list-style-type: none">• Technical feasibility	<ul style="list-style-type: none">• Project manager• Tester

Requirements Elicitation Process



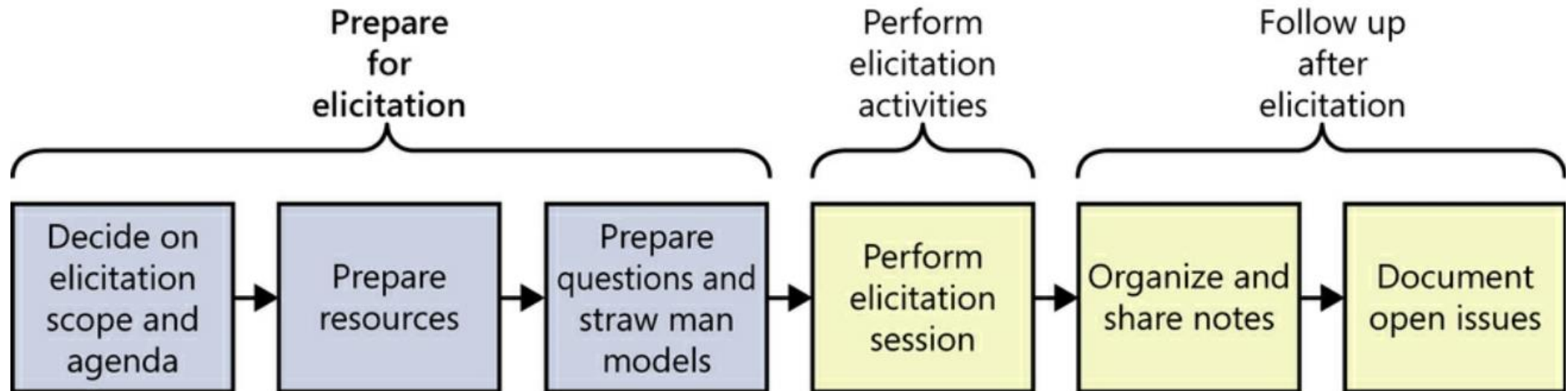
Plan

Planning for Elicitation

Objectives	Strategy & techniques	Schedule & resources	Independent elicitation	Expected products	Risks
<ul style="list-style-type: none">• Overall and individual activities	<ul style="list-style-type: none">• Stakeholders & appropriate techniques	<ul style="list-style-type: none">• Clients/customers & development• Estimates	<ul style="list-style-type: none">• Documents & systems	<ul style="list-style-type: none">• Use cases, SRS, quality attributes specification... etc.	<ul style="list-style-type: none">• Factors and ways to overcome

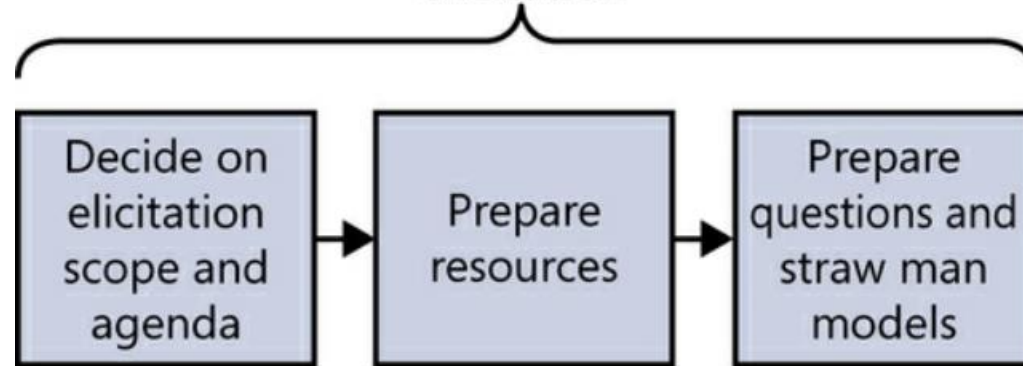
Resource

Prepare for Elicitation



Prepare for Elicitation

Prepare
for
elicitation



Scope in terms of topics, questions, process flows or use cases

Agenda lists topics to be covered, assigned time, and objectives

Physical, participants, documentation, and/or system

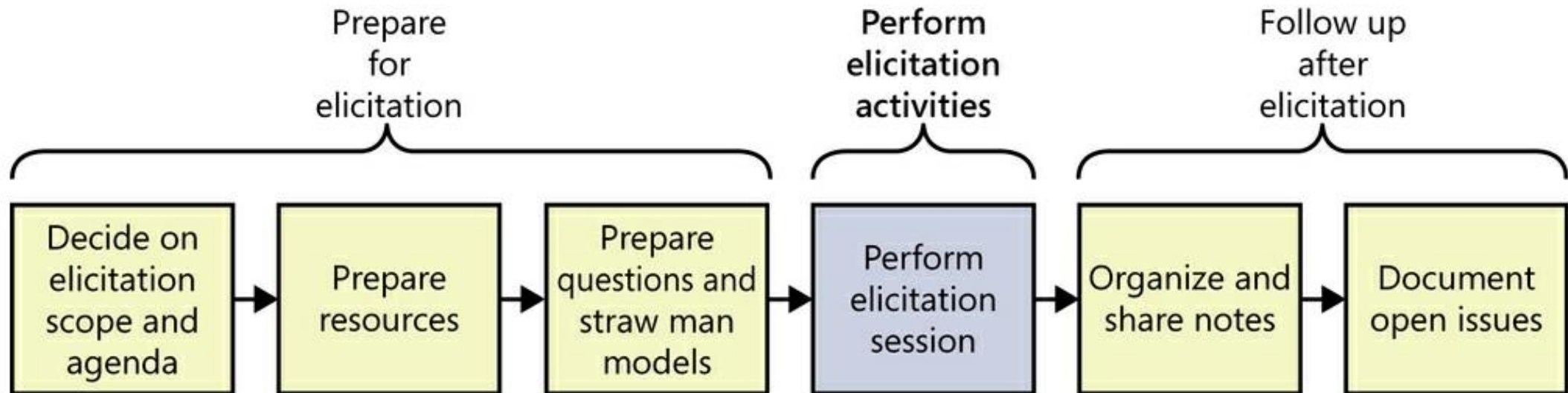
Identify relevant stakeholders and learn about their cultural, regional, and language preferences

Imagine yourself learning the user's job to guide your questions

- What else could...
- What happens when...
- Would you ever need to...
- Where do you get...
- Why do you (or don't you)...
- Does anyone ever...

Draft analysis models (use cases, process flows) to help users provide better input

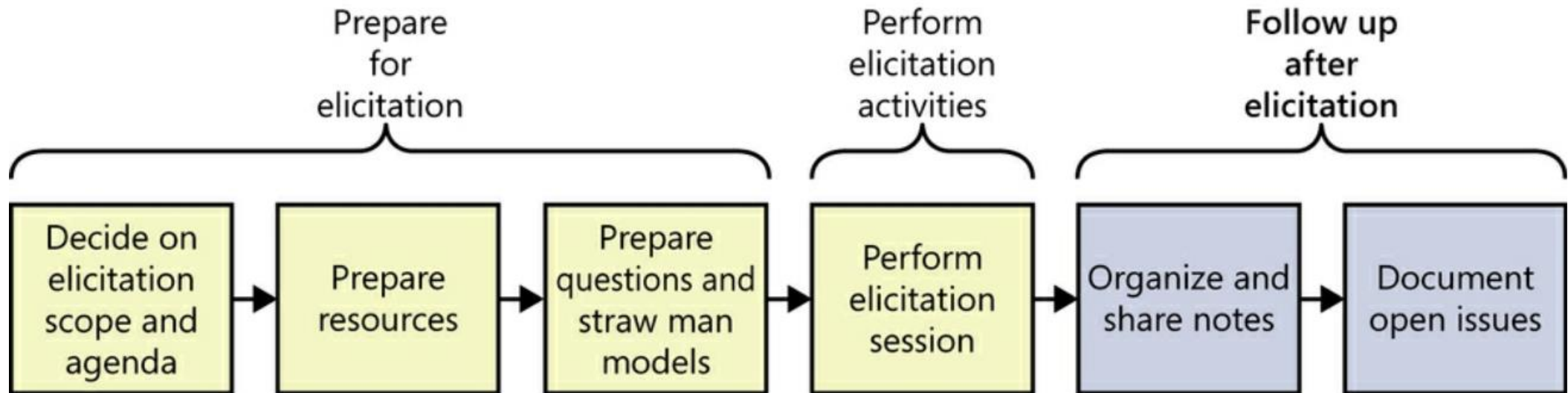
Performing Elicitation Activities



Take good notes

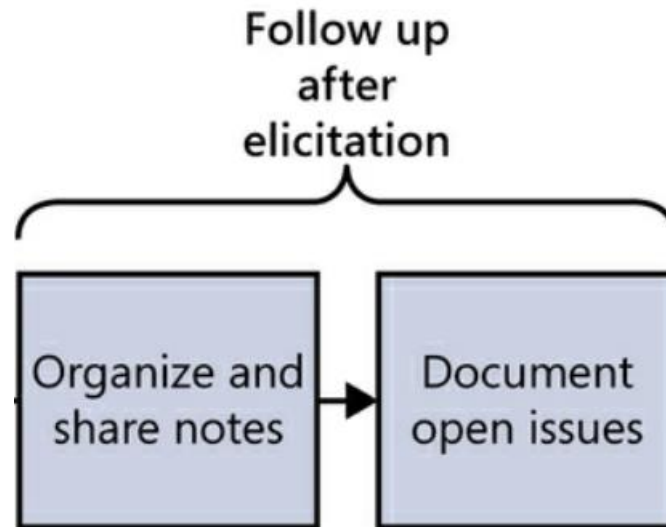
(Attendees, decisions made, actions to be taken and who is responsible for each, outstanding issues, key points)

Following up after Elicitation



Following up after Elicitation

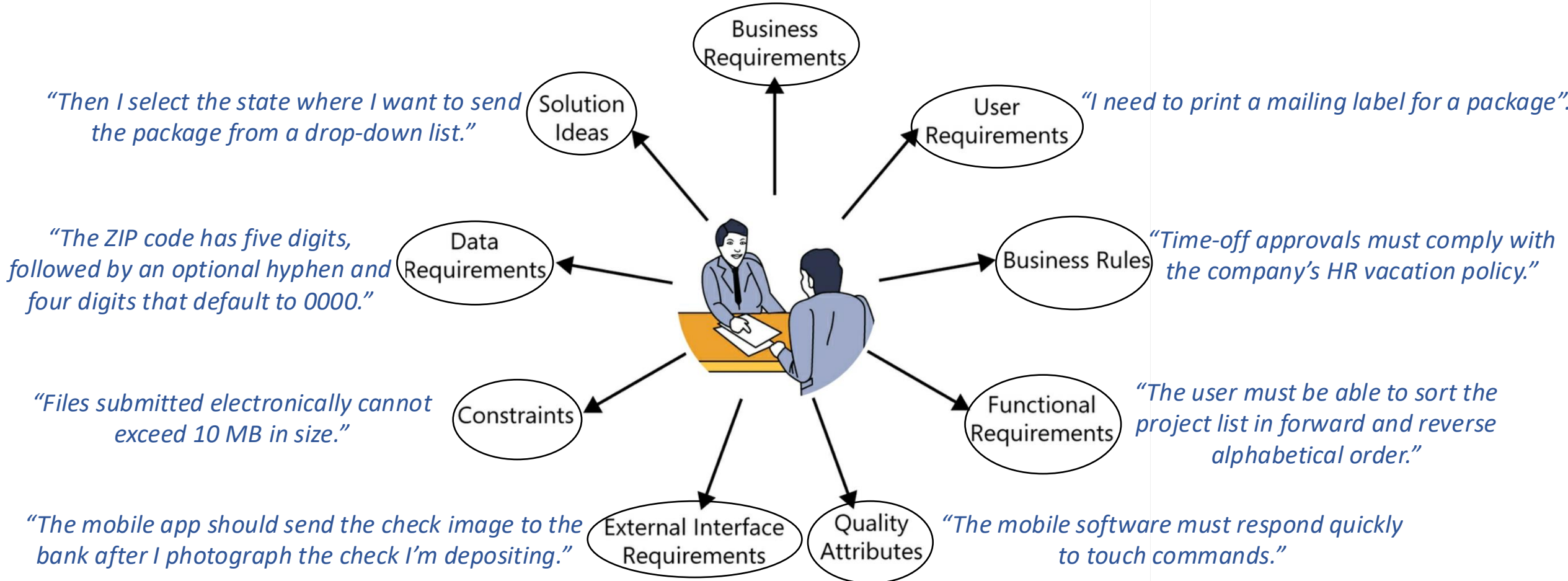
- Review and update right after session
- Consolidate input from multiple sources
- Edit notes with care
- Keep originals
- Review with stakeholders



- Items that need to be further explored
- Gaps that need to be closed

Classifying Customer Input

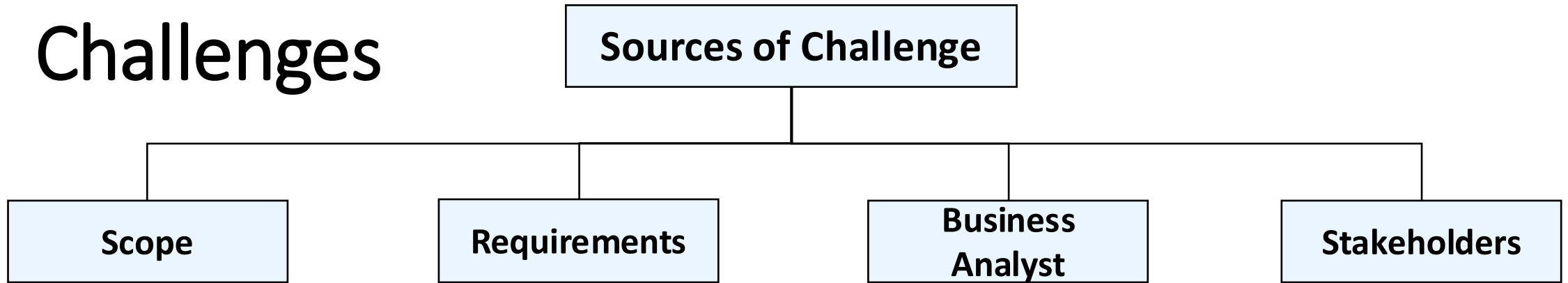
"Save SAR X/year on electricity now wasted by insufficient units".





When are we done?

- Users can't think of any more use cases or user stories
- Users propose new scenarios that don't lead to any new functional requirements
- Users repeat issues that were previously covered
- Suggested new features or requirements are all out of scope
- Proposed new requirements are all low priority
- Developers and testers review the requirements have few questions

Elicitation Challenges



Challenges

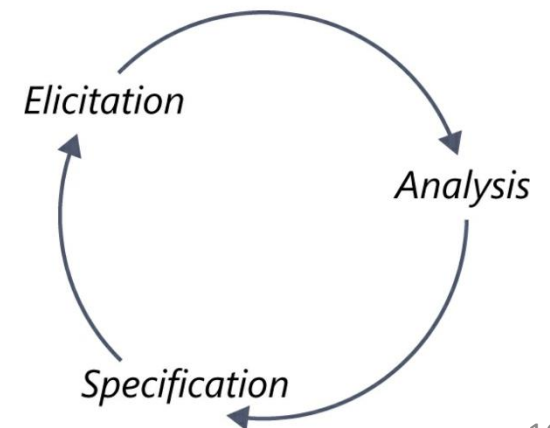
- | | | | |
|---|--|--|---|
| <ul style="list-style-type: none">• Inadequately defined• Incorrectly defined• Maintaining a focus on the scope | <ul style="list-style-type: none">• Assumed requirements• Implied requirements• Missing requirements | <ul style="list-style-type: none">• Lack of expertise• Lack of domain knowledge | <ul style="list-style-type: none">• Uncertainty • Technical knowledge• Availability • Cooperability• Conflict |
|---|--|--|---|

Mitigations














- | | | | |
|---|--|--|--|
| <ul style="list-style-type: none">• Re-check scope before delving in• Use of “in-scope” and “out-of-scope” | <ul style="list-style-type: none">• “<i>What are we assuming here?</i>”• Analyze requirements | <ul style="list-style-type: none">• Research domain• Consult others | <ul style="list-style-type: none">• BA’s interpersonal, communication, and interviewing skills |
|---|--|--|--|

Final Remarks

- Requirements elicitation is perhaps the most challenging, critical, error-prone, and communication-intensive aspect of software development
- Try to extract the essence of stakeholders' requirements and invent new ways for them to better perform their tasks
- Remember, elicitation is incremental

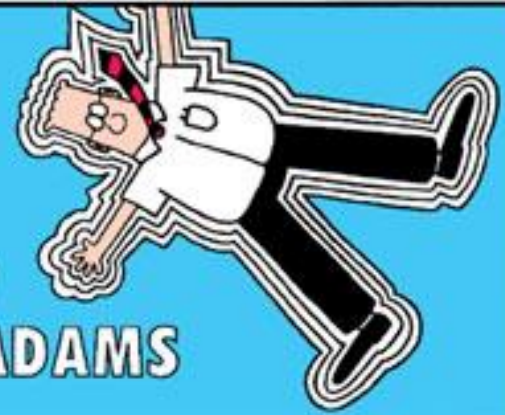


Requirements Elicitation Best Practices

 Define product vision and project scope	 Hold elicitation interviews
 Identify user classes and their characteristics	 Hold facilitated elicitation workshops
 Select a product champion for each user class	 Observe users performing their jobs
 Conduct focus groups with typical users	 Distribute Questionnaires
 Work with user representatives to identify user requirements	 Perform document analysis
	 Examine problems of current system
 Identify system events and responses	 Reuse existing requirements



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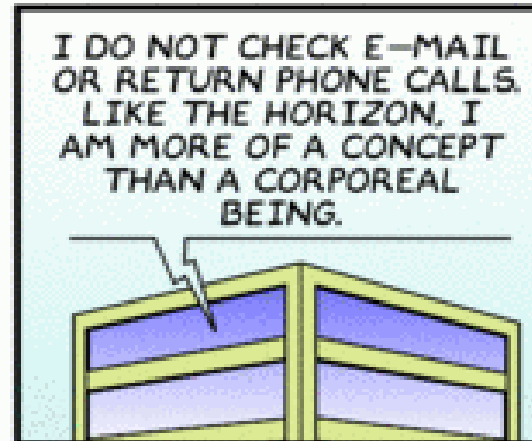
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