CHAPTER 3

Elicit the Requirements

One of the most crucial and challenging aspects of software development is defining the requirements for the proposed software. Elicitation identifies the sources for these requirements and then evokes the requirements from those sources. Requirements elicitation is a "human-intensive" activity that relies on the involvement of stakeholders as a primary source of the needed requirements.

Requirements elicitation is primarily the responsibility of the analyst, but it can involve other technical staff who benefit from acquiring a deeper understanding of stakeholder needs by being involved.

Why is it difficult to elicit requirements?

Customers and users often do not understand how software design and development works, and cannot specify their own software requirements in a way that works for developers. For their part, software developers often do not understand the problems and needs of customers and users well enough to specify the requirements on their behalf.

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Typical difficulties include:

- Differing and sometimes conflicting needs among different types of users.
- Unstated or assumed requirements on the part of stakeholders.
- Gaining access to knowledgeable stakeholders.
- An inability to envision new or different ways to use software.
- Uncertainty about how to adapt to changing business needs.
- Having a large number of highly interrelated requirements.
- Having limited time to elicit requirements from busy stakeholders.
- Overcoming resistance to change.

To help you overcome these many difficulties, you must encourage an environment of cooperation and communication among the developers, customers, and users, to ensure that you elicit the appropriate requirements.

How do I elicit software requirements?

To effectively elicit requirements, you will need to:

1. **Select and plan your requirements elicitation techniques.**
   - Identify the sources for your requirements.
   - Be sure that you thoroughly understand your stakeholders and the best way to involve them in requirements elicitation by creating a stakeholder elicitation plan. (See section 3.12 for more information on stakeholder elicitation plans.)
   - Choose a combination of elicitation techniques.

- Estimate how long using each technique will take, generate a list of planned tasks, and allocate people to accomplish those tasks. (Be cognizant of scheduling difficulties that might arise if you plan to elicit requirements from people who are located at a distant location from the analysts who are eliciting the requirements.)
- Plan on multiple iterations through requirements elicitation to ensure that requirements evolve.

2. Set goals and expectations and prepare.

- Determine the desired outcome for each technique (e.g., to obtain initial requirements for determining the project scope or to explore the requirements of a particular user group).
- Prepare the tools and techniques (e.g., an agenda, interview questions, list of existing documents, or people to contact) that will make your elicitation more effective and efficient.
- Notify the stakeholders you will use for each elicitation activity and allow them time to prepare for the activity. Provide useful information (such as an agenda or the interview questions) in advance to set the context for the elicitation technique you will use.
- Arrange for logistics (e.g., location, food, materials, etc.), as needed.

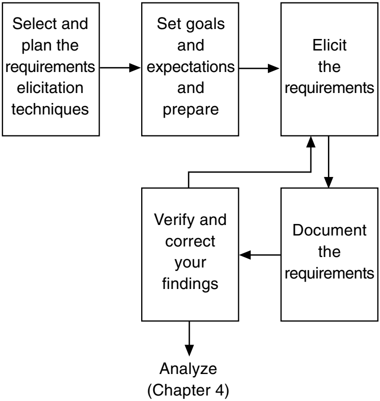
3. Elicit the requirements.

- Use the techniques described in this chapter to determine exactly what your stakeholders' requirements are.
- Document the information you collect during the elicitation process, to reduce errors or missing information.

- Respect stakeholders' time when using techniques that involve direct stakeholder interaction. Start and end on time when interviewing stakeholders, observing users, conducting user task analysis, or facilitating workshops and *focus groups*.

4. **Verify and correct your findings.**
   - Share the documentation with all of your team members. Conduct *peer reviews* of the documentation to ensure the documented requirements accurately describe user needs. (See section 6.1 for more information on conducting peer reviews.)
   - Revise the documentation based on feedback from the stakeholders.

5. **Repeat steps 1-4 to deepen the team's understanding of requirements.**



What Tools and Techniques Will I Use to Elicit Requirements?

When you need to:	Then create:
Identify sources of requirements	A Requirements Source List
Identify product stakeholders	Stakeholder Categories
Describe stakeholders' needs and success criteria	Stakeholder Profiles
Review elicitation techniques	Identified Combinations of Elicitation Techniques: Interviews, Exploratory Prototypes, Facilitated Workshops, Focus Groups, User Task Analysis, Observation, Existing Documentation Study
Plan an elicitation approach	A Stakeholder Elicitation Plan

3.1 Requirements Source List

What is it?

The requirements source list is an inventory of the people, specific documents, and external information sources that you will elicit requirements from.

Why do it?

To identify potential documentation sources of requirements and allow analysts to elicit, review, document, and verify requirements information with stakeholders.

What does it do?

- Identifies sources of requirements information
- Facilitates planning for efficiently involving stakeholders

How do I do it?

1. **Identify the relevant stakeholders that you should elicit requirements from.**
   - Be sure to consider *all* of the project stakeholders. Include the customers who sponsor and champion the software development, the users who will interact directly or indirectly with the software, and others who have knowledge or a stake in the product.
   - Develop a stakeholder elicitation plan for each stakeholder. (See section 3.12 for more information on developing a stakeholder elicitation plan.) Keep in mind that stakeholders are often busy and need advance notice to participate in requirements elicitation.
2. **Identify any documentation that you can use as a source of requirements information.**
   - Include physically accessible references from prior manual and automated systems, such as:
     - Existing and interfacing systems documentation.
     - Change requests, software *defect* lists, customer complaint logs, and issues lists.
     - User guides, training materials, and work procedures guidelines.
     - Help desk documentation.
     - Policies and procedure guides.
     - Code in existing systems.

3. Identify external sources of information.

- Include:
  - Departments or service companies that provide market survey data and industry analysis.
  - Descriptions and reviews of competitive software products and product materials.
  - Sales, marketing, and communication materials.
  - Regulations, guidelines, and laws from governmental agencies and regulatory bodies.

3.2 Stakeholder Categories

What are they?

Stakeholder categories are structured arrangements of groups or individuals who have a vested interest in the software product you are developing.

Alternative names for this tool

- Stakeholder Classes
- Stakeholder Statement

Why do it?

To understand who has an interest in or influence on the project, who will use the software and its outputs, and who the product will affect in some way. (These groups and individuals will need to be kept informed about progress, conflicts, changes, and priorities in requirements information.)

What does it do?

- Specifies the types of people who have requirements and need to be involved or represented in the requirements elicitation process
- Distinguishes the product's customers from its users
- Clarifies which people and external agencies you should consult

- Encourages the team to consider involving often-overlooked people

Incomplete understanding of stakeholders can result in missing or erroneous requirements or developing the wrong software solution. Be sure that you understand and include *all* of your stakeholders before proceeding to software development.

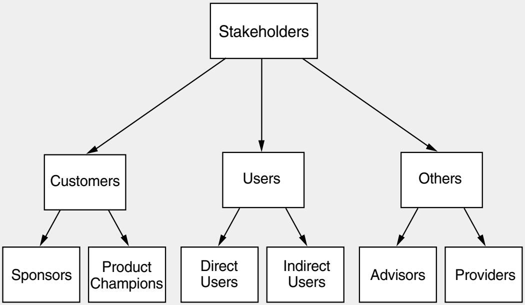
Key questions that this tool will answer

- Who affects or is affected by the system?
- Who or what interacts with the system?
- Who has knowledge relevant to the requirements?

What are the categories of stakeholders?

There are three categories of stakeholders: customers, users, and other stakeholders.

Stakeholder Categories



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