



Lecture: 6 Requirement Elicitation Process

elicitation [ih-lis-i-tey-shuhn] [SHOW IPA](#)  

[See synonyms for elicitation on Thesaurus.com](#)

College Level

noun

1 the act of drawing out or bringing forth emotions, opinions, facts, etc.;
The first step in decision analysis is the elicitation of the decision-maker's preferences.

Requirement elicitation is the process of collecting the requirements of a system or requirement gathering from user, customers and stakeholders by conducting meetings, interviews, questionnaires, brainstorming sessions, prototyping etc.

Elicitation is gathering of all the system requirements from the stakeholders and it encompasses all activities involved in discovering the requirements of a system. The system developers and engineers work in a close relationship with the customers and end-users to determine more about the problem to be solved and to bridge the gap between the stakeholders and the developers.

Elicitation techniques facilitates this process by:

- Finding out more about the problem to be solved.
- Describing the functionalities of the system and non functional attributes.
- Enhances the performance of the system.
- Overcomes hardware constraints.
- Bridges the gap between the stakeholders and the developers.

Requirement Elicitation Methods:

There are number of requirements elicitation methods. Some are:

- Interviews
- Brainstorming Sessions
- Facilitated Application Specification Technique (FAST)
- Quality Function Deployment(QFD)
- Use Case Approach

The success of an elicitation technique used depends on the maturity of the analyst, developers, users and the customer involved.

1. Interviews:

Objective of conducting an interview is to understand the customer's expectations from the software. It is impossible to interview every stakeholder hence representatives from groups are selected based on their expertise and credibility.

Interviews may be open-ended or structured.

- In **open-ended interviews there is no pre-set agenda**. Context free questions may be asked to understand the problem.
- In **structured interview, agenda of fairly open questions is prepared**. Sometimes a proper questionnaire is designed for the interview.

2. Brainstorming Sessions:

- It is a group technique.
 - i.e. an **informal debate is held among various stakeholders** and all their inputs are recorded for further requirement analysis.
- It is intended to generate lots of new ideas hence providing a platform to share views.
- A highly trained facilitator is required to handle group bias and group conflicts.
- Every idea is documented so that everyone can see it.
- Finally, a document is prepared which consists of the list of requirements and their priority if possible.

3. Facilitated Application Specification Technique:

It's objective is to **bridge the expectation gap – difference between what the developers think they are supposed to build and what customers think they are going to get**.

A team oriented approach is developed for requirements gathering. Each attendee is asked to make a list of objects that are-

- Part of the environment that surrounds the system
- Produced by the system
- Used by the system

Each participant prepares his/her list, different lists are then combined, redundant entries are eliminated, team is divided into smaller sub-teams to develop mini-specifications and finally a draft

of specifications is written down using all the inputs from the meeting.

4. Quality Function Deployment:

In this technique **customer satisfaction is of prime concern, hence it emphasizes on the requirements which are valuable to the customer.**

3 types of requirements are identified –

- **Normal requirements** – In this the objective and goals of the proposed software are discussed with the customer. Example – normal requirements for a result management system may be entry of marks, calculation of results, etc
- **Expected requirements** – These requirements are so obvious that the customer need not explicitly state them. Example – protection from unauthorized access.
- **Exciting requirements** – It includes features that are beyond customer's expectations and prove to be very satisfying when present. Example – when unauthorized access is detected, it should backup and shutdown all processes.

The major steps involved in this procedure are –

- **Identify all the stakeholders, eg. Users, developers, customers etc**
- **List out all requirements from customer.**
- A value indicating degree of importance is assigned to each requirement.
- In the end the final list of requirements is categorized as –
 1. It is possible to achieve
 2. It should be deferred and the reason for it
 3. It is impossible to achieve and should be dropped off.

5. Use Case Approach:

This technique **combines text and pictures to provide a better understanding of the requirements.**

The use cases describe the “what”, of a system and not “how”. Hence they only give a functional view of the system.

The components of the use case design includes three major things: Actor, Use Cases, use case diagram.

- **Actor:** It is the **external agent that lies outside the system but interacts with it in some way.** An actor may be a person, machine etc. It is represented as a stick figure. Actors can be of two types:
 - ✓ **Primary actors:** It requires assistance from the system to achieve a goal.
 - ✓ **Secondary actor:** It is an actor which the system needs assistance.

- **Use cases:** They describe the sequence of interactions between actors and the system. **The capture who (actors) do what(interaction) with the system.** A complete set of use cases specifies all possible ways to use the system.
- **Use case diagram:** A use case diagram graphically represents what happens when an actor interacts with a system. It captures the functional aspect of the system.
 - ✓ A stick figure is used to represent an actor.
 - ✓ An oval is used to represent a use case.
 - ✓ A line is used to represent a relationship between an actor and a use case.

