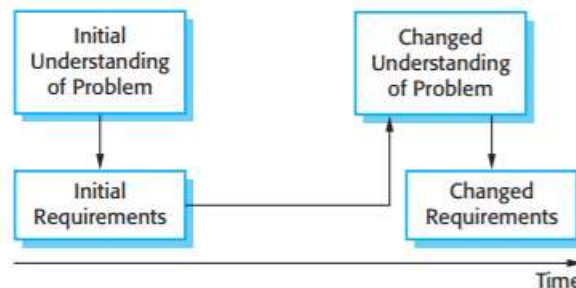


Lecture: 8
Requirements Validation and Management
(Part-II)

Requirements Management:

The requirements for large software systems are always changing. It is because the problem cannot be fully defined, the software requirements are bound to be incomplete. **During the software process, the stakeholders' understanding of the problem is constantly changing** as shown below:



Thus, the system requirements must then also evolve to reflect this changed problem view.

Requirements management is the process of understanding and controlling changes to system requirements.

You need to keep track of individual requirements and maintain links between dependent requirements so that you can assess the impact of requirements changes. The formal process of requirements management should start as soon as a draft version of the requirements document is available.

Requirement Management Planning:

Planning is an essential first stage in the requirements management process. The planning stage establishes the level of requirements management detail that is required.

During the requirements management stage, one has to decide on:

- **Requirements Identification:** Each requirement must be uniquely identified so that it can be cross-referenced with other requirements and used in traceability assessments.
- **A change management process:** This is the set of activities that assess the impact and cost of changes.
- **Traceability policies:** These policies define the relationships between each requirement and between the requirements and the system design that should be recorded.

- **Tool Support:** Requirements management involves the processing of large amounts of information about the requirements. Tools that may be used range from specialist requirements management systems to spreadsheets and simple database systems.

Requirements Change Management:

Requirements change management should be applied to all proposed changes to a system's requirements after the requirement document has been approved. Change management is essential because you need to decide if the benefits of implementing new requirements are justified by the costs of implementation.

The advantage of using a formal process for change management is that all change proposals are treated consistently and changes to the requirements documents are made in a controlled way.

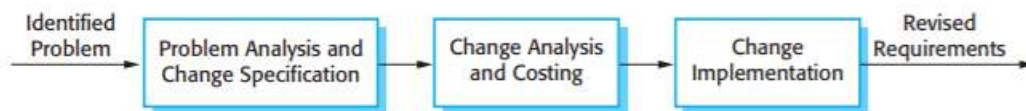


Fig: Requirements Change Management

There are three principal stages to a change management process:

- **Problem analysis and change specification:**
 - During this stage, the problem or the change proposal is analyzed to check that it is valid.
 - This analysis is fed back to the change requestor who may respond with a more specific requirements change proposal or decide to withdraw the request.
- **Change analysis and costing:**
 - The effect of the proposed change is assessed using traceability information and general knowledge of the system requirements.
 - The cost of making the change is estimated both in terms of modifications to the requirements document and if appropriate to the system design and implementation.
 - Once this analysis is completed a decision is made whether or not to proceed with the requirements change.
- **Change implementation:**
 - The requirements document and where necessary the system design and implementation are modified.