Software Engineering

Requirements elicitation - Facts finding
Chapter Objectives

- To introduce software the Requirements Engineering Process

- To describe the techniques used in Requirements Elicitation and Facts finding
The Requirements Engineering Process

Feasibility study

Requirements elicitation and analysis

System models

User and system requirements

Requirements specification

Requirements validation

Requirements document
Software specification Process
(Requirements Engineering Process)

• The process of establishing
  • What services are required (Functional requirements)
  • Constraints on the system’s operation and development ((Non-functional requirements)

• Requirements engineering process
  1. Feasibility study
     • Alternatives & Quick cost/benefit analysis
     • Feasibility: Technical, Financial, Human, Time schedule
     • **Deliverables:** Feasibility report
  2. Requirements elicitation and analysis:Facts finding
     • Interviews, JAD “Joint Application Development”, Questionnaires, Document inspection, Observation
     • **Deliverables:** System models (Diagrams)
The Requirements Engineering Process

3. Requirements specification
   • User level: abstract specification
   • System level: detailed specification
   • **Deliverables:** User and system requirements

4. Requirements validation for
   • Completeness
   • Consistency
   • Realism
   • **Deliverables:** Updated requirements

**Global Deliverables of the Requirements Eng Process:**

**System Requirements Specification document**
Requirements Elicitation: Facts finding Techniques

Facts finding Techniques (Requirements Capturing):

- Interviews
- JAD “Joint Application Development”
- Questionnaires
- Document inspection
- Observation
- Prototyping
Facts finding Techniques: Interviews

- Select interviewees at multiple level of the organisation
- Design unstructured interviews for broad info
- Design structured interviews for specific info
- Prepare questions and checklist
- Types of questions:
  - Closed-ended questions: requires specific answer
  - Open-ended questions: interviewee feels free to talk
  - Probing questions (why?): follow-up on a point just mentioned
- Try to Separate facts from opinion
- Write *interview report ASAP* (same day)
Closed-ended questions

- You expect a specific answer
  - Specific answer:
    » How many employees do you have?
    » What is your budget for the system?

- Binary (True or false): Will the system be a web based one?

- Multiple choice: What is the priority of the system (High, Medium, Low)?
Guidelines for effective interviewing

- **Plan the interview**
  - Prepare interviewee, appointment
  - Prepare checklists, questions

- **Conduct the interview**
  - Arrive on time - be formal
  - Start with an open-ended question
  - Listen carefully - Take notes (tape record if permitted)
  - End with an open-ended question
    » Is there any point you would like to add?

- **Write Interview report within 48 hours**
  - Send a copy to the interviewee
Facts finding Techniques: Joint Application Design “JAD”

- Group of users meet (for hours, days, weeks..) under the direction of a facilitator
- Follow a formal agenda for points to be discussed
- Participants know the business rules and the organization's needs
- Information is combined when collected, not afterwards
- Come out with an *integrated view of needs* (no problem of info integration from different sources as in other techniques).
Facts finding Techniques: Questionnaires

- For large number of people
- Many geographic locations
- Design a form

- *Questions must be very clear* (You are not there to explain the questions)
Facts finding Techniques: 
Document Inspection

- Ask for:
  - Organisation chart
  - Forms used in the system
  - Reports used in the system
  - Annual reports
  - Previous study of the system, if any
Facts finding Techniques: Observation

- Real world (First hand) info
- No description by others (as in interviews and JAD)
- Try to act as a detective