Requirements Elicitation – 3

Lecture # 11

Specific Elicitation Techniques

- Interviews
- Scenarios
- Observations and social analysis
- Requirements reuse

Interviews

- The requirements engineer or analyst discusses the system with different stakeholders and builds up an understanding of their requirements
- Interviews are less effective for understanding the application domain and the organizational issues due to terminology and political factors

Types of Interviews

- Closed interviews
  - The requirements engineer looks for answers to a pre-defined set of questions
- Open interviews
  - There is no predefined agenda and the requirements engineer discusses, in an open-ended way, what stakeholders want from the system

Interviewing Essentials - 1

- Interviewers must be open-minded and should not approach the interview with pre-conceived notions about what is required
- Stakeholders must be given a starting point for discussion. This can be a question, a requirements proposal or an existing system

Interviewing Essentials - 2

- Interviewers must be aware of organizational politics - many real requirements may not be discussed because of their political implications

Interview Steps

- Prepare
- Conduct
  - Opening
  - Body
  - Closing
- Follow through

Prepare for the Interview - 1

- Before developing questions
  - Define the purpose and objectives
  - Determine whether the interview should be conducted by one person or a team (define roles for team members)
  - Contact interviewee to arrange time, place, and logistics of the interview and outline the purpose and format
  - Obtain background information

Prepare for the Interview - 2

- After contacting the interviewee
  - Develop the interview guide
    - List name and title of interviewee and date of the interview
    - List questions in the order you will ask them
    - Move from general to specific
    - Include open questions to elicit essay type response (e.g., Describe…, Tell me…, How…)
    - Include closed questions to obtain specific information (e.g., Who? How much? Where?)

Conduct the Interview - 1

- Opening
  - Establish rapport and build trust and credibility
    - Make eye contact
    - Shake hands
    - Introduce yourself (and your team); provide information about role(s) in the interview process
  - Clarify purpose, time frame, and key objectives
  - Transition to the core of the interview by leading into the first question

Conduct the Interview - 2

- Body
  - Follow your interview guide as you ask questions; use probes to follow up on a response
  - Be flexible and open-minded

Conduct the Interview - 3

- Body
  - Listen actively
  - Monitor your voice and body language
  - Identify interviewee's main concerns
  - Maintain rapport
  - Take accurate notes
  - Use silence and pauses
  - Ask for and obtain relevant documentation
  - Ask "catch-all" question at the end

Conduct the Interview - 4

- Closing
  - Summarize findings and link to purpose
  - Answer any questions the interviewee has
  - Determine and agree on next steps
  - Set next meeting, if necessary
  - Thank the interviewee for his/her input and for taking the time to meet with you

Follow Through - 1

- Immediately after the interview, fill in your notes; be sure to jot down impressions and important ideas
- Review any documentation received from the interviewee
- Write an interview report, if necessary

Follow Through - 2

- Follow up on leads obtained during the interview
  - Contact other potential interviewees
  - Research other data sources
- Follow up in agreed-upon next steps
- Send a thank you note to the interviewee, if appropriate

Listening

- The art of listening is most important. You can best impress your client by listening and giving due attention to what the client or customer is saying
- This requires effort on part of the interviewer

Listening Steps

- Hear
- Interpret
- Respond
- Evaluate

Hear the Message - 1

- Listen to learn as much as you can so that you will know how to respond
- Give the speaker your undivided attention; don’t just wait for your turn to speak
- Concentrate on the message, not the person
- Don’t interrupt

Hear the Message - 2

- Tune out distractions such as interfering noises, wandering thoughts, and emotional reactions to the speaker's message
- Suspend judgment about the message until you have heard all the facts
- Take notes on the speaker's key points, if appropriate

Hear the Message - 3

- Learn to manage your own emotional filters, personal blinders, and biases, which can keep you from hearing what is really being said

Interpret the Message - 1

- Observe the speaker's nonverbal cues (gestures, facial expressions, and tone of voice) and factor them into your interpretation
- Listen for the attitudes and motives behind the words
- Listen for the speaker's needs and wants

Interpret the Message - 2

- Put the message in a broader context
- Integrate what you’ve just heard into what you already know about the speaker or subject

Nonverbal Response to the Message

- Make eye contact
- Nod affirmatively
- Use facial expressions and gestures to indicate that you are listening

Verbal Response to the Message

- Ask questions and probe to get more specific information and ensure understanding
- Rephrase the message using different words to check the meaning
- Make empathetic remarks that acknowledge you understand the speaker's feelings, without offering opinions or judging him or her

Evaluate the Message - 1

- Identify the main point of the message and its supporting evidence
- Clarify facts, perceptions, and opinions
- Distinguish between fact and opinion
- Group facts in like categories and logical order (importance, chronology)

Evaluate the Message - 2

- Base your opinion about the message on the facts
- Use the total message – the needs, the context, and the content – to follow through on what you hear

Brainstorming

- Facilitated application specification technique (FAST)
- Group activity
- All members are equal
- Off-site meeting location is preferred

Scenarios - 1

- Scenarios are stories which explain how a system might be used. They should include
  - A description of the system state before entering the scenario
  - The normal flow of events in the scenario
  - Exceptions to the normal flow of events
  - Information about concurrent activities
  - A description of the system state at the end of the scenario

Scenarios - 2

- Scenarios are examples of interaction sessions which describe how a user interacts with a system
- Discovering scenarios exposes possible system interactions and reveals system facilities which may be required

Scenarios and Use-Cases

- The term use-case (i.e., a specific case of system usage) is sometimes used to refer to a scenario
  - A use-case is a scenario
  - A scenario is a collection of use-cases. Therefore, each exceptional interaction is represented as a separate use-case
  - A use-case is a collection of scenarios

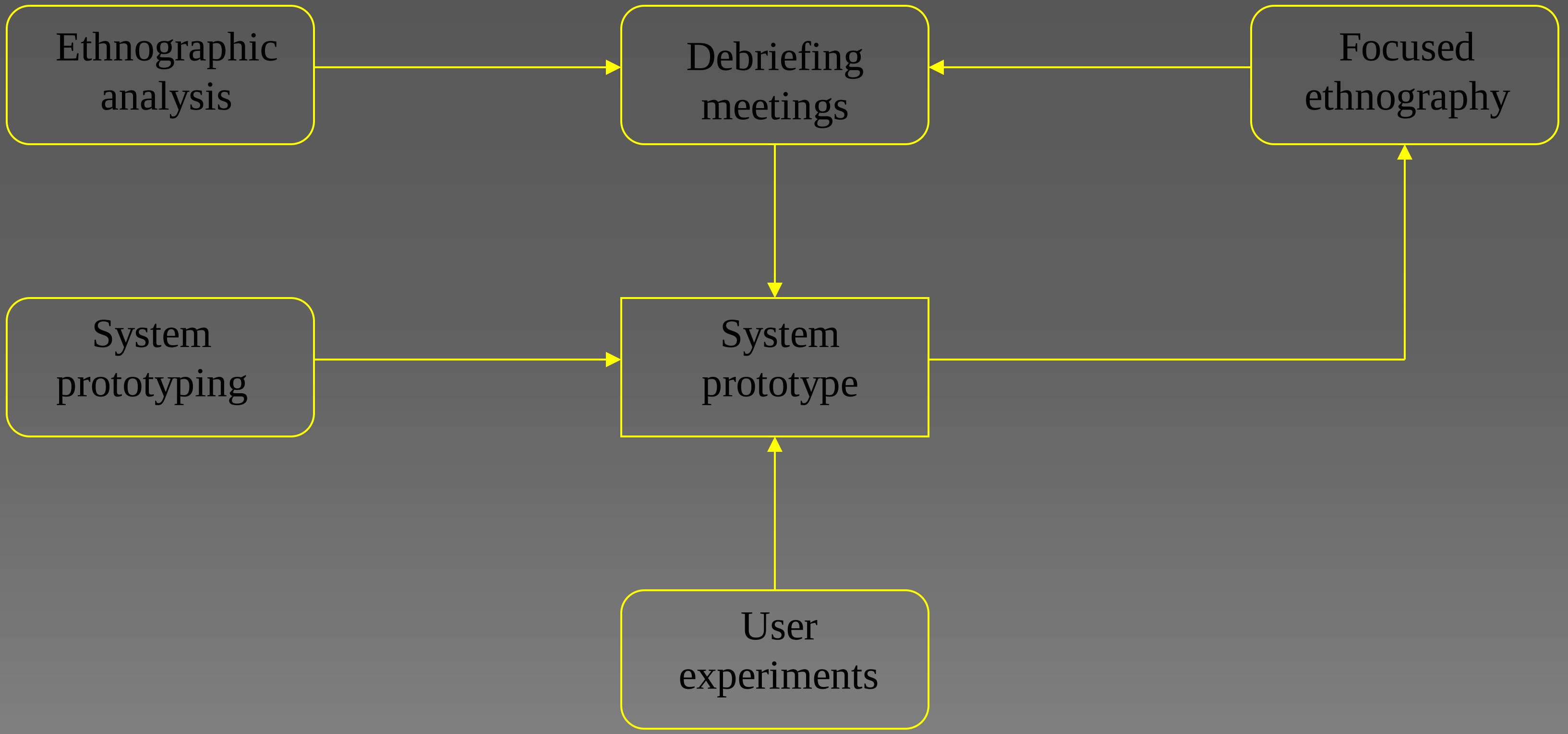
Observation and Social Analysis - 1

- People often find it hard to describe what they do because it is so natural to them. Sometimes, the best way to understand it is to observe them at work
- Ethnography is a technique from the social sciences which has proved to be valuable in understanding actual work processes

Observation and Social Analysis - 2

- Actual work processes often differ from formal, prescribed processes
- An ethnographer spends an extended time observing people at work and building up a picture of how work is done

Ethnography in Requirements Elicitation



Ethnography Guidelines - 1

- Assume that people are good at doing their job and look for non-standard ways of working
- Spend time getting to know the people and establish a trust relationship
- Keep detailed notes of all work practices. Analyze them and draw conclusions from them

Ethnography Guidelines - 2

- Combine observation with open-ended interviewing
- Organize regular de-briefing session where the ethnographer talks with people outside the process
- Combine ethnography with other elicitation techniques

Requirements Reuse

- Reuse involves taking the requirements which have been developed for one system and using them in a different system
- Requirements reuse saves time and effort as reused requirements have already been analyzed and validated in other systems
- Currently, requirements reuse is an informal process but more systematic reuse could lead to larger cost savings

Reuse Possibilities

- Where the requirement is concerned with providing application domain information
- Where the requirement is concerned with the style of information presentation. Reuse leads to a consistency of style across applications
- Where the requirement reflects company policies such as security policies

Prototyping

- A prototype is an initial version of a system which may be used for experimentation
- Prototypes are valuable for requirements elicitation because users can experiment with the system and point out its strengths and weaknesses. They have something concrete to criticize
- We'll talk about prototyping in a later lecture

Summary

- There are various techniques of requirements elicitation which may be used including interviewing, scenarios, prototyping and participant observation
- We focused on different aspects of conducting interviews in this lecture