Requirement Elicitation

Reading: Kendall & Kendall, Systems Analysis and Design, Chapter 4

Requirement elicitation

- The process of obtaining, through systematic research, the requirements of a system from the various users, customers and other stakeholders
  - needs to have a principled approach as it is often hard for users to articulate their needs or their business problems
- any system that doesn't meet the users need is neither useful nor usable

Elicit requirements

From the artefact itself

- study the problem!

From People

- identify stakeholders

From the artefact itself

- Document analysis
- Interface analysis
- Prototyping! (code - show - tune)
- Reverse Engineering!
- …

From the artefact itself

- for instance: if you had to put together a new web site for the University, where would you start?
- https://www.liverpool.ac.uk/

Elicit requirements

From the artefact itself

- study the problem

From People

- identify stakeholders

From People

- Questionnaires (open or closed questions)
- Interviews (one to one)
- Focus Groups (guided discussions)
- Brainstorming (free discussions)
- Ethnographic analysis (watch what people do)
- …

Stakeholder analysis

- Need to contact enough stakeholders to get an adequate, comprehensive coverage
- Selection based on: position, role, decisional power, usage, expertise, exposure to problems, interests/ conflicts, influence on uptake…

Can be difficult

- Conflicting points of view
- Different background / culture/ terminology
- Different "languages", jargon, hidden knowledge / terms
- Internal politics and dynamics

Data-Gathering Techniques

Technique	Good for	Kind of data	Plus	Minus
Questionnaires	Answering specific questions	Quantitative and qualitative data	Can reach many people with low resource	The design is crucial. Response rate may be low. Responses may not be what you want
Interviews	Exploring issues	Some quantitative but mostly qualitative data	Interviewer can guide interviewee. Encourages contact between developers and users	Time consuming. Artificial environment may intimidate interviewee
Focus groups and workshops	Collecting multiple viewpoints	Some quantitative but mostly qualitative data	Highlights areas of consensus and conflict. Encourages contact between developers and users	Possibility of dominant characters
Naturalistic observation	Understanding context of user activity	Qualitative	Observing actual work gives insight that other techniques cannot give	Very time consuming. Huge amounts of data
Studying documentation	Learning about procedures, regulations, and standards	Quantitative	No time commitment from users required	Day-to-day work will differ from documented procedures

Preece, Rogers, and Sharp "Interaction Design: Beyond human-computer interaction", p214

Interactive Methods to Elicit Human Information Requirements

Questionnaires

Interviewing

Joint Application Design (JAD)

Questionnaires

- Questionnaires are useful in gathering from key users or potential users information on:
  - Attitudes
  - Beliefs
  - Behaviours
  - Characteristics

Need to be planned

- Organisation members are widely dispersed
- Many members are involved with the project
- Exploratory work is needed
- Problem solving prior to interviews is necessary

Interactive Methods to Elicit Human Information Requirements

Questionnaires

Interviewing

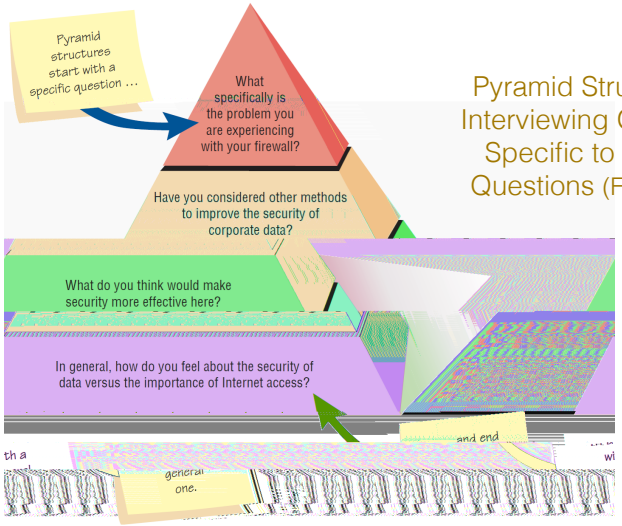
Joint Application Design (JAD)

Interviewing

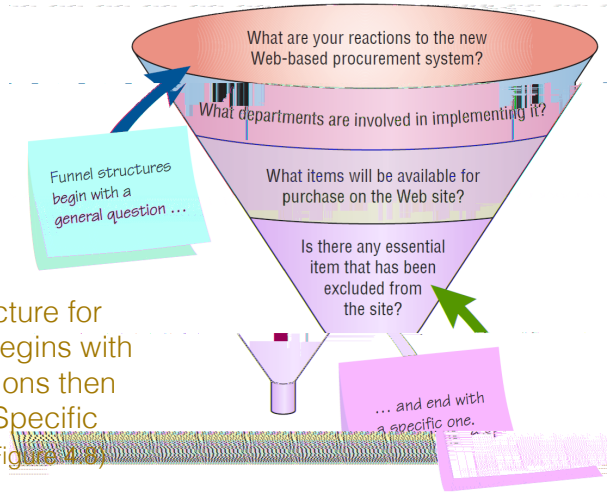
- Interviewing is an important method for collecting data on human and system information requirements
- Interviews reveal information about:
  - Interviewee opinions
  - Interviewee feelings
  - Goals
  - Key UX concerns

Interview Preparation

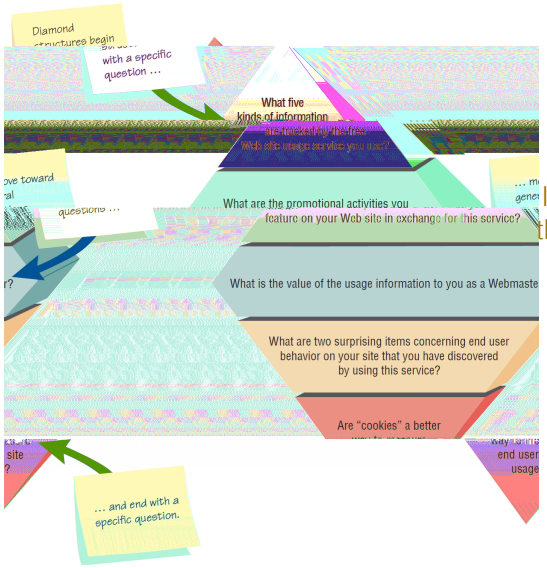
- Reading background material
- Establishing interview objectives
- Deciding whom to interview
- Preparing the interviewee
- Deciding on question types and structure



Pyramid Structure for Interviewing Goes from Specific to General Questions (Figure 4.7)



Funnel Structure for Interviewing Begins with Broad Questions then Funnels to Specific Questions (Figure 4.8)



Diamond-Shaped Structure for Interviewing Combines the Pyramid and Funnel Structures (Figure 4.9)

Interview Report

- Write as soon as possible after the interview
- Provide an initial summary, then more detail
- Review the report with the respondent

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Joint Application Design (JAD)

Joint Application Design (JAD)

- Technique pioneered by IBM to create a greater user identification with the new system as a result of a participative process
- Can replace a series of interviews with the user community
- Allows the analyst to accomplish the requirement analysis and the design of the user interface, **with the users**, in a group setting

Conditions Supporting JAD

- Users want something new and bespoke
- The organisational culture supports joint problem-solving behaviours
  - and allows leave of absence to participate to the exercise
- The analyst reckons that many more ideas will be generated using JAD than with one-to-one sessions
- Note: the analyst needs to be trained in the technique

Who Is Involved

- Executive sponsor
- System analyst
- Users
- Session leader
- Observers
- Scribe

Benefits of JAD

- Time is saved, compared with traditional interviewing
- Rapid development of systems
- Improved user ownership of the system
- Creative idea production is improved

Drawbacks of Using JAD

- JAD requires a large block of time to be available for all session participants
- If preparation or the follow-up report is incomplete, the session may not be successful
- The organisational skills and culture may not be conducive to a JAD session

Interactive Methods to Elicit Human Information Requirements

Questionnaires

Interviewing

User Stories

Joint Application Design (JAD)

User Stories

- Stories originate in the workplace
- Organisational stories are used to relay some kind of information
- Isolated stories are good when you are looking for facts
- Enduring stories capture all aspects of the organisation and are the ones a systems analyst should look for

Purposes for Telling a Story

- There are four purposes for telling a story:
  - *Experiential* stories describe what the business or industry is like
  - *Explanatory* stories tell why the organisation acted a certain way
  - *Validating* stories are used to convince people that the organisation made the correct decision
  - *Prescriptive* stories tell the listener how to act
- Systems analysts can use storytelling as a complement to other information gathering methods

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User stories

- Note: we'll look at 'user stories' also as a specific technique for expressing requirements coming from different typologies of users….
- but this will be topic for another time…