Task Analysis Methods

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Example

- Login
  - Select login screen
  - Enter ID
  - Enter password
- Choose objects
  - Browse listing
  - Select item
- Pay
  - Choose pay screen
  - Select payment method
  - Enter payment method details
- Plan: Task 1, then Tasks 2 as many times as needed then Task 3.

Task Analysis Methods:

- Lots of task analysis methods
- None completely satisfactory
- Best solution is to employ a variety of methods
  - 1. Questionnaires and Interviews
  - 2. Observational studies/Contextual Inquiry
  - 3. Examination of competing or similar products
  - 4. Use unsolicited comments

1/4. Questionnaires and interviews

Questionnaires & Interviews

(1/6)

- Talk to a number of representative users
- Talk to key users
- Plan interview
  - Preset questions to address issues identified in advance
  - Always provide flexibility for users to add to your plan
  - Provide mechanism for recording data easily
  - Present quantitative results

Questionnaires & Interviews

(2/6)

- Keep the number of questions low
  - Only questions with answers that you can’t get other ways
  - Only questions that will have a direct impact on functional requirements
  - Avoid asking for everything
Questionnaires & Interviews (3/6)
• When deciding to ask a question, always ask
  – Why is this question included?
  – How will I analyze results of this question?
  – Do I lose anything if I leave it out?
  – Do I have a better source for this information, e.g., can I find it by looking at logs?

Questionnaires & Interviews (4/6)
• Ask clear questions
  – Can the user understand your question?
• Ask questions that users can answer validly and reliably
  – Does the user store information in this way?
  – Does the user remember such information?
  – Will the user be inclined to answer your question truthfully?

Questionnaires & Interviews (5/6)
• If you need the answer, but users can’t give it to you, use another technique
• If a question won’t give the answer, look for the user leaving traces in the environment
• Respect users time and intelligence
• Always thank the user for your information

Questionnaires & Interviews (6/6)
• Do not take comments personally
  – you shouldn’t have a personal stake
• Goal is to make the system easy to use for your intended users

Observational Studies (1/6)
• Describe and analyze current practice
• Note organization of functionality
• Note expectations and concerns of current users
• Solicit suggestions from users
• Collect quantitative data
  – How many?
  – How often?
  – How long?
Typical Observation Techniques (2/6)

- Task process study
  - Detailed steps in tasks performed by users recorded
- Time geography study
  - Individual records times and changes in location of each individual throughout workday
- Tools study
  - Types of tools used by individual recorded
  - Task application, time and duration of tool usage also recorded

Typical Observation Techniques (3/6)

- Time diary
  - User log their use of time throughout day
  - Random recordings of time usage set off by beeper on watch
- Communication diary
  - User log each communication and purpose of communication
- Context Inquiry
  - Observer in context

Master-Apprentice model (4/6)

- Master – Apprentice model allows user to teach us what they do!
  - Master does the work and talks about it while working
  - Skill knowledge is usually tacit (can’t put it in books)
  - Studying many tasks, the designer can abstract away
  - Sometimes literal apprenticeship is best

Principles: interpretation (5/6)

- Good facts are only the starting point
  - designs based on interpretations
- Validate & rephrase
  - run interpretations by user to see if you are right
  - share ideas to check your reasoning (walk the chain back)
  - people will be uncomfortable until the phrasing is right
  - need to be committed to hearing what the user is really saying

Be creative (6/6)

- Ask novice to perform task under user's direction and observe corrections
- Change information in the environment to nonsense information and ask user to perform task
- Remove suspected information from the environment and ask user to perform task - measure time differential

3/4. Study Similar or Competing Products

Barrow and Steal
Study Similar or Competing Products

(1/1)

• Incorporate features you like
• Don’t just do something because your competitor does
• May not be anything similar
• Borrow ideas from other areas
• Run usability studies on competitors’ products

4/4. Unsolicited Comments

Users telling you what they want

Unsolicited User Comments

(1/1)

• Effective when updating an existing product
• Keep track of frequency of comments
• Information that is readily available
  – Internet comments
  – Suggestions fostered by offering incentives
  – User hotline conversations
• Don’t believe everything users say
  – Confirm usefulness of suggestions with other techniques

Conclusion

Questions to Answer

The Task Analysis Questions

(1/2)

• Who is going to use the system?
• What tasks do they now perform?
• What tasks are desired?
• How are the tasks learned?
• Where are the tasks performed?
• What’s the relationship between user & data?

The Task Analysis Questions

(2/2)

• What other tools does the user have?
• How do users communicate with each other?
• How often are the tasks performed?
• What are the time constraints on the tasks?
• What happens when things go wrong?
Caveats

Best intensions can still produce bad results

Caveats of User-Centered Design Techniques

- Users are not always right
  - cannot anticipate new technology accurately
  - your job is to build system users will want
    - not system users say they want
    - be very careful about this (you are outsider)
      - if you can’t get users interested in your hot idea, you’re probably missing something

Summary

- Best solution is to employ a variety of methods
  - 1. Questionnaires and Interviews
  - 2. Observational studies
  - 3. Examination of competing, or similar products
  - 4. Unstructured user input