Defining the User Audience

Dr. C. Ray Russell
CS 4570 Human-Computer Interfaces

A real-life interface design problem
(1)

♦ Objective: Design a system which will give a speech impaired user a voice.

♦ User Description:
  - User is mute, but has normal hearing and vision.
  - User can comprehend (limited) spoken language.
  - View of the world is very child-like with a limited vocabulary of 500 - 2000 words using sign language.
  - User’s frustration often leads to violent actions.
  - Strength of the user is much greater than average.
  - User has extremely large hands and fingers.
  - User has never interacted with a personal computer before, but is familiar with electronic voice synthesis equipment.

A real-life interface design problem
(2)

♦ System Description
  - Objective is to allow user to activate a voice by touching icons on the screen.
  - Use of the system by the user and special assistants is recorded.
  - Computer has two video cards shared by the user and special assistants.
  - System is housed in a special enclosure with an inner framework made from 1” x 2” solid aluminum, covered by a 3/8” polycarbonate sheet.
  - Special ventilation slots are designed to channel any foreign materials away from the CPU.
  - 19” monitor is mounted on a sliding assembly that is dampened with gas struts with 3” of travel (for shock absorption).
  - A special touch screen designed to withstand 2K pounds of force provides access to the computer. The screen is a standard MicroTouch capacitive screen optically bonded to a 1” thick piece of tempered glass.

Information about Pilots

♦ Work environment
  - Description of the tasks
  - Organizational structure
  - Constraints (companies, FAA, etc.)
  - Task structure

♦ Age, sex, education, background, other demographics

♦ Attitude toward technology in the cockpit
♦ Previous computer use
♦ When do they use documentation?
♦ What problems do they have that could be solved with online documentation?
An old example from desktop automation

- Objective
- Interview Technique
- Results

Map of a purchasing agent’s desk

Map of a research scientist’s desk

What information do we need to know about our travel planning users?

How do we get this information? Interviews

- Who?
- Objective?
- Structure?
- Basic Outline?
  - State purpose.
  - Understand the basic activities of the prospective user.
  - Get a description of how the user’s work is performed. (hardest/tedious part of the user description)
  - Trace interconnections with other people.
  - Look for issues related to the current problems the user is facing.
  - Follow up on the exceptions/special cases
- Recording the exceptions/special cases

How do we get this information? Observation

- Video recording
- Concurrent verbal accounts
- Passive observation
- Action research
### How do we get this information?

**Questionnaire**

- Extreme care required for reliable results
  - Demand on people’s time
  - Unambiguous questions
  - Precise data
  - Support the intended analysis
- Structure?
- Always prototype and test -- no exceptions
- Delivery techniques (smail, email, personally deliver)
- Always allow for “other comments”

### How do we get this information?

**Focus Group**

- How many?
- Who?
- How to bribe them?
- Leading discussion
  - Clearly state objective
  - Let them talk
  - Avoiding gripe sessions
  - Make sure all participate