Defining the User Audience

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CS 4570 Human-Computer Interfaces

Topic Overview
Defining the User Audience

◆ Over the last several weeks, we have discussed what we need to know about users in general. Today’s questions are:
  – What do we need to know about a specific group of users?
  – How do we get that information?
  – How will that knowledge guide application design?

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.

Koko

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 restaurant 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/most 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 interview?

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”

**Focus Group**

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