Corrections and Clarifications to Last Week's Lecture

- On page 5, slide 1:
  - Star avoided the disadvantages of stand-alone PCs since the networking of personal workstations allowed: printers to be shared, databases to be shared, and data to be easily exchanged. (I may have included cost in this list by mistake. However, the stand-alone PCs were less expensive than the Star workstations.)
- On page 14, slide 1:
  - Please change low-level, medium-level, and high-level prototypes to low-fidelity, medium-fidelity, and high-fidelity prototypes.

How To Design Usable Systems By: John D. Gould

- How do you define a good computer system for people?
- There are 4 principles in the usability design process :
- There are 4 usability design phases:

Usability Design Phases

- Gearing-Up Phase
- Initial Design Phase
- Iterative Development Phase
- System Installation Phase

Early and Continual Focus on Users

- Decide who the users will be
- Designers often avoid this
- Don’t rely on descriptive data

Methods to Carry Out Early and Continual Focus on Users

- What are some of the methods for obtaining early and continual focus on users?

Early and Continual User Testing

- Throughout the entire development process, users should have access to:

- Basic premise: You cannot get it right the first time, no matter now experienced or smart you are.

Methods to Carry Out Early and Continual User Testing

- What are some of the methods for early and continual user testing?

Iterative Design

- The key requirements of iterative design are:

- In order to make the changes required with iterative design, the designers need good tools, and the work needs to be organized in a way that enables the designers to be responsive to the needed modifications.

Methods to Carry Out Iterative Design

- Software Tools

- System Development Work Organization

Integrated Design

- All aspects of usability should evolve in parallel.

- In order to achieve an integrated design, one group needs to be given sufficient resources to drive and control usability.

Starting Points

- Define the system
- Follow-on systems
- New influential systems

Starting Points (continued)

- New technologies
- User circumstances
- Journals, proceedings, demonstrations
- Other designers and consultants

Learning From Notes: Organizational Issues in Groupware Implementation By: Wanda J. Orlikowski

- "organizational context is a critical element in determining how employees will react to a system"
- Consider work contexts in design
- The results of this study suggest that people's mental models along with the organization's structure have a significant impact on the groupware usage.

Research Site and Methods

- Alpha Corporation (major consulting firm)
- The research study examined the implementation of Notes over the course of 5 months.
- The research study examined how groupware is adopted, and the possible changes that the groupware may cause to work and social relations.

Background

- The career structure within Alpha:

- In the late 80's a few of Alpha's principals decided that the company was not utilizing information technology as effectively as it could.

Cognitive Elements

- "Cognitive elements are the mental models or frames of references that individuals have about the world, their organization, work, technology, and so on."

- Users' technological frames can be modified by:

Communication About Notes

- Most employees received relatively little information about Notes.

- The CIO assumed that giving people access to a powerful and new technology would cause them to "drift into new ways of doing things."
- Lack of communication regarding Notes let to some of the following remarks:
  - *I know absolutely nothing about Notes. I don't know what it is supposed to do.*
  - *All I know is the firm bought it, but I don't know why.*
  - *It's a database housed somewhere in the center of the universe.*

Training on Notes

- There was relatively little training on Notes.

- Two forms of training were available to users
  - Self Study
  - Classroom training
- The training did not emphasize the collaborative nature of Notes.

Reward Systems

- In Alpha, all or most employee hours should be billable so that they can be charged to clients.

- In contrast, the principals took a longer term and firm-wide view on Notes.

Policies and Procedures

- The firm had not formulated new work procedures or set new polices around data quality, confidentiality, and access control.
- Principals were concerned about data security.

- Managers and consultants were worried about personal liability or embarrassment.

Firm culture and Work Norms

- The consultants and managers operate in a very competitive environment.
- "system would have problems regardless of how well the dialogues, response time, hardware, or documentation were designed and implemented"
- In contrast, the technical support engineers are not a part of the competitive culture of the consultants.

Conclusions

- "a particularly central aspect of implementing groupware is ensuring that prospective users have an appropriate understanding of the technology."
- "In situations where the premises underlying groupware are incongruent with those of the organization's culture, policies, and reward systems, it is unlikely that effective cooperative computing will result without a change in structural properties."

Participatory Design

"emphasizes a tradition of user participation in decisions related to computing systems that have an impact on their work-lives"

- sometimes referred to as cooperative design
- developed in Scandanivia during the 1980's

- Aims:

Scandinavian Approaches to Cooperative Design

- "an approach which views knowledge about users and their involvement in the design process as a central concern"

- Central aspect:
  - involvement of users throughout the design process

Methods for involving users in design

- Many of the following traditional tools prove to be insufficient with regard to incorporating users in the design:

- The following methods make the design process more interesting and engaging.

Future Workshops

- Future workshops are used to generate visions about the future, and to talk about how these visions can be accomplished.

- The 3 phases of a future workshop:
  - The Critique
  - The Fantasy
  - The Implementation

Organizational Games

- Why?

- What should you look for in a game?

Icon Design

- Pictionary activity:
  - one player draws an icon and the rest of the team tries to guess what that icon represents.
- demonstrates:
  - the difficulty of representing actions/activities with a single visual representation.
  - how different backgrounds and cultures dictate people's perspectives.
- you will gain insight into the potential users perspectives

Mock-Up Design

- Mock-ups are generally built with inexpensive materials.
- Advantages of using mock-ups:
- Disadvantages of using mock-ups:

Cooperative Prototyping

- Both users and designers actively participate in the design process when cooperative prototyping is used.
- Good tools are needed in order to make cooperative prototyping successful.

Participatory design advantages

- Users are excellent at reacting to suggested systems
- users bring important knowledge of the work context

Participatory design disadvantages

- requires a democratic workplace
- hard to get a good pool of end-users
- Different backgrounds, cultures, expertise, etc.
- the user is not always right

Time and Date of Midterm Exam

- CMPT 363 Midterm Exam
  - 17:30 - 18:20, Wednesday June 16th, 1999.
  - Closed Book Exam

CMPT 363
Assignment #2
** Due Dates: Part I June 2nd and Part II June 9th **

ABC grocery store has been steadily losing business over the past 3 years. After interviewing their customers, they found that many people with demanding jobs are eating at restaurants more often since they no longer have the time to go grocery shopping. In order to attract their busy customers, ABC grocery store has hired you to create an on-line grocery shopping application. Using the on-line grocery shopping application, the customers should be able to easily locate their products, and they should be able to readily obtain their groceries.

Part I. Task and User Analysis

Please locate people who would be potential users of the on-line grocery shopping application. Talk to 2 of the potential users, and identify the tasks that they need to perform. From here, determine the system's basic functionality and describe 2 representative tasks that the system will be used to accomplish. These should be tasks that users have discussed with you.

Write a two-page report describing what you learned from the task and user analysis. The report should include at least the following:

- A description of the users you interviewed (Include information that is pertinent to this study.)
- A description of the general characteristics of the system's users, based on your interviews
- Your understanding of the tasks and subtasks the interface should support
- A description of the 2 representative tasks selected and why

Part II. Paper-based Mock-ups and Scenarios

Create an initial design for your system and illustrate the interfaces that contain the system's major features. Write up and illustrate 2 scenarios corresponding to your 2 representative tasks identified in Part I. All illustrations should be realized using paper-based mock-ups.

***General comments about the assignment*:**

- **Assignments are due at the beginning of class or by the first break. Late assignments will be penalized 10%.**
- **A strong emphasis will be put on your ability to present your ideas clearly.**
- **Poorly written reports will be penalized.**

Readings for Wednesday, May. 26th

- Article 7: Making Customer-Centered Design Work for Teams by K. Holtzblatt and H. Beyer
- Article 8: Interdisciplinary Cooperation by Scott Kim
- The usability methods toolbox (prototyping section), James Hom
- Article 9: Using Video to Prototype User Interfaces by Laurie Vertelney