Goals of HCI

Learning objectives:
1. Understand common goals of designing interactive systems
2. Understand why such goals are needed
3. Understand why the common goals need to be refined
4. Understand the resulting refined goals (be able to apply them)

Adapted from materials originally created by Prof. Jamie Ruiz

From Jakob Nielsen
Goals of Designing Interactive Systems

Make computational artifacts that are “useful, usable, used” (Dix, Finlay, Abowd, Beale 2004)

Useful: Tool accomplishes what is required

Usable: Performs task “easily and naturally”

Used: People want to use it

Useful, Usable, Used...

• Utility (usefulness) is the minimum requirement for any successful system

• If the system doesn’t do the job the user needs, then no amount of ease-of-use nor slick design can make up for the lacking functionality

• People may buy it, but will not use it (and not recommend it to others)

• There is a term for this...
“Putting Pearls on a Pig”

• If anyone talks about improving an interface, we need to subject the suggestion to the “pig” test:
  – Is an interface feature simply dressing up a broken interface? (Pearls on a pig)
  – Or is it addressing a deeper, real-world, identifiable need grounded in data and not personal experience?
• Does it measurably improve the user’s accomplishment of their goals?

Avoiding Fancy Pigs

• We always need to focus on user’s goals
• What are they trying to accomplish?
• How do their current tools help or hinder this process?
• We will examine all of your assignment and project submissions through this lens:
  – Have you clearly identified the user’s goals?
  – Does your system address the user’s goals?
  – Have you demonstrated how well it addresses these goals?

Fancy Pig Examples?

• Examples of stuff you have purchased that looked slick but let you down once you used it on a day-to-day basis?

Back to the Goals...

• Useful
• Usable
• Used

• So let’s make everything easy to use!
“Easy to use”

No More “Easy to Use”

- From here on out, we will avoid speaking of interfaces as being/not being “easy to use”

- Why?

The Imprecision of “Being Easy”

- How can we measure “easy to use”?  
- What does it mean?  
- The term means many things to many different people  
- But it is not something we can measure  
- Saying a system is “easy to use” or “not easy to use” does not tell us why users perceive it to be that way  
  – This makes it difficult to replicate successes and avoid similar mistakes

More HCI Heresy...

- As a corollary to no more “easy to use” we will avoid use of the concept of “usable”  
  – Don’t use it!  
- Another intuitive concept without a precise way of measuring it  
- *It goes without saying* that we want systems that are perceived to be “easy to use” and “usable”
Getting in the Right Mindset

• Instead, start thinking about what measurable qualities of the interface or of users’ tasks can be improved to create the impression of a system being “easy to use” and “usable”

• What are some metrics that indicate a system is “easy to use” or “usable”?

Alternatives to “Being Easy”

• Learnability
  – Time required to learn the interface

• Memorable
  – Can users remember how to use the interface?

• Desirability
  – Satisfaction in using interface

• Cognitive Load
  – How much cognitive effort is required to use interface

• Physical Exertion
  – Number of physical actions required
  – Strength of action required

Refined Goals of Designing Interactive Systems

• Discover and understand user’s underlying goals and needs

• Develop models of users, including their goals, behaviors, and context of use

• Design to the data and the models created

• Precisely measure what ways the new system improves the user experience

HCI in Practice...

• As a professional, you may do one or all of these steps

• More often than not, you will not have the luxury of being able to fully apply HCI methods

• But you’ll be served well if you always remember to ask:
  – “What are the user’s needs and goals?”
  – “How will we know we have significantly improved their work? What can we measure?”