User-centered design (part 2)

• Iterative design
  – Identify changes...and make them
  – “Developing user-oriented systems requires living in a sea of changes”
• Why did Postal Buddy fail?
• A local example...

Resources for user-centered design

• Checklists in this article
• Software tools
• Accepted conventions (such as WIMP designs)
• Guidelines
• Techniques for determining user needs

Conventions

• Are telephones, televisions, and automobiles “easy to use”?  
• Complexity has grown tremendously over the last few years

Telephones:

• Dial tone, busy signal, direct dial long distance, answering machines, remotely-operable answering machines, pagers, cordless phones, cell phones, voice-response systems, international dialing, unlisted numbers, call screening, telemarketers, speakerphones, wrong number conventions, toll-free calls, ...

Telephones (part 2)

• … local vs. extended area vs. LATA vs. long-distance collect call, credit card call, person to person call, caller ID, callback, conference calls, videophones, payphones, “phonecards”, multiple long distance companies, data connections

How do we manage?

• Tremendous social benefits to learning how to use phones
• Conventions consistent across a wide geographic region (North America)
• Complexity grew over time
• Knowledge learned culturally, contextually, incrementally
### Conventions for computer interfaces

- WIMP designs aren’t inherently “simple” or “intuitive”
- Same principles at work:
  - Work-related benefits to learning
  - Conventions consistent across a wide range of software
  - Complexity grew over time
  - Knowledge learned from coworkers

### Guidelines Example

### Guidelines summary

- Of limited help
- Can remind you of things you might otherwise forget:
  - don’t code information through color alone
- Perhaps more useful in explaining why things went wrong than in predicting them

### Lo-Fidelity prototyping

- Mock it up with construction supplies
- “Run” the prototype with surrogates or actual users
- Emphasizes the overall flow rather than the graphic design elements
- Low-cost implementation

### Lo-Fidelity prototyping: limitations

- Graphic design elements affect usability
- Designs that are impossible to implement
- Can’t reproduce complex interactions
  - Results of complex queries
- Doesn’t substitute for site visits!