How usable are current systems?
US federal software
- 2% used as delivered
- 3% used after rework
- 28% abandoned or reworked
- 20% paid for but not delivered
- 47% delivered but not used

Example of usability:
Installation of a home computer
- Tandy, IBM, DEC/Compaq, Apple
- 1991 (DEC):
  - Worst case: 1 day with media
  - Planned: 1 hour without media
  - Best case: 10 minutes with media
- 2000 (IBM—Tony Temple)
  - Typical case: 10 minutes

Case study: Olympic Messaging System (OMS)
- 1984 LA Olympics
- Voice messages from friends to athletes and between athletes

OMS—challenges
- Walk-up-and-use
- Many nationalities, languages
- Non-technical user population
- International phone systems
- High visibility
- Security
- Stringent deadline

OMS—4 principles
- Early focus on users and tasks
- Empirical measurement
- Iterative design
- Integrated design

OMS—methods
- Constant prototyping
- Constant revision
- Flexible planning
- Progressive increase in realism of tests
- “Hallway tests”
OMS—outcomes

• “Make it simpler”—users
• Reliable
• Heavily used
• Few usability problems
• Big fun!

OMS—conclusions

• User-centered design worked well
• Integrated design was essential
• Non-quantitative elements of project important
  – Impressing Olympic Committee
  – Visibility within IBM
  – Visibility of methods

OMS—unique aspects

• Unique event
• Simple task
• Builds on technologies people already knew
  – Although touch-tone phones and voice response systems were less familiar in 1984
• Not mission-critical
• Could rest after Olympics (No release 2)

OMS usability characteristics

• Guessability
• Learnability
• Experienced user performance
• Re-usability

Example 2: Federal Express

• Kiosk
• Waybill
• 800 number
• Web site

Basic needs for novice users

• What can I do with this? (What goals can I accomplish?)
• What sequence of steps do I need to perform to accomplish goal X?
• Where am I in the sequence?
• I have deviated from the sequence. How do I get back onto it?
• Did I successfully achieve my goal?
Kinds of knowledge novice users bring

- Perceptual / motor skills
  - Visual searching
  - Pointing and grasping
- Knowledge of the physical world
- Cultural knowledge
- Knowledge of the underlying technology
  (telephone, Netscape, automobile, television…)