Questions?

• Check your grades!

• Class survey
Growing up
(From The Invisible Computer, Don Norman)

- Technology
- Customers
- Product development
Technology: the need-satisfaction curve

- **Product performance**
  - Level of performance required by average users
  - Unfilled need
  - High technology: Consumers want more technology, better performance
  - Consumer commodity: Consumers want convenience, reliability, low cost...

**Transition point**
where technology delivers basic needs

- Excess quality
  - Most customers uninterested in this region
  - Technology is "good enough" and therefore irrelevant.
  - User experience dominates.

Time
Examples

• Photography
  – Easy to process film (Kodak)

• Car
  – Affordable and easy to fix Ford-T (Ford)

• Radio
  – Extensive use of transistors (Sony or is it the Regency TR-1 from I.D.E.A.)

• Personal computers
  – Easy “on your desk” printing (Apple Mac)

• Internet
  – Easy access from your home computer (AOL)

• Digital music
  – Integrated hardware/content experience (iPod/iTune)
Price-indignation curve
(Paul Safo in Bringing design to software)
Customer: adopter categories

The chasm

Relative % of customers

Innovators, technology enthusiasts

Early adopters, visionaries

Early majority pragmatists

Late majority conservatives

Laggards, skeptics

Customers want technology and performance

Customers want solutions and convenience

Time
Examples

• Xerox Star
  – Targeted casual users, but lacked necessary performance

• Cellular phones
  – Almost at the laggards stage

• Personal computers?
From one cycle to the next

- Beware of the underdog

- Personal computers vs large mainframes
- Small Japanese car versus Large American car
- More example in the “Innovator Dilemma” by Clayton M. Christensen
The 3 legs of product development

The invisible computer, Don Norman

The inmates are running the asylum, Alan Cooper
Examples
(from The inmates are running the Asylum, Alan Cooper)

- **Novell**
  - NetWare dominated the market only while being the only game in town

- **Microsoft**
  - Good value, lot of features but how many loyal customers?

- **Apple**
  - Saved by its design of the user experience!