

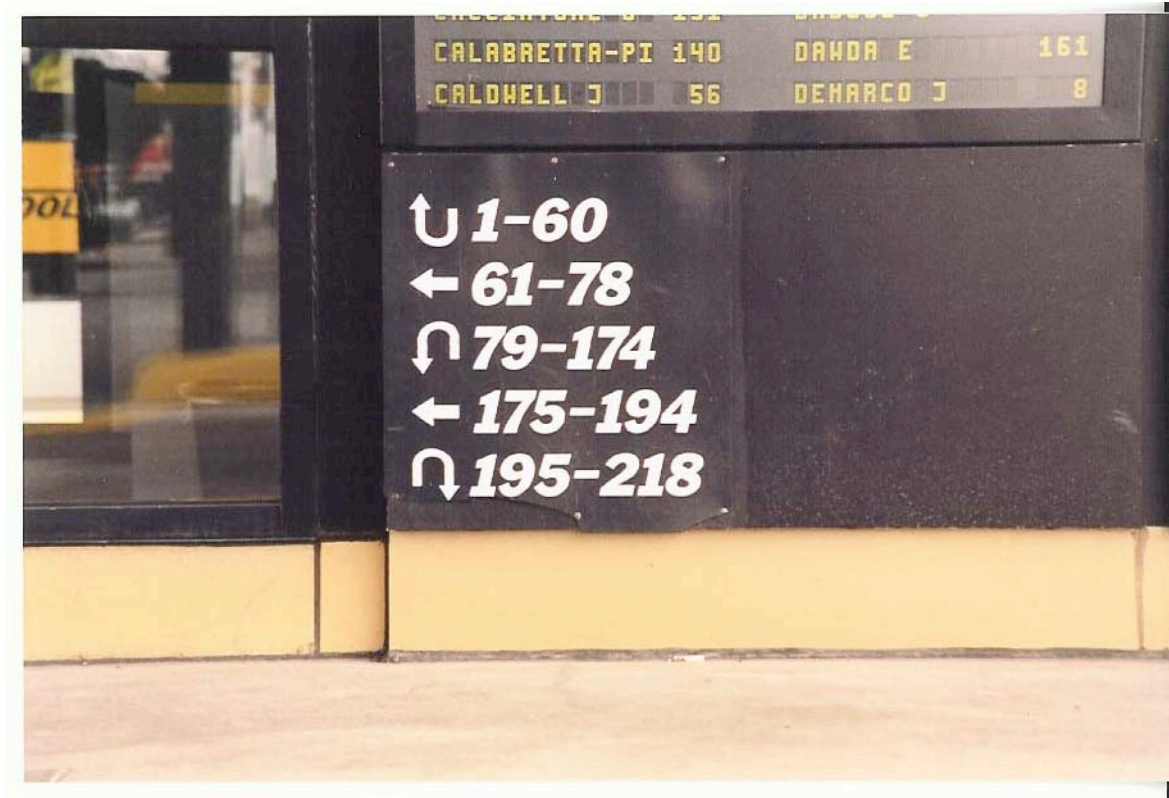
- Introduction
- What sort of design I work on
- Some factors in product and design success
- HumanWare future products
- Experiences in future design
- Lessons and a look at the future

- Teacher
- Psychologist
- Stanford
- Apple – Advanced Technology Group
- Startup - AdessoSoft
- Consulting – Zanzara
- Navman – CTO
- HumanWare - CEO

# Usability and design in everyday life



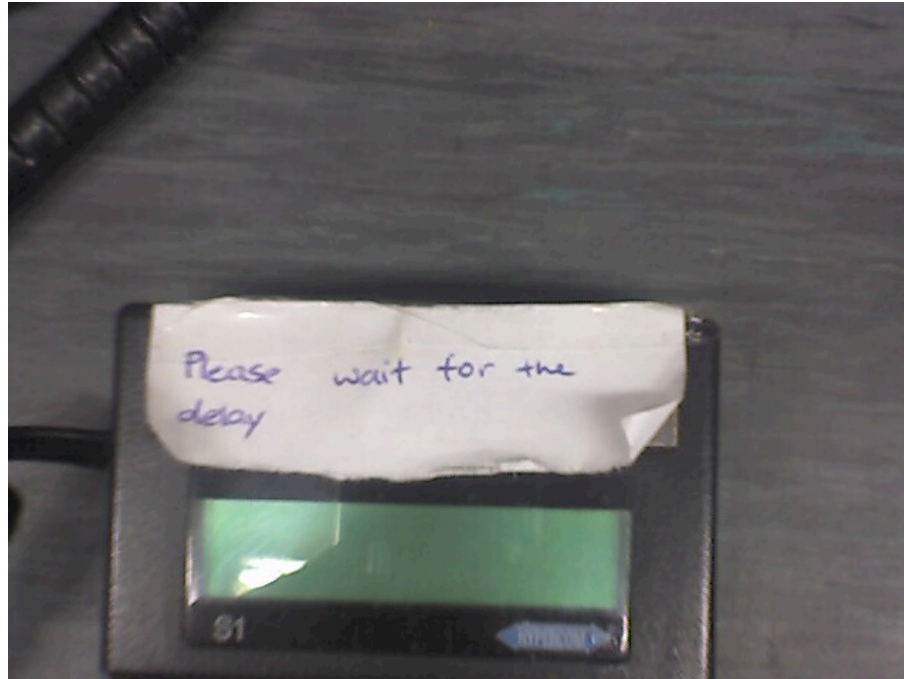
# Usability and design in everyday life



# Usability in the real world



# Usability in the real world



# Usability in the real world



# Usability in the real world



A non-slip surface has been  
applied to this pavement.  
Please walk carefully



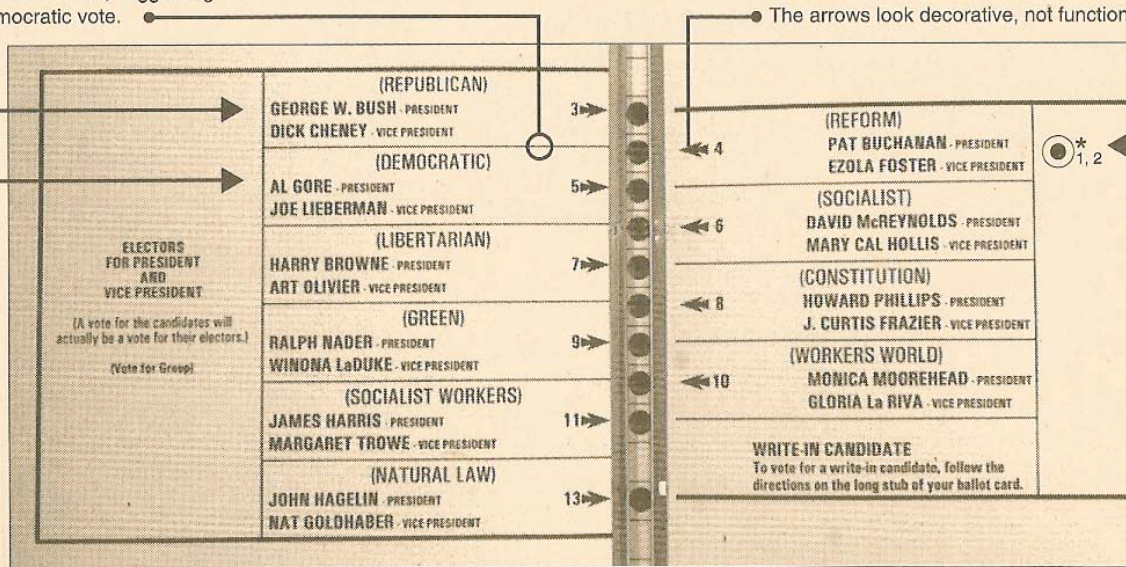
**Op-Art**  
PAULA SCHER

**DEFECTIVE EQUIPMENT: The Palm Beach County Ballot**

The divider line between Republican and Democrat appears to be pointing to the second dot, suggesting it is the correct one for a Democratic vote.

Bush is first on the ballot, and the punch dot for the Republicans is also first. This is good design, making it highly unlikely that a Bush voter would make an error.

The Democrats are listed second, but the correct punch dot for them is third. Since it is logical to assume that one punches the second dot on the ballot to vote for them, this is unsuccessful design.



The arrows look decorative, not functional.

\*1 This is the logical place for the dots corresponding to the second column of party listings. (Florida law actually specifies that voters must mark the box to the right of the ballot. The county election officials foolishly violated this law.)

\*2 Since the English language is read from left to right, it is natural to expect that the dot will appear after the name. The sudden shift in the pattern – putting the dots for the right column on the left – is likely to confuse voters.\*\*

**\*\* Many official bodies and corporations approve products or documents that are incompetently designed. When a design causes problems for a significant number of people, even if it was "approved," the product is usually recalled, and sometimes reparations are made.**

# Design is changing our lives



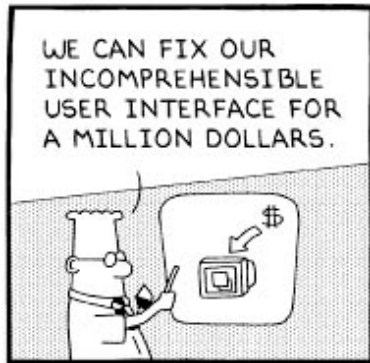
# Technology is confusing us



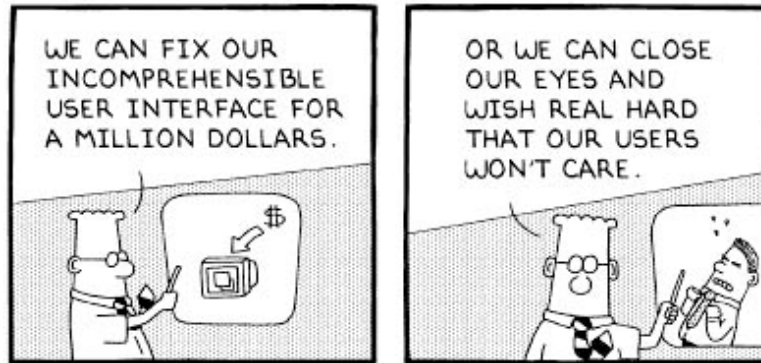
# How do we balance this?



# Dilbert – Scott Adams

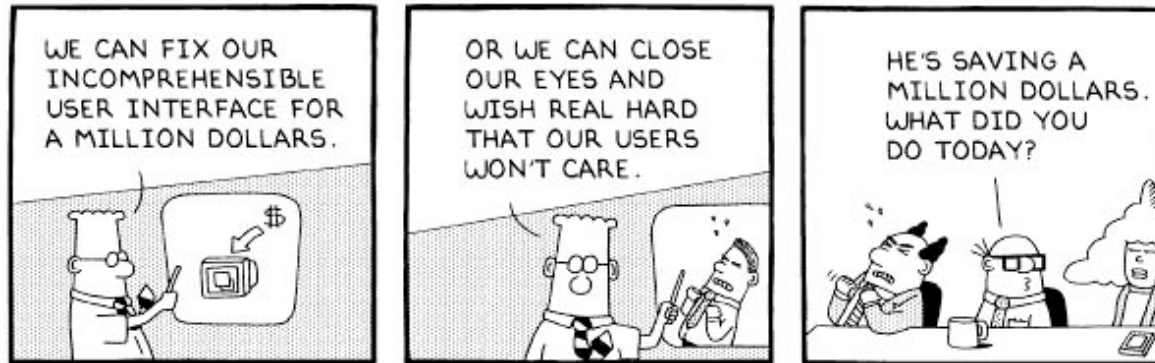


# Dilbert – Scott Adams



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# Dilbert – Scott Adams



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# **Some factors in product design success**



# Winning companies

- PDMA research
  - 60% of new products fail in the marketplace
  - Why?
    - Looked at companies that succeeded
    - Looked at companies that failed
  - What did they find? Three things

# Customer Need

- The product is designed to meet a clearly identified customer need. In the eyes of the customer the product provides unique benefits and value for money.

# Market Orientation

- The company operates with a market orientation. Product decisions are supported by well executed market research.

# Technical leverage

- There is a good fit between the product and the company's technical competence and development expertise.

# Characteristics of winning products

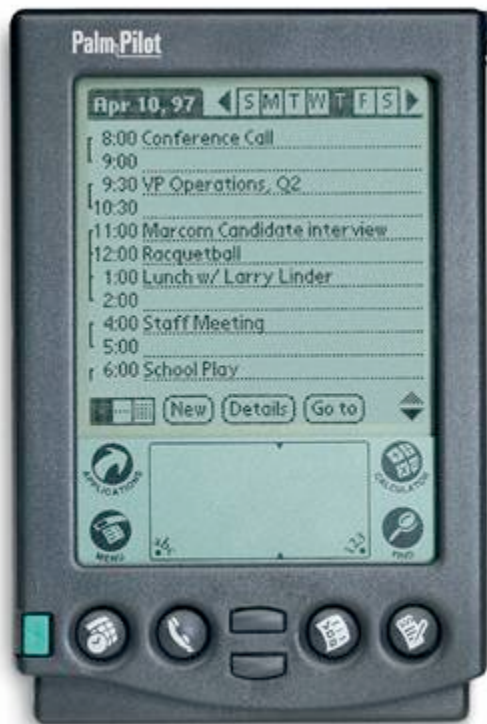
- **Useful** - Product provides a solution to a customer need
- **Usable** - It's easy to figure out how to use the product
- **Desirable** - Customer's are drawn to the product because of its value and aesthetics
- **Valuable** - For the feature set and quality provided, it's the right price

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- **Sustainable?**

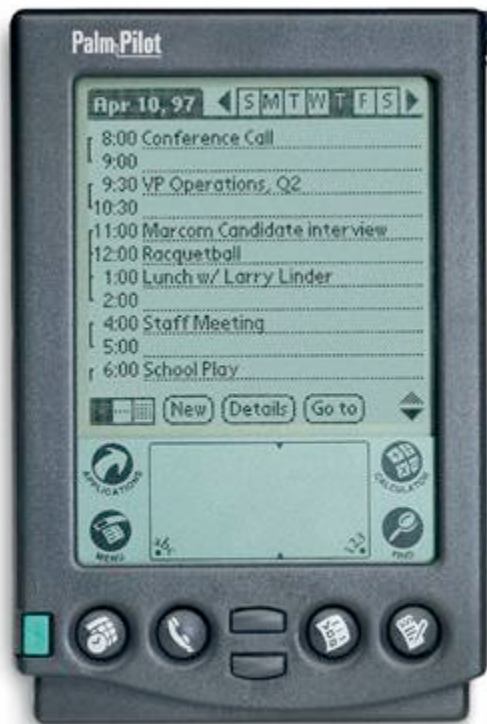
# Winning products

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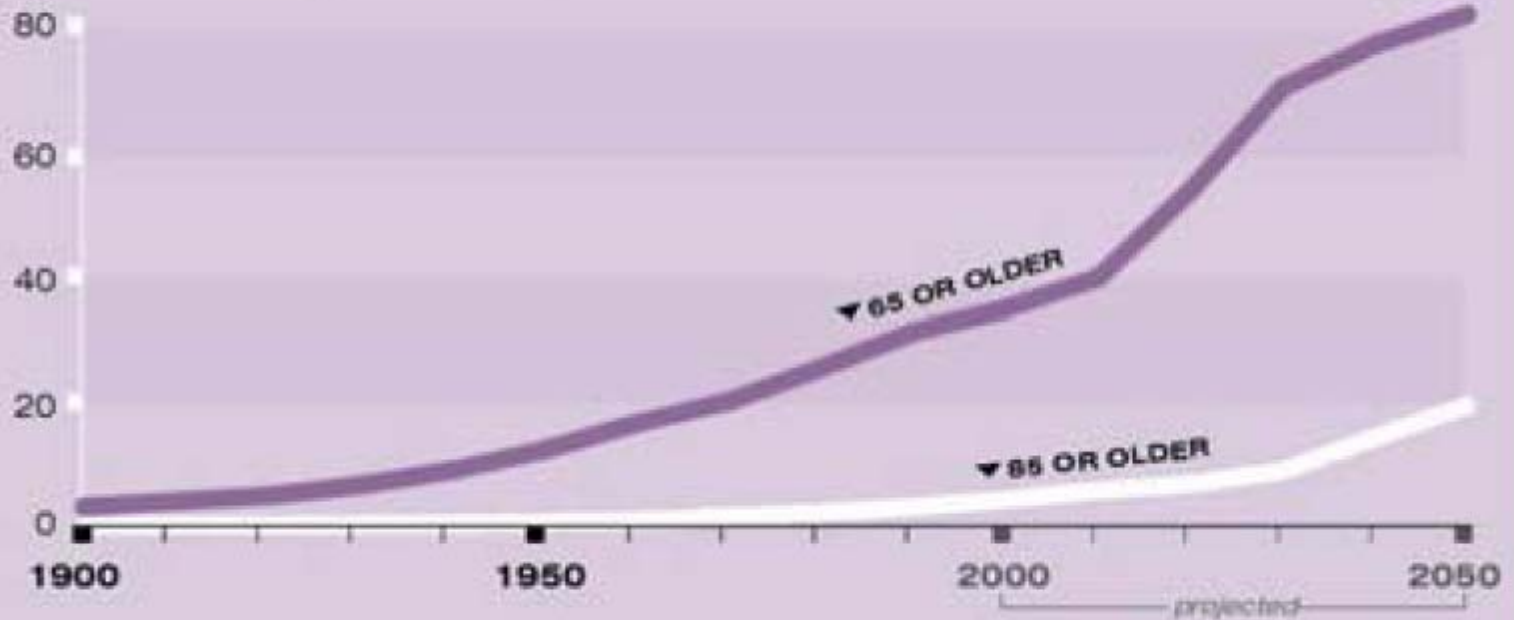


# Winning products



# HumanWare's look into the future

### Total number of persons age 65 or older, by age group, 1900 to 2050, in millions



Note: Data for the years 2000 to 2050 are middle-series projections of the population.  
Reference population: These data refer to the resident population.  
Source: U.S. Census Bureau, Decennial Census Data and Population Projections.

# User characteristics

## **Greatest generation** (today's retirees):

- Grew up with Great Depression and WWII
- Believe what doctors tell them (or don't tell them)
- Savers rather than spenders
- Realistic about death and skeptical as to life expectancy
- Not computer users

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## **Baby boomers** (new retirees from 2010):

- Grew up with the Beatles and moon landing
- Run to Internet to disprove what doctors tell them
- Spenders rather than savers
- Not accepting of death and expect long life
- Active computer users

# Customer-centered design

- Who is the user?
- What is the job they are trying to get done?
- What are their unmet needs?
- Develop 'Personas'
  - Prototypical users
  - These are the people we are designing for

# Experiences in future design

# In 1990 looking at the future in 2000

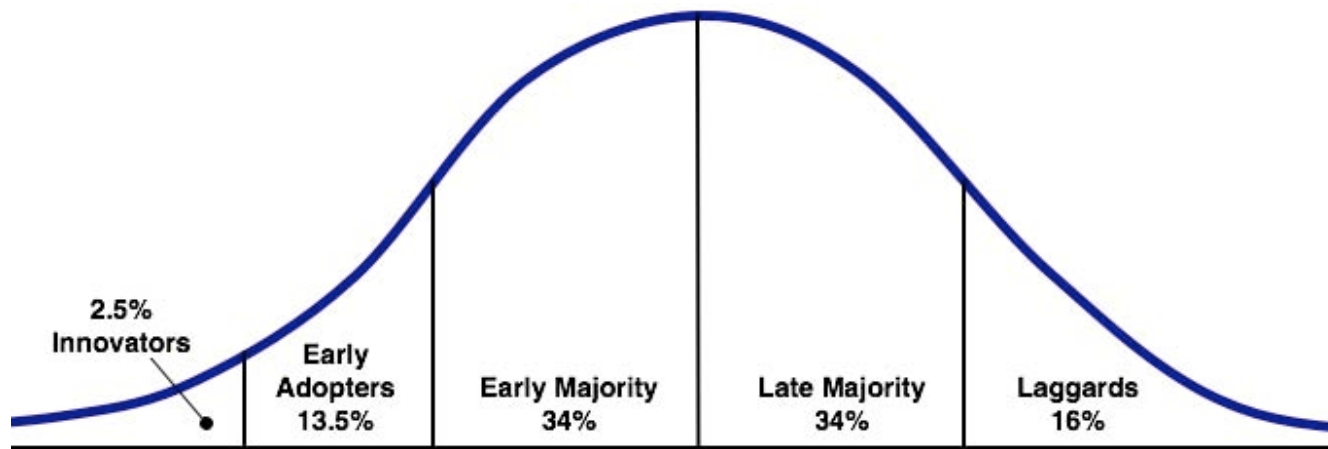
- Look at the computer, what would the user look like to an alien
  - Mono hearing, no depth perception, large number of digits, deaf, etc
- We got to play with lots of current/future devices
- What did we come up with
  - Sybil description
    - Large screen
    - Touch screen
    - Stylus and gestures
    - More processing power than you can use
      - Speech recognition, indexing of files, preview files before opening
    - Connected to a large network, files are centrally located
    - Rich documents – pictures, dynamic charts, movies
    - Many small devices will connect to it
      - Audio recorder, camera, phone
    - Ability to look back through history of a document
    - Camera – video conferencing,
    - Knows you are there, it's a digital assistant



# The Mac today

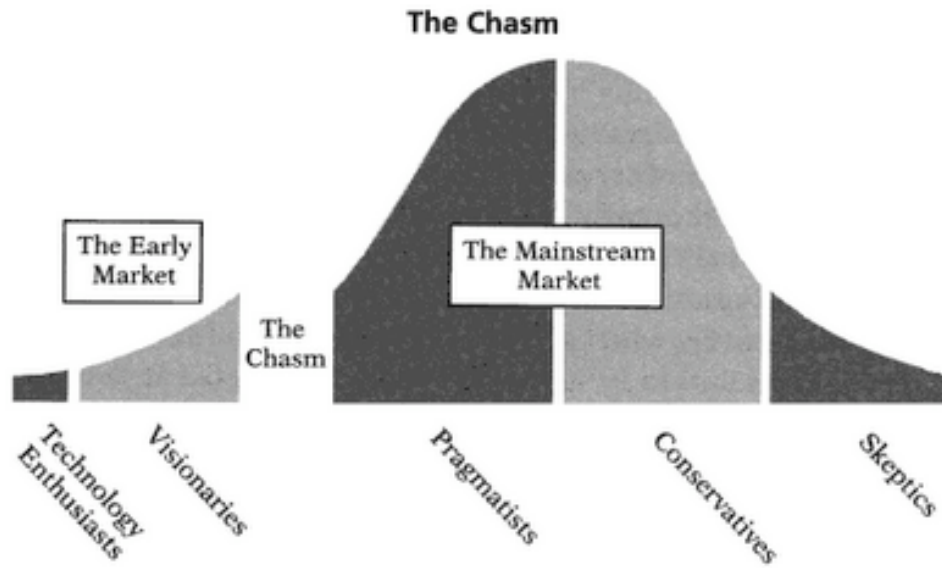


# Technology adoption



Source: Everett Rogers (Diffusion of Innovations model)

# Chasm Theory – Geoffrey Moore



# How refined some technologies really are

- Newton and stylus
- Pencil and paper



# Lessons and a look at the future

# Learnings

- It takes 5 years for any new technology device to really get adopted – often longer
  - Colour printers, Digital cameras, Mobile phones,
- People like dedicated devices
  - Very hard to combine devices e.g. Smart phone and camera
- Need solutions for success
  - Apple, Spreadsheet
  - Macintosh, Postscript, Laserprinter, Pagemaker
  - Digital cameras, email, printers, broadband
  - iPod, iTunes, Internet
- Humans are ‘complicated critters’
  - They have to be motivated to change

# My predictions

- What do I need in my bag?
  - Look through my bag now and think of future bag
  - Many of our daily artifacts will change or at least morph to something electronic
- Small personal communications device
  - Phone, camera, gps, some local storage
  - Connects to larger devices – screen, keyboard
  - Connects to large network
  - Some processing, power, storage, more about giving access to information – capture, review, create, annotate
  - A tablet sized ‘viewer’ and stylus
- What’s new
  - Has biometric factors too
    - A ‘health assistant’ – knows what your body is doing – blood pressure, blood sugar, etc
  - Micro payments
  - You can’t lose stuff
- Implications
  - Private and ‘owned’ versus ‘shared’ or ‘pay as you go’ devices
    - Personal device is owned, other devices are shared
  - Standards for behaviour and hygiene
  - Knowing where you are and where other people are
  - What will happen to money
  - Much about your behaviour will be recorded e.g. Grouphealth lifestyle survey

# Implications

- Hot desking
  - Already happening
  - Issue – how to personalize?
- Work from home
- Information
  - Books? Newspapers? Magazines?
  - Media on disk etc? 50 years ago we were using 78s – and mono at that
  - Massive generation of content files, how to keep them safe? Hard discs will fail
  - What information is reliable?
- Health
  - Unacceptable to be unhealthy
    - Smoking, exercise
- Many things will be designed to be shared
  - In the home
    - Already hard. XBox360. Mac.
    - Photos and music – multiple copies
  - In public places
- Valued for knowledge and ability to impart it



# Fundamental problems

- Intrigued by our inability to think outside our own lifetimes
  - Science fiction - Foundation trilogy, 2001 A Space Odyssey
  - English cathedral
  - Totoras
  - Economics of home design and ownership
  - Local loop broadband unbundling in Christchurch
  - Wood framed houses – 200 year lifespan
- More design for ongoing use, replacement, refurbishment etc
- Ownership/stewardship

PATEK PHILIPPE  
GENEVE  
Begin your tradition.

You never actually own a Patek Philippe.

◆

You merely look after it for the next generation.

The first ever Patek Philippe self-winding Chronograph with moonphase 40-minute and 10-hour moon counter is combined with the patented Annual Calendar and housed in a platinum case with sapphire crystal back, Ref. 5950R. Tel: +41 (0)21 811361 www.patek.com

You never really own a Patek Philippe.  
You simply look after it for the next generation.

**Dad, Mum put your big knife in the dumpster!**

# Scythe



- My great grandfather's way of earning a living around 1900
- My grandfather made a living putting electricity into houses
- My father repaired Burroughs adding machines
- I'm a knowledge worker – my tool is a computer
  - Phone, Email, increasingly browser and pdf, Word, Excel, Images, Presentations
- What will my children do?
- What will my grandchildren do?

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