The coming age of Calm technology

• Published in 1996

• Notions of
  – Mainframe – many people share a computer
  – Personal computer – one computer per person
  …internet, distributed computing….
  – Ubiquitous computing – many computers share us
The periphery

- A calm technology will move easily from the periphery of our attention to the center and back.

- Examples
  - Inner Office Window
  - Internet Multicast
  - Dangling String
Inner Office Window

• Notion of connectedness

• Boundary well defined
Internet Multicast

UGA

Charter @Home

Allows Groups To share packets

GATECH
Internet Multicast

When UGA joins packets are not duplicated

UGA

Charter @Home

Allows Groups To share packets

GATECH
Dangling String

- Small motor connected to ethernet
- Whenever a packet goes by, it twitches
- With a busy network it whirrs along
“Future”

• 10 million pixels (80 dpi over several feet)
  – Still too expensive

• Embedded processors
  – 1 billion operations / sec low power
  – Reality: Hitachi SH4 – 200MHz low power

• Matchbox size removable hard drives at 60 MB
  – Reality: 1 GB microdrive
“Future”

- 1000x800 high contrast display
“Future”

• Remove fixed configuration of devices
  – Universal plug and play, Jini etc..

• High speed wireless networks everywhere
  – 3G wireless networks upto 384 kb (deployment slow)

• Close range wireless networks
  – Bluetooth, HomeRF

• Wireless LAN
  – 802.11b (11 Mbit – right here in the class)
Missed technologies

- World Wide Web
- Is WWW ubiquitous?