

The Computer for the 21st Century

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<http://www.ubiq.com/hypertext/weiser/SciAmDraft3.html>

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Premise of the paper

- “The most profound technologies are those that disappear. They weave themselves into the fabric of everyday life until they are indistinguishable from it.”

Other technologies that have “disappeared”

- Writing
- Electric Motors

Ubiquitous Computing

- What it is not:
 - notebook computers
 - multimedia computers
 - virtual reality

Ubiquitous Computing

- What it is:
 - “Embodied virtuality” - Process of drawing computers out of their electronic shells
 - Networked, invisible computers
 - Tabs, pads, and boards

Active Badges

- Employee ID cards that are computers
- Identify themselves to receivers throughout the building, allowing the tracking of people or objects
- Doors automatically open to the right people
- Phone calls forwarded to person's current location
- Automatic appointment diary

Pads

- Cross between a sheet of paper and laptop/palmtop computer
- “scrap computers” (analogous to scrap paper)
- No individual identity or importance
- Spread out on a desk, one for each task to effectively increase your workspace area

Boards

- Blackboard with electronic “chalk”
- Liveboards
- Possibility of sharing one “board” across several rooms or physically separate locations
- Bulletin board that changes depending on who is reading it (“scoreboard”)

Required Technology

- Cheap, low-power computers with convenient displays
- Network to tie the computers together
- Software systems implementing ubiquitous applications
 - More problematic
 - OS today generally assume fixed hardware config
 - Applications that move from one place to another are a problem

Privacy Concerns

- Rogue tabs in a room collecting all data
- Active badges and self-writing appointment diaries
- Solutions proposed
 - Cryptographic techniques for messages and data
 - Build systems with same privacy safeguards as the real world, but no more

Author's Conclusion

- Embodied virtuality will make individuals more aware of people on other end of computer links
- Ubiquitous computing will become the dominant mode of computer access over the next 20 years
 - Will make things faster and easier
- Almost every object contains computer or has a tab attached ==> obtaining information is trivial
- Decline of the computer addict
- Overcome problem of information overload

My Conclusion

- Flawed ideas
 - Drawer full of pads
 - Minimizing applications to tabs
 - Tabs attached to everything (especially written stuff)
- Good ideas
 - Active badges
 - Shared blackboard
 - Bulletin board that changes

Questions?