

February 13, 2012



Hybrid Spaces & Pervasive Computing



THIS IS A COMPUTER



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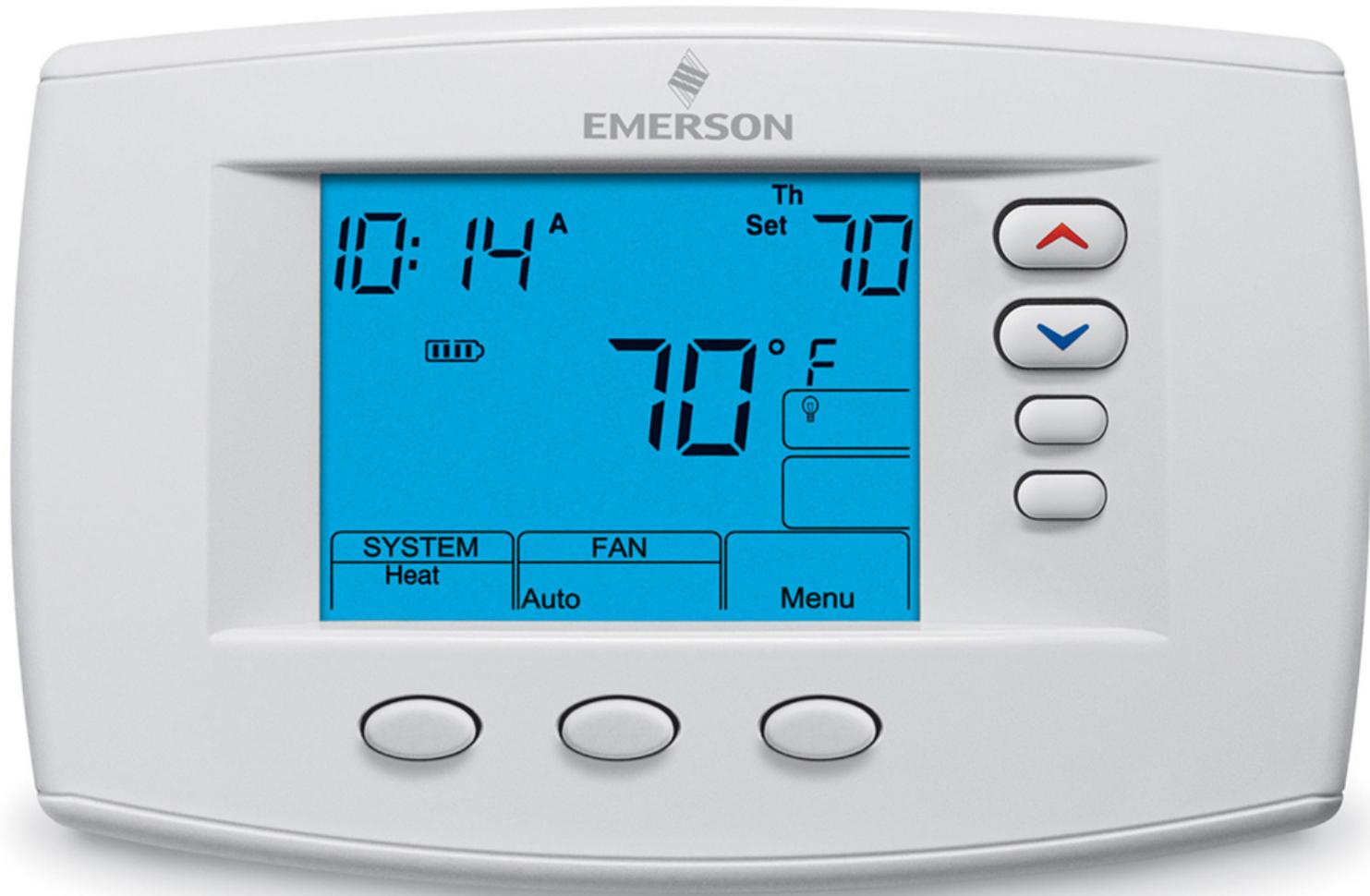
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Pervasive Computing

- “According to Intel, already more than 95 percent of devices containing microchips do not present themselves to their users as computers.”
 - Malcolm McCullough, *Digital Ground*, page 74.

Pervasive Computing

- “Computing, not computers will characterize the next era of the computer age.”
–Intel

Ubiquitous Computing

- **Mark Weiser: What is the metaphor for the computer of the future? The intelligent agent? The television (multimedia)? The 3-D graphics world (virtual reality)? The StarTrek ubiquitous voice computer? The GUI desktop, honed and refined? The machine that magically grants our wishes? I think the right answer is “none of the above”, because I think all of these concepts share a basic flaw: they make the computer visible.**
 - **Mark Weiser, “The World is Not a Computer,”**

Ubiquitous Computing

- “The most profound technologies are those that disappear. They weave themselves into the fabric of everyday life until they are indistinguishable from it.”
 - Weiser, “The Computer for the 21st Century.”

Ubiquitous Computing

- Ubiquitous computing developed at Xerox PARC: “by the inch, by the foot, and by the yard.”
 - The example of the LiveBoard and of the Digital Desk
 - Contemporary examples: Corning, PNNL, and Sixth Sense

Remediation

- Bolter and Grusin, *Remediation*
- Immediacy vs. Hypermediacy
 - Immediacy
 - “The logic of immediacy dictates that the medium itself should disappear and leave us in the presence of the thing represented: sitting in the race car or standing on a mountaintop” (p. 6)
 - The medium’s “interface” should not be noticed
 - Media should be immersive

Hybrid Spaces

- Computers interact seamlessly with our environments
- Leads to “Hybrid Spaces” that “create a more dynamic relationship with the Internet, embedding it in outdoor, everyday activities, we can no longer address the disconnection between physical and digital spaces” (262).

Hybrid Spaces

- **Key technology to this transformation: mobile phones**
- **Current statistics:**
 - **5.3 Billion Mobile Subscribers Worldwide**
 - **Out of a global population of 7 Billion (that's about 76% of the world that has — and uses — a mobile phone)**
 - **By next year, more people will access the internet on a mobile device than on a PC**

Hybrid Spaces

- How do our phones create “hybrid spaces”?

Hybrid Spaces

- But focusing strictly on the technology misses a key aspect of hybrid spaces:
- “From the merging of mixed reality and augmented spaces, mobility, and sociability arises a *hybrid reality*. It is exactly the mix of social practices that occur simultaneously in digital and in physical spaces, together with mobility, that creates the concept of hybrid reality” (265).

Hybrid Spaces

- Theories of social and spatial practices are vital
- Dourish notes: Working with computers (designing, building, interacting) is a “philosophical enterprise” (viii).

Hybrid Spaces

- “It is philosophical in the way it represents the world, in the way it creates and manipulates models of reality, of people, and of action. Every piece of software reflects an uncountable number of philosophical commitments and perspectives without which it could never be created. Software depends inevitably on our ideas about representation and reality” (viii).

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