Hosting humans in their natural habitat

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In the Public Spaces of the Future...

People will be:

more aware of their context

well connected, directly with each other

People will need:

To feel safe

to establish trust with familiar strangers

To share and collaborate with their neighbors

David MacDonald ©2006

Living within computing

Vannevar Bush, As we may think, 1945

John McCarthy -> F.J. Corbató, An experimental time-sharing system, 1961

Doug Englebart, A conceptual framework for the augmentation of man's intellect, 1962

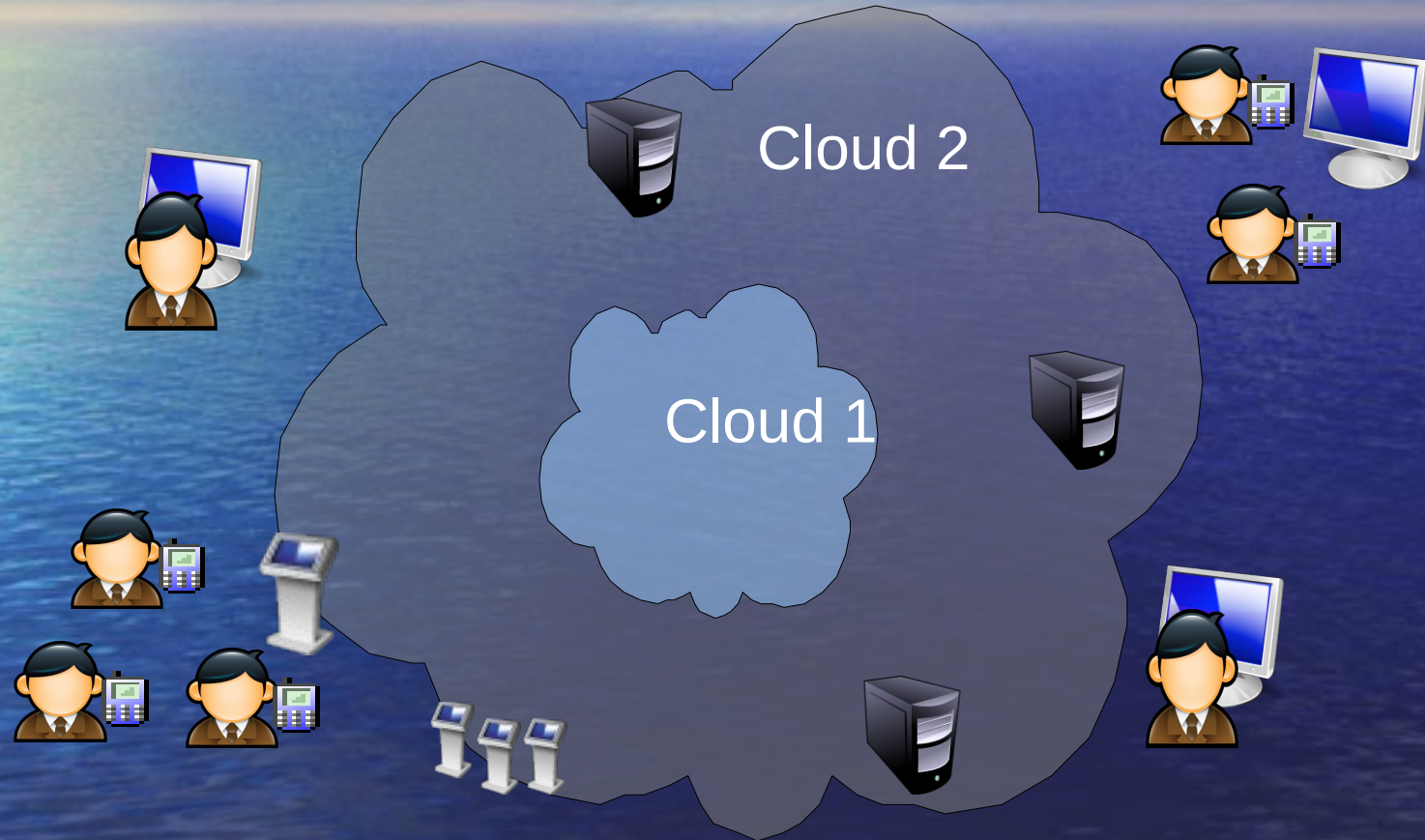J.C.R. Licklider, R. Taylor, The computer as communications device, 1967
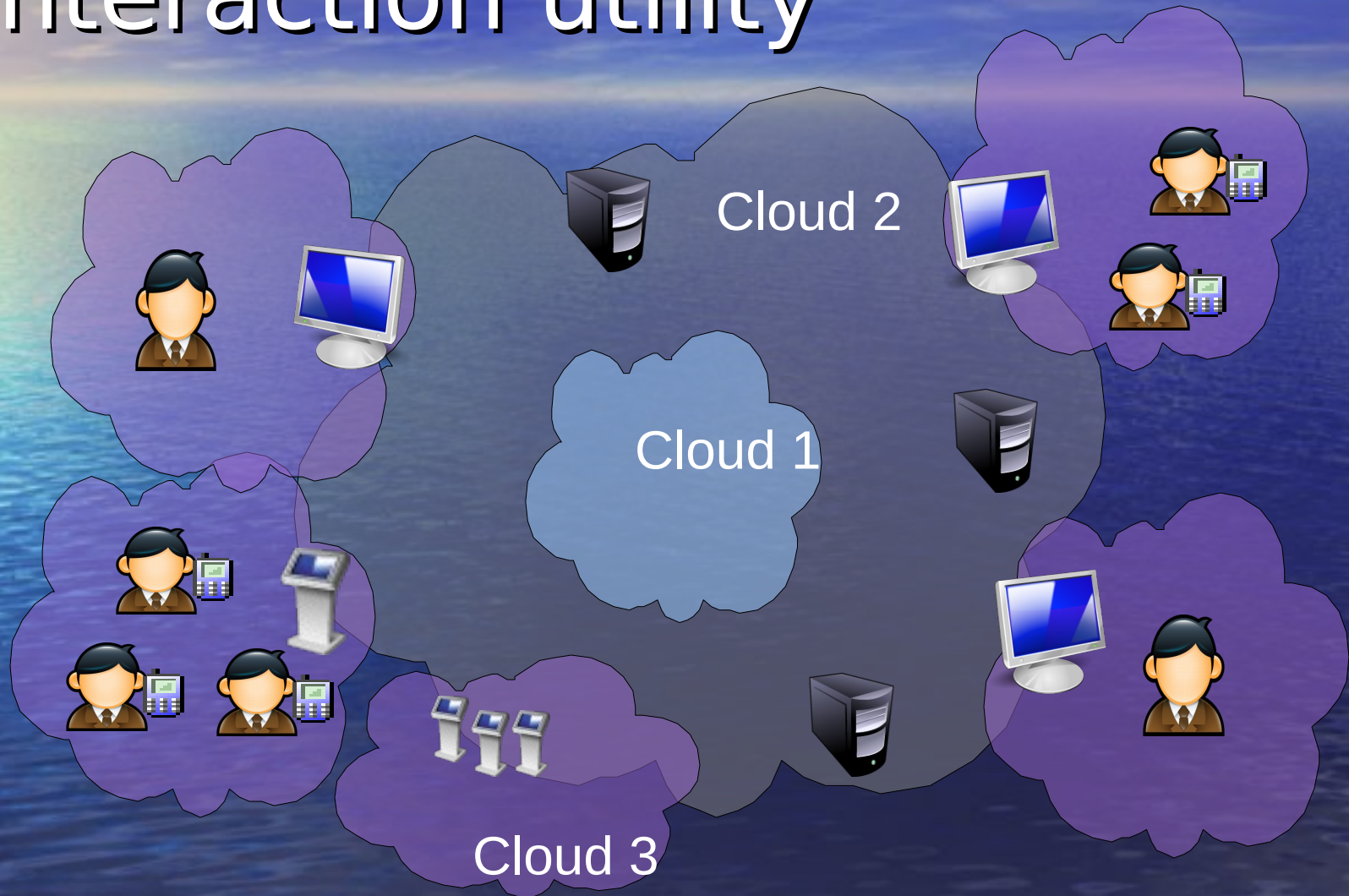
In the beginning ...
PCs and PDAs

Internet ... a connectivity utility (1st cloud)

(2nd) Cloud computing … a resource utility

Cloud 2

Cloud 1

The 3rd cloud – mobile, social interaction utility

Cloud 2

Cloud 1

Cloud 3

Public Interactive Surfaces

Wall displays that serve visitors (and perhaps their owners, too)

Sensors and computing support interaction

Amulet provides identity and context

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Among the Crowd

- Each person at the center of his/her own networks of *relationships*

- Relationships are "real-time" and "persistent"

- Cooperation based in, **requires** instantiation of relationship

Shared Setting
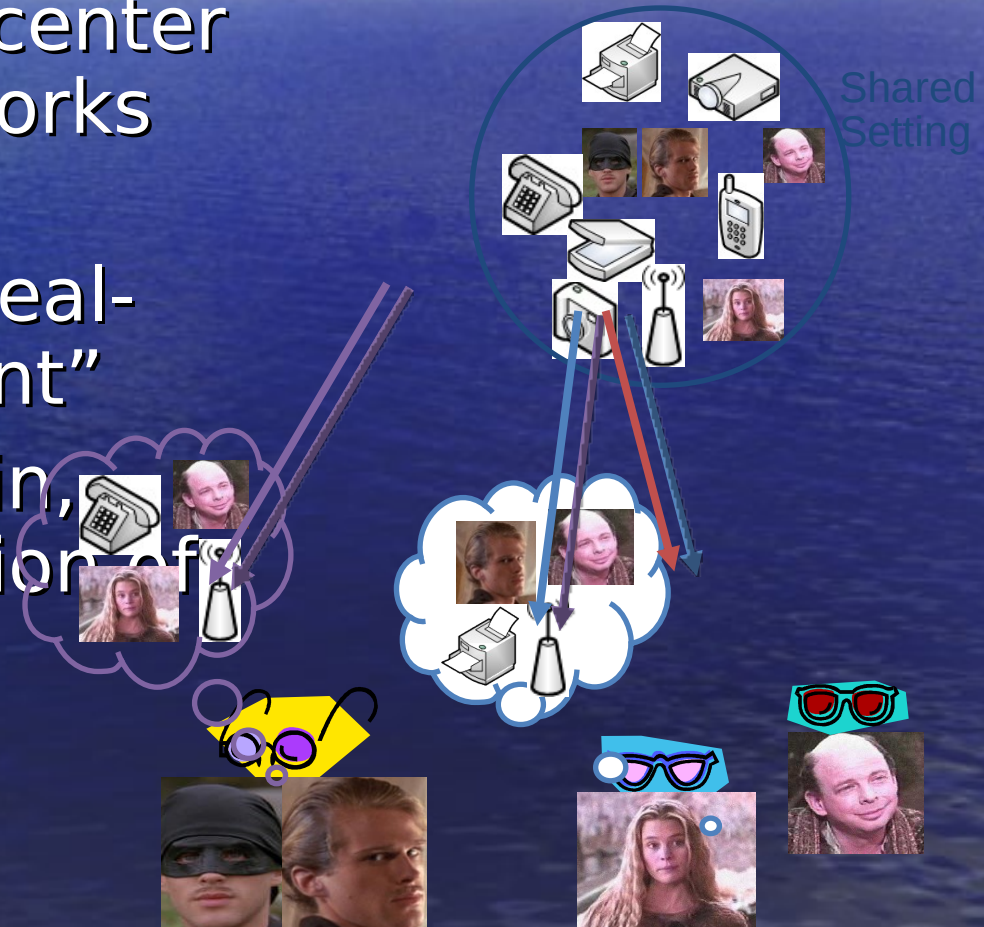
Creative Collaboration and Learning

- Integrate design, technology with real life

- Engage *visitors* in the chemistry

- Samsung

- Cisco

- EMC

- Intel

- Schneider

- Comcast

- DirecTV

- Marvell

Design and realization in concert with partners

Opportunity for Third Cloud

Create a public infrastructure for mobile citizens and customers

Understand the mechanisms of local cooperation, sharing, and commerce

Transform the local village in the same way that the Internet transformed the global village

Infrastructure

- 300 Phones

- 41 screens

- 100 Picture Frames

- Steelcase MediaScape 2

- Intel Embedded

- (Cisco Conferencing) (Rewind the building)

- EMC NECSYS Cloud data and computing

What to do with what we have

3rd Cloud Interactions in the Media Lab context

- Project Linker: A google for related projects. Solves the problem of relating independent projects

- Meeting marketplace: Side meeting maker. Solves the problem of wanting to idly chat with other attendees and students.

- Bookmarking spaces for friends: Leave post-its for friends. Solves the problem of recommending things for others, advantage is that they get the information *in place* rather than when you send it

- Meeting Preparer: downloadable recommendation (from buddy?) about what is new and what is featured. Solves the problem of catching up on a second visit. Can link to bookmarker

- Social Demo marketplace: Recommendation agent for sessions and demos; we aggregate and display. Solves the problem of dividing time between sessions and meetings.

- Trip report: Captures your travels. Solves the problem of notes and remembrances

Persistent wayfinding

More from visitors

2-year old work is sometimes more interesting than new

Badge-phone connection for phone as convenience

Rewinding to the alumni

Bookmark the presentations; bookmark your traversal

Rapid recall videos of the demos for later association

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research
laboratory
andy
associate director
andrew lippman
hiroshii ishii

systems

mit   media   lab   lippman
ishii   future

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1. Andrew **Lippman** | **MIT Media Lab** Center for **Future** Banking
Hiroshi **Ishii**. Ken Jackowitz. Erik M. Johnson. Marc B. Keller. Henry Lieberman. Andrew **Lippma**
Andrew **Lippman**. Associate Director, **MIT Media Lab**. Senior ...
http://cfb.media.mit.edu/people/andrew-lippman - 15Kb

2. Hiroshi **Ishii** | **MIT Media Lab** Center for **Future** Banking
Hiroshi **Ishii**. Ken Jackowitz. Erik M. Johnson. Marc B. Keller. Henry Lieberman. Andrew **Lippma**
Media Arts and Sciences at the **MIT Media Lab**, where ...
http://cfb.media.mit.edu/people/hiroshi-ishii - 15Kb

3. **MIT Media Lab** announces two new associate directors - **MIT** ...
MIT Media Lab Director Frank Moss today announced the appointment of two associate direct
Hiroshi **Ishii** and Andrew **Lippman**, both long-term, prominent researchers ...
http://web.mit.edu/...ce/2008/media-directors-0506.html - 15Kb

4. **MIT Media Lab** announces two new associate directors - **MIT** ...
Hiroshi **Ishii**. Photo courtesy / The **Media Lab**. Andrew **Lippman**. T O O L S ... **future**. Lab
researchers foster a unique culture of learning by doing, ...
http://tmg-orchard.media....ia%20Lab%20announces%20two - 134Kb

5. **Media**-Newswire.com - Press Release Distribution - PR Agency
Before coming to the **Media Lab**, **Ishii** spent the majority of his career at NTT ... member of th
Lab, Andrew **Lippman** has a more than 30-year history at **MIT**. ...
http://media-newswire.com/release_1066025.html - 12Kb

6. **MIT Media Lab** - Wikipedia, the free encyclopedia
Associate Directors of the **Lab** are Hiroshi **Ishii** and Andrew **Lippman**. ... "Inventing a better f
the theme of the **Media Lab**'s work. ...
http://en.wikipedia.org/wiki/MIT%20Media%20Lab - 60Kb

7. Opera of the **Future** | **MIT Media Lab**

Persistent wayfinding

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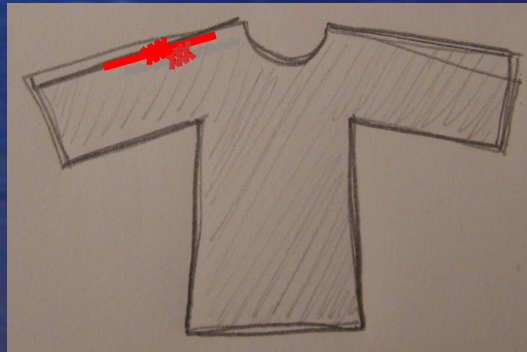information in place
rather than when you
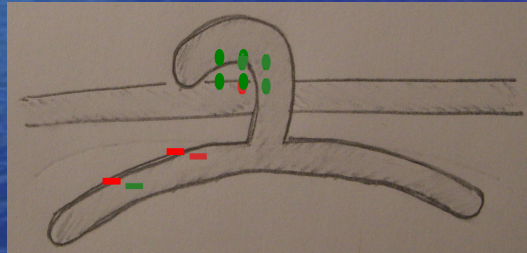send it

Persistent
wayfinding

Digital Mine

"If we know what you have, we can tell you what you need"

- Track the items we own in an effortless manner.

- Can natural affordances of items serve as natural tags, much like a person's DNA?

Creating a common platform

- Communications embedded in context
- Enabled by identity
- Centered around awareness and discovery
- Cooperative use of common resources
- Negotiation
- Standard programming interfaces (APIs)
- Standard protocols for negotiation

Implications for "operations"

- Indoor wireless driven by interoperability and reconfigurability in "neighborhood"

- "Air power" - the 21st century tussle

- Where will the "control points" and "cash registers" of this industry be?

Platforms that create context for interactions, awareness and discovery

Configuration
Tracking
Event Routing
Authentication
Recognition Protocols
Wireless, Optical, Audio

Virtualize everything

WiFi RFID etc.

Multicast, Pub/Sub, overlay

Android phone and iPhones?
Amulet?
???

802.11/BT/SDR monitoring,
Infrared scanning,
Geolocation,
Visual light scanning
Microphone, Ultrasound