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
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 (1\textsuperscript{st} cloud)
(2\textsuperscript{nd}) Cloud computing ... a resource utility
The 3\textsuperscript{rd} cloud – mobile, social interaction utility

Cloud 1

Cloud 2

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

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

1. Andrew Lippman | MIT Media Lab Center for Future Banking
   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 Lippman. 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 directors, Hiroshi Ishii and Andrew Lippman, both long-term, prominent researchers ...

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

   Before coming to the Media Lab, Ishii spent the majority of his career at NTT ... member of the Media 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 future" is 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
   Hiroshi Ishii, Frank Moss, Ken Jackowitz, Andrew Lippman, Tod Machover, David B.
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.
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

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