

Connecting the Real World with the Ubiquitous Overlay in Ambient Media

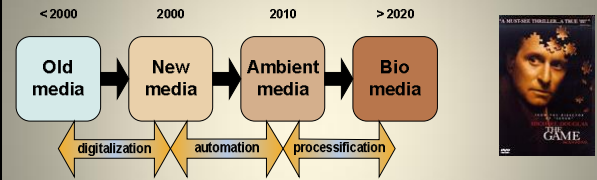
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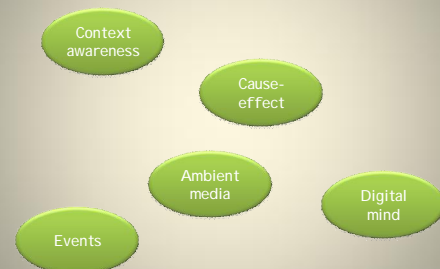
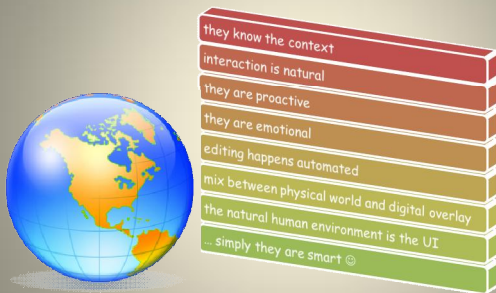
<http://www.tut.fi/emmi>

My Vision of Media of the Future

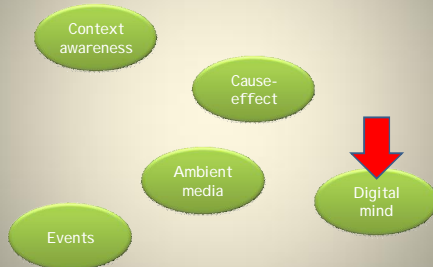


"All efforts in the development of media technology have as their goal to immerse humans fully in the substance of 'media' emotionally and technologically, and in artificial worlds - by all means!"

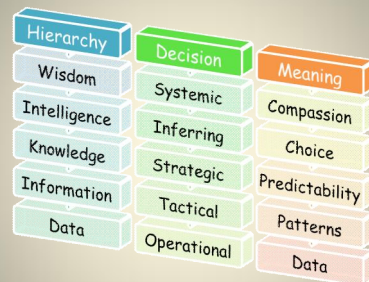
What are intelligent media?



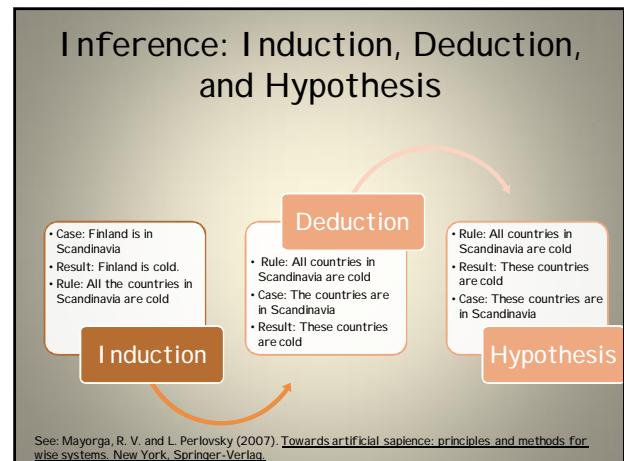
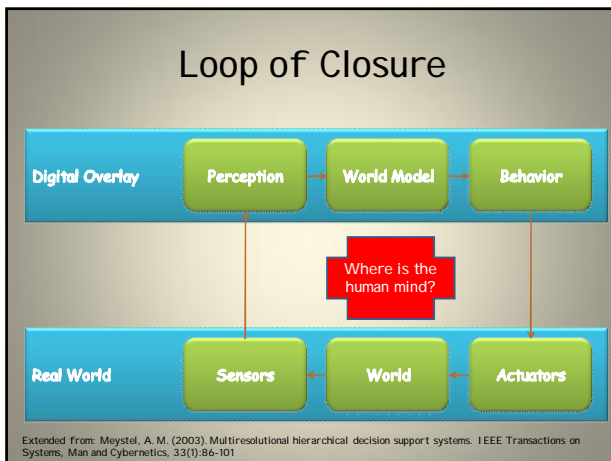
Modeling the 'human mind' and its creative nature...



From Data to Wisdom



Extended from: Tien, J. M. (2003). Toward a decision informatics paradigm: A real-time, information-based approach to decision making. IEEE Transactions on Systems, Man, and Cybernetics-Part C: Applications and Reviews, 33(1):102-112. and Tuomi, I. (1999). Data is more than knowledge. In Proceedings of the 32nd Hawaii International Conference on System Sciences.

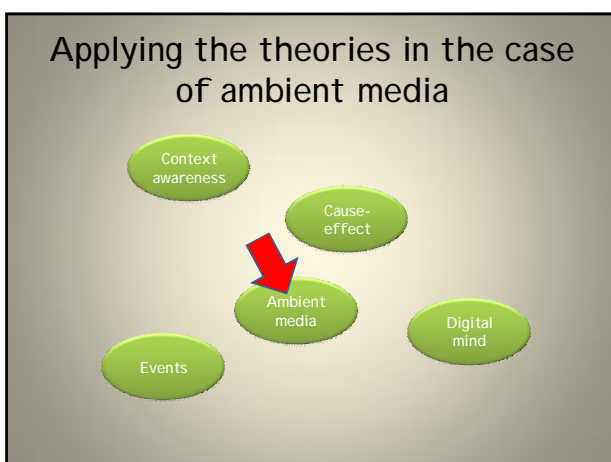


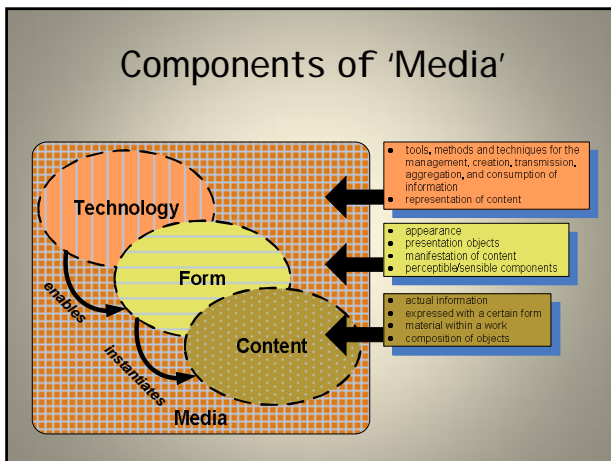
- ### Peirce's Categories:
- Firstness
 - Mode of being without any reference to anything else
 - Secondness
 - Mode of being in relation to a second but without relation to something else, but focusing on the interaction between two
 - Thirdness
 - Relationship between events, and mediation
 - Examples:
 - Psychology: feelings → perception → reasoning
 - Practical: watching a movie → disturbance → visual language

FIRSTNESS

WATCHING A MOVIE
PASSIVELY - WHAT IS THE
'MOVIE' IN AMBIENT MEDIA?

THUS WHAT IS THE BEING
WITHOUT RELATIONS TO
OTHERS?





What are media?

Media simply transmit 'information'

- form of media**
 - media have a certain form for their representation and presentation in terms of aesthetics and required technology (e.g. a newspaper requires printing technology)
- communication of information**
 - media communicate information from a sender to a receiver (e.g. television news about the daily happenings)
- technology for media**
 - each form of media demands different kinds of technology for representing, presenting, and transmitting information (e.g. the media form TV requires a TV station, transmitters, and a TV set at the consumer's home)
- media immerse humans**
 - regardless of the media form and media technology, media immerse humans in another world (e.g. a movie that binds the watcher emotionally because of its story)
- media are aggregated or edited**
 - media are either aggregated by third persons and are passively absorbed by humans or are aggregated via single human interactions or collaboratively (e.g. a TV show versus surfing the web)
- media are a human-enveloping substance**
 - media create a space for humans to interact and to get immersed in the content of the media (e.g. in the space, cinema, the human gets immersed in the story of a movie)
- aesthetics of media**
 - each media form has its artistic expression of the content of the media, its society-implicated rules, beauty, and taste (e.g. a beautifully designed webpage with appealing content)
- each medium has its culture**
 - each newly emerging medium has its own culture regarding how the human being collaborates, aggregates, and accepts new forms - in digital times of digital, digital culture.

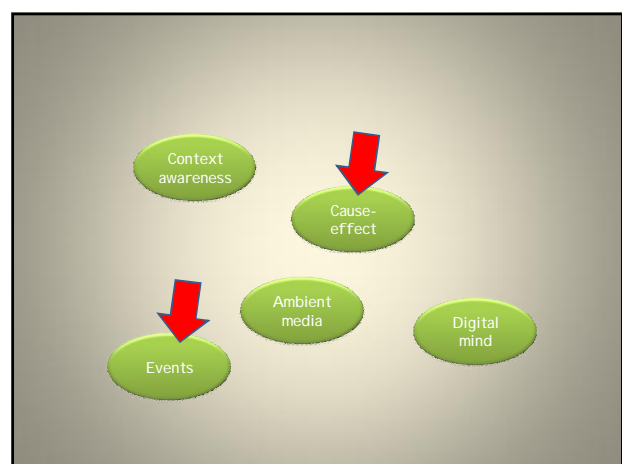
- ### Example: the web
- HTML and web-servers - media technology
 - Webpage layout and style - media form
 - Webpage text and images - media content

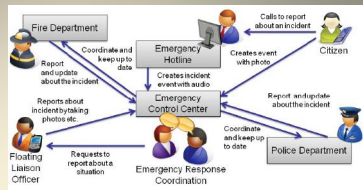
- ### Ambient example: Navigation
- GPS location & mobile - media technology
 - Voice output and map - media form
 - Track from X to Y - media content
- What is the meaning of 'content' in the case of ambient?*

SECONDNES

WHAT IS THE 'DISTURBANCE' IN AMBIENT MEDIA?

THUS WHAT IS THE BEING AS INTERACTION BETWEEN TWO?





citizen reports incident
 emergency control center keeps-up-to-date police department
 emergency hotline creates incident video for control center

A. Scherp, T. Franz, C. Saathoff, and S. Staab. "A Model of Events based on a Foundational Ontology." 2/2009, 2009 http://www.unikoblenz.de/~aggrimm/arbeitsberichte/2009_02_Arbeitsberichte.pdf.

From "thinking in streams" to "ecosystems"

At the moment we have a server streaming to rendering devices. A single stream serves a single renderer.

In the case of 'ambient' we stream 'a whole of something' that includes A/V data, metadata, events, context, psychology, content descriptions to multiple renderers, which includes light bulbs, TVs, radios, HiFi, ...

Data is streamed to service ecosystems.

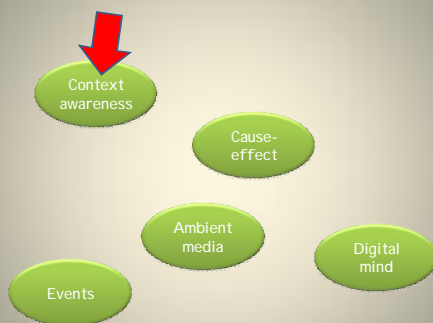
Applications based on context

Application	Features affected
Phone application	Ringing tone, volume, vibration, suggestion of contacts in shortlists
Messaging	SMS tone, vibration, suggestion of contacts in shortlists
Web browser	Backlight in browsing, changes in bookmark lists, changes in connection preferences
Camera	Changes in exposure settings, may even prelaunch camera when outside
Multimedia player	Changes in volumes, may disable internal speaker, selection of music based on context, hide content in some contexts.
Image viewer	Selection of content to be viewed based on context, selection of background music and skin for slideshow.
Radio	Changes in volumes and preferred channels based on context.
Calendar	Selection of visible content based on context
Phonebook	Shortlist of contacts based on context

THIRDNESS

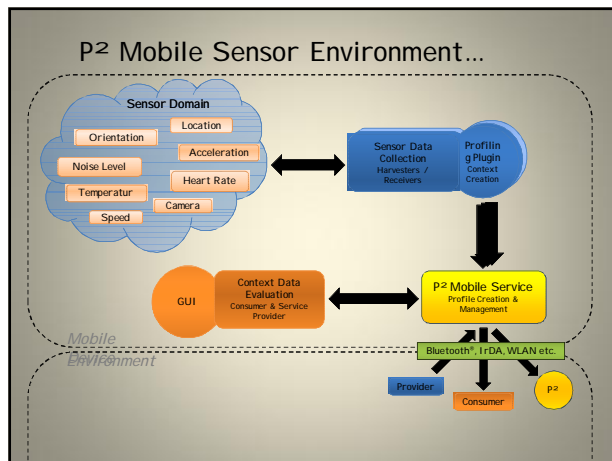
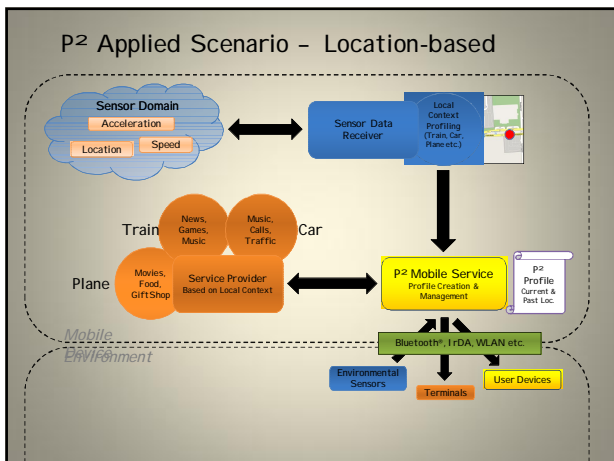
WHAT IS THE "VISUAL LANGUAGE" IN AMBIENT MEDIA?

THUS, WHAT RELATES PEOPLE, OBJECTS, AND EVENTS TO EACH OTHER?

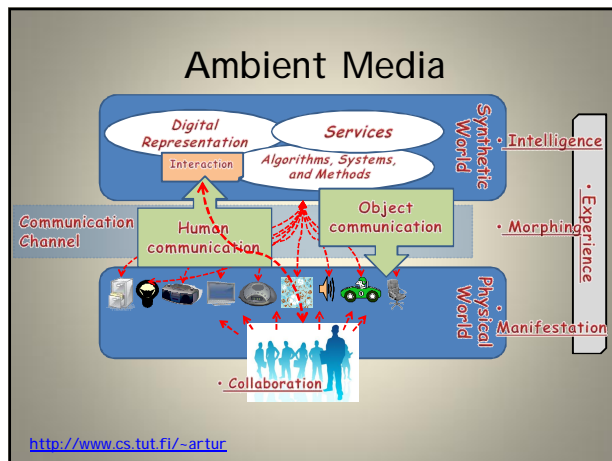
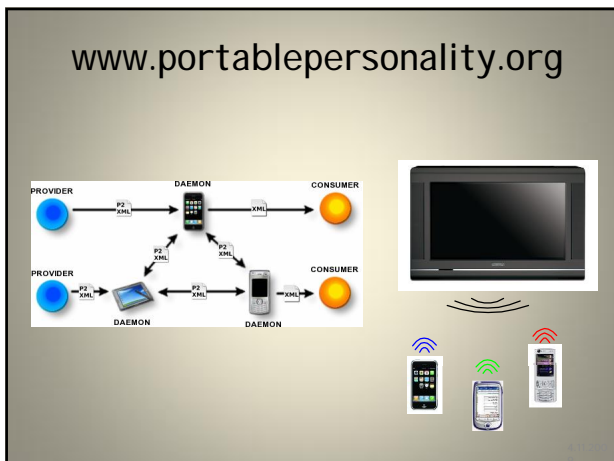
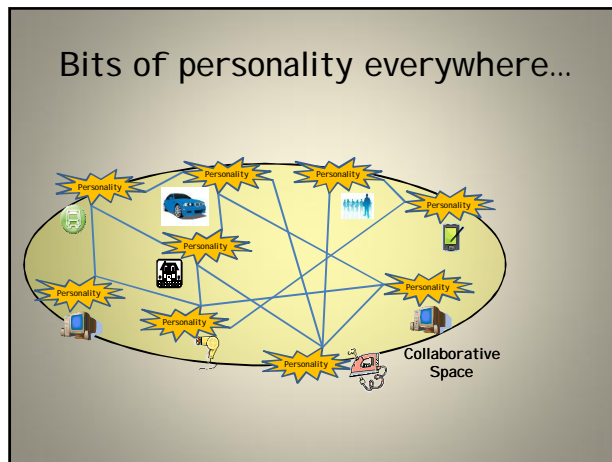


it is about sensing and context

- Sensor technology everywhere
- Collaborative tagging
- Location awareness
- Navigation through environments
- Service discovery
- Surveillance systems
- Service discovery systems for shopping
- Context aware control and surveillance systems
- Example:
 - Shopping, electronic antennas, mobile phones detecting context, ...



BRINGING IT TOGETHER



Donkeypedia



"mixes both low-tech and high-tech components with the help of a real live donkey. A man and the donkey travels by foot through cities gathering information"

Donkeypedia by Frank Alsema & Joost van Eeden, 4xM - Mixed Media Match Makers, The Netherlands

1st place of the Nokia Ubimedia MindTrek Competition 2009

PING: The Smart Trash bin




"embedded technology gives its own input into intelligent recycling. This is a good example of how we can relate to and record our everyday life in a non-obtrusive way in order to make us act better and understand our surroundings"

PING: The Smart Trash Bin by Katrina Bekessy, interaction designer, USA

2nd place of the Nokia Ubimedia MindTrek Competition 2009

Traffic Light detector

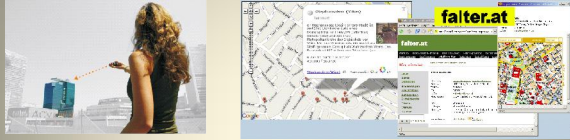


"ubimedia is not used to extend our senses, but to replace a sense lost due to a disability? Translating stimuli from one sense to another"

Traffic Light Detector, by Jan Roters, elumo, Germany

3rd place of the Nokia Ubimedia MindTrek Competition 2009

Point to Discover



"Mixing the digital overlay with the real physical world."

Telecommunications Research Center Vienna, Austria, <http://p2d.ftw.at>

1st place of the Nokia Ubimedia MindTrek Competition 2008

Treasure hunter

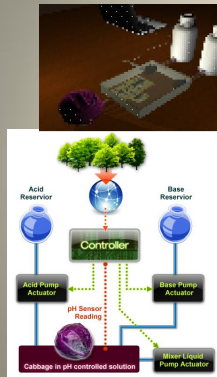


"In the world of 'pervasive' there is not always a screen needed."

Eindhoven University of Technology, <http://www.remcomagielse.com/>

2nd place of the Nokia Ubimedia MindTrek Competition 2008

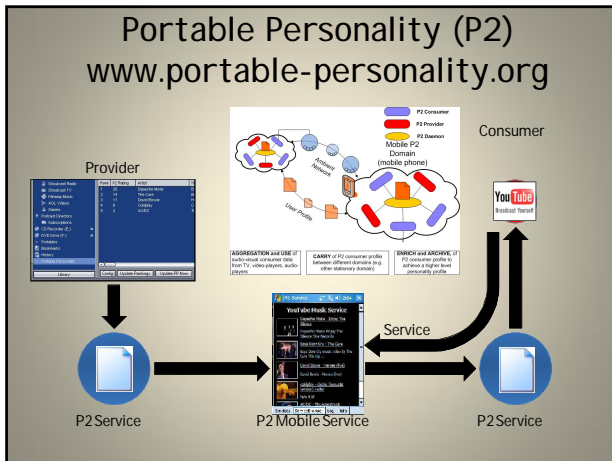
Babbage Cabbage - Biomedia



"Boundaries between 'media that are alive' and media that are living media and blended into the natural environment"

Mixed Reality Lab, National University of Singapore, Singapore

3rd place of the Nokia Ubimedia MindTrek Competition 2008



Prof. Dr.
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SAME 2009 in conjunction with Aml 2009, Salzburg, Austria

Entertainment and Media Production Management Lab. (EMMi Lab.)
Tampere University of Technology (TUT), Tampere Finland

A. Lugmayr, T. Risse, B. Stockleben, K. Laurila, and J. Kaario, "Semantic ambient media—an introduction," *Multimedia Tools and Applications*, vol. DOI: 10.1007/s11042-009-0282-z, 2009 <http://www.springerlink.com/content/5616a82741340375>

A. Lugmayr, T. Risse, B. Stockleben, J. Kaario, and K. Laurila, "Special issue on semantic ambient media experiences," *Multimedia Tools and Applications*, vol. DOI: 10.1007/s11042-009-0283-y, 2009 <http://www.springerlink.com/content/w220782hh508943>

A. Lugmayr, "Ambient Media," *Novatica*, vol. 33, pp. 35-39, July-August 2007 http://www.aties/novatica/infonovatica_eng.html