



Ambient Intelligence

Research Profile TU/e

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Ambient Intelligence (AmI)

AmI stems from the union of three key technical areas:

- ubiquitous/pervasive computing
- ubiquitous communication
- intuitive and intelligent user interfaces

The convergence of such technologies would lead to the development of a seamless environment that is constantly aware of the presence of people, their needs and desires and is capable of intelligently responding via intuitive and natural user interfaces such as gestures, speech, etc.

The following issues have to be addressed as well: energy, environment, social sustainability, privacy, social robustness and fault tolerance.

Vision of the Future

Ambient Intelligence:

Electronic environments that are sensitive and responsive to the presence of people.

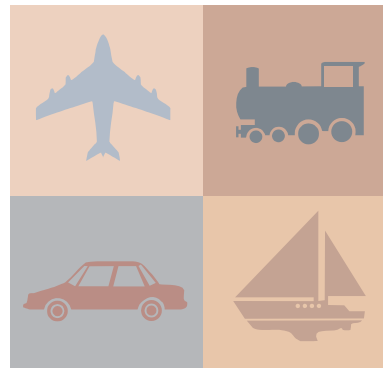
Characteristics:

Embedded, aware, natural, personalized, adaptive, anticipatory

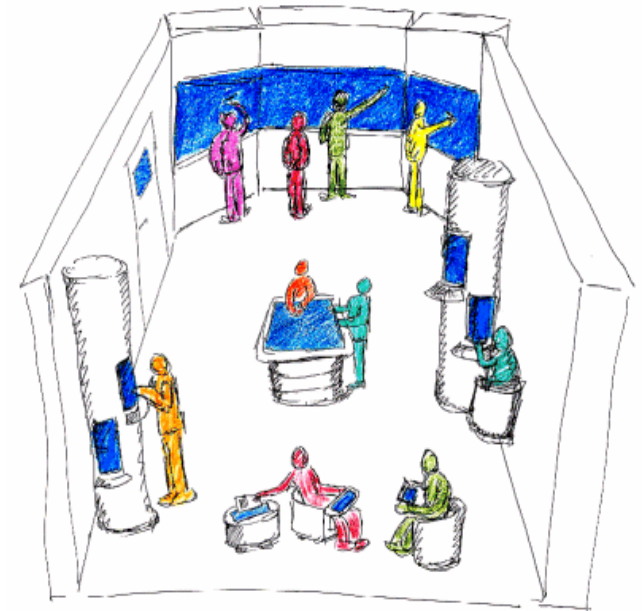
Trends in User Interface Technology



Mobile computing

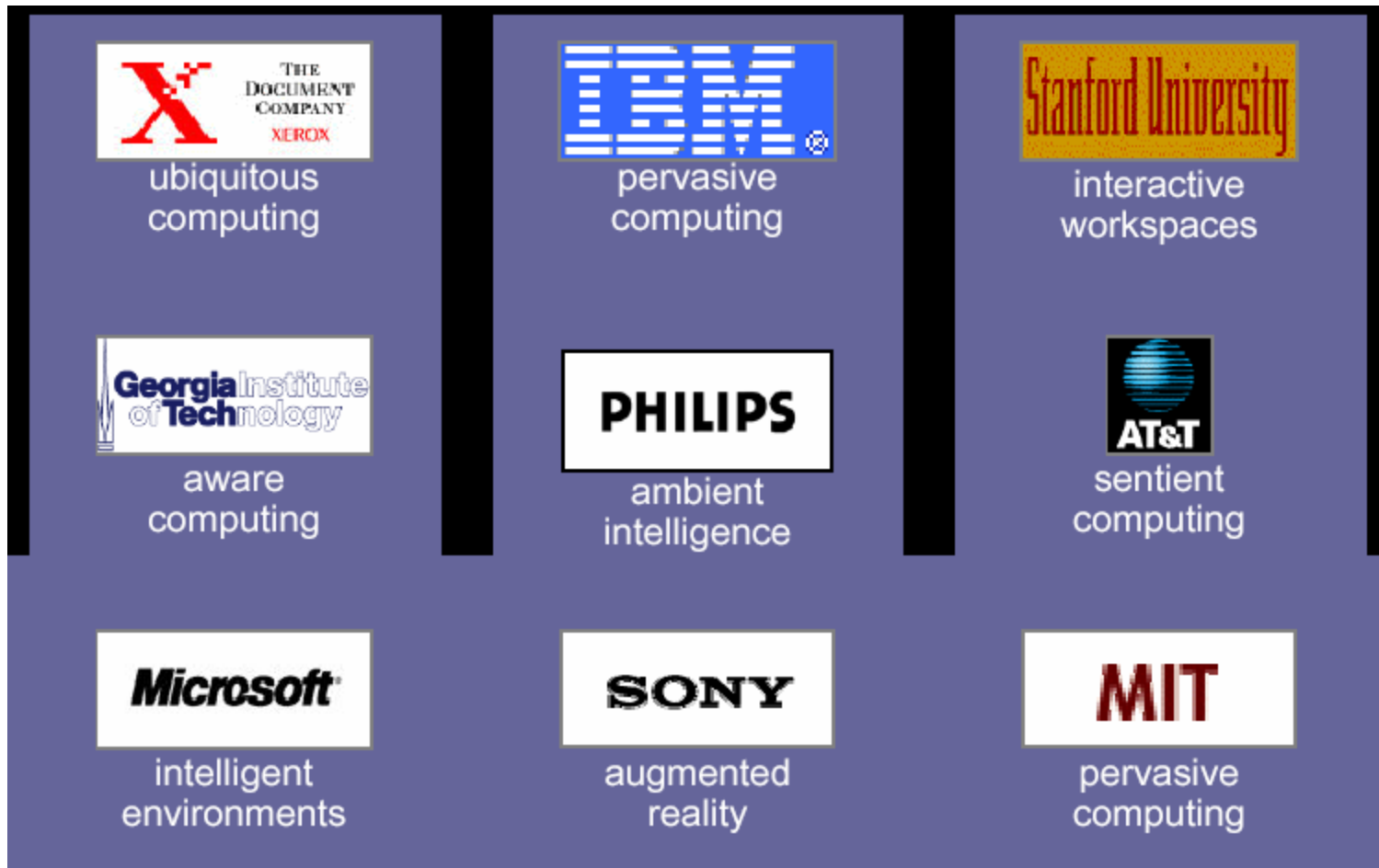


Transport



Ambient rooms and
Cooperative buildings

Worldwide Benchmark



PHILIPS HomeLab



Ambient Intelligence

Ambient Intelligence defines how Philips envisions the future. It describes technology that understands and anticipates your needs and reacts appropriately. All of the prototypes being tested at HomeLab are Ambiently Intelligent because they put people at the center of their functionality. The prototypes can "think" on

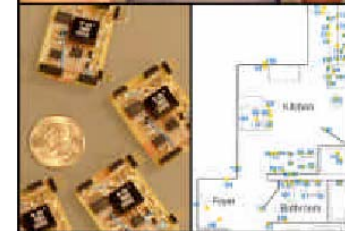
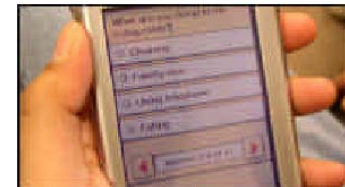


their own and make your life easier, by acting with subtle or no direction. Ambient Intelligence technologies will be in your home, your car and even on you personally in the form of wearable electronics. Philips believes that the concept of Ambient Intelligence will be pervasive in our lives by the year 2020, if not sooner.

Click here for more on Ambient Intelligence



MIT house_n



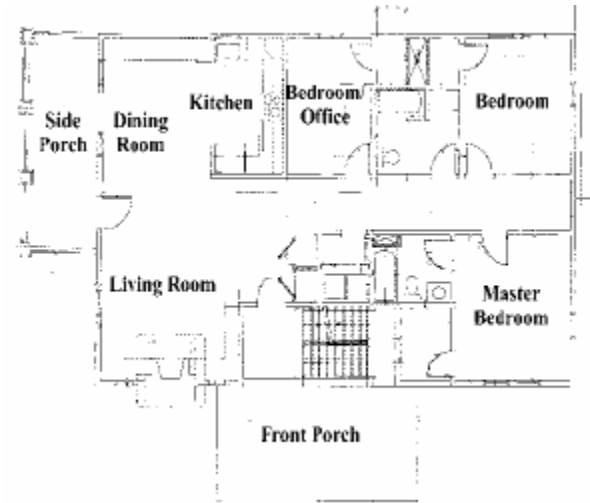
Georgia Tech's Aware House



Technology Research Central



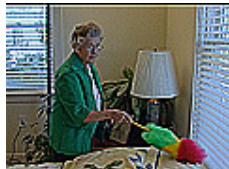
Digital Family Portrait



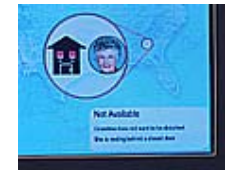
Aging in Place



Gesture Pendant

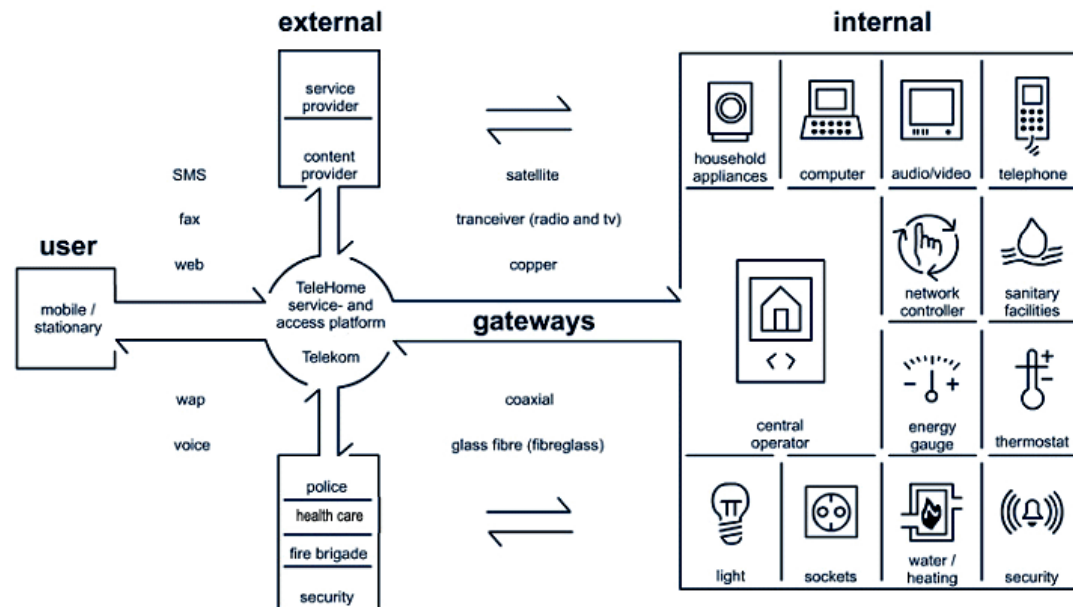


Graying of America

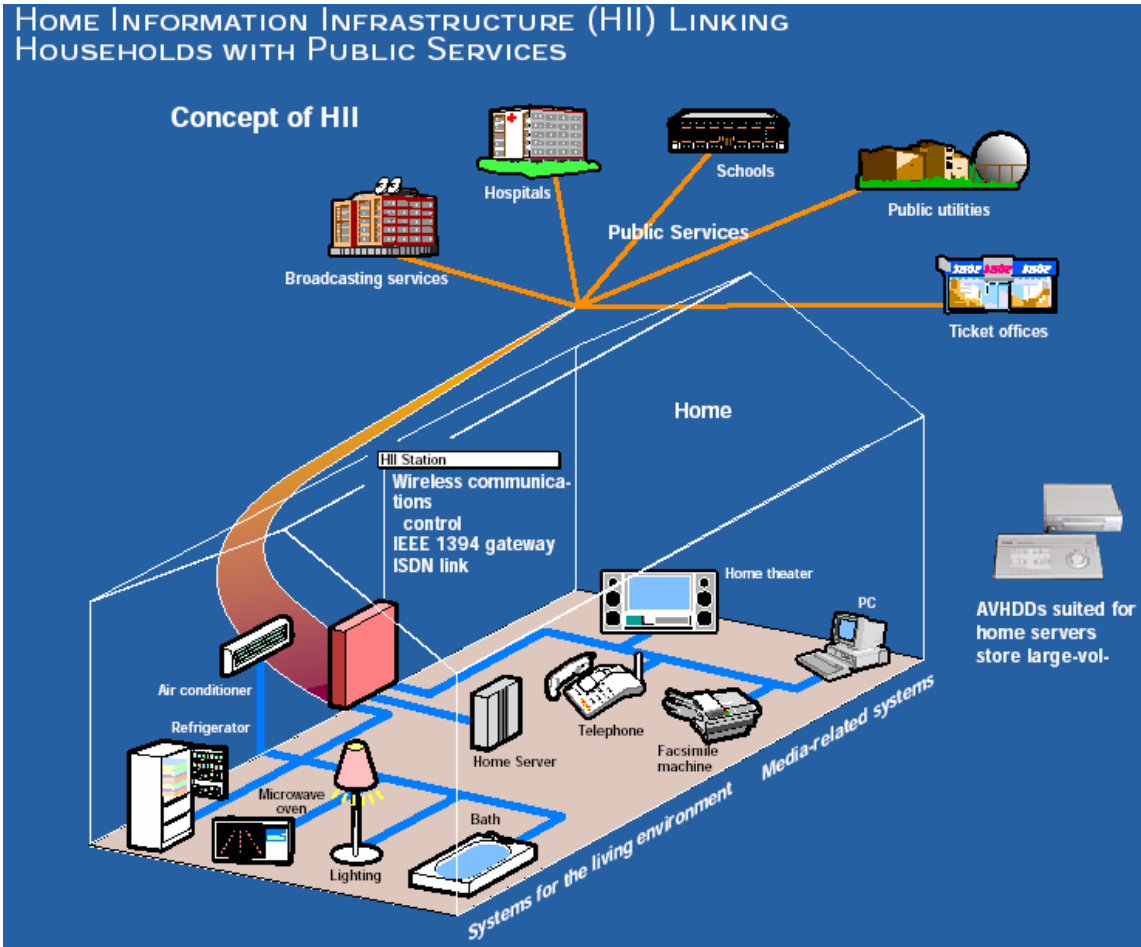


Family Intercom

Fraunhofer's in-haus



Panasonic's HII



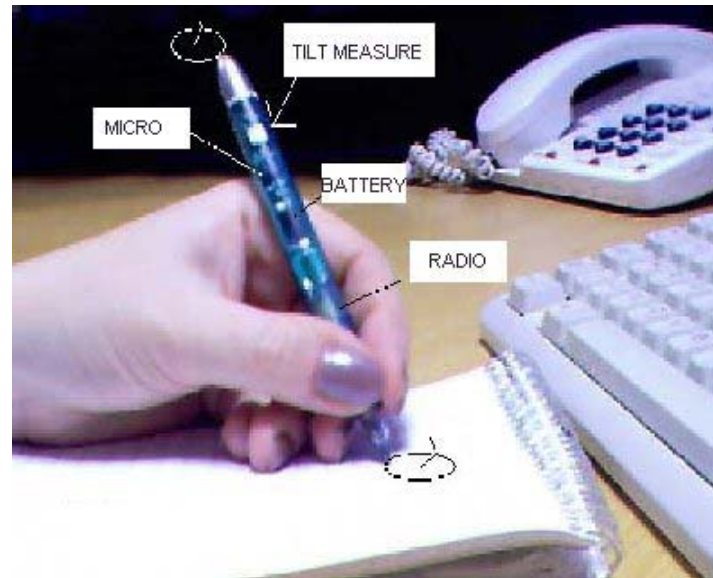
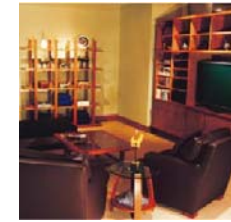
FhG-IPSI Roomware



The Roomware® components were developed in the AMBIENTE-division at GMD-IPSI in Darmstadt as part of the i-LAND environment (Streitz et al, 2001). Roomware® results from the integration of information technology into room elements as, eg, walls, doors, and furniture.



Microsoft Research



Office and Home of the Future



Bill and Melinda Gates' \$97 million house

- **Main characteristics:**
- Home automation is defined as a process or system which provides the ability to enhance one's lifestyle, and make a home more **comfortable, safe and efficient.**
- Home automation can link lighting, entertainment, security, **tele-communications, office automation,** heating and air conditioning into one centrally controlled system.