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PROJECT RESULTS

Ambient ecologies in the home

A vision of personalised connected living based on insights into the way people really behave

In the near future domestic consumer electronics systems will behave much more like an ecosystem of products and services than a well-defined discrete structure. The AMEC project set out to explore how an adaptive and intuitive-to-use ambient ecology of digital products, content, applications and services could support domestic life in the connected home of the future. A series of demonstrators running different people-oriented application scenarios verified the framework that has been developed, based on interconnecting stand-alone devices.

As digital technologies become increasingly pervasive, we may well, within the next decade, find ourselves living with almost invisible, interactive systems creating an 'ambient intelligence' that will form an intrinsic part of our everyday life. The implications of this development are far reaching for individuals, businesses and communities alike.

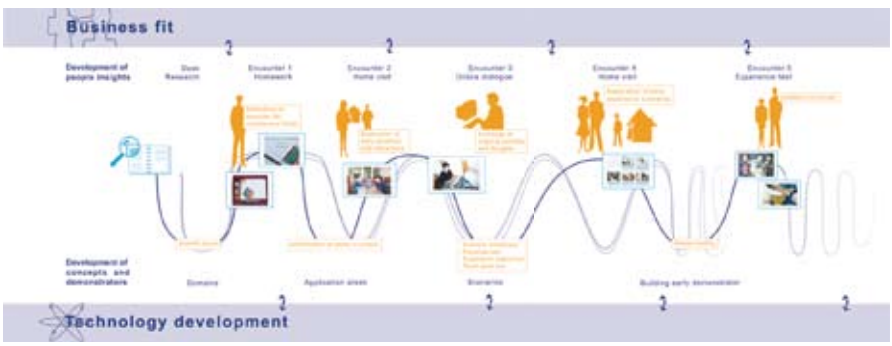
Ambient intelligence could generate great opportunities. But, as with all advances, the technology itself is neither good nor bad; it is how we might use it that will make the difference. Right now, the main challenge is to guarantee that the new ambient intelligence technologies are appropriate, sustainable and that they meet people's individual and social needs.

People-driven approach

AMEC therefore set out to study people's everyday domestic routines and natural behaviour and asked how these experiences could be enriched through interconnected, networked products, applications and services. Visions of connected systems are nothing new of course. Where AMEC differs is that it takes a people-driven approach.

One of the major accomplishments of the project has been the development of a methodology for people-driven innovation: the Multiple Encounter Approach (MEA). The idea is to try to understand what people want and need in order to incorporate these insights into the development of early experience demonstrators that represent Ambient Ecologies of the future.

The methodology integrates socio-cultural, ethnographic research with concept and experience testing at people's homes. The approach



Multiple Encounter Approach

AMEC (ITEA 03016)

Partners
European Software Institute
Fagor Electrodomesticos
Ibermatica
Ikerlan
Institut Cerdà
Mobilera
Philips Design
Telefónica I+D

Countries involved
The Netherlands
Spain
Turkey

Start of the project
November 2004

End of the project
October 2006

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consists of multiple face-to-face and online encounters to involve users throughout the creation process and thus make the process people- rather than technology-driven.

Middleware-based framework
AMEC has developed its own middleware – the AMEC Framework – based on the application scenarios derived from the creative process described above. This framework can be run on a domestic server, Microsoft Media Center, set-top box or personal-computer-based platform.

The specificity of the framework is its interoperability across all forms of domestic networked equipment that can be referred to as AMEC Nodes. These have little or no intelligence, and range from light bulbs and thermostatic controls to domestic appliances such as smart refrigerators.

AMEC ecology

Naturally, the framework is open and extendible, and it supports smart and easy application development by third parties.

Series of demonstrators
A series of demonstrators have been developed that exhibit the potential of connectivity between various devices, digital content, applications and services. The final ambient ecology consists of ten different devices plus a conventional TV set used as an entry point to the domestic server on which the AMEC Framework runs.

Devices range in functional complexity from the multicoloured SenseLamp and AmbiLamp devices and the single function OpenFrames display through the smart refrigerator and LifeBook to a number of richer applications running on a personal digital assistant (PDA) or smart phone.

A variety of scenarios can be played out on the demonstrators, based on two distinctly different user 'personas' developed from the MEA methodology. An important feature of the AMEC approach is that all of the devices are intended to operate as stand-alone elements. Devices that enter the ecology are enabled, via the AMEC Framework, to enter into, or collaborate in, the various connected applications and scenarios.

Major project outcomes

Dissemination
- 11 publications and 15 conferences
- One publication awarded 'best international paper'

Exploitation
- 10 tangible demonstrators integrated into final experiential prototype ecology
- The AMEC Framework: an interconnecting operating system developed and successfully integrated into the prototype ecology
- A number of demonstrators exhibited at IFA 2006 in Berlin (225,000 visitors). The demonstrator was also mentioned in a keynote speech by the CEO of Philips Consumer Electronics division
- 26 separately exploitable assets identified: knowledge, new tools and methodologies, new products, application and services, brand image, IP and licensing
- Various product features and interaction principles already incorporated into company product development roadmaps
- The methodologies developed are furthering partners' individual approaches towards people-centred innovation

Standardisation
- Contribution to the Web4CE standard (CEA 2014), published in June 2006

Patents
- Four patent applications filed

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