ITEA
INFORMATION TECHNOLOGY FOR EUROPEAN ADVANCEMENT

PROJECT RESULTS

Adaptive networks and services

For mobile use and highly personalised environments

Both wireless and fixed networks are rapidly converging towards an IP-based packet network approach. This introduces new complexity into communications by providing multiple voice, data, video, virtual private networks (VPN) and other advanced services on a common backbone. The internet is evolving towards provision of user-specific applications and Quality of Service (QoS) levels, requiring efficient, adaptive network utilisation, service agility and increased manageability.

Dealing with user preferences
Strongly related to mobility is the concept of a user profile. This contains specific user preferences for graphics, applications, personal or professional data, and so on. Also, from the network/service provider's point of view the user profile should contain security or QoS levels (determined by service level agreements). With regard to mobility, coherent distributed management of data is needed so users are provided with the same level and scope of services regardless of terminal type or their geographical location.

Adaptive service platform
ADANETS thoroughly investigated the scope of problems related to mobility in applications and in network services. This resulted in an intelligent platform with adaptive and flexible properties, enabling the provisioning of customised mobile entertainment services and facilitating service continuity, both for home (consumer) and in-car environments. Such a platform with the required QoS guarantees is necessary to ensure automated service provision mechanisms over heterogeneous networks.

ADANETS has developed a service/network control model with adaptive properties enabling the provision of mobile services and end-user applications. For example, when an application is ported from one device to another, it has to adapt

Major project outcomes

Dissemination
- 17 communications in peer-reviewed international conferences and workshops
- five publications in magazines (CE and networking domains)
- two dedicated annual workshops with participants from related projects within IST, Eurescom, RNRT, MEDEA+

Exploitation
- validation of the advanced network and service management solutions, transferring them to the industrial life cycle
- proven applicability of the profile/ontology related issues in real life cases for mobile user
- enhancing CE components, product development platforms and iTV middleware stacks after an experimentation of broadcast and broadband technologies

Standardisation
- DVB contributions; IETF drafts in working groups: NSIS, Policy, PPVPN, IPPM; TMF: NGOSS architecture

Patents
- DVB/TV Anytime licensing arrangements (Philips)
- Enabling component for policy-based management system (Alcatel)

Spin-offs
- Philips Softworks

ADANETS (ITEA 01001)

Partners
Alcatel
Fiat Research Center
Nokia Research Center
Philips Digital System Lab
Targasys
University of Paris
Vinco

Countries involved
Finland
France
Italy
The Netherlands

Start of the project
January 2002

End of the project
December 2003

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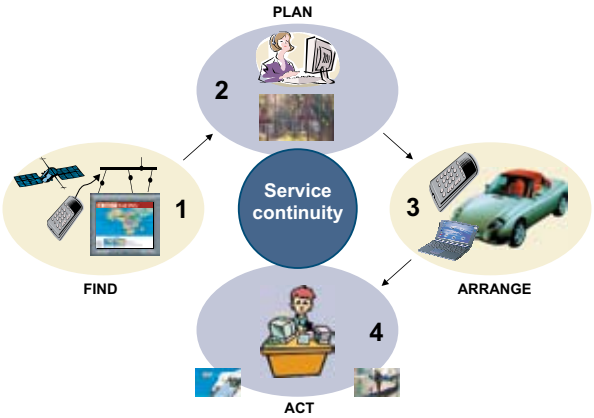
its user interface, the resource capabilities, and the type of content it can handle. Investigations were made to adapt middleware and application behaviour to varying circumstances and to interconnect devices, in the most transparent way to the users. Furthermore, the service control model plays a central role in managing the mobility of end-user applications with the required QoS.

The project has also defined a unified profile with information for content providers to better target their clients, and for network service providers to apply appropriate service management policies.

Transcending network barriers
Mobility is key to the new public network. Customers should be able to access their services no matter how or where they connect to the network – whether logging on from their office PC, using an application in a vehicle, or retrieving previously stored multi-media content from home media centre (PVR).

Technologies for interconnecting devices and using services over these devices, irrespective of their location, haven't been fully standardised. For home devices such as Multimedia Home Platform (MHP) boxes, distributed services are needed to enable MHP applications to use (mobile) inside-home and outside-home devices and to enable such applications to interact with remote services. Networks of CE devices have to support service customisation, security, and transparency. These concepts were proven by the ADANETS demo.



ADANETS service scenario for a family holiday

Project results
Based on its vision of adaptable service, ADANETS has defined:

- a comprehensive framework for the differentiated QoS provision and assurance for mobile applications and services, including an automated translation of high level QoS needs into network configuration by means of policy-based management;
- a platform was developed that couples broadcast content and personal profiles to internet services via media gateways in a home networking environment. This enables interactive multimedia services and the improvement of set top box functionality.

Within a family holiday scenario, an impressive set of integrated demonstrations has been developed. These illustrate essential elements in adaptive and mobile services and involve home, car, and personal environments. An illustrative scenario is where a user can access devices and services from different sites, using platforms differing in QoS and other properties, yet they can maintain consistent and personalised user interaction. The demonstration includes the user scenarios: Personalised Travel Channel, Travel Agents, Service Policy for video streaming and a Mobile Photo Library.

The project results have been widely disseminated through many papers and conference participations. The results have contributed to standardisation activities, specifically at the IETF, DVB and WWRF. Valuable exchanges with some related projects from other European research programmes have been established.

Exploitation is being performed through integration of the results into the industrial partners products, notably Philips' and Alcatel's. Thanks to the project, a spin-off company from Philips has been created: Philips Softworks.

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