MObile Video and InteractivE Services

The MOVIES project on "**Mo**bile **V**ideo and **I**nteractiv**e S**ervices" provided new interactive mobile services by combining mobile cellular and digital broadcast communication technologies. The project focused especially on the co-operation between DVB-H and wireless networks (UMTS/ GPRS, WiMax).

Main focus

Major work has been done in the following areas:

♦ Identification of the key business-enabling technologies and analysis of the impact of business models on the global architecture.

♦ Definition and development of a service delivery platform for new interactive mobile broadcasting services with open interfaces.

♦ Definition and development of inter-operable mobile service protection systems.

♦ Proactive contribution to international standardization bodies.

The figure below provides a high-level view of the MOVIES project.

Approach

The organizations belonging to the Consortium provided complementary expertise and experience to meet the objectives of the project. The Consortium consisted of a European-based network equipment manufacturer, broadcasters, telecom operators, industrials recognized for their work in this field, a public research institute, a leading organization of institutes for applied research and SME. In total there were 9 project participants from three different countries.

The knowledge and skills provided by the partners of the MOVIES consortium were fully complementary. This vertical integration offered several advantages:

♦ Improve value chain coordination,

♦ Provide technical innovation increasing the entry barriers to potential non European competitors,

♦ Provide more opportunities to differentiate the proposed services,

♦ Facilitate investment in highly specialized assets in which the different players may be more reluctant to invest without such cooperation,

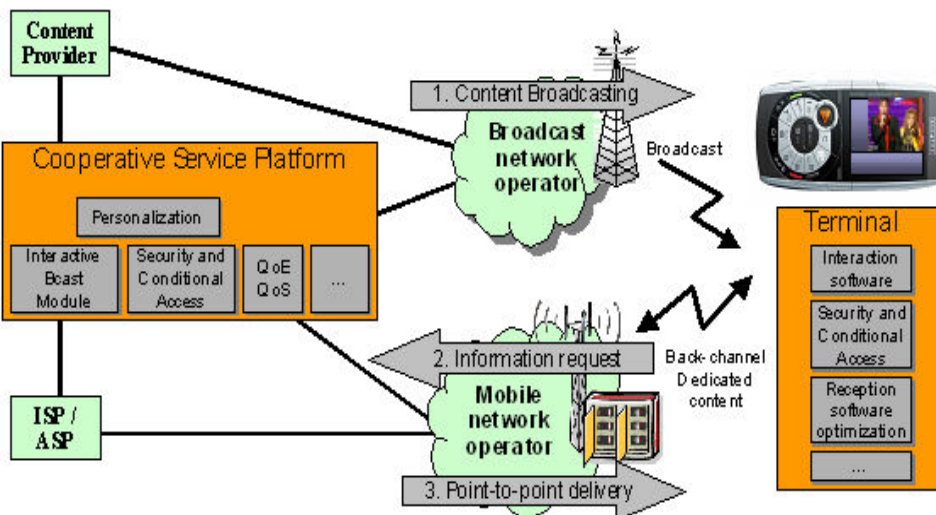♦ Lead to the increase of European core competencies in his high-potential domain.

Achieved results

Major results were performed in three areas:

Innovation

The project developed several innovative approaches in the following areas:

♦ Formal modelling of joint cellular/ broadcast business model. This de-

scribes business roles and their interactions in the overall mobile TV eco-system.

♦ Return path management for security and service delivery optimization. Definition of requirements for these return paths, relating to the different applications.

♦ Ontology-based personalization adapted to mobile-TV delivery. This is the definition of set of objects (such as channels, programs, subscribers, …) and rules applying to their relations, allowing to build a database of likely user interest for programs, in relation with their profile and the program contents

♦ Not invasive customer profiling: a mechanism building a user profile based on the history of viewed programs, where the user can control the usage of its history.

♦ Recommendation engine for programme discovery and selection: an automated mechanism based on, the above ontology, improving the TV navigator of each user according to the "likely user interest"

♦ Service and content protection: permanent access control, per user and per channel, in a consistent way for broadcast and multicast services.

♦ Roaming between different broadcast networks. Transfer of rights for users who may migrate from one broadcast network to another.

♦ SIM remote management via broadcast channel: use of the broadcast channel to update the SIM content in a robust and secure way.

♦ Statistical encoding and time slicing for DVB-H optimal reception. This allows optimal use (picture quality) of the available bandwidth by taking advantage of statistically uncorrelated bit rates (image complexity) of different channels in a multiplex, while ensuring minimal receiver consumption with time slicing.

♦ First complete experimental OMA BCast broadcast platform, including service protection and interactive TV.

♦ Analysis of different rich media technologies for implementation in a prototype.

♦ Fine synchronization of Interactive TV features in two modes: live synchronization and pre-packaged synchronization

♦ Multi-server file repair: optimized architecture for on-demand reparation of files distributed over broadcast, in the case where error rates vary highly over the broadcast footprint.

Standardization

The project partners made several contributions to some worldwide standardization committees, helping them to keep a leading edge competitive advantage for later successful exploitation of project results. Major contributions of the project targeted the following committees:

♦ OMA BCast: for service protection features: Business Models extensions, Key audit and management, Parental control

♦ DVB-CBMS (on Interactive TV synchronisation)

♦ BMCO (Broadcast Mobile Convergence Forum): for profiling of the service protection features (derived from OMA-BCast).

♦ 3GPP for some service protection features, beside the OMA-BCast scope.

Integration and demonstrator

The partners worked together to integrate the various components developed in the project on one single demonstration platform. This made it possible to successfully demonstrate new types of innovative services during the final review of the project in BCE facilities in Luxemburg. Such innovative services included:

♦ Ontology-based customer profiling

♦ Interactive broadcast services

♦ Interactivity using fine synchronization

♦ OMA BCast Smart Card Profile

♦ Massive SIM update

The demonstration platform installed at the BCE premises was especially useful to provide a "close to real life" test-bed, as the integration of MOVIES components within the global TV broadcast platform of BCE (especially with its two large scale transmitting antennas) was able to cover a large part of Luxemburg.

These large-scale demonstrators have validated all innovative components that have been developed in the project and represent a first step towards more partner-specific exploitation paths.

Impact

Mobile TV is probably one of the next hot topics for mobile network operators, broadcast operators, and content owners. The key impact of the MOVIES project has been the development of possible solutions to some open issues related to mobile TV, including:

♦ Support of flexible business models

♦ Delivery of personalized services;

♦ Interactive TV add-ons on top of mobile TV services

♦ Global service protection

♦ Improvement of global Quality of Service.

About Celtic

Celtic is a European research and development programme, designed to strengthen Europe's competitiveness in telecommunications through short and medium term collaborative R&D projects. Celtic is currently the only European R&D programme fully dedicated to end-to-end telecommunication solutions.

Timeframe: 8 years, from 2004 to 2011

Clusterbudget: in the range of 1 billion euro, shared between governments and private participants

Participants: small, medium and large companies from telecommunications industry, universities, research institutes, and local authorities from all 35 Eureka countries.

Celtic Office

c/o Eurescom, Wieblinger Weg 19/4, 69123 Heidelberg, Germany

Phone: +49 6221 989 405, e-mail: office@celtic-initiative.org

www.celtic-initiative.org

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