

Innovation Reports

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CAM4HOME

(ITEA 2 – 06017)

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Improving and personalising the home multimedia experience

The ITEA 2 CAM4HOME project has created a common metadata-enabled content delivery framework to allow end users and commercial contents providers to create and deliver rich multimedia experiences in the home. CAM4HOME simplifies access to and sharing of all contents of specific personal interest with any terminal through any network and through peer-to-peer networks. It exploits a novel concept of collaborative aggregated multimedia to create individualised multimedia contents bundles that can be delivered as semantically coherent sets of content and related services over various communication channels.

Until recently there has been little or no interaction between broadcast TV, broadband Internet TV and mobile TV networks and services. As a result, dedicated content provisioning is required for different networks and user devices, leading to unbalanced services and difficulties of sharing content between TV, personal computers (PCs) and mobile phones.

CAM4HOME set out to develop a 'create-once, deliver-anywhere' approach to enable ubiquitous access to any contents on any device through all networks. The project has simplified access to all content of specific personal interest with any terminal through any network and enabled easy sharing and collaboration

with multimedia contents regardless of the terminal or network in use.

The CAM4HOME approach represents a move from passive consumption to interactive community-based experience and finally the benefit of rich multimedia experiences. Applications considered include:

- Enriching broadcast TV with additional content obtained from the Internet and providing links and interaction with such contents;
- Using metadata to enable personalised coverage of a major multi-sports event with individualised reports of concurrent events combining live and recorded coverage as well as background information; and

- Sharing of computer games with recommendations, analysis and ratings by social groups.

ENABLING INTERACTIVITY BETWEEN NETWORKS

The ITEA 2 project set out to allow interactivity and facilitate multimedia content delivery between heterogeneous networks, user devices and users in social networks while easing user operation for various services. By enabling exchanges between video, HTML web pages and mobile contents, CAM4HOME enables rich media interaction between all devices.

The main benefits offered by rich media services and multimedia deployment in the digital home are the

possibility of developing personalised search and aggregation of contents on an overall range of related media according to the user profile and the user device. It also becomes possible to provide strong links and interaction with social networks – i.e. friend's recommendations.

This personalised search and aggregation of contents is as important as the sustained growth of media contents including rich media contents, emergence of social networks and a trend to non-linear contents speeds up and impacts the partner's business plans which must build new offers to satisfy these requirements.

For partners' from the broadcast industry, CAM4HOME offers an enrichment of broadcast contents thanks to broadband connectivity. By providing true convergence at the metadata level, CAM4HOME allows the seamlessly delivery and sharing of multimedia content to any device.

For users, CAM4HOME enables seamless access and interaction to a wide range of media contents with a possibility to share and collaborate with media content.

ADVANCES TECHNOLOGIES AND METHODOLOGIES

The main technical advance was enabling the concept of collaborative aggregated multimedia (CAM) at the heart of the project, providing a common vision. This involved aggregation of contents and services (CAM Objects) into described collections (CAM Bundles) which can be delivered as a semantically coherent set of contents and related services over various communication channels to a variety of terminals.

Technical challenges lay in describing, processing and exchanging the CAM bundles. In addition, it was necessary to tackle content and metadata interoperability, cross-media and cross-network delivery of CAM content, user experience, context-aware and personalised CAM content provisioning, and the integration and use of peer-to-peer (P2P) community networks.

Advanced and new technologies and methodologies included:

- The metadata framework which acts as the binder between interacting components and allows a semantic description to ease interaction between heterogeneous contents;
- An open service platform supporting interoperable description and processing of digital content and service bundles in multimedia applications and services; and
- Domain-specific devices such as content analysis,

content adaptation and content delivery through heterogeneous networks.

COLLABORATIVE APPROACH FUNCTIONED WELL

ITEA 2 enabled collaboration at the European level with a focus on commercial exploitation. The project was nurtured initially by VTT with the help of several partners and involved 21 partners from 6 countries in all. Grass Valley was proposed and accepted as project coordinator. ITEA 2 offered an ample level of networking between partners thanks to events such as the ITEA Project Outline days, annual symposiums and workshops.

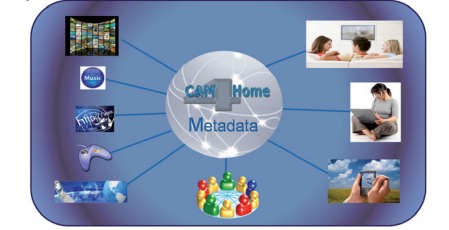
The collaborative approach adopted by all partners to develop and clarify the original concept has influenced the architecture of the system. At the beginning, a lot of face-to-face meetings enabled the partners all to speak the same language, as some came from the fixed or mobile telecommunications industry, others from web and broadcast domains, and others again from research organisations – all with different standards and references. So there was a strong need for a shared common vision and mutual listening.

CAM4HOME marks a step forward in the user-model transformation, with users moving from passive to active as digital multimedia producers and actors. The first trials are already running and the initial applications should be deployed in 2011.

Applications already developing include:

- Personalised casual online gaming with Facebook-like updates, games ratings and new friend notifications for the PELIKONE games portal in Finland, based on the CAM4HOME concept and model;
- Synchronised content aggregation for on-line business services already being exploited to improve VideoNavig management of live webcasts linking speaker video with content such as PowerPoint slides, summaries and list of speakers;
- Live sports events production with automated media asset management being developed for the 2012 London Olympic Games to simplify classification of information and enable synchronisation of different video and data sources in real time;
- Enhanced TV-centred user experience with personalised video-on-demand (VOD) contents, personalised electronic programme guide (EPG) and interacting with social networks and web contents – such as details of films, etc.; and

Easy access and sharing of all content and services that interest you...



...with any terminal through any network!



- Sharing contents between fixed and mobile devices including rich media sharing, IP Multimedia Subsystem (IMS) notification and mobile broadcasting with mediation.

Internal and external standardisation has also been encouraged with the main targets being the Digital Video Broadcasting (DVB) and Open Mobile Alliance (OMA) standards bodies. Several CAM4HOME partners have contributed to DVB CBMS, DVB CM-IPTV, DVB TM-IPI and DVB H, as well as to OMA BCAST.

More information: www.cam4home-itea.org