ITEA
INFORMATION TECHNOLOGY FOR EUROPEAN ADVANCEMENT

INNOVATION REPORT

Ensuring transparent service continuity for mobile communications and media services

Project leader: Linas Maknavicius (Alcatel-Lucent Bell Labs, France)

The SUMO project resulted in a choice of easy-to-use solutions offering transparent and seamless functionality for uninterrupted mobile services when switching networks. The aim was to ensure live services such as voice or video entertainment remain accessible, regardless of the underlying communications infrastructure, in environments where different wireless-access technologies are in use. Extensive business-case modelling made it possible to identify specific needs in corporate and private markets and develop ways of ensuring continuous access to relevant tailored services through mobile and wireless networks whenever needed by users on the move.

Transparency of use and seamless connectivity are significant requirements in future mobile applications, with most interpersonal and professional communications becoming hybrid wireless. Whether in trains, cars, airports, offices, meeting rooms, home or on holiday, people want to access services without worrying about the 2.5G, 3G, wireless local area network (WLAN), WiMAX or xDSL connections available.

Key motivations for SUMO service continuity were current trends within communications technologies and markets, including:

- The growing abundance of new high capacity and wireless networks;
- The rise and proliferation of advanced services, and users' expectations for added features;
- Changes in value networks;
- Developments in software technologies; and
- Device convergence, especially the growth of the multimode terminal market.

Indeed, according to market forecasts, fixed/mobile convergence (FMC) services are set to increase at a compound annual growth rate (CAGR) of 173% until 2011.

Enriching communications services

Universal communications are continuously being enriched with instant messaging, personalised rings, video streaming and conferencing. All of these interpersonal, media and Internet services can be consumed using various terminals – such as multimode smart phones, personal computers (PCs),

personal digital assistants (PDAs) and TV sets with set-top boxes or media centres – employing seamless connectivity.

While various different technical solutions offer transparency and ease of use, SUMO wanted to develop 'smart' roaming, voice-call continuity and IP multimedia service (IMS) platform-based FMC solutions that leverage the power of service continuity in the market place.

The SUMO project carried an extensive business modelling analysis in two different sectors:
1. Corporate ubiquitous services – ensuring more efficiency for mobile workers; and
2. Private media entertainment – offering nomadic comfort, including switching from mobile terminal to home TV as required.

SUMO also identified two options for revenue generation through service continuity: offering SUMO for free to protect average revenue per user (ARPU) on main services; or charging SUMO per use. An internal quantitative market study on willingness to pay revealed an average 'reasonable' price per use – such as transferring an on-going session from one terminal to another – of €0.40 and a monthly subscription fee of €5.80 for corporate service continuity.

A balanced consortium of partners consisted of technology providers Alcatel, Birdstep Technologies and software company DoNewTech Solutions, and two complementary operators – mobile virtual network operator (VNO) Euskatel and fully fledged telecommunications operator Telenor – together with academic partners that contributed to dissemination and scientific work.

Tailored solutions for session continuity

The consortium developed a comprehensive software platform for unbounded mobility with features that include an efficient delivery environment, multi-level adaptation, seamless session transfer, vertical handover prediction, 'always best connected' (ABC) and other features. Switching can be done at the terminal itself using embedded intelligence as well as from the telecommunications operator platform side or a mix of both. This offers a seamless solution that meets all situations: operator, private and public.

In the trend towards 'non-stop' services, session continuity is focused on ensuring that personalised services are delivered to users in the most convenient manner, with no perceivable disruption of communication session or media streams from a user's perspective.

A functional architecture targeting the handling of SUMO system requirements has been elaborated and concerns three different levels – the terminal, the network infrastructure and the service infrastructure – that could be interoperable and complementary with each other.

SUMO innovation outpaced current FMC deployments because the SUMO project proposes an à la carte solutions set – service platform, network and home media centre oriented solutions – and covers both communications and media services.

Tangible service use case scenarios were made possible by the use of property-rich terminals with globally harmonised mobile service support and including seamless interactivity. A series of project demonstrators were elaborated: mobile seamless streaming; personal ubiquitous media access; roaming/voice call continuity; and IMS media session mobility.

INNOVATION REPORT

Reducing service churn

A key target was use of these new facilities to reduce the churn in service subscribers. At the end of 2007, several offers were tried out around Europe by operators such as Orange and BT. In 2008, Orange launched a commercial service called UNIQUE in several European countries. This provided facilities such as multimodal interfaces to allow switching from 3G to Wi-Fi at home as part of an overall monthly payment bundle, attracting several thousand customers.

A specific SUMO service provider could play a very specific role in the ecosystem by switching the on-going sessions between user terminals or even between networks. This could involve a fragmented business scenario where a dedicated SUMO provider could play a unique role but most probably this role would be performed by a telecommunications operator such as an IMS operator or service infrastructure provider, a VNO or a broadcaster.

At the same time, the SUMO approach is complementary to the software industry as these solutions could be developed by mobile handset providers, handset manufacturers or independent software houses as represented in the project consortium and also implemented and introduced to the market by the operators. So a good co-operation is possible between different types of actors.

Europe offers key growth

Market analysis indicates that seamless mobility is most important in Western Europe currently, compared with other regions in the world. The key markets for FMC are forecast to be Western Europe and Asia, with the Americas trailing. Average growth rate is estimated to be 173% to end 2011 globally – so this quite an important sector. The largest markets are estimated to be France, followed by the UK and Germany.

SUMO has also resulted in important contributions to standards as has been evident since the project ended. The issues of seamless mobility as still being treated by the 3GPP service/architecture group which is trying to incorporate them in the comprehensive 3GPP solutions.