ITEA 2

INFORMATION TECHNOLOGY FOR EUROPEAN ADVANCEMENT

expeshare

INNOVATION REPORT

Making multimedia content sharing easier on the move

Project leader: Johan Plomp (VTT Research Centre of Finland)

The ExpeShare project has improved the way consumers can use, share and enjoy personal multimedia content such as music, pictures, videos and games on the move. The results offer new ways of setting up and managing peer communities as target groups for sharing content. Innovative peer-to-peer networking technologies facilitate sharing between mobile devices while taking into account content owners' interests. Improved identification and payment solutions simplify use of commercial content and trusted services. The concepts and technologies were evaluated in pilots, and options for alternative business models explored.

Sharing content and experiences right where it happens

More and more people capture, store and enjoy treasured multimedia content in small mobile devices such as mobile phones, MP3/DVD players, memory sticks and digital cameras. Enhancing, sharing and rendering the content to relive the archived experiences often prove to be challenging. The experience is defined not only by the content itself, the user interface and the limited rendering capabilities of the mobile devices, but also by the means available to retrieve, share and manage content and the social context of the user.

Difficulties lie in:

- Automatically storing multimedia and information related to important moments in consumers' lives;
- Sharing such experiences without advanced technical skills to establish connections, and to select and pass content – requiring simpler solutions;
- Identifying the group of people to share with – easy in normal life, but complex when establishing connections for example on location in an exhibition or in a restaurant in an ad hoc network between incompatible devices; and

INNOVATION REPORT

- Sharing user-created and commercial content while avoiding misuse of peer-to-peer networks – requiring new business models for service and content providers, and to simplify and secure payments.

Facilitating content sharing

While mobile content is enjoyed by many using current devices, and sales of content in suitable formats have increased rapidly, sharing is still cumbersome and technically demanding. This is due to interoperability problems and legal restrictions. Moreover, content enjoyment is restricted by the limitations of the mobile devices themselves.

ExpeShare was started by VTT as a means to research and develop the technologies envisioned to be important for mobile service development in the near future. The project set out to resolve technical bottlenecks related to peer-to-peer networking, digital rights management (DRM) and personal assets security while supporting building and managing mobile virtual communities, such as managing identity and sharing context information.

There are a variety of options to apply DRM solutions with content sharing. While DRM protects the rights of the producers, it also makes use of content more cumbersome. The major challenges included developing suitable business models as well as overcoming general interaction problems related to the use of services in mobile settings. Such solutions had to be attractive also for service providers. Linking DRM with promotional material was identified as a particularly interesting case.
Authentication and payment solutions, especially in a mobile setting, are cumbersome – requiring memorised passwords and a series of interactions. The challenge here was to simplify this while maintaining trust to make mobile commercial services acceptable to customers. Moreover, the business opportunities for the services envisioned depend heavily on the motivation of consumers to start using them.

ExpeShare achieved its goals by focusing on three scenarios: an outdoor scenario involving capturing experiences during an event such as hiking or skiing and a hotel visit; an indoor scenario involving a visit to city nightlife; and a professional scenario focusing on an exhibition visit. Co-operation mainly took place between partners involved in the same scenario.

Major advances achieved

The ITEA project carried out three successful pilot projects:

1. **Professional**: An exhibition scenario involved the provision of services to users attending exhibitions, including registration, sharing information and establishment of ad hoc local communities. This demonstrated innovations in several different domains, such as near-field contact (NFC) and smart card applications for registration, payment and issue of e-tickets and self-organising networks for peer-to-peer streaming and file transfer – including the exchange of electronic visiting cards.
2. **Indoors**: A night-life scenario involved establishing links to a local community when staying in a hotel, finding an entertainment location matching personal tastes and needs, and, once there, viewing local play lists and voting for songs as part of the local community.
3. **Outdoors**: A leisure scenario covered participation in activities such as hiking and climbing and involved creating and sharing experiences. Users were able to produce personalised content – including photos, videos and live streaming – anywhere, anytime and securely by means of mobile devices with a network connection. The content could be published seamlessly and shared among all community peers.

These pilots demonstrated a series of major advances, including:

- **Content-creation and management tools**, particularly for mobile use, that are simpler to use and

a platform that links them with existing web-based content-management and sharing solutions;
- **Community-management solutions** offering mobile support for managing virtual identities in multiple social networking services and joining local ad-hoc communities through Bluetooth and radio-frequency identity (RFID) solutions;
- **Ad-hoc wireless peer-to-peer networking solutions** that allow establishing virtual networks between capable devices on the fly without any pre-existing physical infrastructure and deploying services for joining communities, sharing content, exchanging messages, streaming multimedia, searching, voting, etc;
- **Mobile payment** with trusted, easy-to use-services for ticketing and payment by mobile phone. ExpeShare even allows paying other people just by touching mobile phones using NFC technology and mobile phone subscriber identity module (SIM) cards; and
- **Content-rendering environment** that makes mobile devices not only useful for collecting experiences but also for enjoying them.

Feeling part of a community

The outcome of ExpeShare is a series of easy-to-use mobile services for capturing and sharing experiences. Its main impact will be in service satisfaction, easy purchase of related content and an increased feeling of being part of a community.

Three principal applications will be:
1. **Mobile social media services**, where the technology provides a mobile extension of web services;
2. **Hotel and restaurant services** – providing information to make a visit more social and allow for sharing content and opinions as well as assisting in finding the most suitable services and locations; and
3. **Exhibition and social event services** where ad-hoc services can be established by exhibitors to share content easily between participants. Simplified payment solutions would also open up revenue-earning possibilities to anyone involved.

The technical solutions will be used to enhance a range of devices and services – from robust NFC systems to better protection of digital rights in peer-to-peer networking. Commercial exploitation of the most mature results can be expected in one to two years.

Benefits for service providers and users

The consortium members sought to develop technologies that will facilitate experience sharing between users. As a result of ExpeShare, Europe will be better able to maintain its lead in mobile technologies and improve its position in social media and digital content provision, currently dominated by US companies.

Service providers can benefit from this technology through the supply of new services with capabilities attractive to users and fair for all stakeholders involved. Users can benefit through improved device capabilities, services and easier payment and, in general, by the satisfaction they get from capturing, storing and sharing their experiences with friends.

Society in general can benefit from easier-to-use mobile devices and services. As social life is happening increasingly also in the virtual world, it is important to facilitate access to this world also for less technically minded people.

More information: http://www.expeshare.org