Me and my files

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(PhysOrg.com) -- If you are fed up with juggling too many incompatible devices, European researchers may have the answer. In their 'me-centric' world, you literally wear all your data and transfer what you need to whichever device you happen to use.

It is 9 am, you have just sat down at your desk. First you check you emails on your desktop PC. Then you fire up your laptop to access a document you worked on last night. Next, a phone call (but the number you need is in your mobile's address book). Midway through your call you receive a text from a friend suggesting meeting up for lunch. He gives you the name of a restaurant, but you don't know where it is. Back to the PC to print off directions...

What a game of gadget juggling we play each day! A laptop, several

mobile phones, a personal mp3 player... Wouldn't it be great if we could just join them all up together? We could have our address book, our personal preferences, our book marks, our playlists and our favourite films - a host of personal data files and documents - all accessible on any device (not just our own), anywhere.

The solution is basic, at least in concept: you simply carry all your personal information with you. This is the idea of INTERMEDIA, an EU-funded Network of Excellence (NoE) that is demonstrating the future of multimedia transfer and multi-device interactivity.

“At the moment, all our information is highly fragmented,” explains INTERMEDIA's coordinator, Dr Nadia Magnenat-Thalmann. “It is stored on devices, on the internet, in smart cards. What we really want is for us to carry all of this with us and be accessible to whatever device we happen to be using - a ski-pass reader, the screen on the seat back in an aeroplane, our car stereo.

“We came up with the idea of a wearable jacket. It contains all the necessary ICT technology to store and transfer data between computing and communications devices. Quite simply, you carry everything you want around with you; relevant data or files can be downloaded and adapted for whichever device you are using.

Chloe to the rescue

Evidently, this level of device and media interoperability would require an enormous and coordinated change in the way devices are currently designed. So instead of trying to trigger a revolution too early, the INTERMEDIA partners decided simply to prove that the me-centric model could work.

The Network of Excellence came up with Chloe, a fictitious student at a

European university. In two storyboard scenarios Chloe makes the most of her me-centric capabilities. As she walks into her lecture hall the wearable system automatically registers her into the lecture. She downloads the lecture notes and can even control a public information board in the foyer using her mobile phone. At home, she video calls her mum using her laptop, then moves to the lounge and carries on the call using her TV. At the same time she sends her mum a video from her mobile phone.

“We based our research around these scenarios - they gave us focus,” says Nadia. This scenario-based approach is one of the reasons why the [NoE] has been graded 'excellent' by the Commission, she says. “This is foresight research, but narrowed down using Chloe to prove the concepts. The whole idea - the full concept of interactive multimedia - is not visible today.”

A total of 16 partners have collaborated to develop the numerous ICT modules: the wearable device, systems for dynamic and secure ad hoc networking, and methods for content sharing and adaptation. Combined, these turn Chloe's imagined powers into reality.

Jackets off

It soon became apparent that the iJacket would need to be replaced with something less intrusive. The NoE decided to solve Chloe's problems in three settings: at university, at home and at work. Even after one year the iJacket - which contained bluetooth, WiFi and various other ICT networking and control devices - had grown in size and was too heavy to wear.

Several partners have worked to produce miniaturised systems that can be integrated into more practical items such as watches and jewellery. The research partners identified all the necessary modules for the

wearable interface; they included sensors for movement, satellite global positioning, voice recognition and text-to-speech conversion. Each module has been well tested and there is now the scope to miniaturise these component parts into a much smaller wearable device.

Although the INTERMEDIA research teams have focused on the Chloe demonstrations, the research is far from “pie-in the-sky” futuristic technology. The partners have written 40 scientific publications between them. They are also driving major advances in the development of international standards - a critical step for the adoption of the me-centric model.

INTERMEDIA partner GET-ENTS is currently spearheading the development of the Mpeg-U standard for the storage and exchange of rich multimedia. The standard is expected to be published in July 2010. Indeed, the Mpeg-U standard is largely based on input from INTERMEDIA partners.

Gearing up for the future

“We have developed lots of different modules during the three years of the research,” says Nadia. “We have certainly made Chloe's life much easier. What we now have is a variety of modules, or cogs. They are all useful now and our partners are already exploiting them. But their real strength is when they join together - that's when the user suddenly finds they really are at the centre of their ICT world.”

More information: INTERMEDIA project - intermedia.miralab.unige.ch/

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