Developing 'broadband for all'

October 6 2005

Increasing the spread of broadband connectivity throughout Europe is central to the growth of the knowledge economy. Yet broadband technology is hardly new. So what is holding back wider implementation and investment? This is the issue at the core of the IST project NOBEL.

At the core of the Internet is a large network of optical fibres. The challenge for NOBEL is to make that network work much more efficiently, in connecting together all the growing millions of broadband users.

“[But] European network operators and telecom manufacturers are strongly constrained, because of the risk involved against investing large amounts in relatively new technologies,” says project coordinator Marco Schiano of Telecom Italia in Turin, introducing the project background. “There are already new technologies available for broadband networking over optical fibre,” he continues, “but these are not yet fully developed. So our objective in NOBEL is to facilitate the adoption of these technologies so that European telecom businesses can achieve the most effective integration at the lowest possible cost.”

The overall goal of NOBEL was to develop innovative network solutions and technologies for intelligent and flexible metro and core optical networks, and to validate these technologies to ensure their suitability for broad implementation across the EU. Providing input to the standardisation bodies (ITU, OIF and IETF) is also central to the project’s aims.

The rationale is that by working together to develop the most suitable technologies for mass-market adoption of broadband capabilities, the partners would be able to develop critical mass in markets more quickly. Because it is only when markets reach critical mass that businesses can offer broadband services to customers at a realistic cost, while customer demand reaches levels that make such services economic to provide.

In their research the partners studied technology developments over three distinct periods; progress in the next few years, developments in the medium term, and the longer-term future. For each of these periods they examined network technologies, network services, and the 'control plane', i.e. the network technologies, algorithms and protocols that enable automatic network configuration, either to meet customer demand or to compensate for faults.

However, Schiano is very clear that it is new services, rather than the technologies that underpin them, that are the key market drivers in broadband. "Beside the network development based on new technologies, we need to offer broadband services that appeal to the mass consumer market," he says.

He sees the main driver of broadband utilisation as the home PC. After that, the development of ADSL technology, and thirdly, the availability of new online services "other than just Web surfing". All these factors acting together, he says, will influence the rise or not of broadband development in Europe.

Schiano also believes that video communication will have a key role to play in future broadband services. When broadband technologies make possible the kind of online video communications that offer near-photographic levels of resolution, then we will see a sea-change in attitudes to video services. With video-conferencing that actually works from the PC, and medical consulting with video facilities that can offer

close-ups of visual symptoms, these are the kind of services that could have a real influence on everyday life.

The NOBEL partners are hosting a workshop in Turin on 22-23 November to publicise their results. Several of the telecom companies involved intend to present live demonstrations at the event of the technologies that they are developing, including broadband links between automatic network configuration testbeds in Turin, Madrid and Berlin.

Source: IST Results