



DIGITAL MEDIA

DIGITAL MEDIA, HOME AND AWAY

In less than two decades the internet has become an everyday tool at home and work. European research has slowly shifted its emphasis from getting people connected to the development of highly interactive and integrated content and services. Content is king, and European research are developing the jewels in its crown.

What a web of possibility we have in the online world today. We can write a blog and upload photos from our mobile phone, send texts from a computer, watch TV shows on a laptop (whilst sitting in a cafe), even chat with friends in Australia through a TV.

Even cinema — the bastion of ‘old world’ entertainment — is going digital: increasingly films are being produced and distributed in a digital format and delivered to cinemas online.

The evolution of the internet, and high-speed broadband technologies in particular, makes it possible for all our media channels to transfer data over the internet. And there is a growing ‘network of things’ — everyday objects embedded with chips to make them smart and ‘talk’ to each other. In short, everything and everyone is getting connected.

The idea of networked media is that you can access whatever you want, whenever you want and however you choose — on your phone, TV, or laptop. The network decides the best way to deliver the service or content you have requested.

Traditional channels like television and entirely new types of content like 3D media will be created and delivered seamlessly to any device, anywhere, through high-capacity, interoperable end-to-end networks.

USERS IN CHARGE

Previously, the network held all the power and limited what we could do. But now content and users are firmly in charge. And a high quality experience is the ultimate goal.

Thanks to ongoing European research, we are on the brink of some exciting new applications of networked media, for example virtual or augmented reality experiences that are so good you really feel immersed in your computer-generated world.

EU-funded projects have broken new ground in the concept of networked media, building and testing the core components of the forthcoming networked age.

For example, ICT research under successive Framework Programmes has been instrumental in the development of the MPEG family of standards which define how audiovisual information is coded in advanced multimedia systems. MPEG-2 has enabled the success of DVDs and MP3 is now the gold standard for audio files.

Active involvement in MPEG-4 standardisation by FP4 and FP5 projects has made it a very serious contender as the ubiquitous compression mechanism for interactive digital media and high-definition TV over the full range of delivery channels.

Long-term EU backing of the digital video broadcast (DVB) standard has now effectively made Europe the home of digital broadcasting technology.





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Networked media opens up a world of opportunity for new types of media-rich, experiential applications. It is a wonderful market for smaller technology players who, through collaborative research projects, can develop high-quality, efficient and effective content, as well as premium services for niche audiences.

Europe also supports the novel concept of 'pro-sumers' through such projects as 'Citizen media' where consumers also produce content (and services too). Europe already has a strong media content industry and wants to build on this strength.

Europe is backing the technologies that encourage highly creative and competitive environments for content production and publishing. The hope is that content, services and their networks will merge together to create something functional, powerful and compelling for each and every user.

The increasing level of interconnectivity between content, devices and delivery mechanisms will also mean that data can be shared around more easily. And with this data comes power — the power for technology to make informed or 'smart' decisions.

The idea of the smart home has been around for many years, but the EU has not treated it like science fiction. Already in the late 1990s under FP5 European projects began to explore the idea of ambient intelligence and how ICT could use this to provide 'Systems and services for the citizen'.

Since then research in this field has continued apace, exploring applications in areas such as ambient assisted living (AAL), smart homes, 3D media and digital cinema, underpinned by efforts to establish de facto standards and/or middleware that can link up diverse applications (the HYDRA project) as needed.

The full potential of networked media is hard to judge, but we can be certain that the future internet will not just deliver content, but enhance it too. Web 2.0 gives us a glimpse into what is already possible. With a strong research base Europe is preparing itself for the 'networked society' where media will be fully accessible, more engaging, and provides a more interactive, user-centric experience. ■





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PROJECTS IN FOCUS

Europe always has one eye on the future, striving to fulfil its big vision for a healthy, safe and sustainable society. For 15 years EU-funded research projects have continuously pushed the boundaries of what the internet can do, transforming it from a technology for geeks to a powerful tool for social inclusion, entertainment and much more. The user is starting to have control of a high-quality experience.

COOL AND CONNECTED...

Peer-to-peer (P2P) networking is now recognised as a key ingredient for the success of networked media.

The European P2P-Next project is working to improve P2P connectivity so that networked media can flourish. The project has demonstrated the world's first device-to-device streaming of professional quality video.

The new P2P technology allows anyone to broadcast a live video stream, from a simple webcam feed to an entire TV channel, to millions of internet viewers. It uses the 'BitTorrent' protocol, which can stream to thousands of people using the same bandwidth as for a single user.

P2P-Next lets consumers broadcast from their own homes. TEAHA, meanwhile, has developed the first open smart-home platform to allow any home device — using any technology made by any manufacturer — to interoperate and communicate seamlessly.

The system could incorporate a camera, for example, to alert you if anything abnormal occurs while you are away; you could use a mobile phone or PDA to lower the blinds, lock doors or control your set-top box and hi-fi.

The potential for linking devices and giving users more control will also help to enhance their experience of networked media accessed at home.

PICTURE THIS...

The TA2 project imagines a future where two families, who rarely see one another, are able to keep in touch because they frequently share information and experiences. Awareness systems installed within their homes allow the families to call one another at the most appropriate and convenient times, so they are able to chat rather than get a pre-recorded prompt to 'leave a message'. They also play board games with one another via their widescreen TVs and the surround-sound systems encourage banter between the families as if they were in the same room.

The enjoyment and engagement of the TA2 system could be dramatically increased if included in some kind of 3D display, such as the technology developed by the Holovision project.

A prototype of Holovision's 3D display had a resolution around 10 times better than HDTV. It could be used to tele-connect people in real time so that it feels like someone is actually present in the room, not just their voice or a 2D video image. ■

