## News

### Trends in ICT - connected anywhere and anytime

[Date: 2007-10-23]


Applications of information and communication technologies (ICTs) are varied and so is its future. Incorporated into a modern, mobile, multimodal high-speed communication system, ICT will pave the way to better safety, improved health, information and entertainment accessible anywhere at any time, according to Wolfgang Wahlster, director of the German Research Centre for Artificial Intelligence (DFKI). Professor Wahlster was speaking at the ITEA 2 Symposium on 19 October in Berlin.

ICT is the number one innovation driver and software is its fuel, Professor Wahlster stressed. And progress is being made fast. 'In the end, we will have what we call ambient network access - always on and always best connected, ad hoc networks, personal body area networks, moving networks on the plane, the train, home networks and so on.'

Professor Wahlster's vision of a home in 2012 is one of complete connectivity: 'Such a home has various SIM-cards. We have intelligent entertainment, network appliances, biometric access control, intelligent recycling, digital product memories, cleaning robots and health monitoring.'

Being connected anywhere at any time is not the only change ahead: the internet itself will also change. Today, Web 2.0 is the buzzword. Tomorrow, 'we are moving on to embedded internet services, machine-to-machine communication and then finally to the semantic web [making web content understandable to computers],' Professor Wahlster believes. He added that European projects such as Theseus and Quaero are at the forefront of this development. 'We will see a combination of the internet of things [a wireless, self-configuring network between objects], the embedded internet and the internet of services, and where we combine this, we get the next stage of the web - web 3.0.'

According to Professor Wahlster, the grand challenges for information society technologies are the following:

- 100% safe car;
- the multilingual companion;
- the service robot companion;
- the self-monitoring and self-repairing computer;
- the internet police agent;
- the cell-based disease and drug simulator;
- augmented personal memories;
- the pervasive communication jacket;
- the everywhere visualiser;
- the intelligent retail store.

'All of these challenges have a societal dimension: health and the ageing society, anywhere-anytime-anyhow connectivity, new values and services and finally safety, security, privacy and trust,' he said. However, ensuring interoperability of all of these systems is key.

Another key issue is 'green ICT' - saving energy as well as recycling ICT components. ICT currently consumes between 2% and 4% of global energy, the same amount as the airline industry. While 'without ICT the same level of productivity could only be reached with much more energy,' Professor Wahlster pointed out, the problem must still be addressed. So far, the industry has put great effort into developing low power hardware. 'What we now urgently need are the algorithmic foundations for low power software,' Professor Wahlster said.

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The ICT sector alone generates 6% to 8% of the European Union's GDP. In areas such as the automotive and medical industries, logistics and retail, more than 80% of innovations come from ICTs. According to the OECD, investments in this area contributed half of Europe's productivity gains between 1995 and 2002.

For further information, please visit:
http://www.dfki.de/web/

**Category:** Miscellaneous
**Data Source Provider:** CORDIS News attendance at an ITEA 2 conference
**Document Reference:** Based on CORDIS News attendance at an ITEA 2 conference
**Subject Index:** Information and communication technology applications ; Network technologies ; Telecommunications

RCN: 28568