




An international cooperation forum between Europe and Southeast Asia in the field of Information and Communication Technologies

■ Welcome to Euro-Southeast Asia 2006!

The **Euro-Southeast Asia ICT Forum 2006 (EUSEA 2006)**, supported by the European Commission and ASEAN, took place in Singapore during the **imbX event** from **19 to 23 June 2006**.

This unique event, sponsored by **British Telecommunications plc** , provided a platform for Europeans and Southeast Asians to foster business, research, policy and regulatory collaboration.

Over 600 of the **most influential European and Southeast Asian ICT** business leaders, researchers and regulators discussed technological advances and explored current and future ICT landscape of the two regions.



EUSEA2006 was opened by **Viviane Reding**
European Commissioner for Information Society and Media

The Added Value of EUSEA2006

EUSEA2006 CONFERENCE

Shangri-La Hotel, Singapore, 19-20 June 2006

- **Plenary and Parallel Sessions:** debating business and policy paradigms for future ICT
- **ICT training:** hands-on training by global experts
- **Networking meetings:** creating future partnerships
- **Get in touch sessions:** collaboration leading to innovation

eStrategies Roundtables Shangri-La Hotel, Singapore, 18th June 2006

British Publishers Ltd, the EUSEA2006 lead Media Partner, held a number of high level roundtable debates focusing on Mobility & Communications, and eHealth. [Read more...](#)

EUSEA2006 EXHIBITION

Cutting-edge European technologies were showcased at the **European ICT Pavilion** during the international IT trade fair, CommunicAsia-EnterpriseIT2006, Singapore Expo, 20-23 June 2006.

Find out more...



For further information, please contact the EUSEA2006 organisers at info@eusea2006.org



The Euro-Southeast Asia 2006 event is funded by the European Commission, Information Society & Media DG and organised with the support of the Association of Southeast Asian Nations (ASEAN).





An international cooperation forum between Europe and Southeast Asia in the field of Information and Communication Technologies

D5 - Next Generation Networks

Workshop Overview

Next Generation Networks (NGN) mean different things to different people, but there is broad agreement that they assume an IP-based environment, with broadband access, always-on characteristics, and multi-service capabilities in an open, carrier-independent structure.

The objective with NGN is to develop a new common architecture of networks that can evolve to handle multimedia services in an integrated and convergent way. To achieve the vision of ambient intelligence and ubiquitous communication/computing, the models and networks for content provisioning, intelligent and high-performance appliances and high-capacity network infrastructure need to converge into an integrated architecture of NGN.

The issue of availability of NGN to provide sustainable broadband infrastructure and services is therefore a key ingredient to achieve the overall objective for Europe to be the most competitive Information and knowledge-based society and economy in 2010 and further on.

NGN has been discussed and defined many times as the convergence of technologies and networks gradually has begun, and the process will be an evolution of current network technologies rather than a revolution into something new which is economically impossible.

The NGN objective need to be promoted through and converged in standardisation (or de-facto standard setting) bodies like ITU, IEEE, ETSI, 3GPP and IETF. This is a time-consuming exercise as these bodies approach the issues from different views (and investments) and their roles need to be adapted and changed to reflect the direction of a commonly agreed NGN.

A Roadmap to NGN will have to consider non-technical factors as well as general technological trends. Business Models, Societal and Economic/Political Factors generally determine the rate at which networks will evolve, since they influence the financial resources that are available, the incentive for introducing new services, and the level of governmental support. The Evolution of the Network depends on the general trends taking place in the Core and Access networks, with special attention to the optical and CATV environments.

This session will discuss the current evolution towards next generation networks and the different approaches being undertaken in Europe and elsewhere, namely:

- Ad-hoc networks
- RFID and location services
- Sensor networks and ambient intelligence
- Digital Divide
- Ubiquitous computing and communication

*This session will be co-chaired by Radu POPESCU-ZELETIN - Fraunhofer Institut - Germany and Lawrence WONG - Executive Director A*STAR Institute for Infocomm Research - Singapore.*

Workshop Programme

Date **20, June 2006**

Start time **14:30**

End time **16:05**

Location **Shangri-La Hotel Singapore**

BROADWAN affordable broadband services for everyone using wireless access networks

[Terje Tjelta](#) - Telenor - Norway

The FP6 project BROADWAN focussed on economical realistic network architectures to provide true broadband services for all, key features for low-cost next generation wireless solutions, and advanced utilisation of broadband services including solutions for rural areas. Business, organisations, education, health care, culture, and community authorities take more and more advantage of broadband services. Broadband wireless technology has, in particular, the potential of improving third world societies dramatically. Efficient wireless systems ensure that everyone can get access within a reasonable time frame. The radio solutions will be important for competition and represent an extension of the fixed network into the broadband nomadic and mobile domain. The results addresses a total solution for hybrid broadband access networks for fixed and nomadic users, dealing with a global coverage architecture, new generation adaptive equipment and automatic network planning and managements.

 **D5 - Terje Tjelta -**

[BROADWAN_EUSEA2006_D5_affordablewirelessaccess.pdf](#) (1853Kb)

Will Overlay Networks Rule in NGN?

[Jo Yew Tham](#) - Institute for Infocomm Research - Singapore


The convergence of PSTN and PSDN introduces a seamlessly blended multi-service network which supports the transmission of data, voice and video. The next generation network (NGN) will be an IP-based packet-switched network in which

the service-related functions are distinctly separated from the underlying network transport-related technologies. In the NGN architecture, the central-office (CO) functionalities will be distributed to the edge of the network thus creating a more open and flexible infrastructure that allows new services to be deployed to end users at a much lower cost to market entry. As much as new communication protocols and networks (ranging from WiMax and HSPDA to IPv6 and DVB-H) have made possible new streaming and downloading services, the proliferation of overlay networks is making its marks on the OSI Level 5 from the perspective of virtual routing and session management among communicating nodes on the edge networks. The advent of peer-to-peer (P2P) based VoIP and BitTorrent downloads provides promising evidence of a robust overlay networking architecture for the present and the future. But will overlay networks rule in future services and applications?

 [EUSEA Talk on NGN ThamJoYew.ppt](#) (691Kb)


Dr. Peter van Daele

[Peter Van Daele](#) - IMEC-Ghent University - Belgium

 [D5 - Peter Van Daele - BREAD Presentation 06-06-20 EUSEA - Parallel Session NGN.pdf](#) (1998Kb)

Dr. Radu Popescu-Zeletin

[Radu Popescu-Zeletin](#) - Fraunhofer-Institut FOKUS - Germany

 [D5 - Radu Popescu-Zeletin - PanelSINGapore.01.pdf](#) (2487Kb)

Dr. Sureswaran Ramadass

[Sureswaran Ramadass](#) - Universiti Sains Malaysia - Malaysia



The Euro-Southeast Asia 2006 event is funded by the European Commission, Information Society & Media DG and organised with the support of the Association of Southeast Asian Nations (ASEAN).





BREAD
BROADBAND FOR ALL

NGN's : What, why and EU involvement?

Peter Van Daele
IMEC-Ghent University
FP6-BREAD project Coordinator





BREAD
BROADBAND FOR ALL

The BREAD Project

Broadband Europe
Conference & Exhibition
Call for Papers

11 - 14 December 2006, Geneva, Switzerland
www.bbeurope.org

Submission deadline: June 18th 2006
Electronic submission only via www.bbeurope.org

Papers are solicited in all areas related to BroadBand Drivers & Applications, Content, Standardisation, Socio- and Techno-economic impact, Monitoring, Measurement, Regional projects & Deployment, National strategies and BroadBand technologies such as FTTx, Cable, Satellite, Wireless, PLC,

 **BREAD**
BROADBAND FOR ALL

Organised by the BREAD-project
breadmaster@intec.ugent.be

with the support of

 Information Society Technologies





Develop a **multi-disciplinary** view for the realisation of *'broadband for all'*

www.ist-bread.org

www.bbeurope.org


BroadBand Europe
Developing Technology, Developing Market Opportunities



Teleworking / e-learning



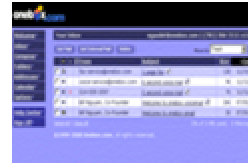
video telephony



TV and video



eCare



Unified messaging



music



home security



conferencing



gaming

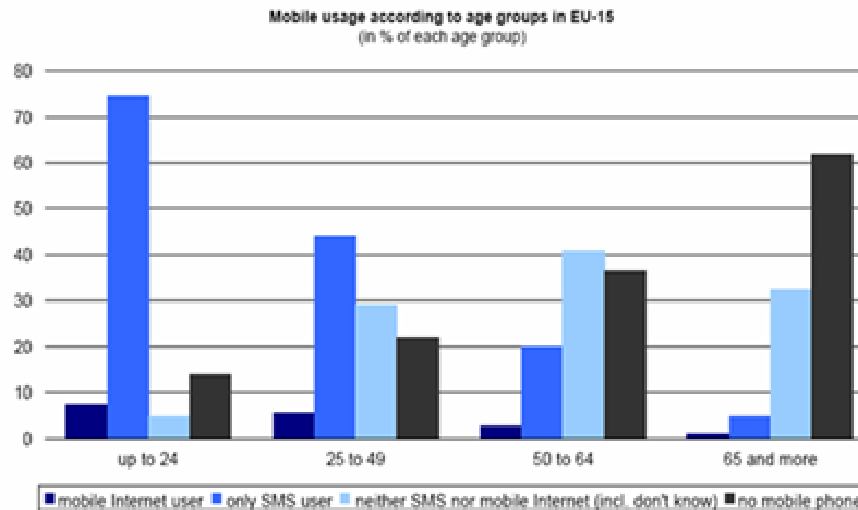
Information

Communication

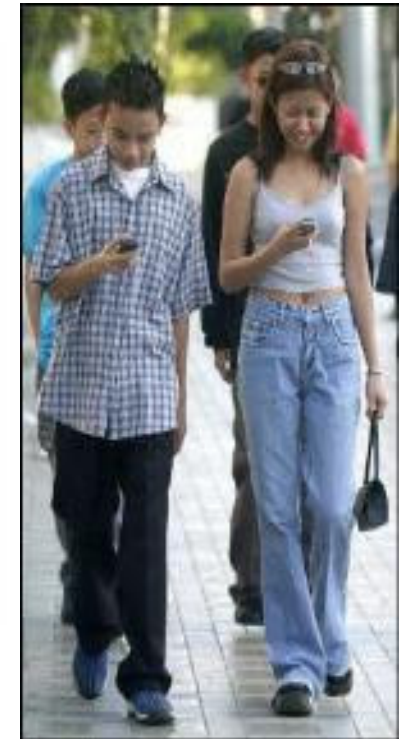
Entertainment



In the developed world, ICT has become a crucial enabling factor in the functioning of society and economy



Source: SIBIS 2002, GPS.
Base: all respondents weighted by EU15-population (N=10,306)

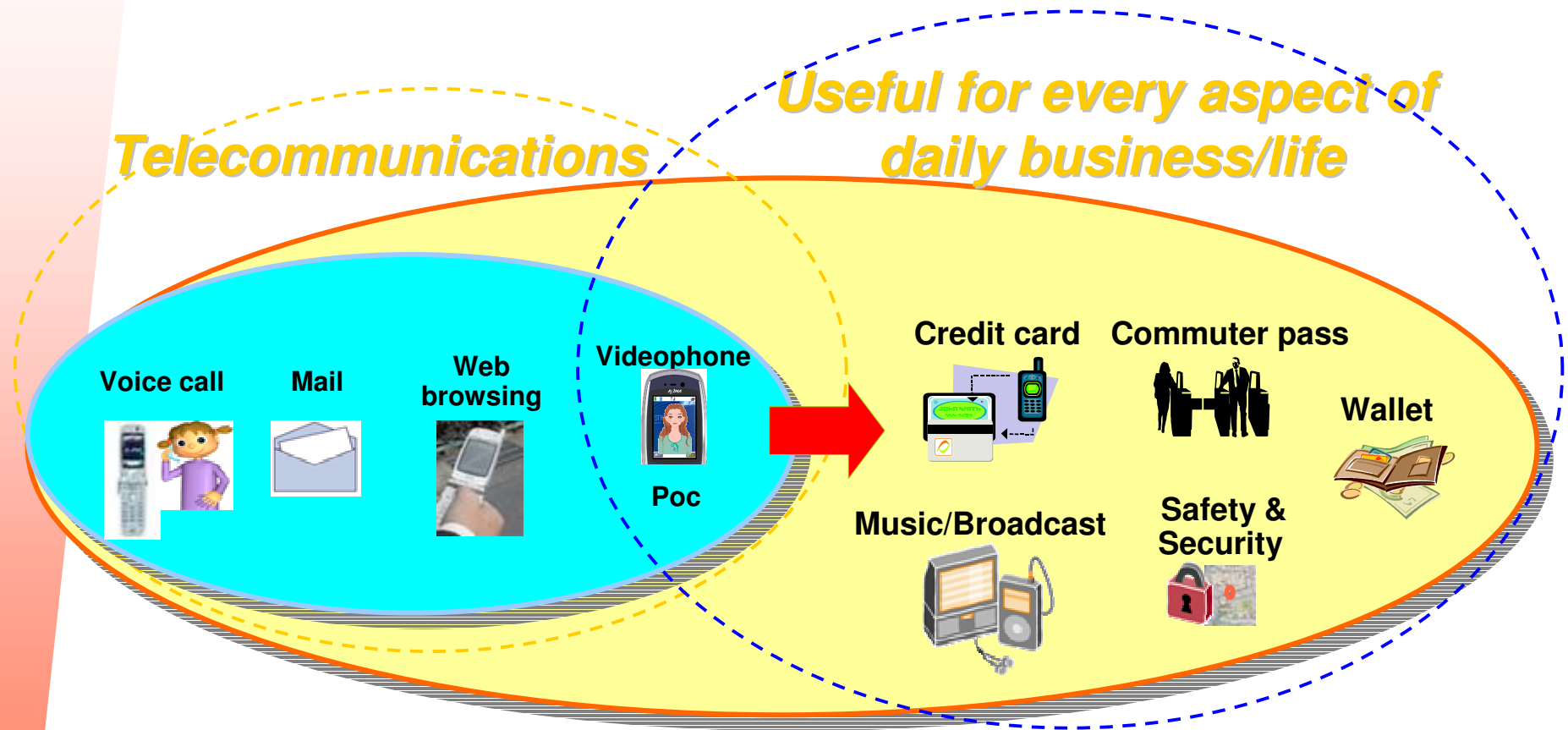


ICT has a fast growing influence on the societal behaviour of people



Challenges to the network

From “Telecom” services to “Lifestyle Infrastructure”



Sharing information empowers individuals and communities, and enables whole societies to benefit from the experience of everyone within them

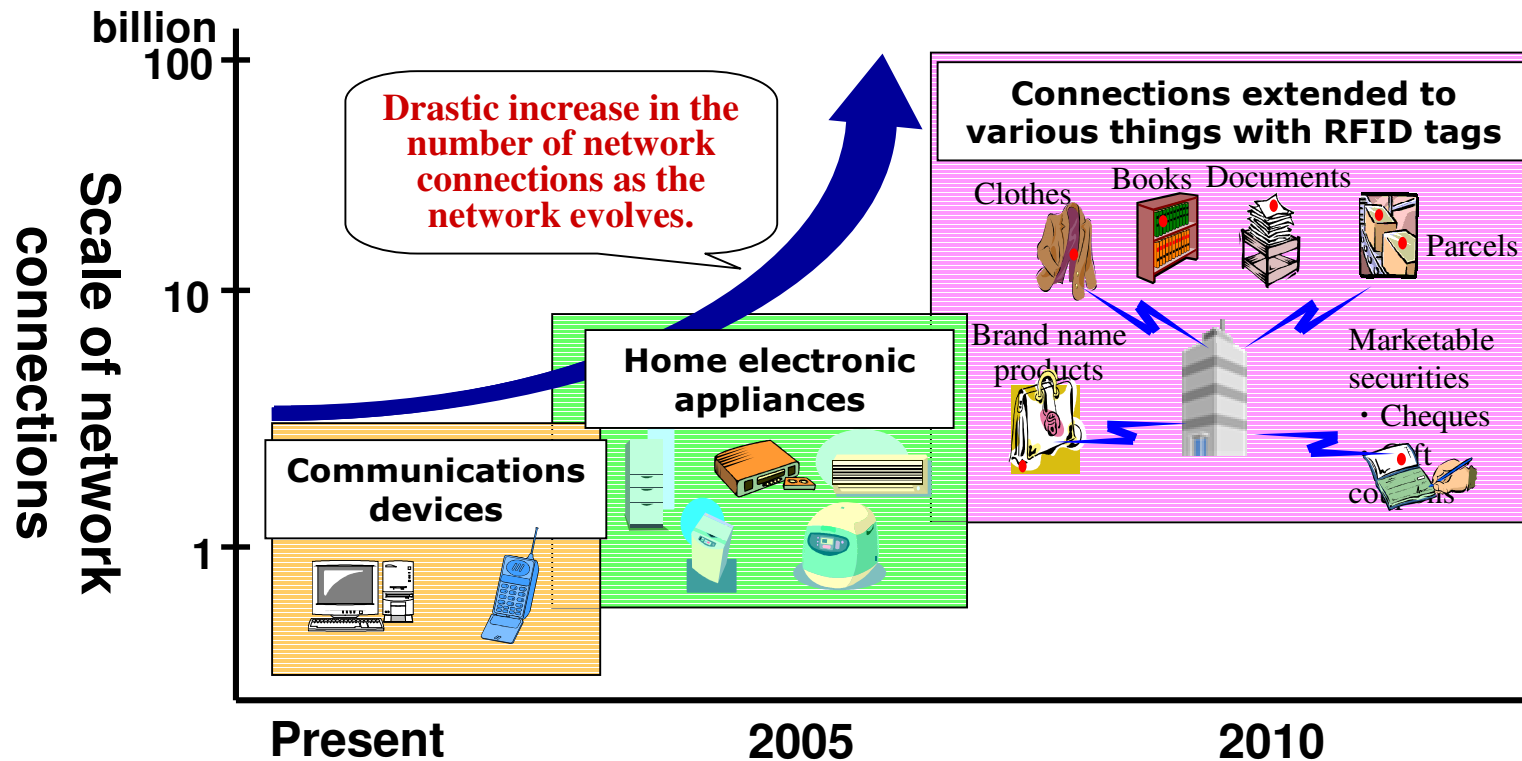
(after Dr. J. Schwarz da Silva, EU Commission)



The Internet of Objects

M2M communications:

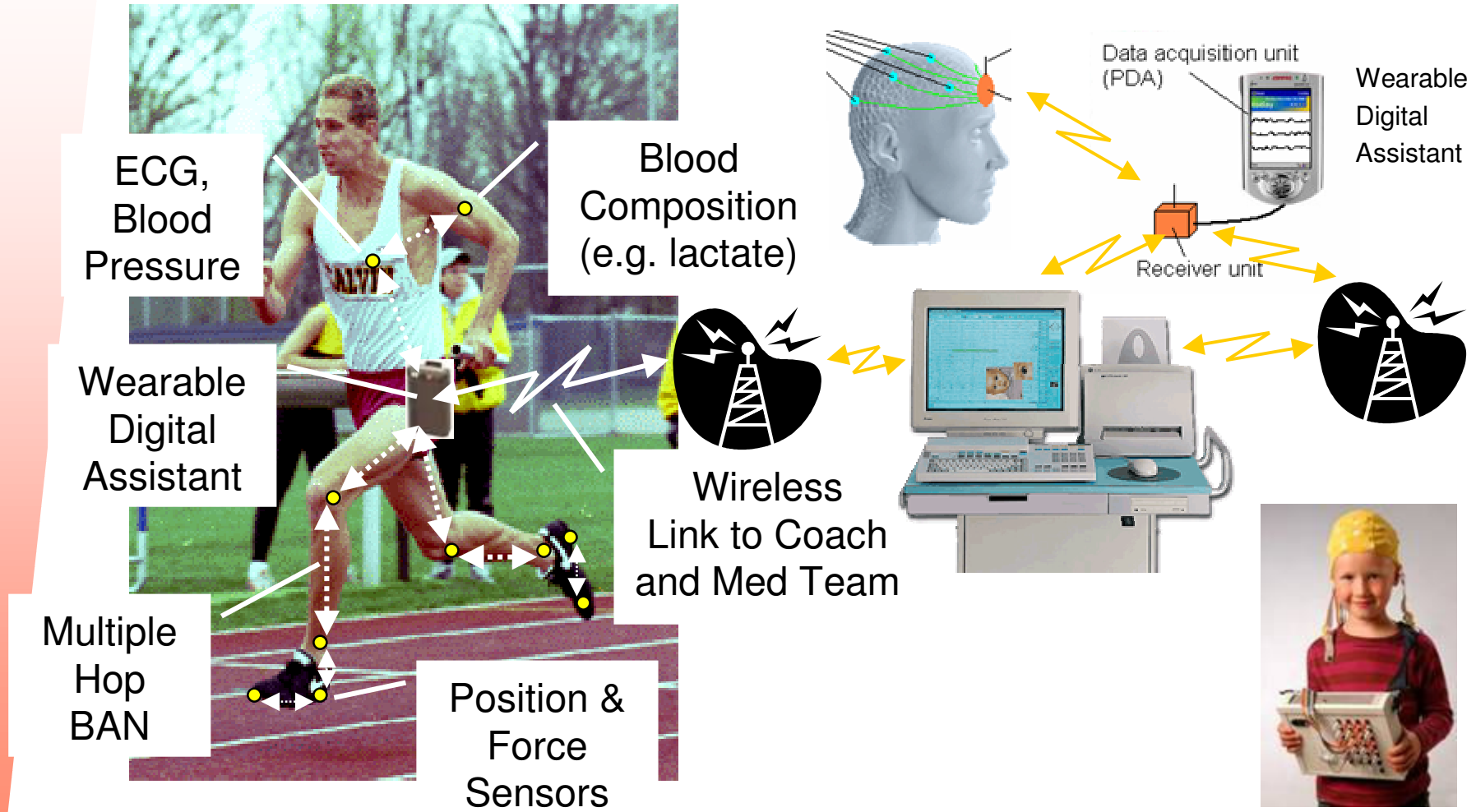
While the demands for person oriented (P2P and P2M) communications will someday saturate, M2M communications between RFID tags will create new and unprecedented amount of demands.



(after Dr. A. de Albuquerque, EU Commission)



Body Area Networks



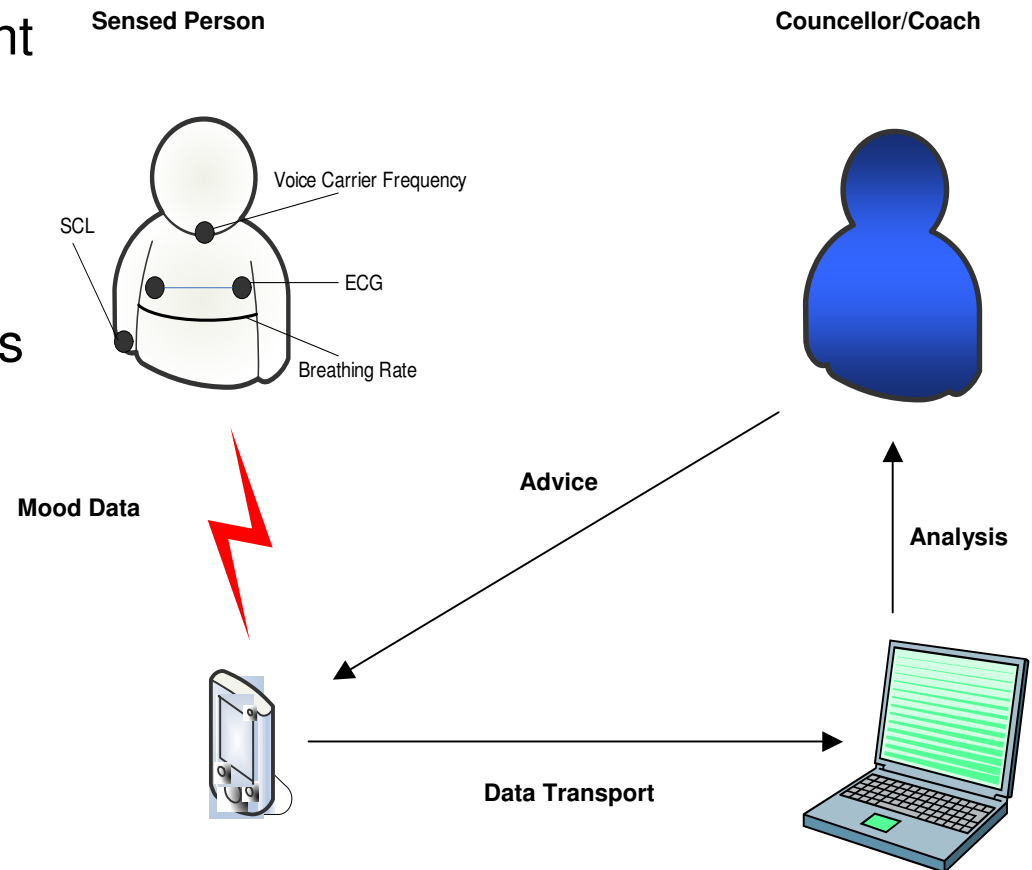
(after Dr. A. de Albuquerque, EU Commission)



Health counselling

For people who have constant fear (e.g. phobia) or suffer from depression

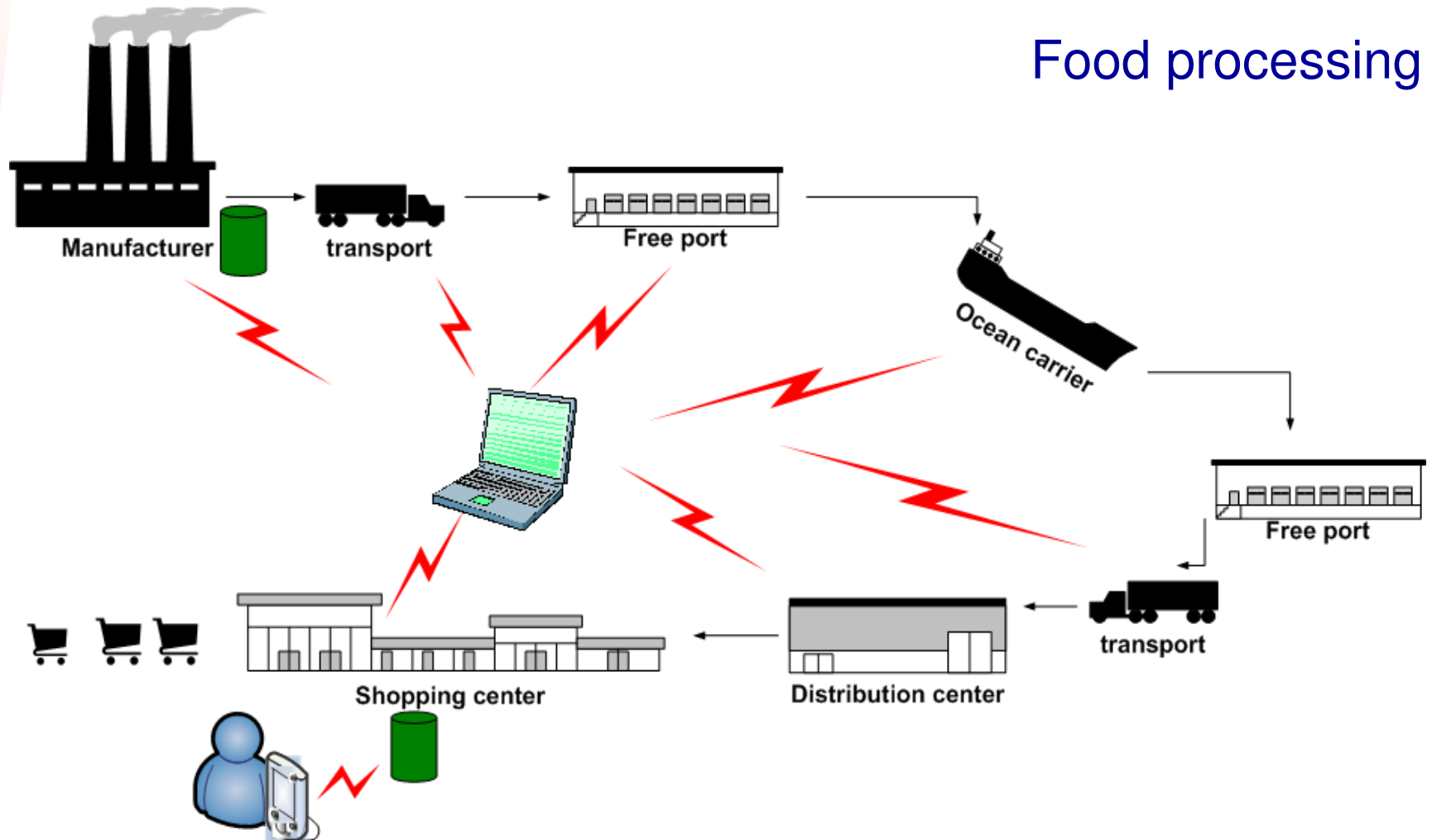
A monitoring by psychologists and counsellors to provide advice and support to overcome their worries.



Reliability – liability – security - privacy



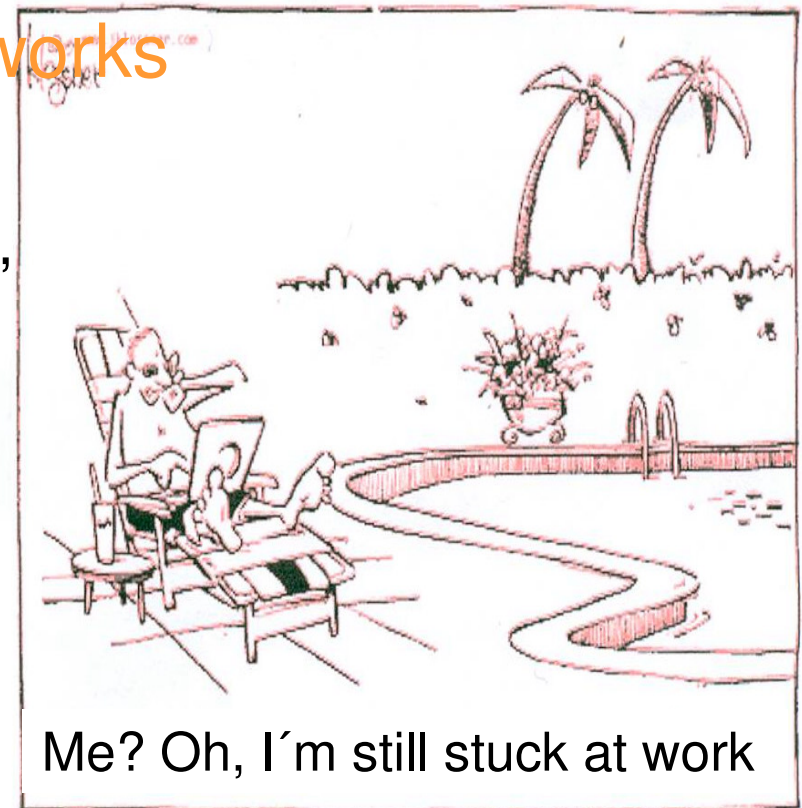
Food processing



Cost – size – integration – lifetime



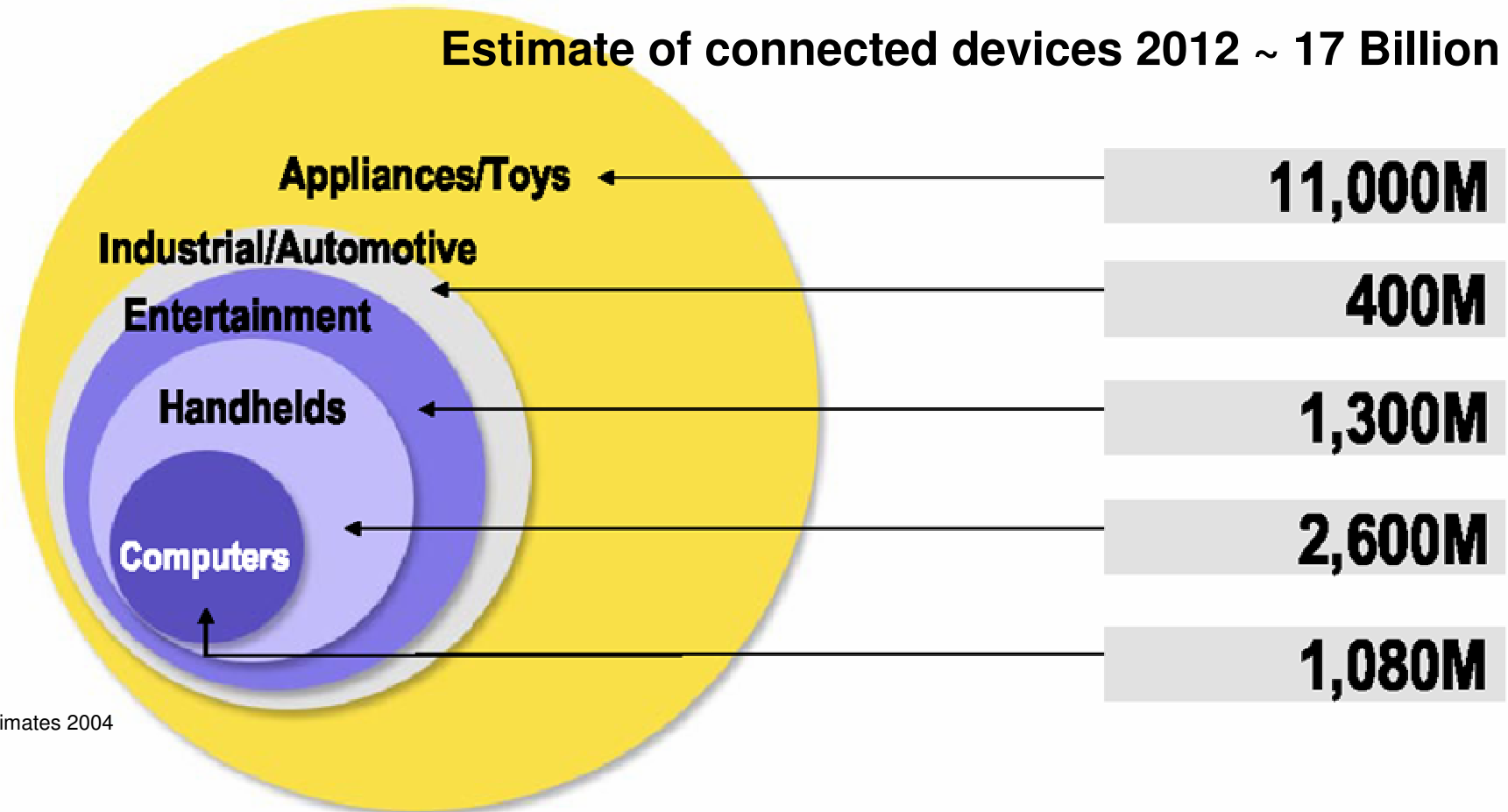
- **Person-to-Anything (Physical) Interaction**
 - leading to more natural means of interactions
- Enablers are **Sensor Networks** (actuators and sensors)
 - ubiquitous computing
 - '*disappearing technologies*'
- **Context Information** for
 - Context aware applications
 - services
 - communications





Challenges to the network

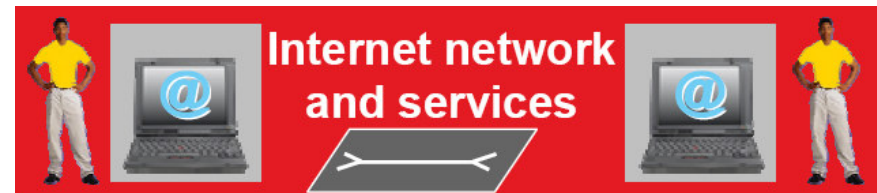
Estimate of connected devices 2012 ~ 17 Billion



IDC Estimates 2004

Add Tags and Sensors - over 1 trillion

(after Dr. J. Schwarz da Silva, EU Commission)



- Access specific terminals
- Access specific services
- Independent service platforms
- Multiple customers identifiers
- Separate billing
- Separate regulation

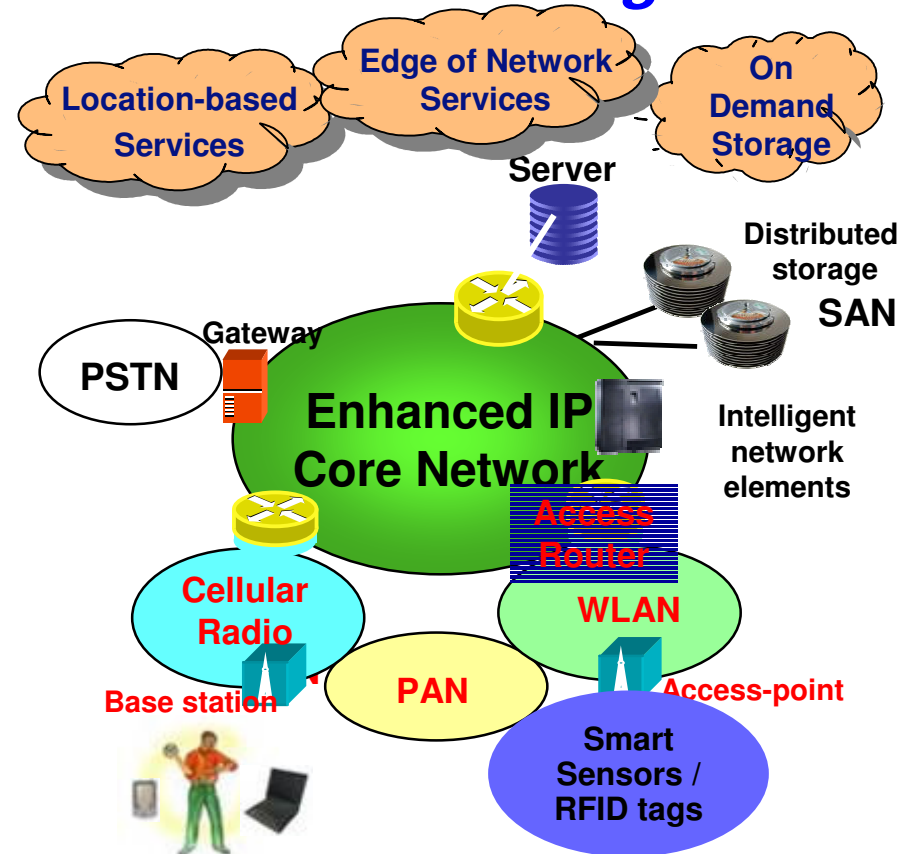
(after Dr. Phil Holmes, Motorola)



Future Converged Networks

Data, voice and multimedia will be carried over heterogeneous broadband networks running IP

- Supporting very large number and variety of devices
 - Wireless communicators: Cell phones, PDA's, pagers ...
 - Interactive "smart" sensors: health monitors, environmental sensors ...
 - RFID tags

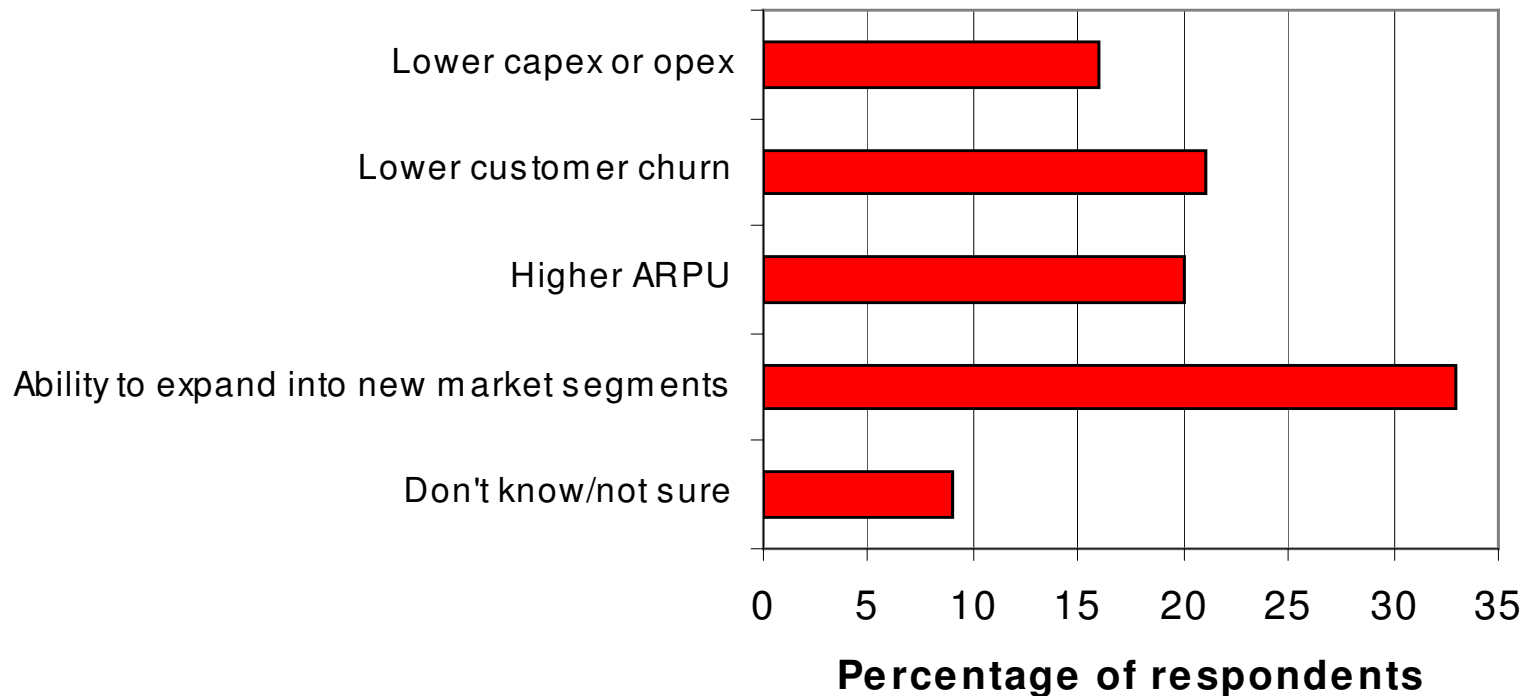


(after Dr. J. Schwarz da Silva, EU Commission)



Not a single reason to move to FMC

What is the main benefit of FMC for telecom service providers?

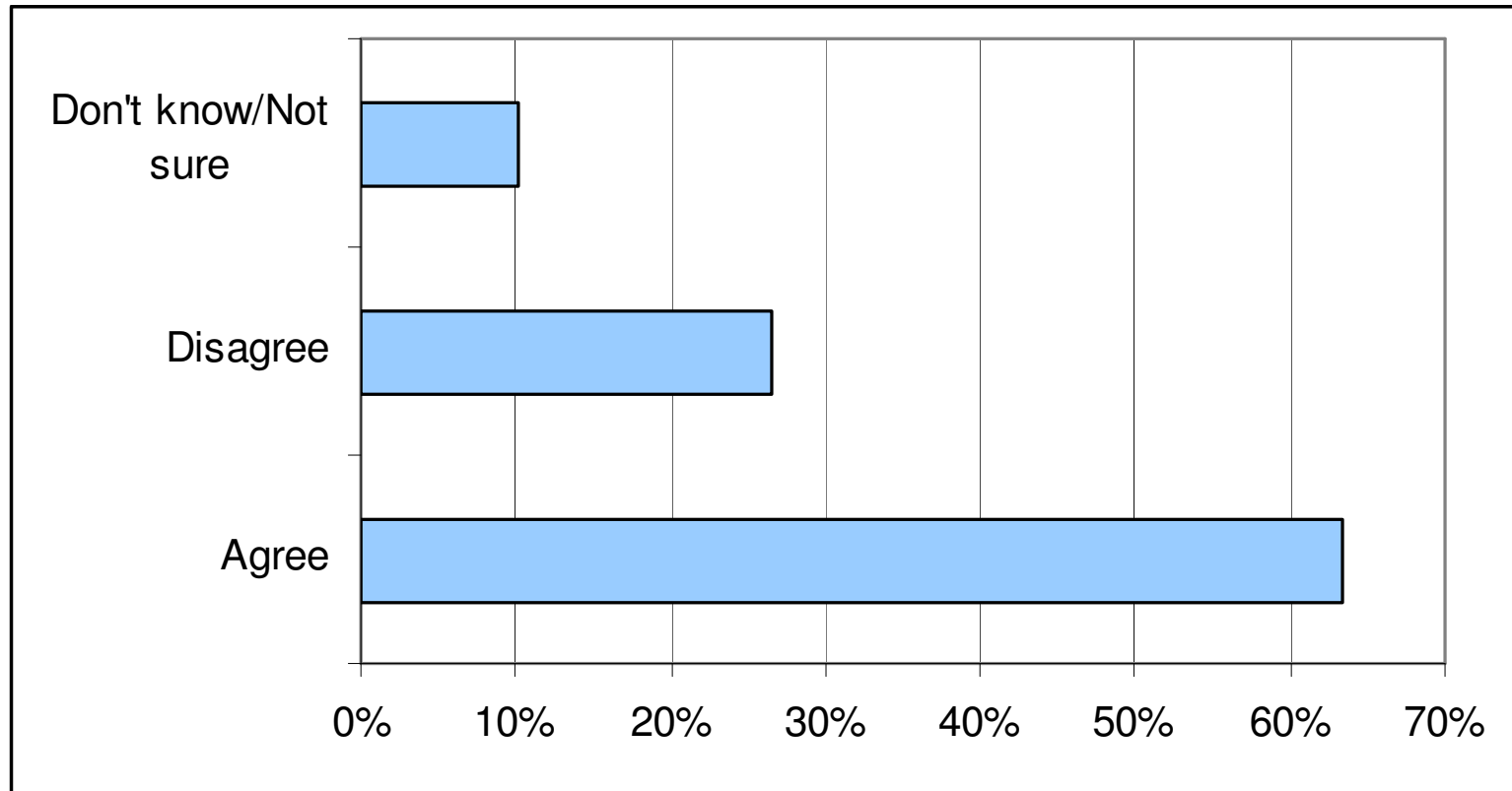


Source: Heavy Reading Fall 2005 Survey of Service Provider Technology Deployment Plans



... but all buy the vision

“Within the next decade, the first link in every network will always be wireless-cellular, WiFi, WiMax, UWB, and so on-and devices will automatically choose the most appropriate type of wireless link based on location, price, and bandwidth.”

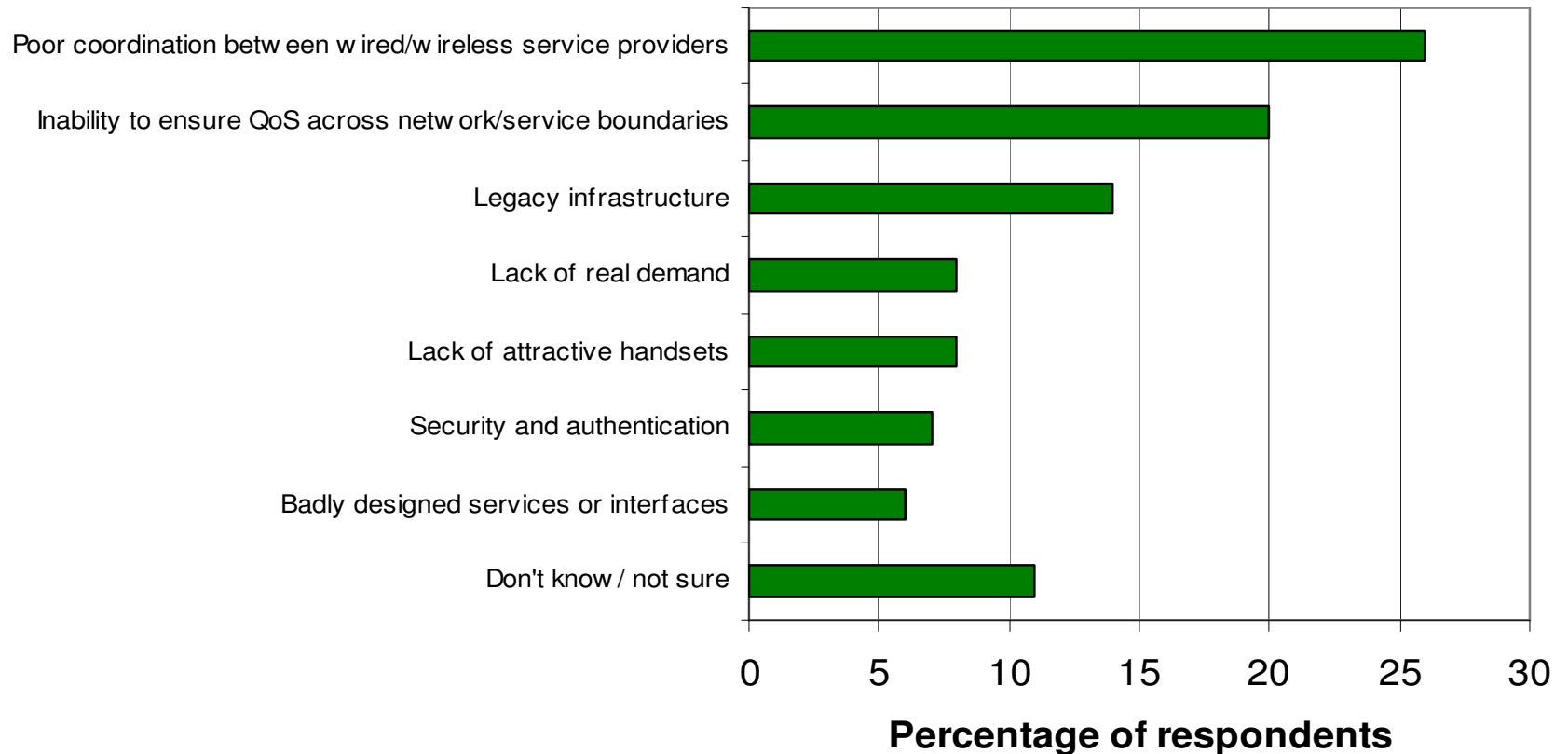


Source: Heavy Reading Survey of Service Provider Attitudes to Fixed-Mobile Convergence, November 2004. Base: 109 Service Providers



... but how do we get there?

What is the biggest obstacle at present to FMC?



Source: Heavy Reading Fall 2005 Survey of Service Provider Technology Deployment Plans

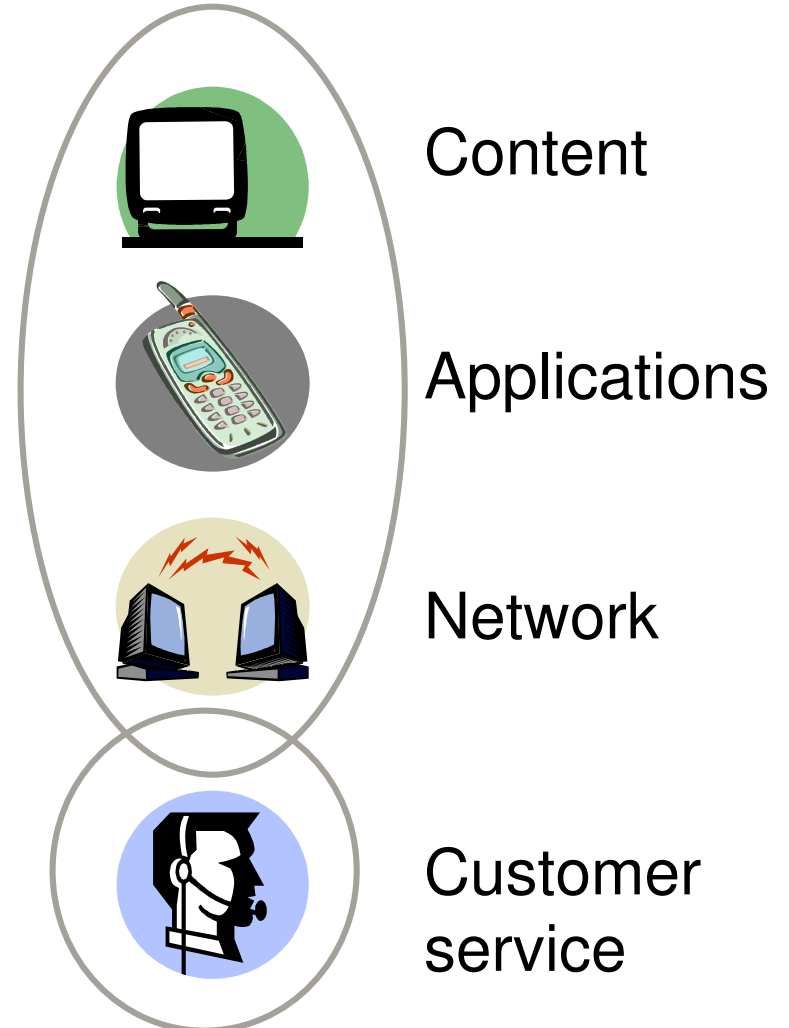


Packaging is critical

- The winners will be those who bundle the right packages for customers



User is looking for:
- experience
- personalisation
- mobility





Convergence is about the collapse of disparate technology, equipment and services into a set of common and ubiquitous technology, equipment and services



(after Dr. J. Schwarz da Silva, EU Commission)



20+ years of EU Commitment.....

OFDM on copper pair, ADSL, then VDSL: RACE, ACTS ⇒ ADSL deployment success worldwide, EU companies in the forefront;

HiperLan, HiperMAN: RACE, ACTS ⇒ benefits reaped elsewhere through WiFi and WiMax deployments/prospects;

FTTx: from RACE to IST FP6 ⇒ prospects for FTTH are now becoming real, but Europe may be lagging behind and in search of a right regulatory approach. Difficult industrial sector, dropped by many EU key players;

3G/UMTS: RACE, ACTS ⇒ EU success at standardisation level; Y2005: very significant take off of UMTS world-wide,

B3G/4G: ACTS, IST FP5, IST FP6 ⇒ issue still developing, risks of EU taking a less proactive approach than Asia, heavily committed to this issue;

Broadband Satellite: ACTS, IST FP5, IST FP6 ⇒ High expectations, high investments, but only niche markets. Good position of EU industry through development of DVB-RCS standard

DTV-HDTV: from RACE to IST FP5 ⇒ world-wide success of DVB standard; promising prospects for EU led technology like MPEG4 for HDTV.

Mobile TV, DVB-H: from ACTS to IST FP6 ⇒ promising technology developed in the EU, need to progress on the regulatory/spectrum front.

PLC: IST FP6 ⇒ is PLC in the race at the access level?

UWB: IST FP5, FP6 ⇒ better positioning of EU industry and regulatory regime being clarified, but too early to judge on success from an EU perspective

(after Dr. J. Schwarz da Silva, EU Commission)

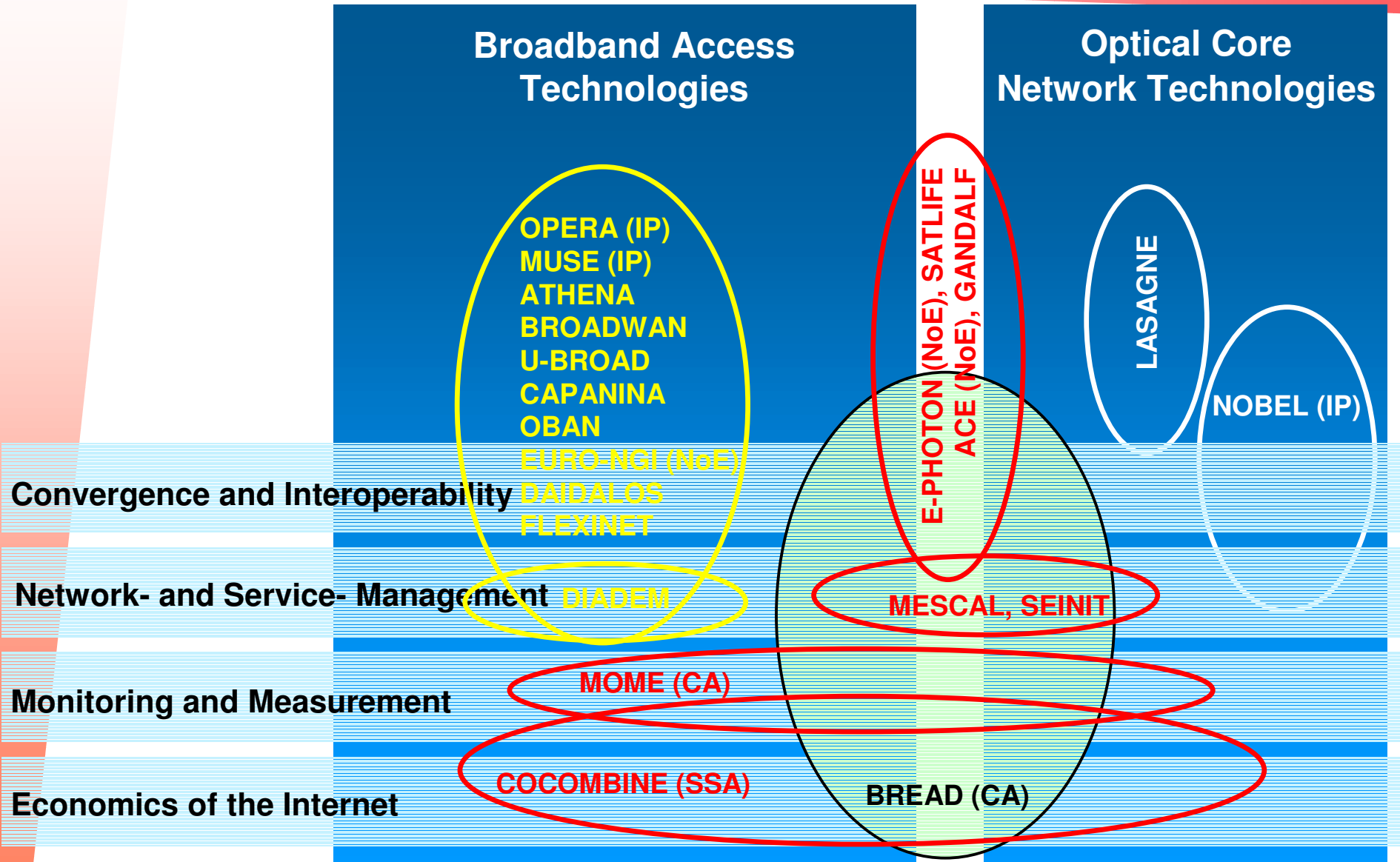


- Optical technologies offer infinite bandwidth in the core network
 - EU industry is leader supported by Academic excellence.
 - Optical switching and full deployment is coming soon.
- Low cost access for all
 - Development of full range of access technologies (DSL, radio, satcom, etc..) including alternative solutions like powerline.
 - Tackle digital divide (ex: rural, NMS..)
- Fixed Mobile convergence.
 - Integration of networks
 - IP is deployed everywhere to offer Internet, voice, video

(after Dr. A. de Albuquerque, EU Commission)

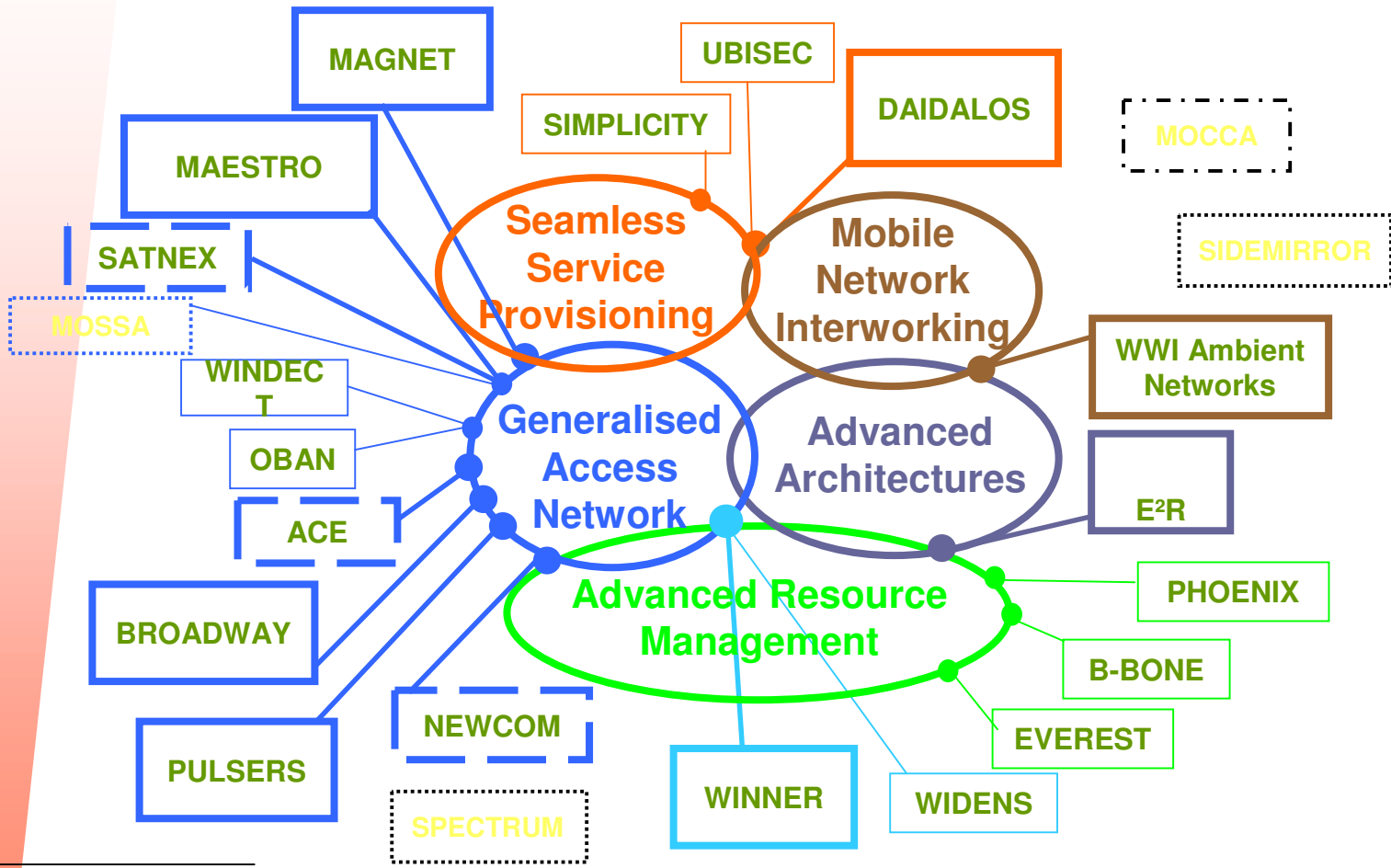


FP6 - Broadband for All Projects

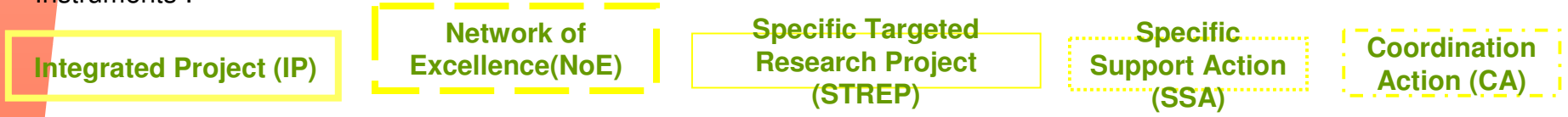




Mobile & Wireless systems beyond 3G Projects



Instruments :

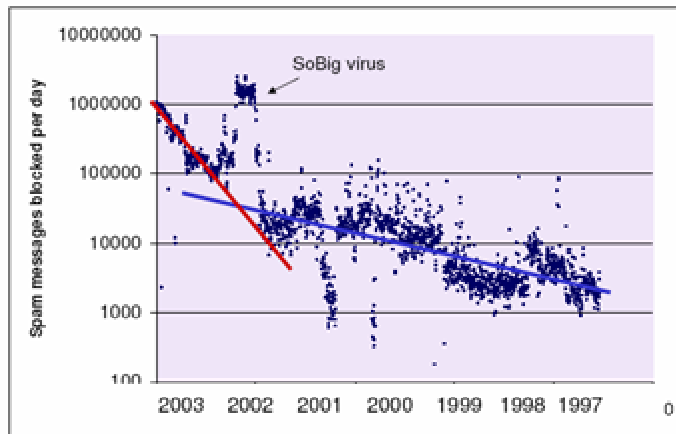




Roadblocks in BB deployment

The Internet has become too important to be left to the engineers

- Stronger management institutions should be created
 - *need for action at government level*
- New solutions must be explored
 - *email validation?*
 - *“third party” virus insurance?*
 - *identity and authentication?*
 - *intellectual property responsibilities as well as rights?*
 - *consolidation and regulation of the value chain?*

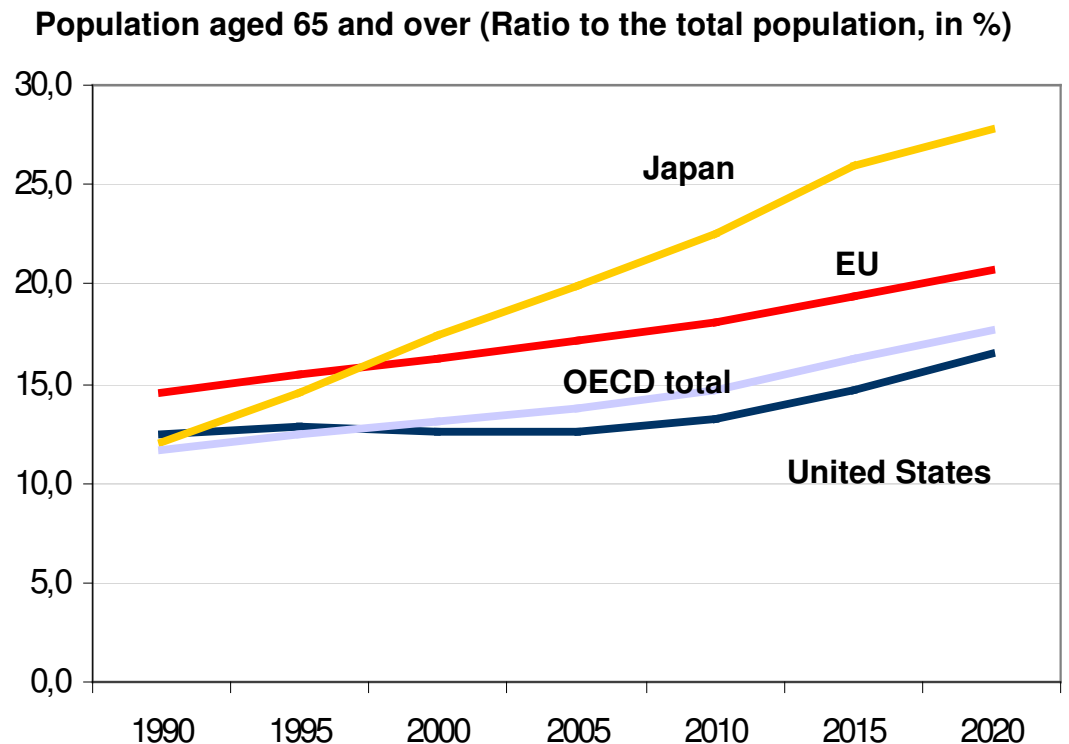


Source: XMission

BB is used for downloading security patches that are needed because the connection is broadband

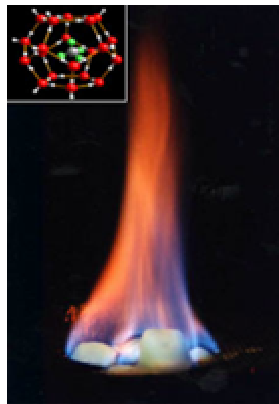


- 20% of population over 65 by 2025
- Challenges
 - Cost of Care:
 - 20% of GDP by 2025
 - Social exclusion
- Opportunities
 - ICT can reduce costs and improve Quality of Life
 - Fast growing market



Source: OECD Factbook 2005

(after Dr. J. Schwarz da Silva, EU Commission)



Etc...
?



Internet Access will become a **“utility”** in the developed world with large impact on economic and societal life

But in developing countries ICT is to be seen as an **“enabler”** towards economic and societal development