



Panel Content Delivery Networks B1. Networks Breakout Session

**The Future of Internet
Bled, 1st April 2008**

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**CONTENT NoE
University Carlos III Madrid**



CONTENT NoE

CONTENT NETWORKS AND SERVICES FOR HOME USERS

NoE IST-2006-38423

Networked Audiovisual Systems

Start date: 1/07/2006 End date: 30/06/2009

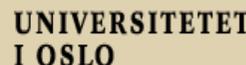
Project duration: 36 months

Total budget: 2,648,000 €

11 partners from 10 countries

www.ist-content.eu

IAB Board: Philips Research, Eindhoven, NL - Agilent Laboratories, UK - Danet GmgH, DE - Thales Broadcast & Multimedia, FR - Ericsson Research, IR - Telefónica, Publicidad e Informacion, ES - TECHMATH – Blue – Order, UK - Alcatel-Lucent, BE - Nokia Research, FI - Telefonica Research Lab Barcelona, ES - Google Switzerland GmbH, CH - TANDBERG ASA, NO



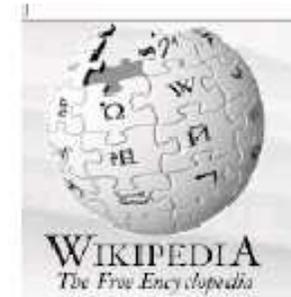
Today Media Internet

social networks

friendster



knowledge sharing

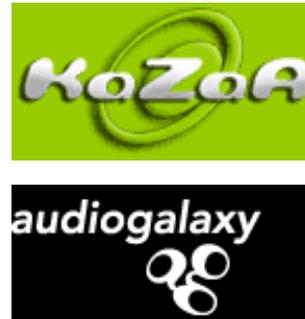


personalized browsers, search engines

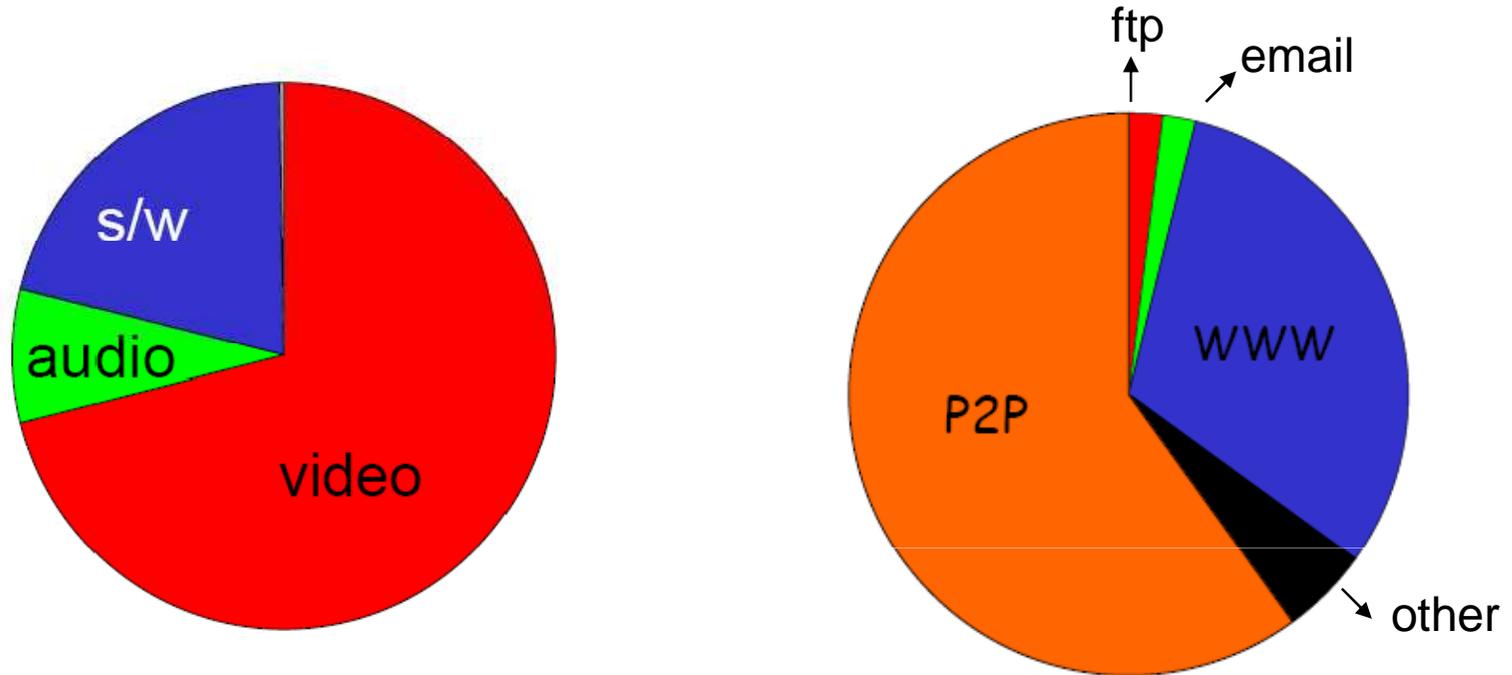


Today Media Internet (ii)

◆ And much more almost every day...

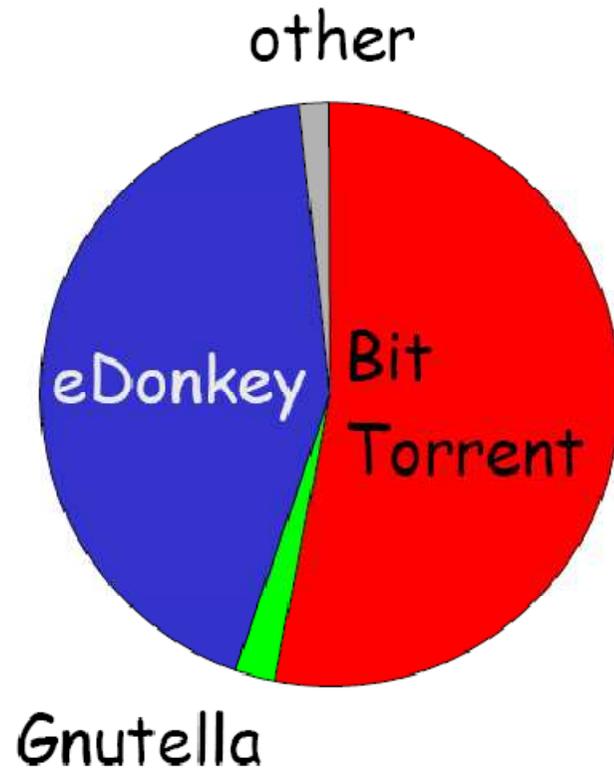


Evolution of Internet Traffic



- ◆ 1993 – academic traffic
- ◆ 1995 – web in scene
- ◆ 2000 – ~ 75% web traffic and data content
- ◆ 2004 – 70% P2P traffic and media content
- ◆ 2007 – More than 80% P2P traffic

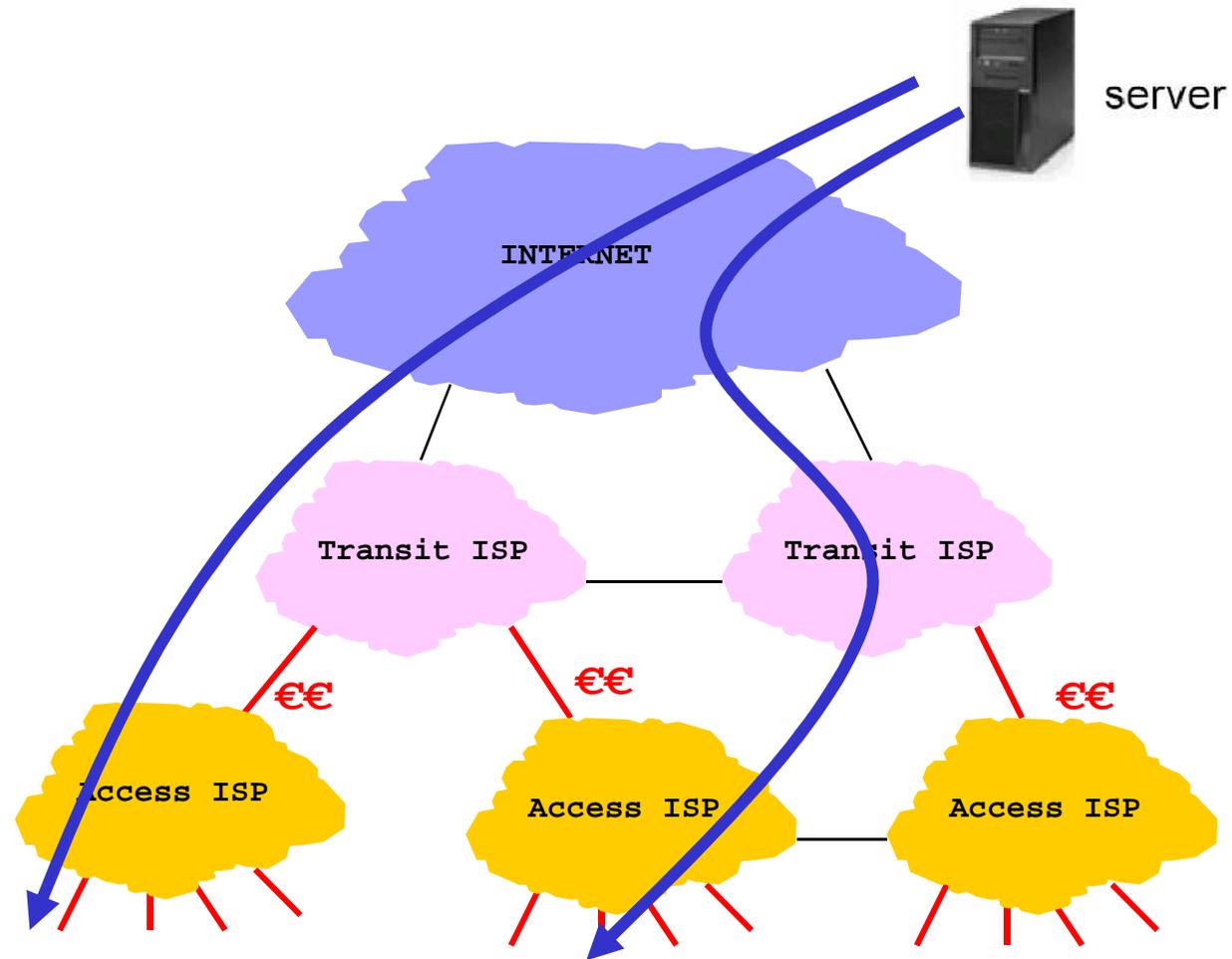
Inside P2P



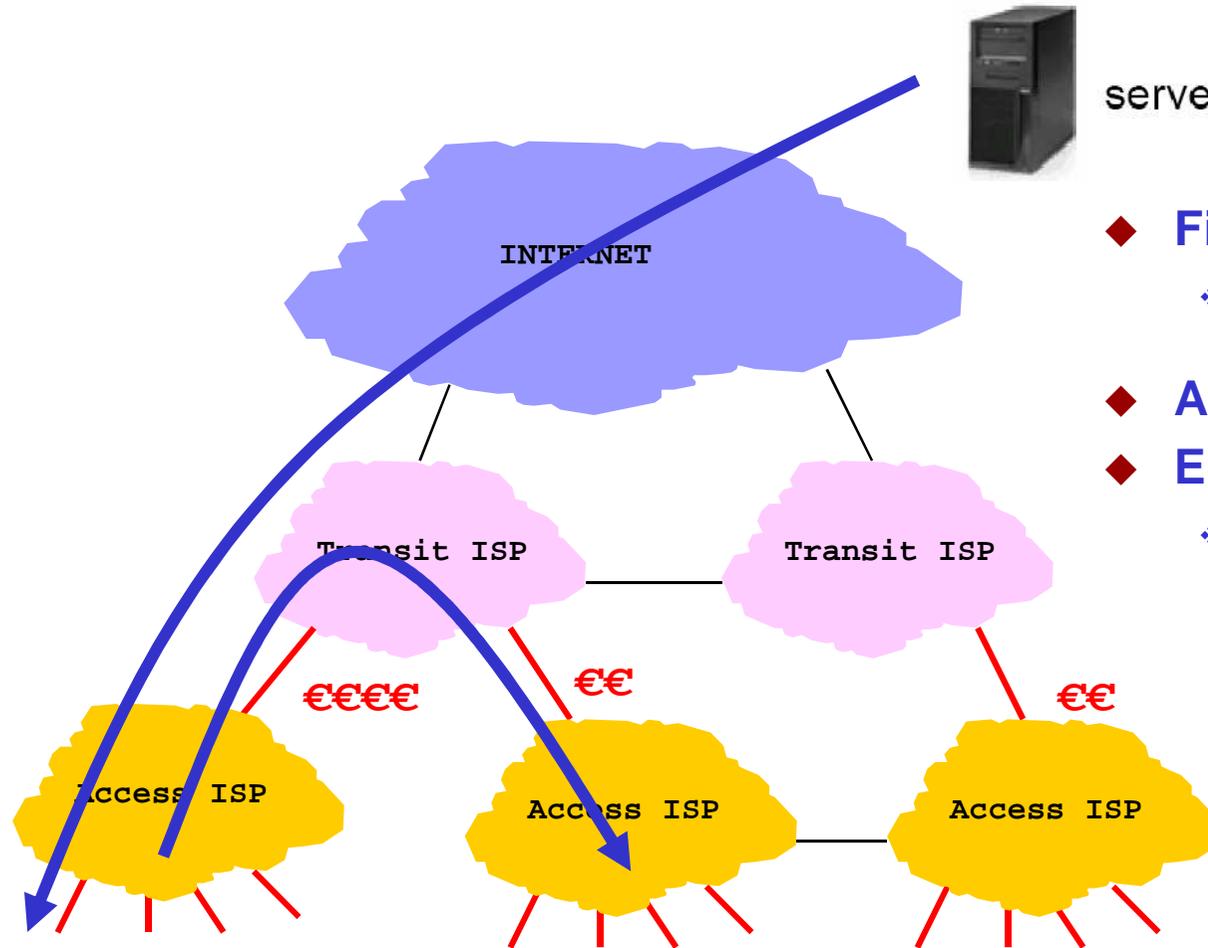
- ◆ 30%-70% traffic P2P
- ◆ ~ half Bittorrent
- ◆ ~ 70% media content
- ◆ Implications:
 - ❖ Economics of ISPs
 - ❖ Impact on traffic engineering and routing
 - ❖ Interaction between applications and network
 - ❖ Next generation of CDNs

- ◆ Internet Study 2007 in Germany (similar in rest of the world)
- ◆ www.ipoque.com

Client-Server Economics



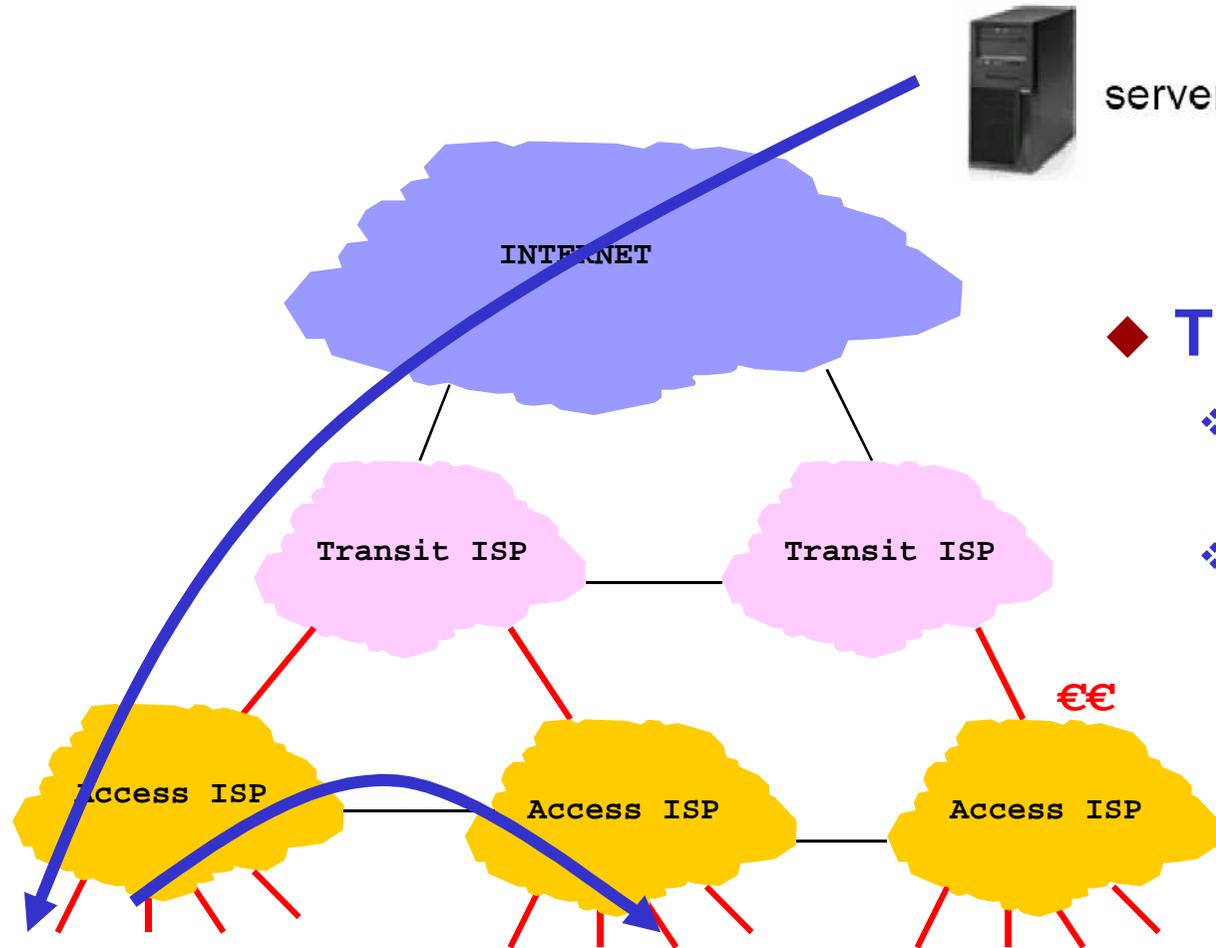
P2P Economics



server

- ◆ Filtering out P2P traffic
 - ❖ But P2P increases access demands (€€)
- ◆ Add caches
- ◆ Enrich connectivity
 - ❖ Peering between access ISPs

P2P Economics



◆ That means:

- ❖ **Flattening Internet**
- ❖ **Impact on the design of Internet**

Challenges of the Future Media Internet

◆ Internet is sociologically flat

- ✓ Empowering people
- ✓ Equalizing experimental opportunities

◆ Technologically flat

- ✓ **Hierarchical** structure
 - **Flat** structure
- ✓ **Network** resource management
 - **End-host/application** resource management
- ✓ **Complexity**
 - **Simplicity**

1st IEEE Workshop on FUTURE MULTIMEDIA NETWORKS



**IEEE FMN'08 - 1st IEEE International
Workshop on
FUTURE MULTIMEDIA NETWORKING**
<http://fmn2008.dei.uc.pt>
 2008 September 17, Cardiff, Wales, UK
 Collocated with IEEE NGMAST 2008



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Real-time multimedia services are contributing to enhance our life experience and are expected to be among the most important applications in future generation networks. The management of real-time multimedia services is an important key to attract and keep customers, while increasing profits to content providers. The efficient delivery and deployment of real-time multimedia services over emerging diverse and heterogeneous wired and wireless systems is a challenging research objective. The interoperability of applications, transport and network protocols, as well as, the demand for improved Quality of Service (QoS) and user experience, and seamless mobility control creates a challenging study field and also possibilities for research of novel communication protocols, architectures and methods towards **Future Multimedia Networking Systems**.

The objective of the **IEEE Future Multimedia Networking (FMN'08)** workshop is to discuss state-of-the-art research and developing activities contributing to aspects of multimedia systems, and networking. We are inviting both theoretical and experimental papers as well as work-in-progress research.

Topics of interest include, but are not limited to:

- Multimedia management in next generation networks
- Content delivery networks
- Audio-visual systems
- Novel protocols for multimedia services
- Grid networking for multimedia services
- Multimedia in cellular, sensor and ad-hoc networks
- Multimedia in peer-to-peer networks
- Quality of service management in multimedia networks
- Quality of experience management in multimedia networks
- Management of service oriented architectures
- Seamless mobility of multimedia services
- Novel multimedia architectures/platforms
- Multicast and broadcast multimedia service management
- IP multimedia systems, transactions and management
- Resource reservation for multimedia services
- Multimedia in mobile and broadband wireless access networks
- Experimental issues from recent deployments
- Performance evaluation of multimedia services
- Network measurement methodologies for multimedia services
- Pricing, accounting and billing for multimedia services
- Reliability, availability, serviceability of multimedia services

Special Issue Journal Publication: best papers of the workshop will be considered for publication in a Special Issue of *International Journal of Internet Protocol Technology (IJIT)*.

To register or submit a paper: <http://www.ieee.org/2008>

The accepted papers will be listed in the IEEE Search Database and will be published by IEEE CPS.

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Submission
2008 / April / 28

Notification
2008 / June / 01

Camera ready
2008 / June / 20

Registration
2008 / June / 20





Panel 4. Content Delivery Networks B1. Networks Breakout Session

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Bled, 1st April 2008**

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