Objective ICT-2009.1.1: Networks of the Future

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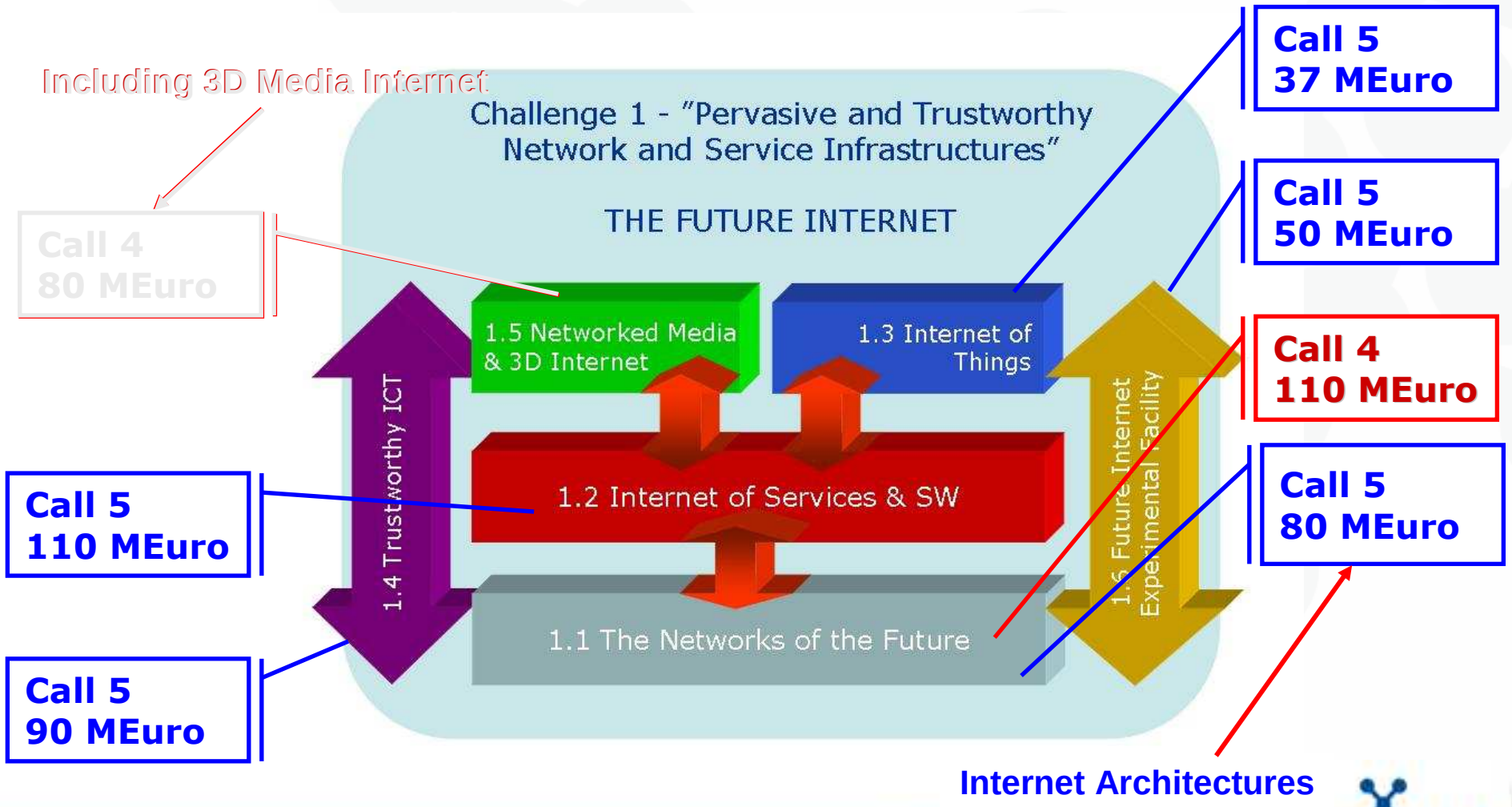
Networks of the Future

ICT-2009.1.1, Challenge 1 in FP7 Call 4

Call 4 (190 M€) Focus: ***Call 4 (367 M€) Focus:***



Rationale:

- ✓ **The 'Future Internet' is emerging globally as a federating research theme:**
  - The current Internet architecture was not designed to cope with the wide variety of networked applications, business models, edge devices, networks and environments that it has now to support. Its structural limitations in terms of scalability, mobility, flexibility, security, trust and robustness are now recognised. The challenge is to address the multiple facets of a Future Internet. Clean slate or evolutionary approaches or a mix of those can be equally considered,

Rationale:

- ✓ **The 'Future Internet' is emerging globally as a federating research theme:**
  - From a networking perspective, this entails a rethink of architectures such that performance bottlenecks are overcome, novel types of edge networks may be integrated, and new types of media applications such as 3D can be supported. Mobility and ever higher end to end data rates also emerge as important design drivers. At the network level, a clear challenge will be to provide the Internet with flexible management capabilities beyond the original 'best effort' paradigm
  - Novel radio and optical systems are important components of this overall network perspective,

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Main Objectives:

- ✓ **Ubiquitous network infrastructures and architectures,**
- ✓ **Convergence of mobile, fixed telecom and Internet network infrastructures,**
- ✓ **Optimised control, management and flexibility of the future network infrastructure,**
- ✓ **Towards mobile broadband and efficient/dynamic spectrum usage,**
- ✓ **Technologies and system architectures for the Future Internet.**

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Details:

- ✓ **a) Future Internet Architectures and Network Technologies:**
  - Novel Internet architectures and technologies,
  - Flexible and cognitive network management and operation frameworks.
- ✓ **b) Spectrum-efficient radio access to Future Networks:**
  - Next-generation mobile radio technologies ,
  - Cognitive radio and network technologies,
  - Novel radio network architectures
- ✓ **c) Converged infrastructures in support of Future Networks:**
  - Ultra high capacity optical transport/access networks ,
  - Converged service capability across heterogeneous access .
- ✓ **d) Coordination/ Support actions and Networks of Excellence**

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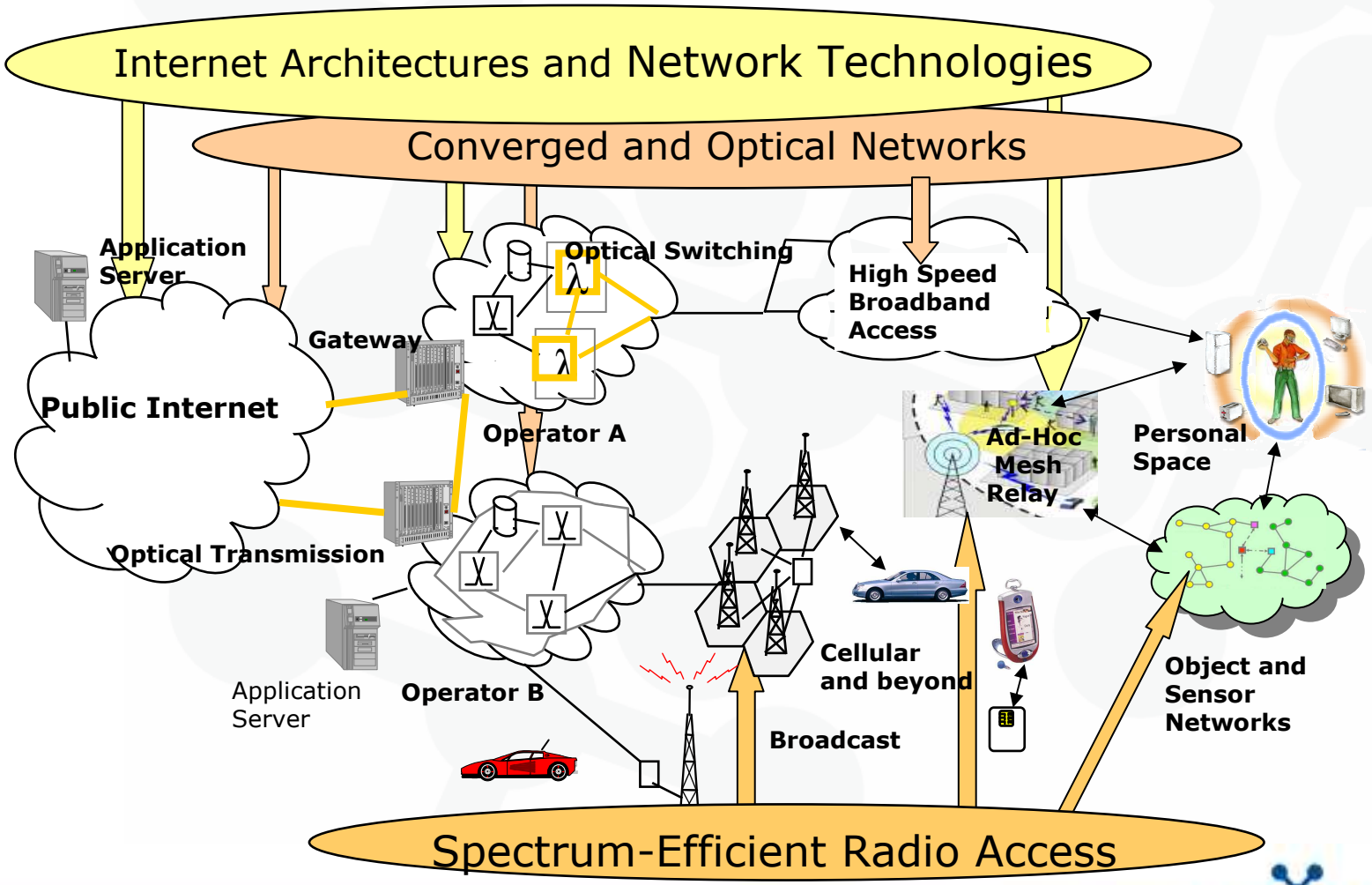
The Network of the Future:



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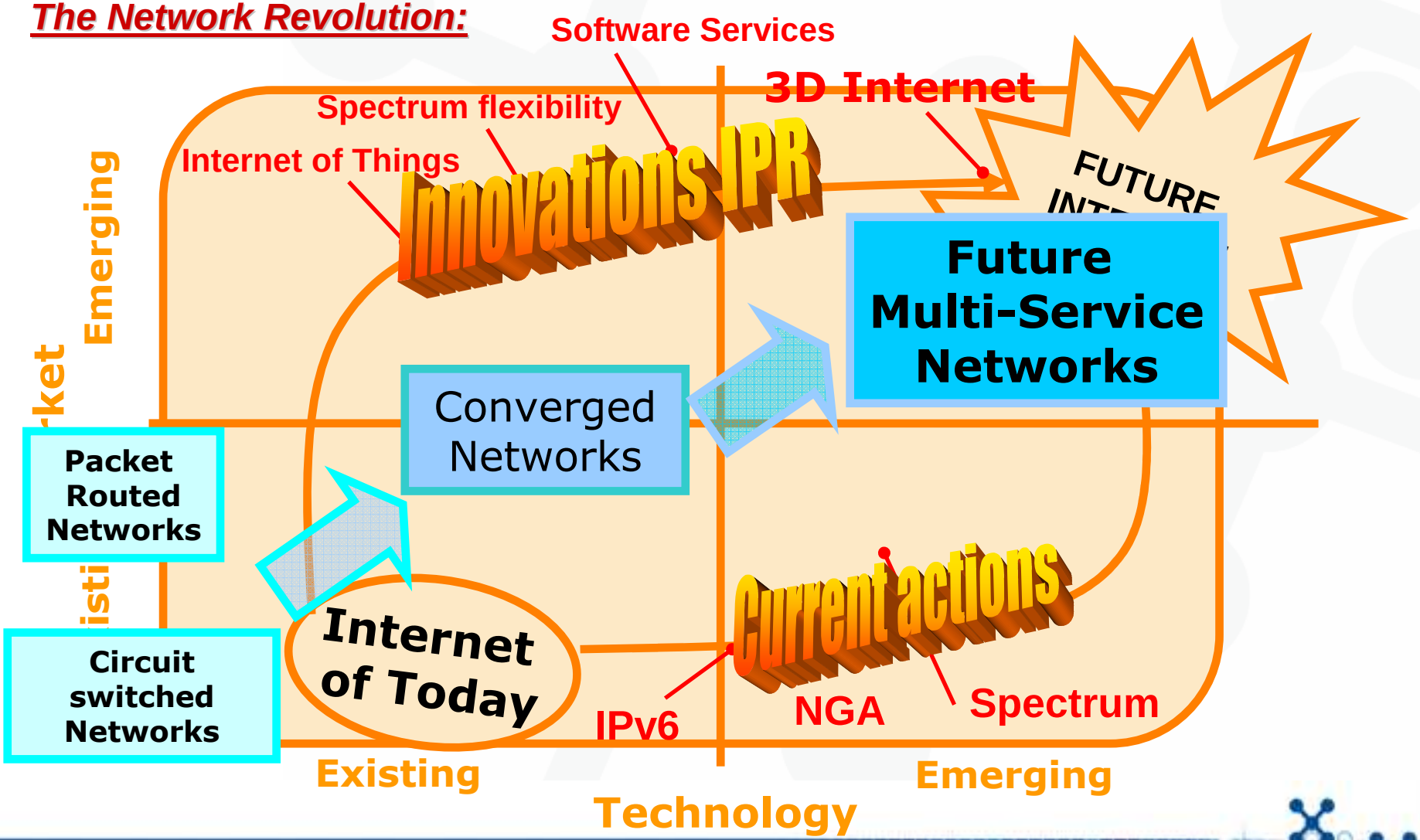
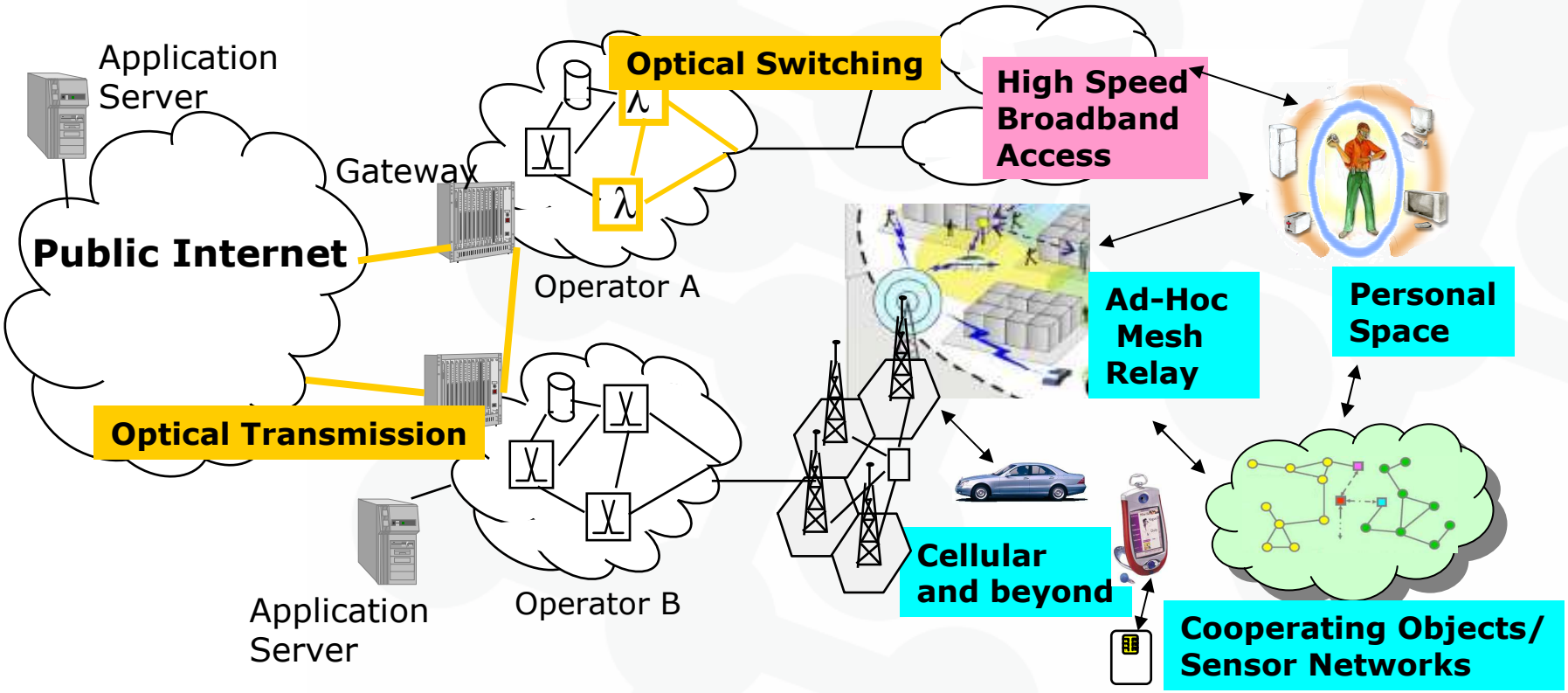
The Network Revolution:



Future Mobile and Fixed Access:



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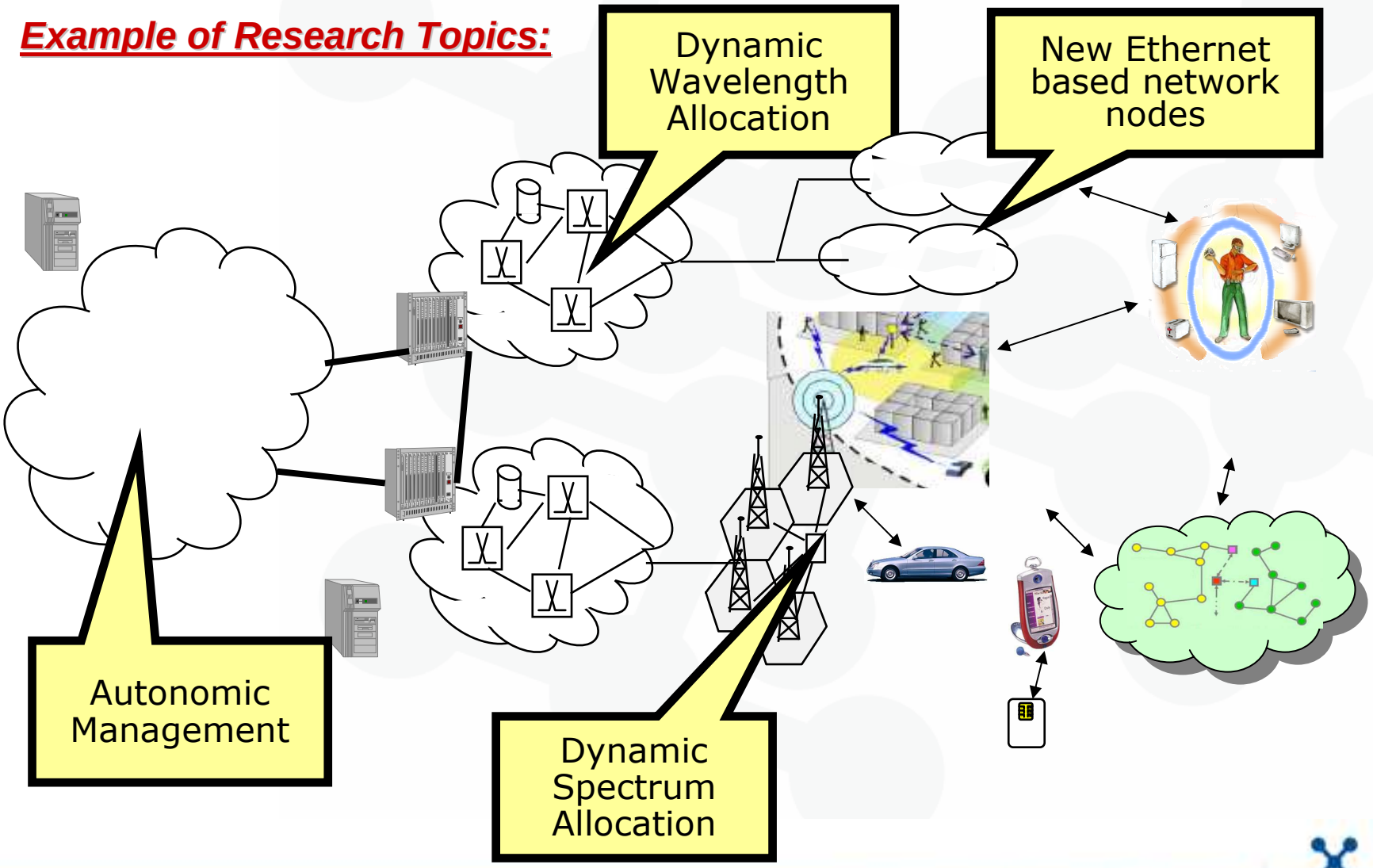
Example of Research Topics:



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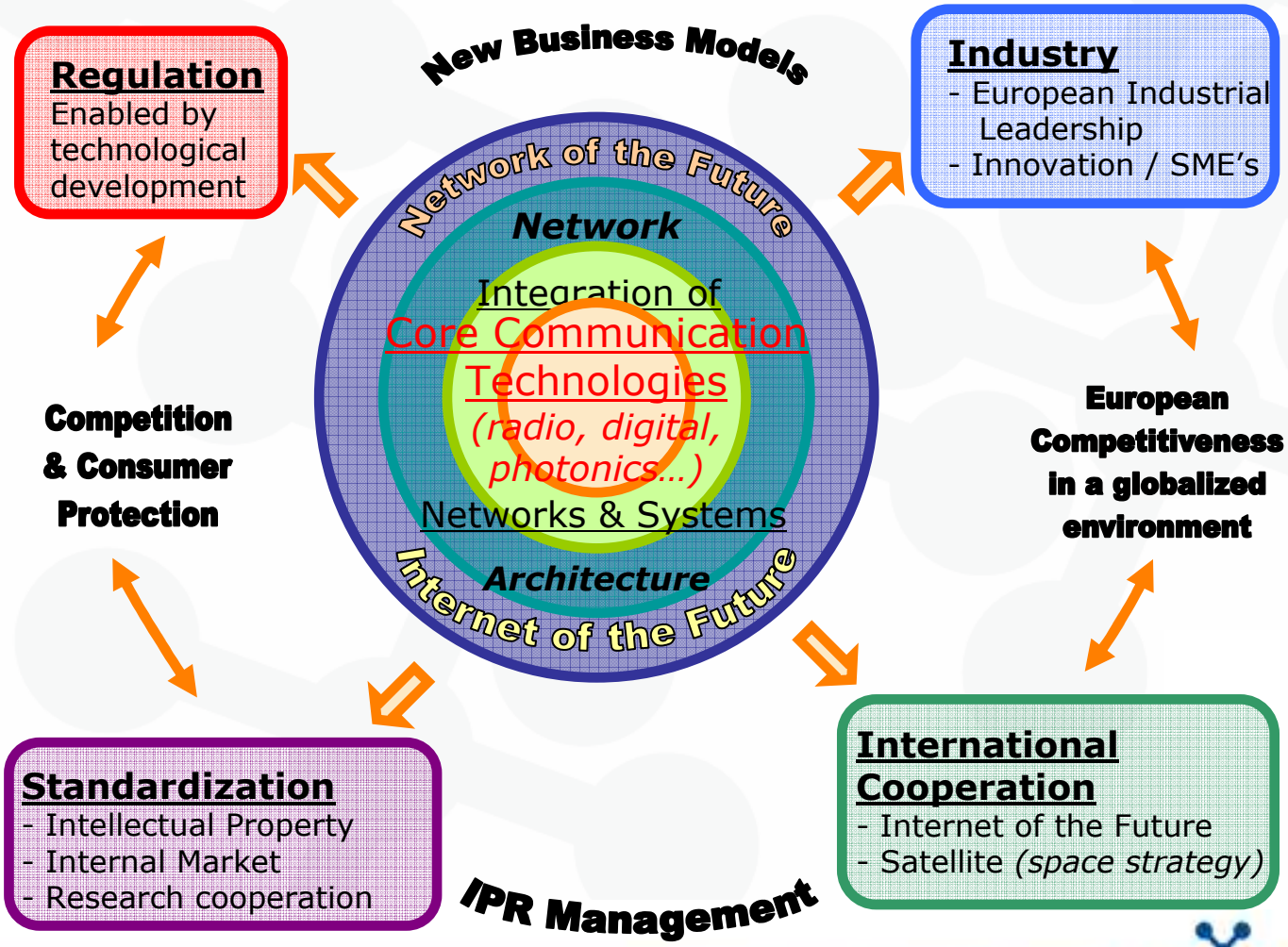
Overall activity picture:



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- ✓ Budget: **110 M€**
- ✓ Funding schemes:
  IPs and **STREPs** - for a), b), c)
  CSAs and **NoE** for d).

- ✓ Contact: Andrew.Houghton@ec.europa.eu

Expected Impact:

- ✓ **Strengthened positioning of European industry in the field of Future Internet technologies**
- ✓ **Reinforced European leadership in mobile and wireless broadband systems, optical networks, cognitive network management technologies.**
- ✓ **Increased economic efficiency of access/transport infrastructures (cost/bit)**
- ✓ **Global standards and European IPRs reflecting federated and coherent roadmaps.**
- ✓ **Wider market opportunities from new classes of applications taking advantage of convergence.**
- ✓ **Accelerated uptake of the next generation of network and service infrastructures**

Thank you for your attention

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