



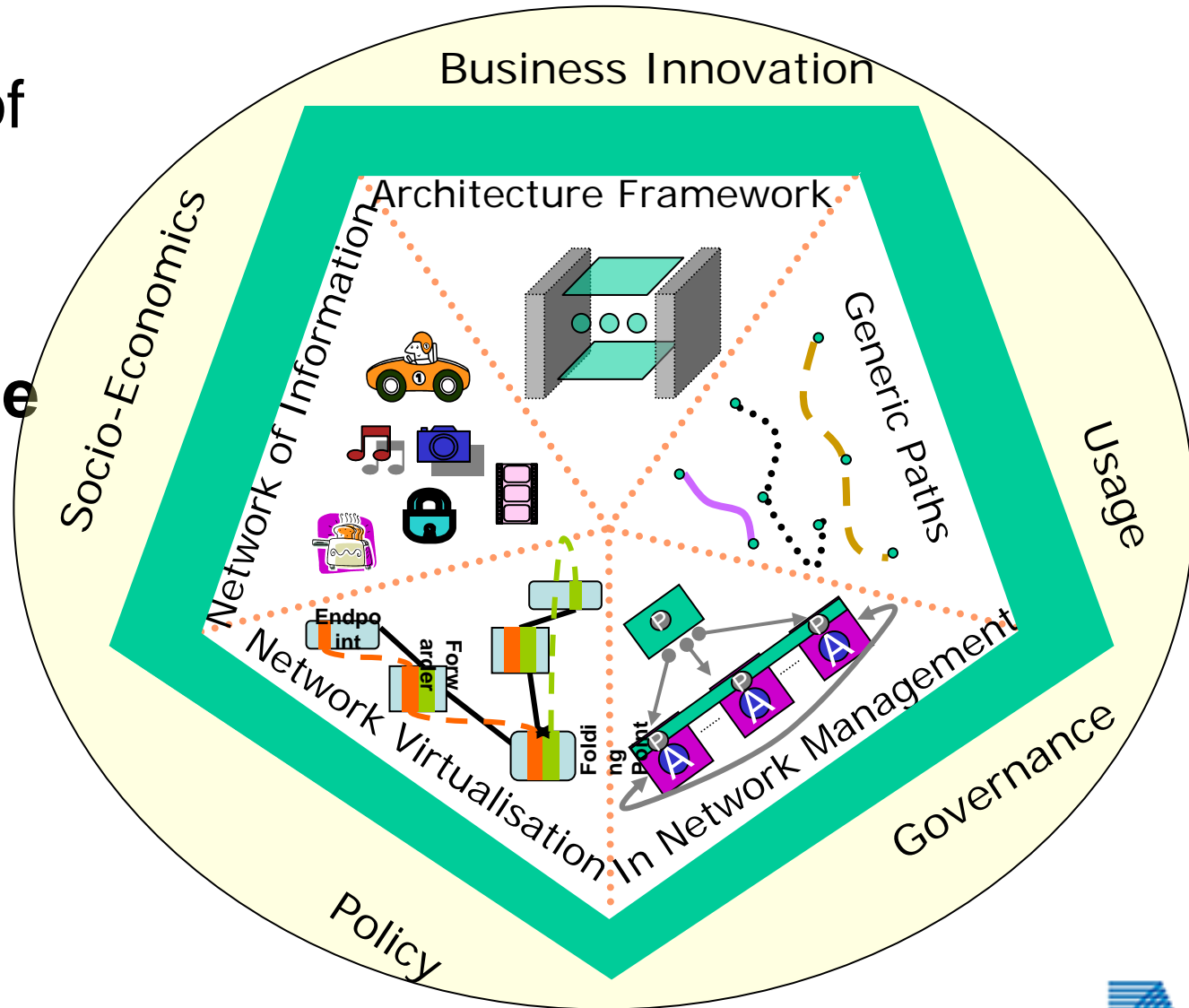
4WARD A clean slate approach for Future Internet

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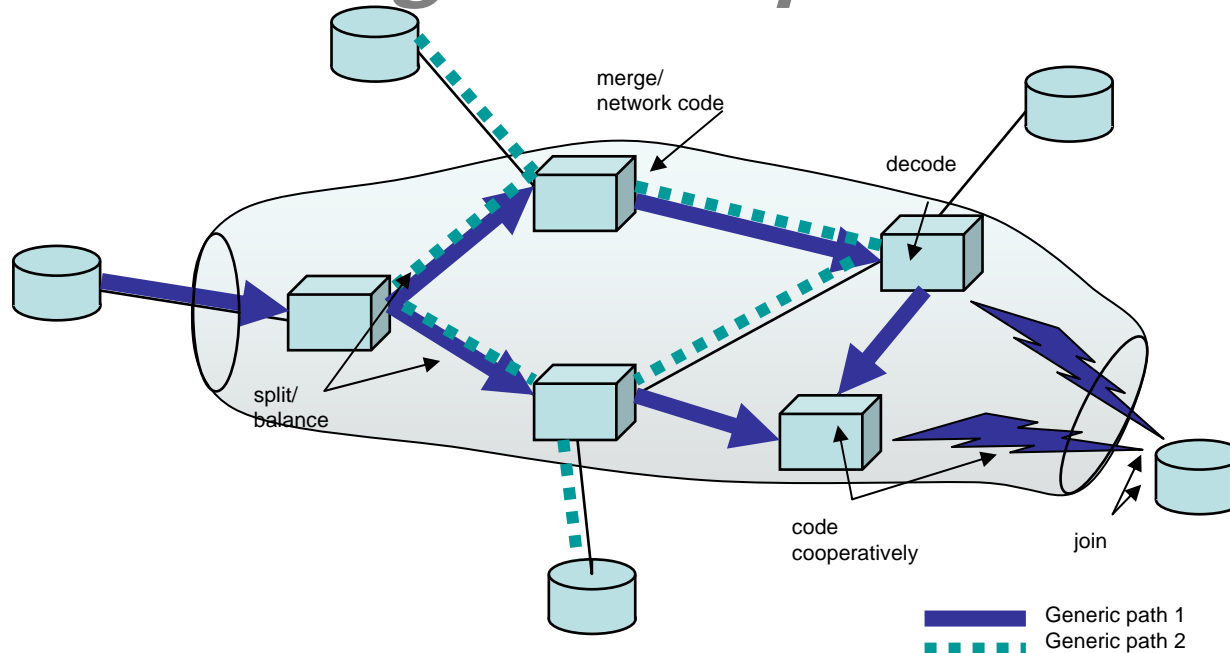
The Facets of 4WARD

- ❖ Combination of clean-slate approaches to address the **Network of the Future**
- ❖ Size: Roughly 23 M€
- ❖ Time 2 years





A new transport paradigm: the generic path



❖ Path generalisations in a functional architecture: How to

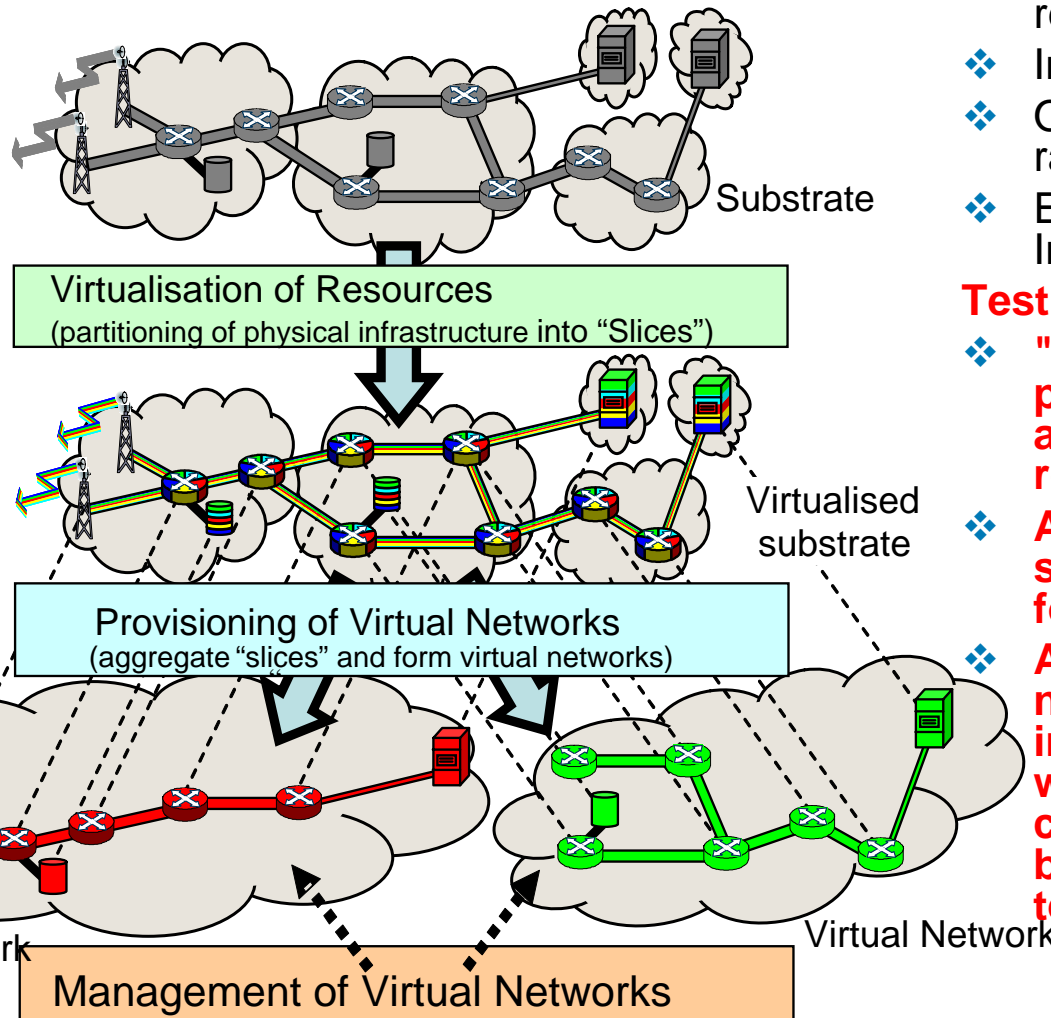
- Organize cooperation between nodes in a path
 - Understand their existence, and signalling between nodes
- Structure cross-layer information
 - Find out lower topologies and their capabilities
- Control underlay topologies
 - “Multi-layer routing”

❖ Mobility by generic path

❖ **Evaluation in proof-of-concept testbeds**



The Virtual e2e Network



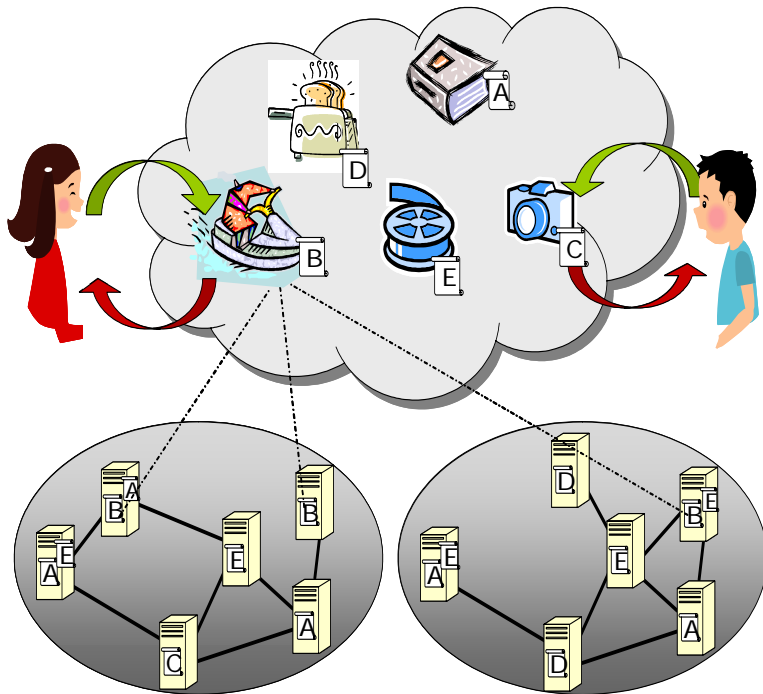
- ❖ Deals with e2e resource virtualisation of networking resources
- ❖ Includes wireless virtualisation
- ❖ Opens the possibility for more radical innovation in the network
- ❖ Enables migration from current Internet

Testbed req.s

- ❖ **"Routing in a slice":** The possibility to virtualise routers at layer 3 to e.g. install custom routing protocols
- ❖ **Access to layer 2 connectivity services** to evaluate methods for the virtualisation of links
- ❖ **Access to a range of networking resources** including routers, links, wireless systems. This goal can probably best be achieved by federating a number of testbeds.



The Network of Information



- ❖ Architecture of a Network of Information
- ❖ Information modelling
- ❖ Basic dissemination mechanisms and services
- ❖ Non-dissemination and delay-sensitive services
- ❖ Evaluation of the approach

Testbed req

- ❖ For this year (2008), and probably for next year (2009) as well, two kinds of experimentation are interesting:
 - larger scale using overlay on the Internet (such as Planetlab and successors)
 - smaller scale experimentation with non-overlay approach in a lab
- ❖ At some point, earliest 2009, but more likely in Phase 2, non-overlay experimentation on a larger scale becomes interesting. This means interest in [OneLab2](#) and/or [Federica](#) .