



ETNA - Ethernet Transport Networks, Architectures for Networking

<http://www.ict-etna.eu/>

New Transport Architecture for the Future Internet

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Outline



- What is ETNA
- Motivation
- ETNA Transport Architecture
- ETNA vision





Motivation – why new transport architecture



- Future Internet requires scaling of link and node capacities by a factor of at least 100
 - interest in synchronous octet stream oriented transmission (SDH) is waning
 - trend is towards packet transmission → Ethernet
 - parallel processing can be used to scale up speeds
- Data traffic will be on the driving seat → packet technology
 - Footprint of Ethernet is growing: Access, Metro, Core networks
 - will also be used to emulate legacy services such as TDM
- Native Wide-area End-to-end Ethernet services are emerging
 - PBB, PBT etc.
 - PLSB, Synchronous Ethernet, Ring Protection

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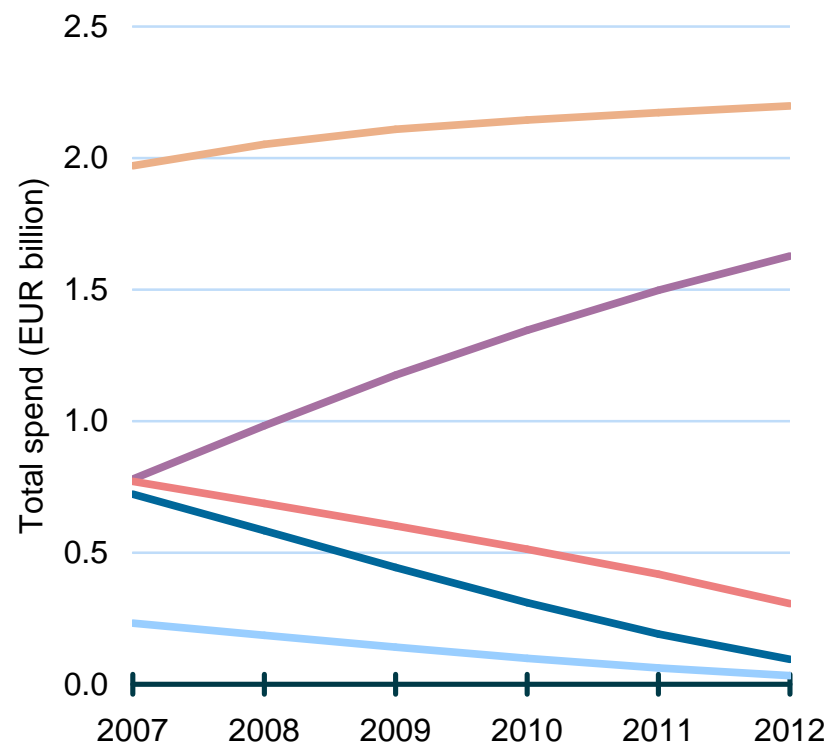
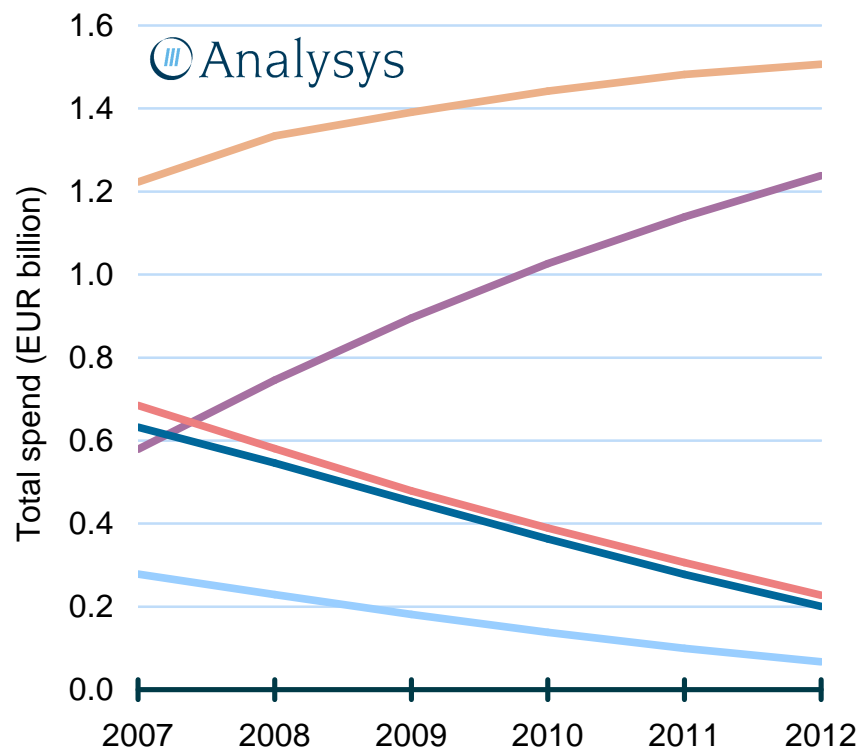
Revenue growth/decline



Business Data Services: growth opportunities and forecasts for Europe 2007-12 © Analysis

France

UK



— Ethernet
— FR
— SDH, WDM and other

— ATM
— Broadband

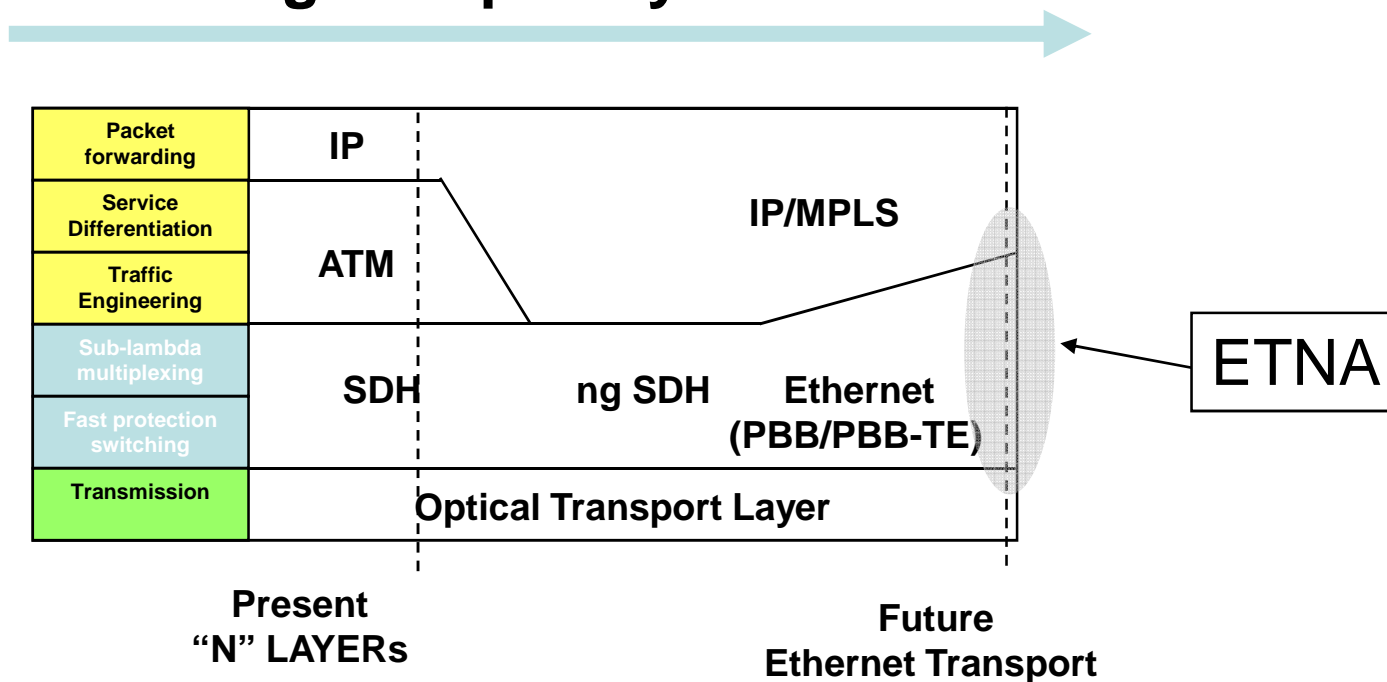
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Network evolution – where ETNA fits



Reducing Complexity/Cost



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Requirement: Carrier Grade Transport

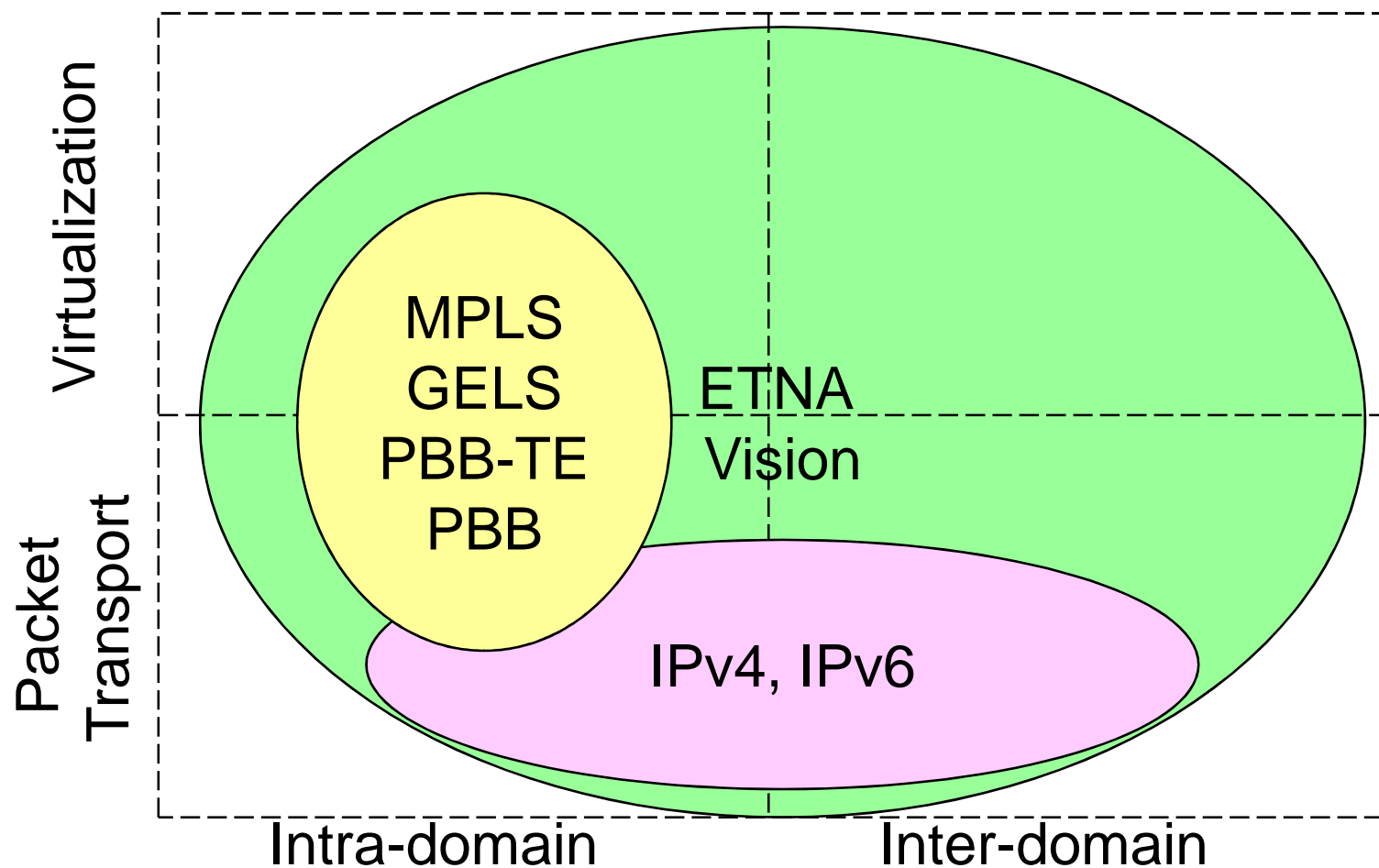


- Carrier grade control
 - ALLOW traffic flow from A to B
ELSE DENY
- QoS, Resiliency, Protection of connections, Fast convergence, Multihoming support
- Network virtualization

Low CAPEX and Low OPEX



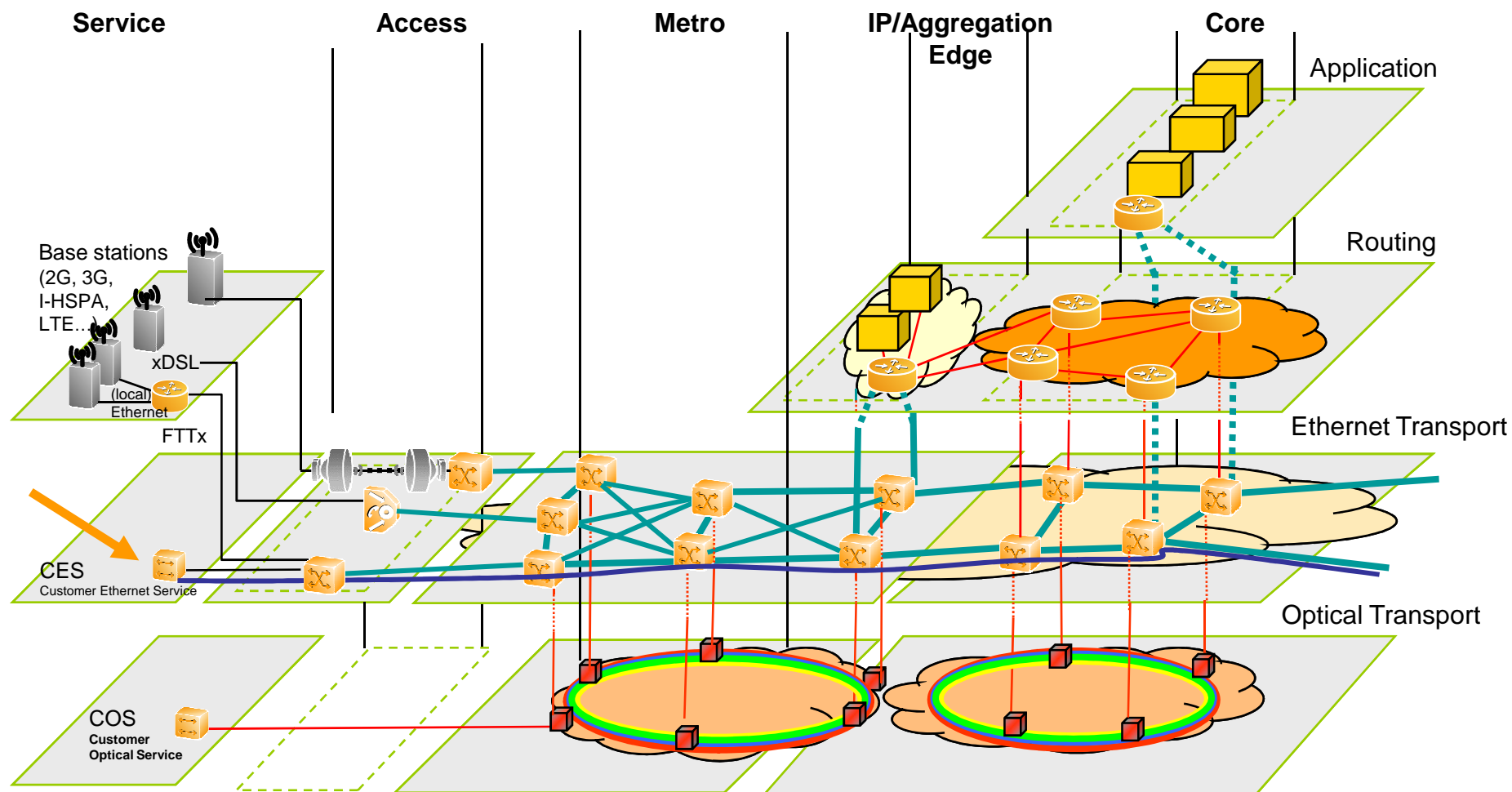
Design Space for Future Network Infrastructure



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Network Layers



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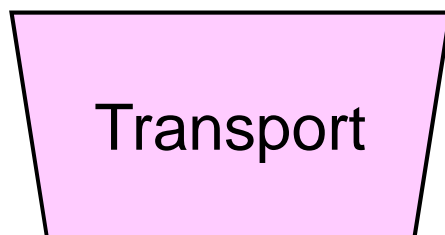
Layering the transport network



Value added such as:
- Mobility and multi-homing
- Interconnection



Mapping of simple user services to transport (leased line etc)
- Protection etc



Tunnels between network end points
Point-to-point and Pt-to-Mp
Automatic network discovery
Tools for TE
Native Ethernet or Legacy



Conclusions



- Ethernet footprint is growing
- Routed Ethernet and native end-to-end Ethernet services are emerging
- It is critical to design a modular and scalable transport architecture
 - ETNA is creating a demonstrator
- This will open a path to Future Internet that will make IP itself a legacy and later phase it off from the network core