Information Society Technologies

Sixth Framework Programme

Telefónica

Telefónica
Investigación y Desarrollo

Business models in EuQoS

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EuQoS: Who we are

- 5 network providers (Prime Contractor is Telefonica)
- 5 Corporates
- 5 SMEs (consultants, small development companies)
- 9 Research Institutes

EuQoS Approach

Support the evolution of the Internet into a multi-service network

Take a pragmatic approach

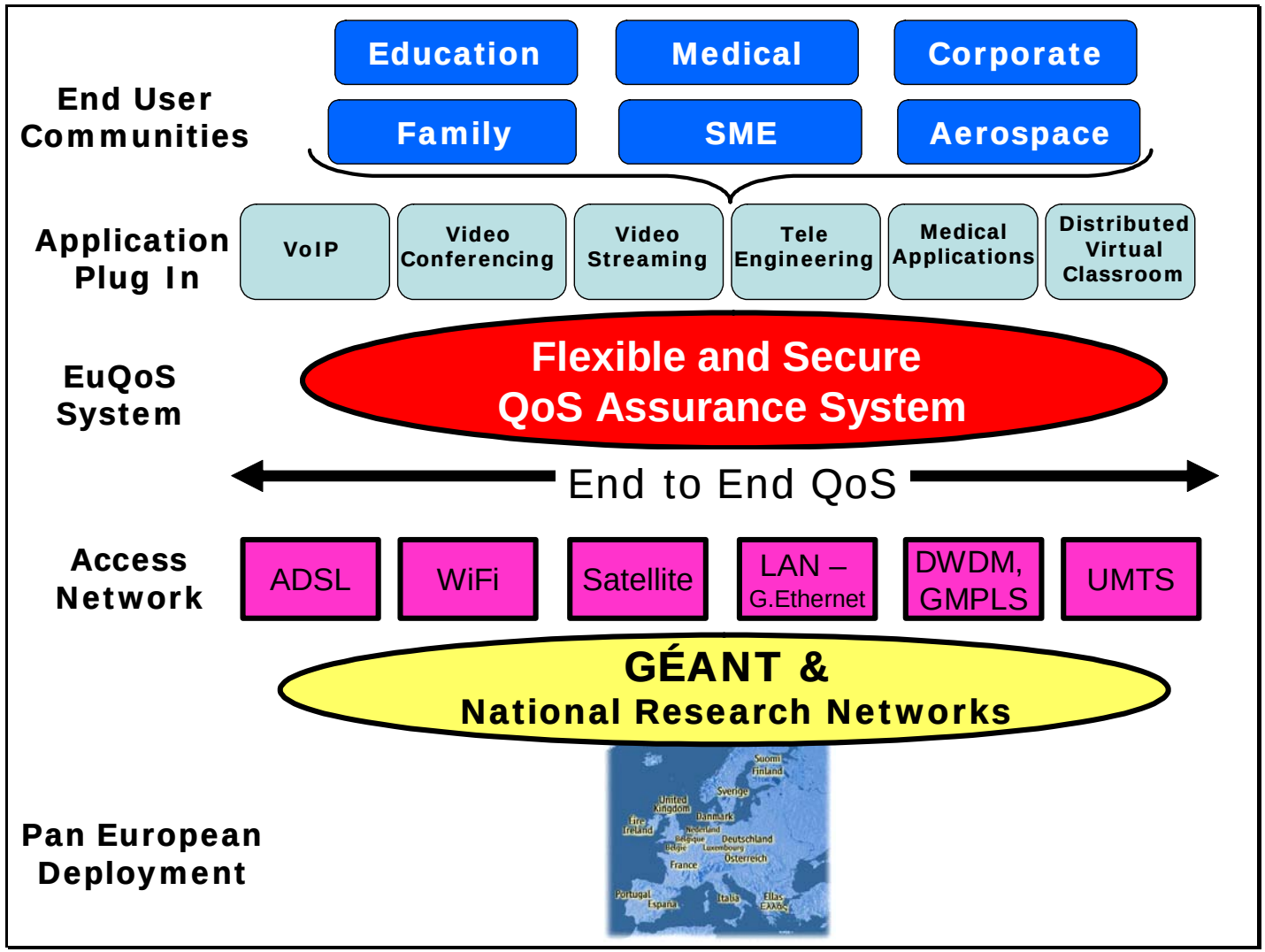
Sell QoS as a new source of revenue.

Define business models

€9.5M Funding over 3 years
Kick-off 1 September 2004

Information Society Technologies

What we are doing:



Business models in EuQoS

- The first steps for building the solution
  - Requirements
    - Business and marketing
    - Users
    - Providers
    - Regulation
  - Build the different conceptual models
    - Business
    - Communication
    - QoS
  - Design of scenarios of application
    - Scenario 1
    - Scenario 2
    - ...

Financial and market requirements

- Network & service providers =$
- Charging plan: tariff by session
- Charging as a function of QoS
- Marketing aspects
  - Easy to demonstrate
  - Different user communities
- 3 year horizon
- Deployment:
  - Compatibility with existing solutions: large scale deployments
  - Simplicity: leverage off-the-shelf components and low-cost solution

End user requirements

- Low tariffs!
- The benefits must be clear
  - Best than BE
- QoS concept from the pov of the user
  - Easy to understand
- Plug and play
- Dynamic invocation:
  - QoS per session
  - The same application with different QoS levels
- Different commercial packages
- Monitoring capacities are desirable

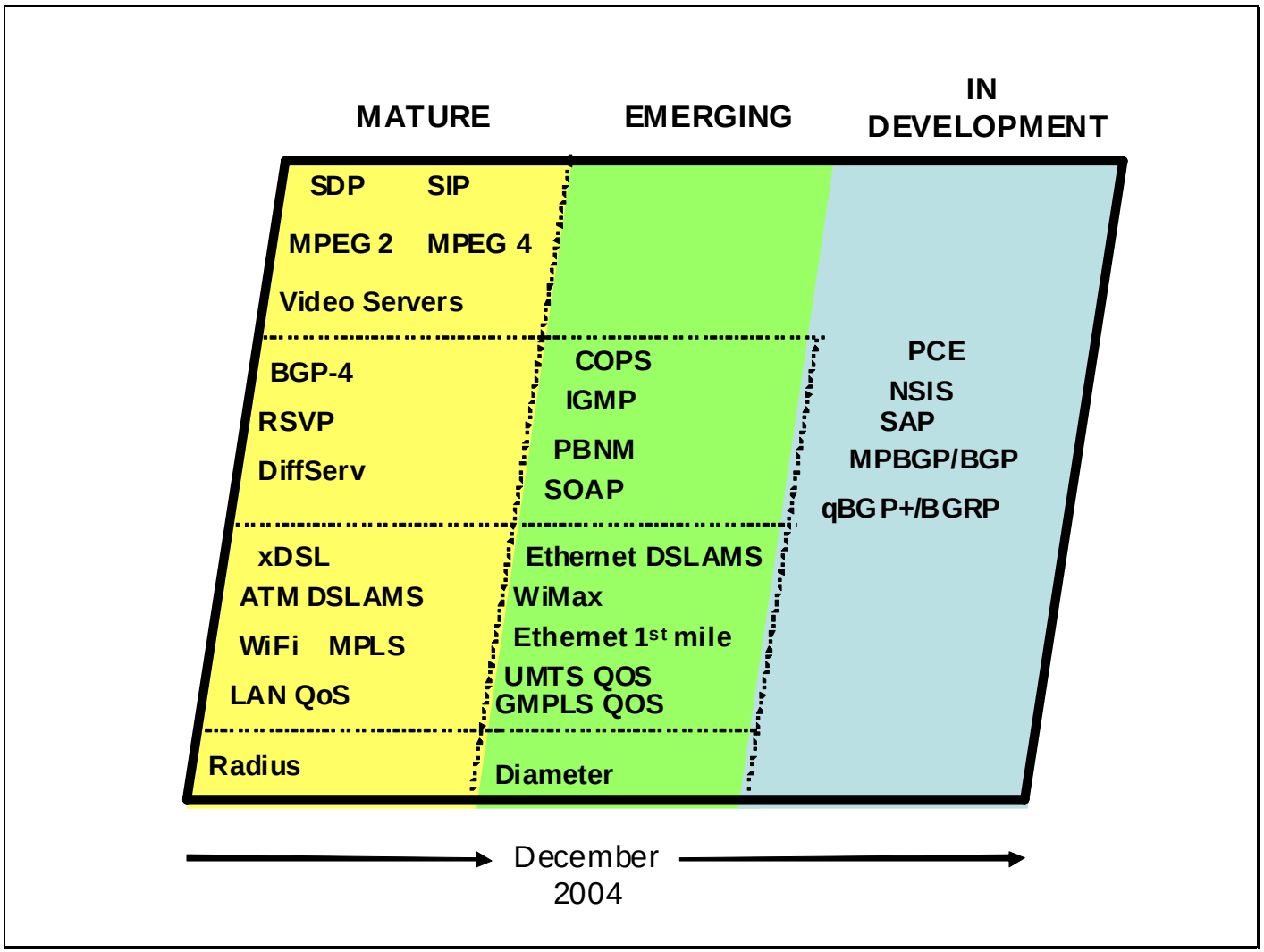
Provider requirements

- To sell services to end users!
- Ubiquity
- Seamless service
- Different solutions for different services
- Simplicity of the solution
  - Easy to deploy
  - Easy to manage
  - Easy to charge
  - Easy to sell
- Support of wholesale/retail models

System, architecture, and standards requirements

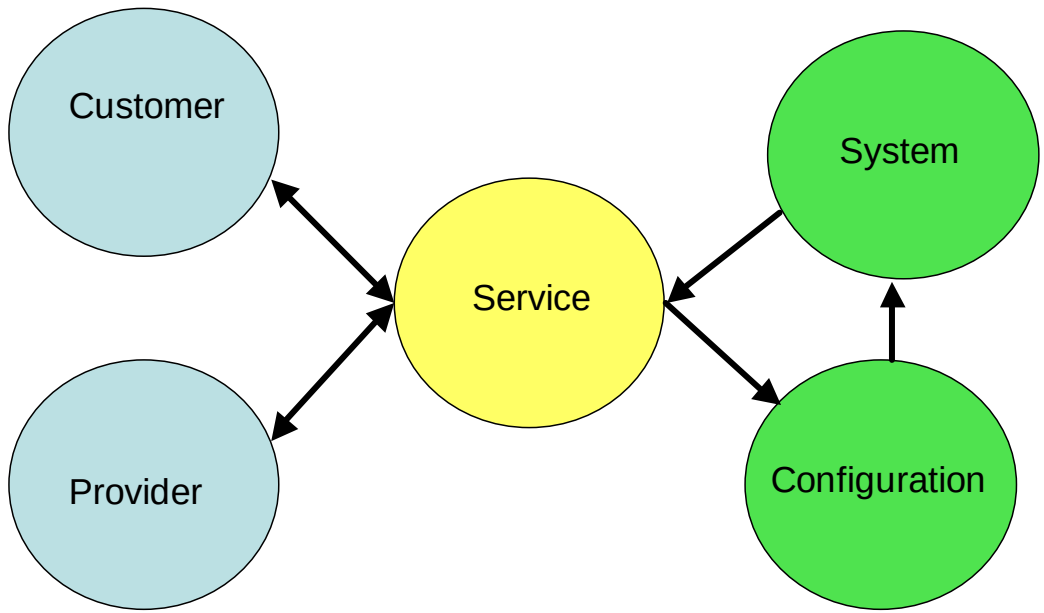
- The system must be scalable
- Interoperability with existing equipment
- Independent from software platform
- Support for existing and future standards
  - When necessary, contribute new standards

Time to market of EuQoS



Business reference model

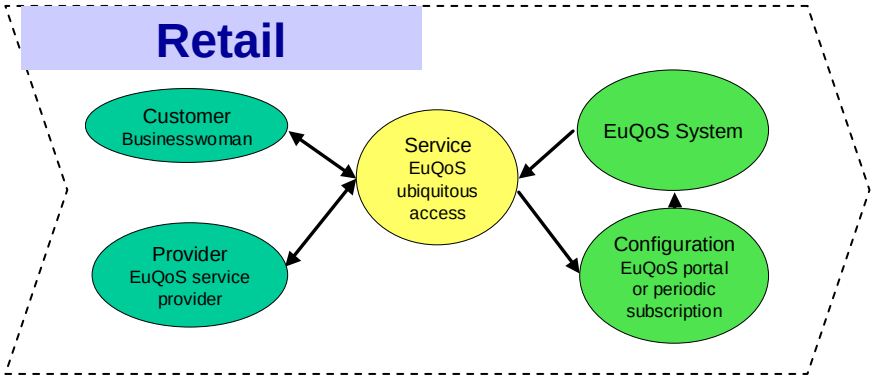
- Service technical description.
- Potential kinds of customers.
- Potential kinds of providers.
- Added value for the customers (non technical view).
- Potential charging models (especially those more innovative).
- Service configuration:
  - Needs from the underlying network.
  - Physical interfaces.
  - Specific required hardware and software.
  - Traffic characteristics.
  - Bandwidth requirements.

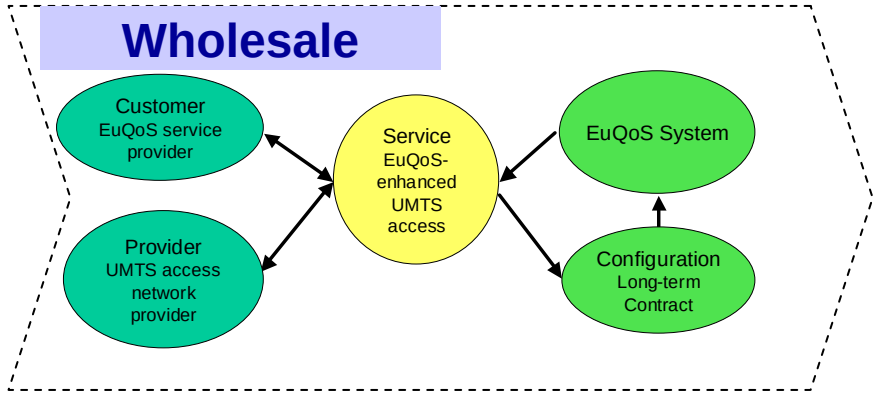


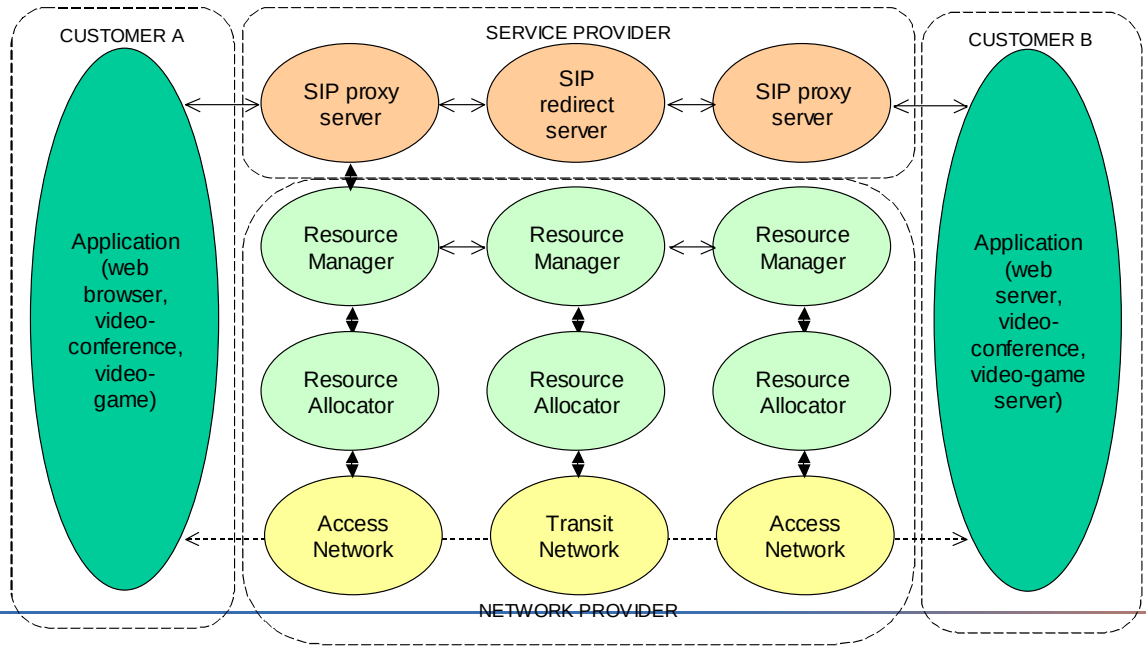
Scenarios for EuQoS

1. The benefits of being an EuQoS customer
2. Increasing service provider revenues from the residential user
3. New solutions for large corporations
4. Interactive events
5. Enhanced CRM (Customer Relationship Management) services
6. Solutions for healthcare corporations

S1: The benefits of being an EuQoS customer

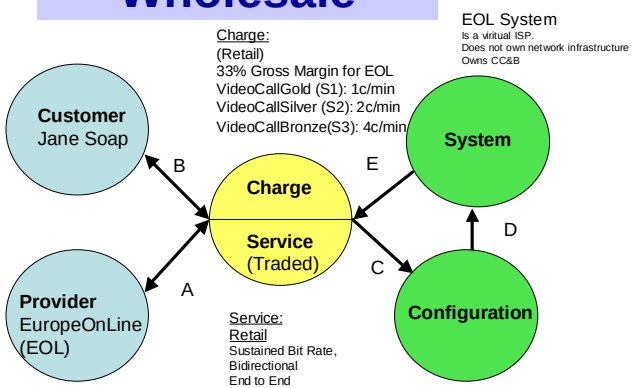




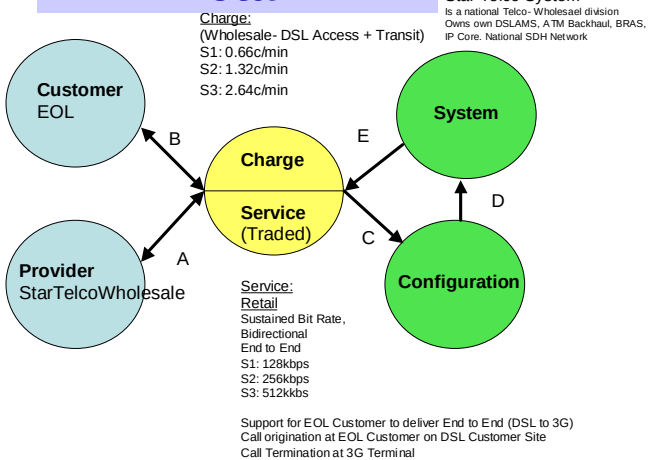


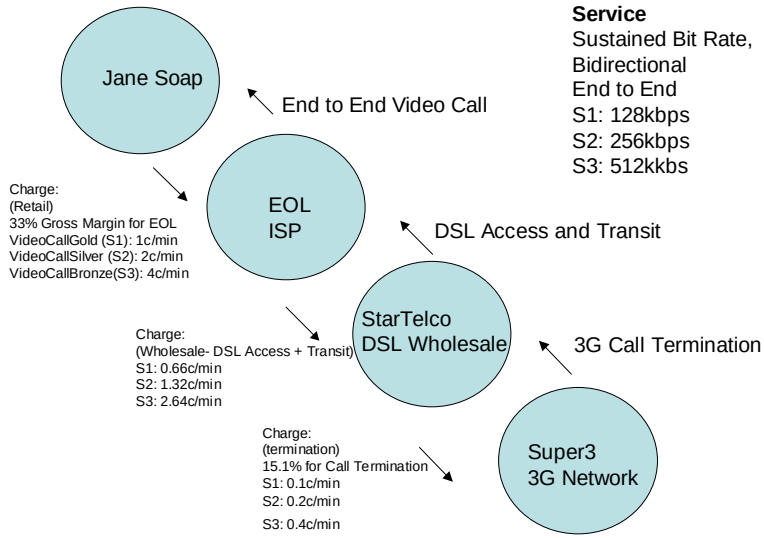
S3: New solutions for large corporations

Wholesale

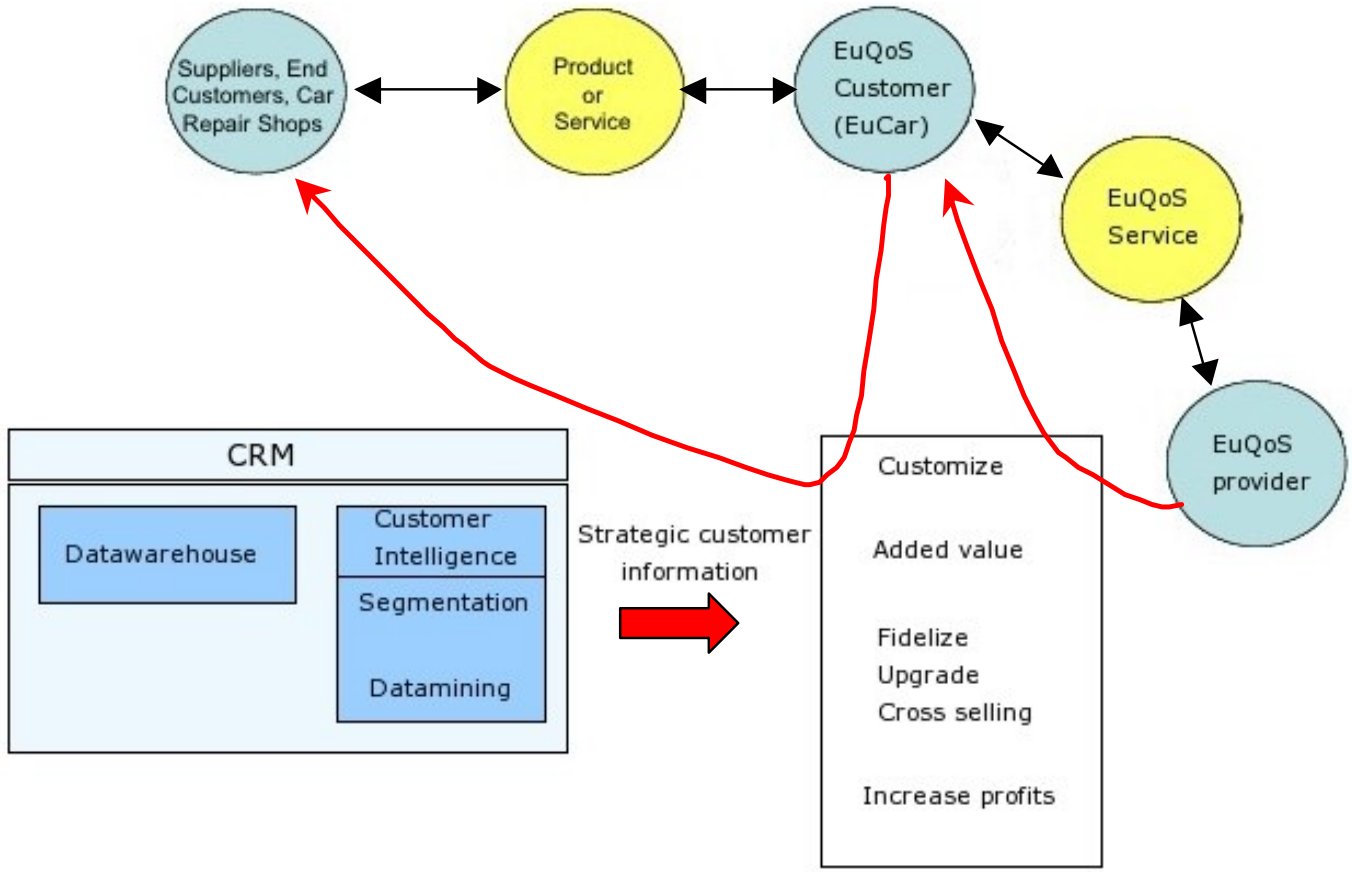


Retail



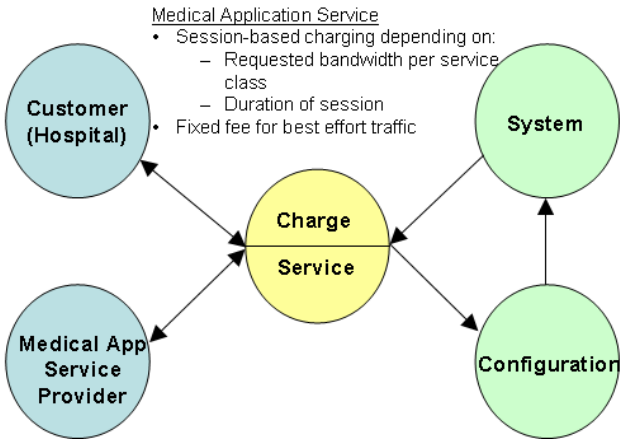


S5: Enhanced CRM (Customer Relationship Management) services

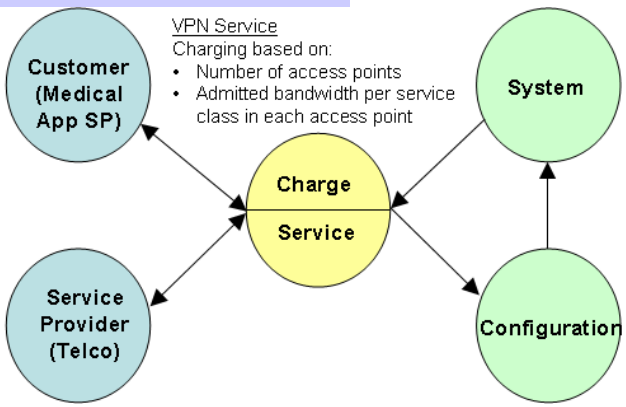


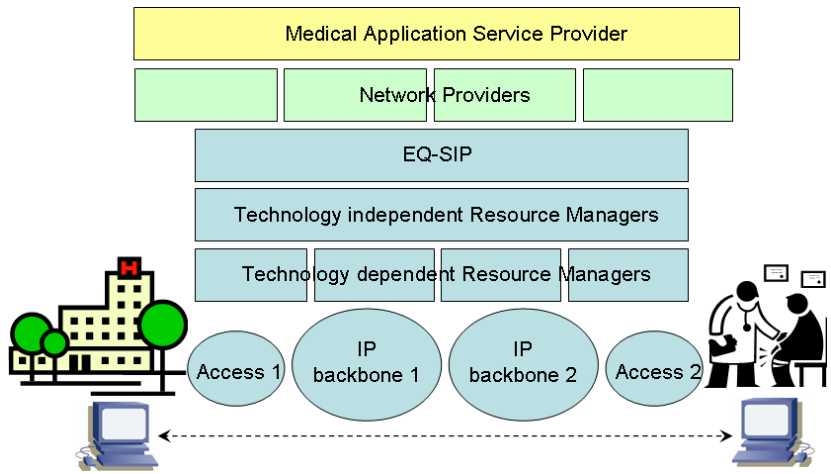
Solutions for healthcare corporations

Wholesale



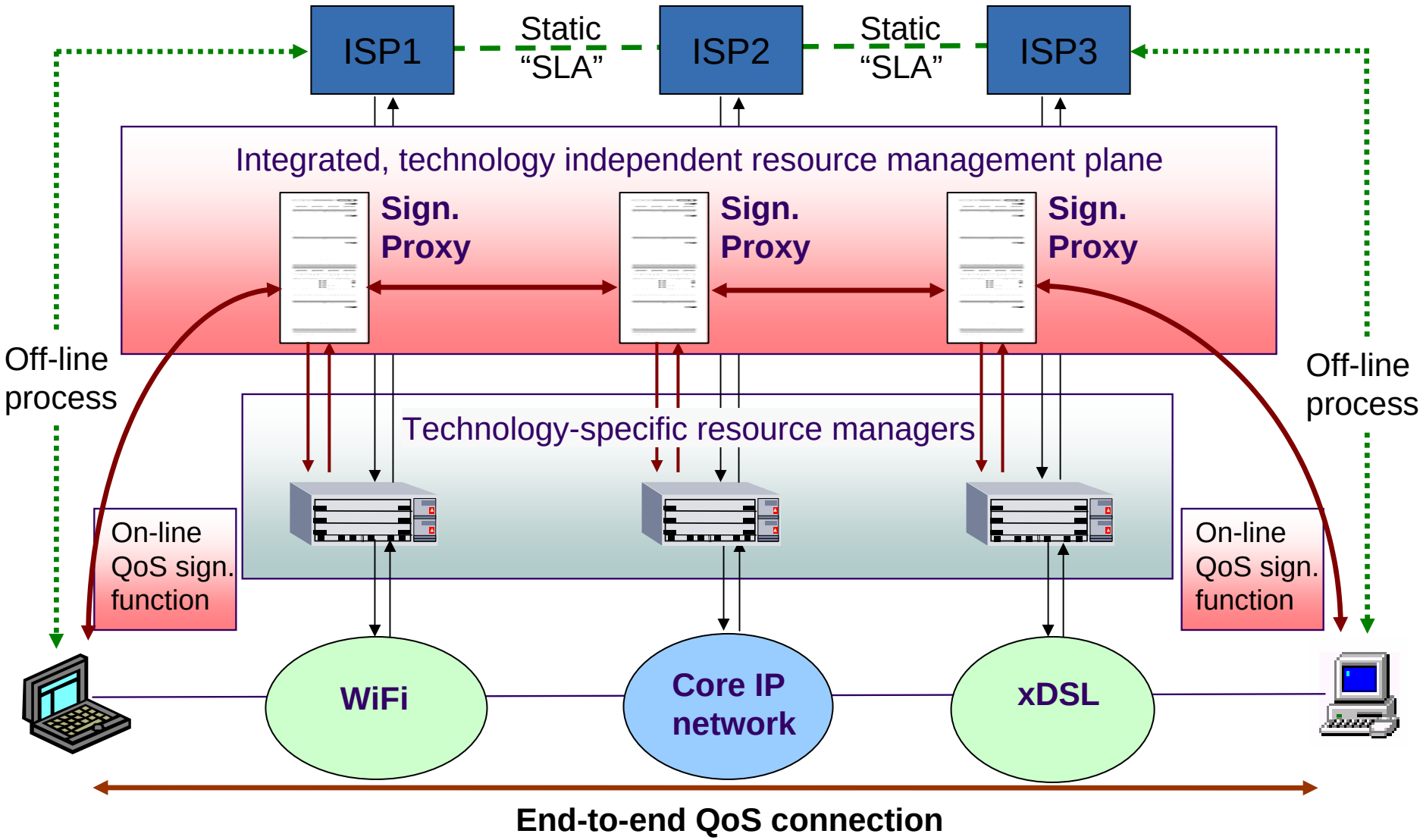
Retail





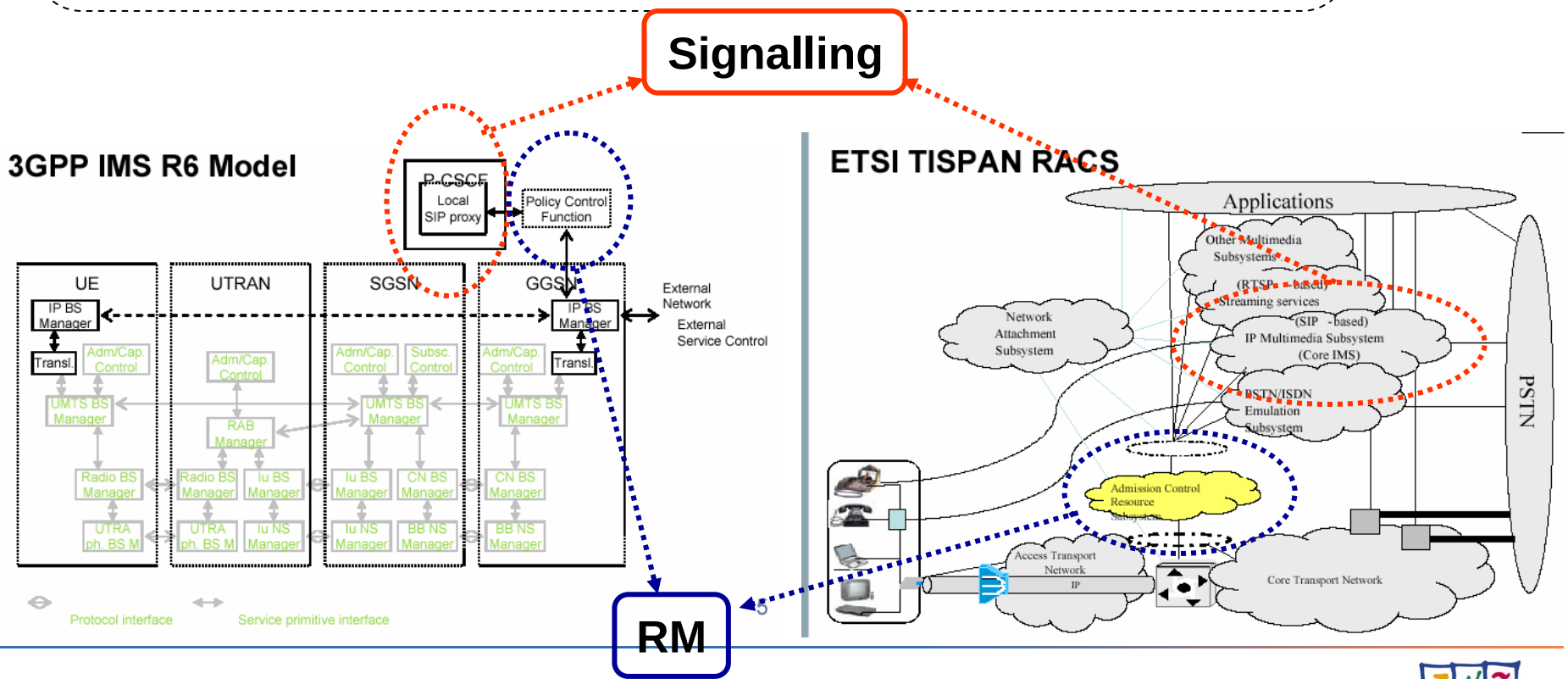
EuQoS solution:

- technology-independent layer added
- QoS signalling capabilities added to the applications (terminals)



Connection control in NGN: QoS is needed

- The connection control is made through network elements specialized in the control of each individual session.
- These elements have two main functions:
  - Signalling control (IMS elements and the likes)
  - Management of the resources of the network, independent of the technology (*Resource Manager, RM*)



Models for resource management: *tight control* vs. *loose control*

- The most relevant question in the provision of QoS is the **level of control exerted over each individual connection**.

Tight control

- Centralized vision of the resources in use
- The connection requests are accepted or rejected on an individual basis.
- The requests, acceptations and reservations are managed independently for the two directions in the communication path.

- Low scalability
- Reservation per flow
- Stateful information management in all points

\+ control by the end user

\- flexibility for service creation and management

Loose Control

- Distributed vision of the resources in use
- The connection requests are accepted or rejected on an individual basis, but based on a virtual reservation of the previously dimensioned resources.

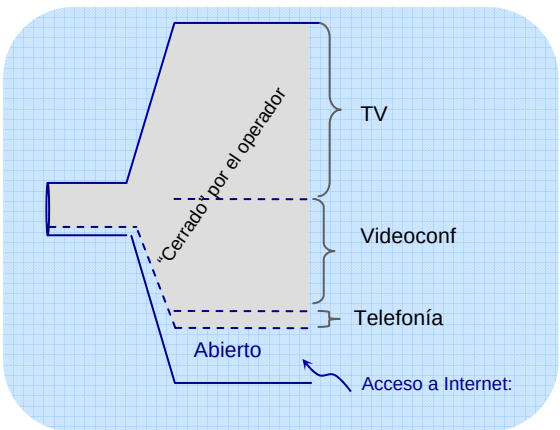
- High scalability
- Reservation mechanisms based on the global demand
- Stateful information management in few points

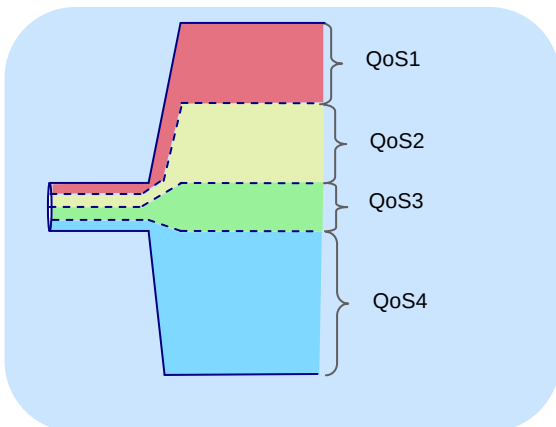
\- control by the end user

\+ flexibility for service creation and management

The change of the operator's role in the new network architecture

- All the new architecture proposals assign a relevant role to the operators, as a essential part of the service provision process.
- The difference is in the control level over the signalling plane:
  - *Tight* control (IMS trend):
    The operator controls the end services
    All signaling is controlled by the operator, including application signalling
  - *Loose* control (ITU/providers trend)
    The operator sells network services, based on objective magnitudes (QoS, security)
    The end services providers are coordinated with the operator
    The operator only controls the network signalling, but not the application signalling





Control

The long term vision

Report from IRTF e2e Group

- *How might the computing and communications world be materially different in 10 to 15 years, and how might we define a research agenda that would get us to that world?*

- Technology at the edge—an access infrastructure for next generation devices.
- A universal system for location
- Anti-Scale: small networks
- Assume Quantum Computers Work
- Giving everything a presence in cyberspace
- Reduce the energy required for communications
- Embrace the software radio revolution

The evolution will further migrate intelligence and control to the endpoints of the communication.

- A new design for secure, robust operation.
- Operation in times of crisis
- Rethinking the Control/Data Plane Dichotomy

The network core will evolve for more security and reliability.

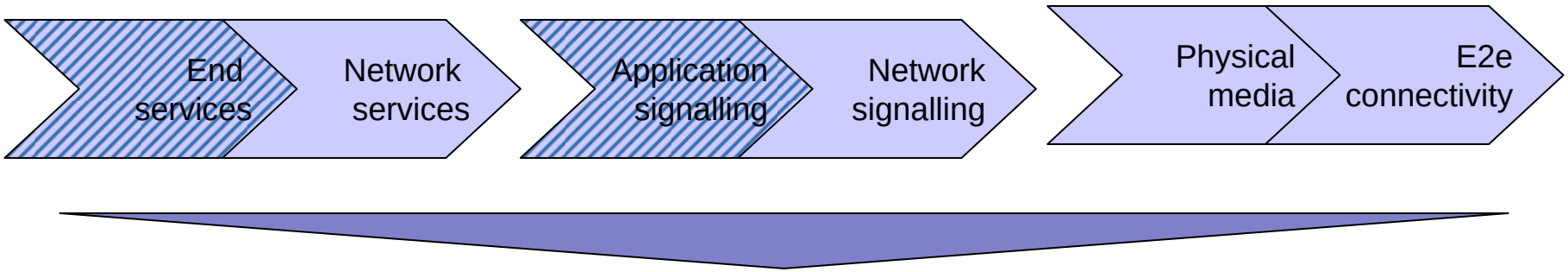
Source: "Making the world (of communications) a different place", IRTF e2e Research Group, 01/05

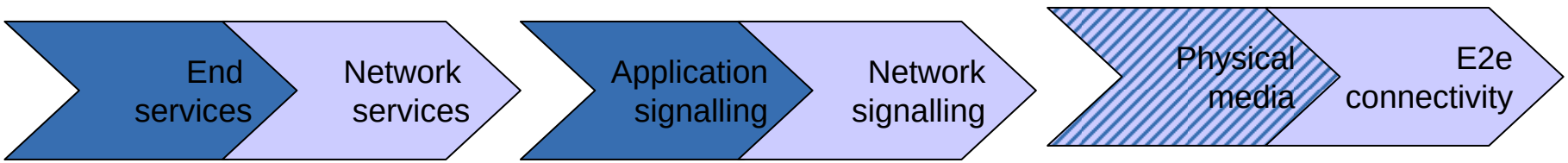
Evolution of the user/operator relationship

There are end services offered by operators and third parties.

Services are signalled by the user. The e2e control is responsibility of the operator

Network infrastructure is wholly managed by the operator





Users/third parties control the end services

Application and network signalling are totally separated.

Users may own and manage part of the network

Controlled by the operator

Controlled by the user