

ITU-T regional development  
forum :  
*Next Generation Access Regulation and  
Trends...*



Cairo, December, 2010

## Agenda

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FTTH Market panorama: highlights from the World and the middle east

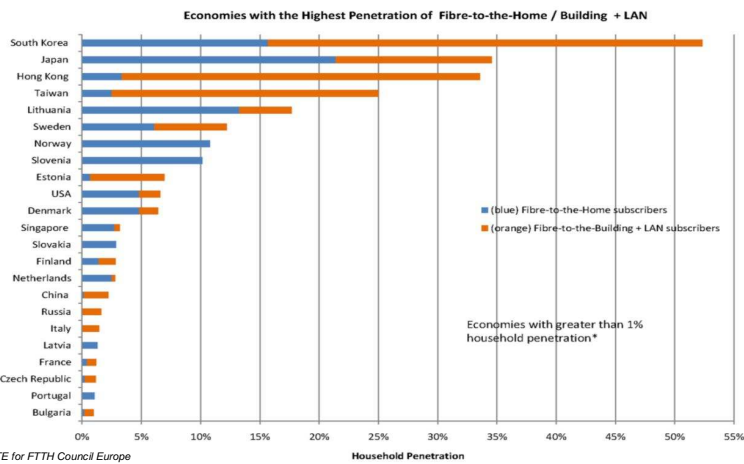
The Connected Experience :

*More bandwidth... more symmetry... more convergence*

Update on NGA-broadband regulation : *Europe and Middle East*

Update on NGA-broadband funding : *Public and private partnerships...*

## FTTx market panorama in the world



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## FTTx Middle East panorama in the region

In December 2009, UAE is undoubtedly the main FTTH/B market in the region, in terms of **Global Subscribers** and homes passed.

UAE is representing 91% of FTTH/B subscribers and 94% of homes passed in the region

Countries	Homes Passed Dec 09
UAE	1 065 000
Egypt	35 000
Saudi Arabia	11 622
Barhain	4 500
Lebanon	4 500
Kuwait	2 000

Countries	Subscribers Dec 09
UAE	62 700
Saudi Arabia	3 122
Barhain	1 000
Egypt	500
Kuwait	500
Lebanon	300

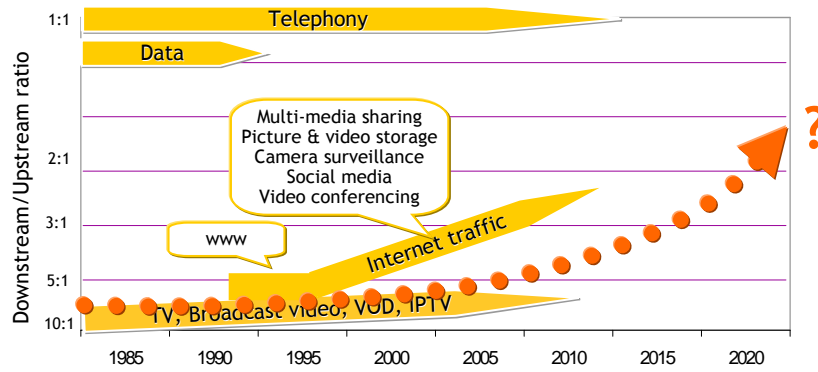
Source: IDATE for FTTH Council Europe

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## Understand your end-customer demand

Symmetry?



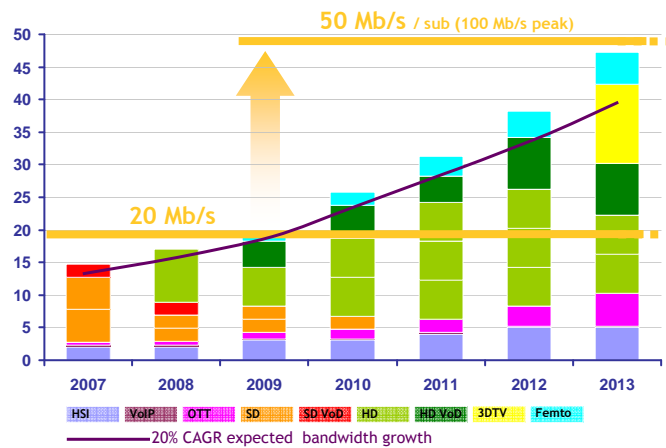
There is significant movement towards more symmetric residential traffic

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## Understand your end-customer demand

Bandwidth?



Sources: FTTH Council; Operators; Alcatel-Lucent

Global peak and average bandwidth have demonstrated their ability to grow consistently. 100Mbps will eventually become commonplace.

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## Understand your end-customer demand

Symmetry?

### More Interactivity

- Online gamers need speed & static IP (server)
  - Speed - Download allowance - Low latency - No throttle
  - Static IP - Low contention ratio

### More Symmetry

- Online storage space
- Online backup and share
- TV-centric video communication
  - Two way HD stream (15 Mbps) → FTTH/B
  - STB needs real time video encoding
  - Create minimal barriers for adoption
    - Pay-as-you-go models for support
    - Third parties create wholesale revenue

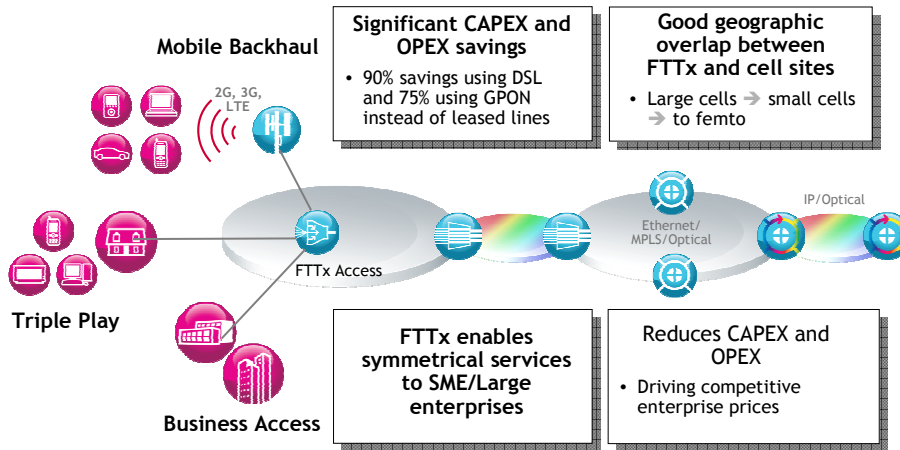


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## Understand your end-customer demand

Offload?



FTTx must meet residential and the specialized mobile backhaul and business access requirements

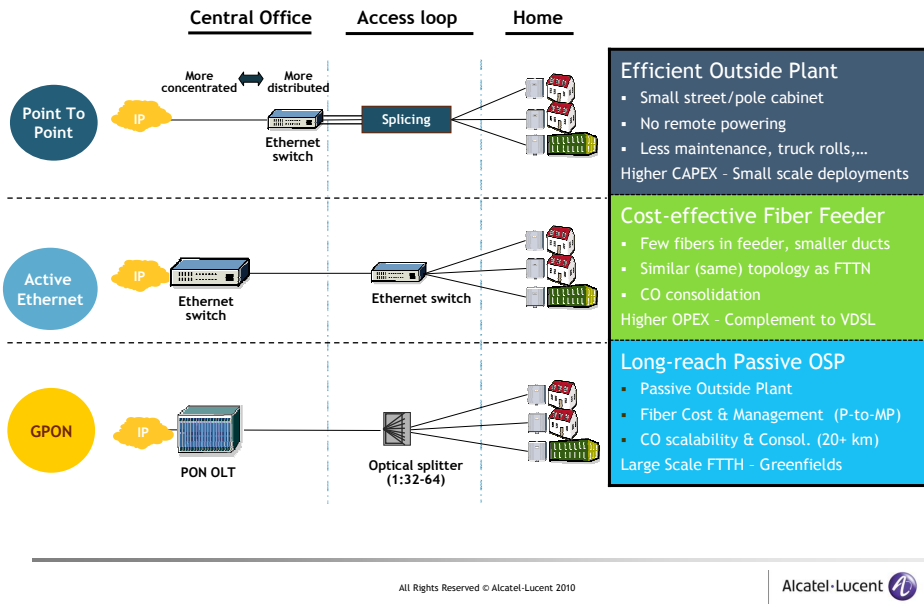
More on Convergence "MBH and Small Cells" ?

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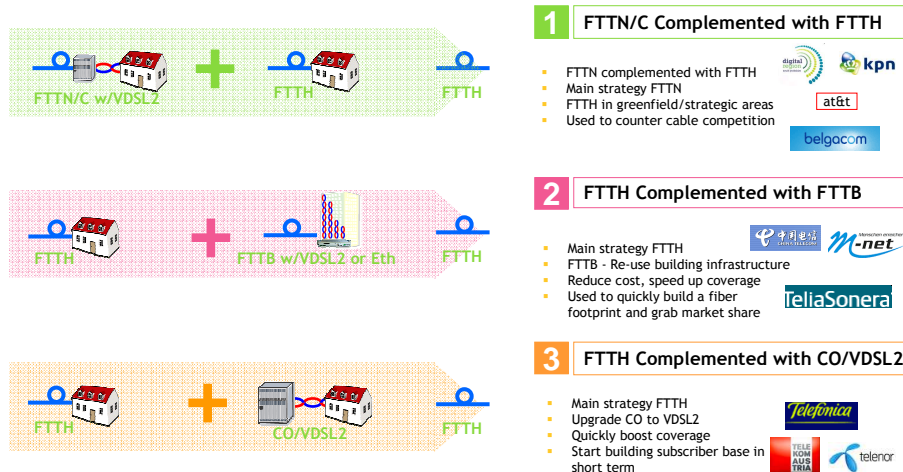
## Operator strategies for FTTx

FTTH terminology and topology : P2P, AE and GPON (P2MP)



## Operator Strategies for FTTx

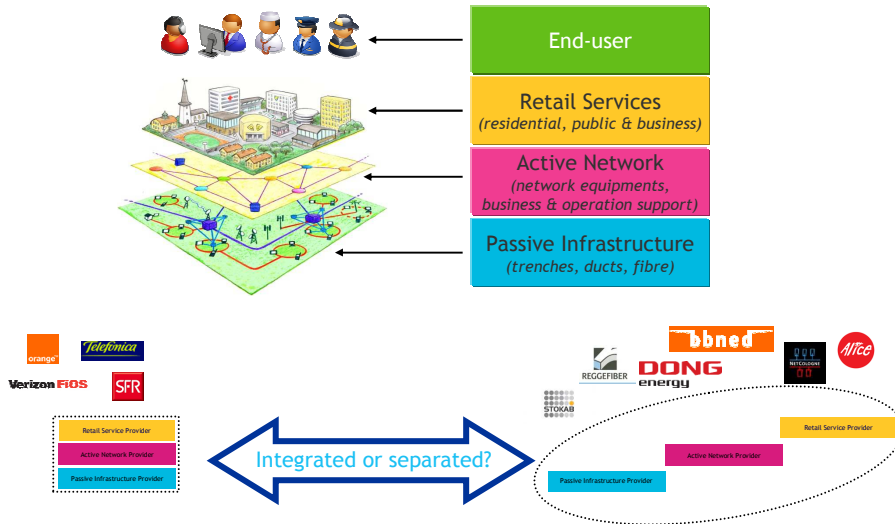
Migration from Central Office ADSL to FTTH: 3 common strategies



**VDSL2 ideal short/medium term:  
Sufficient bandwidth; quick time-to-market; and cost-efficient coverage**

## Competition drives uptake

*Private and public hand in hand - the layered model*

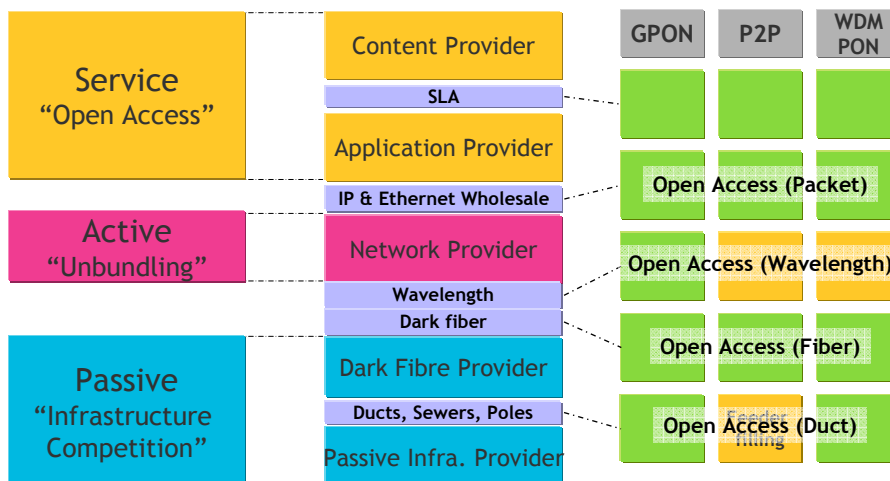


More on 3-layered model?

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## FTTH Regulation and the different sharing options

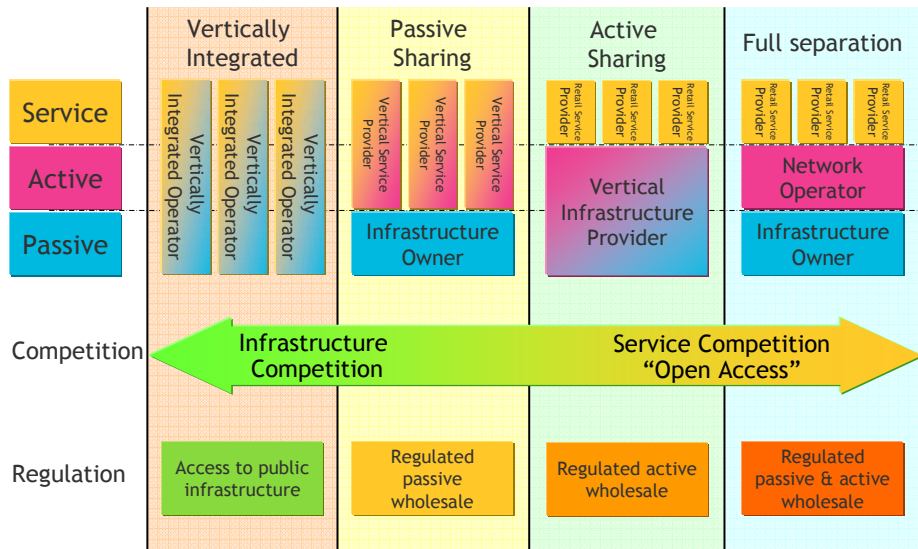


Sharing can take place at many layers, independently of technology

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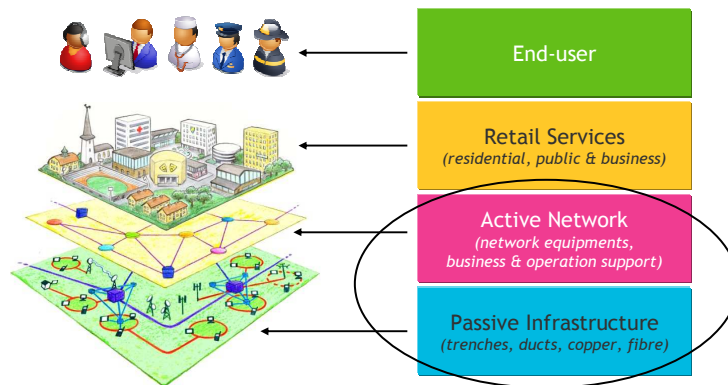
## FTTTH Regulation spectrum Infrastructure and service based competition



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## What does the EU Commission recommend? Europe recent past and current situation : regulatory focus



EU regulation focuses on passive infrastructure access/sharing (LLU) and active network access (bitstream wholesale)

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## What does the EU Commission recommend?



### 1 “Regulatory NGA principles for EU states

1. Promote infrastructure-based competition (vs service-based)  
*Service innovation on your own network is key...*
2. Regulatory remedies should be based on geographic segmentation  
*Urban, suburban and rural area's*
3. Duct access and in house wiring sharing is key  
*No regulatory burden if sharing options granted*
4. Fiber concentration (flexibility) point is where access should be granted  
*Location should be determined by economical and density conditions*



### 2 “Community guidelines for the application of STATE AID rules in relation to rapid deployment of broadband networks”, Sept 09

1. Definition of white, grey and black area's for NGA networks
2. State Aid is OK for white, possible for grey, unacceptable for black
3. Public investment in private venture under market conditions is OK

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## An update on NGA regulation

### Three-step process for regulating markets in Europe

- The EU has defined seven product and service markets in which ex ante regulation may be warranted
- Markets 4 and 5 are relevant to NGA networks because they concern broadband (Recommendation 2007/879/EC)

Step 1 Market definition	Step 2 Market analysis	Step 3 Market remedies
Market 4: Wholesale (physical) network infrastructure access (including shared or fully unbundled access) at a fixed location	Market 4: Typically dominated by the former incumbent operator	Market 4: Grant access to the physical path of the network duct sharing in-building fibre SLU for FTTC (terminating segment) fibre unbundling dark fibre
Market 5: Wholesale broadband access	Market 5: Not always 100% incumbent dominant (dependent on product definition and geography)	Market 5: A range of possible remedies include different levels of bitstream access different pricing mechanisms etc.

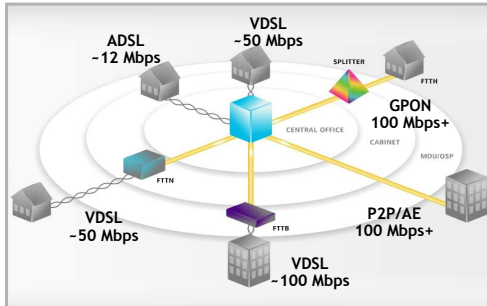
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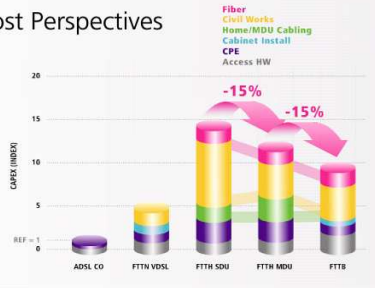


## Operator strategies for FTTx

Economics and technology go hand in hand



### Cost Perspectives



Revenues

CAPEX

OPEX

Penetration...  
Service Packages...  
Wholesale...

Civil Engineering...  
Passive Layer...  
Active Layer...

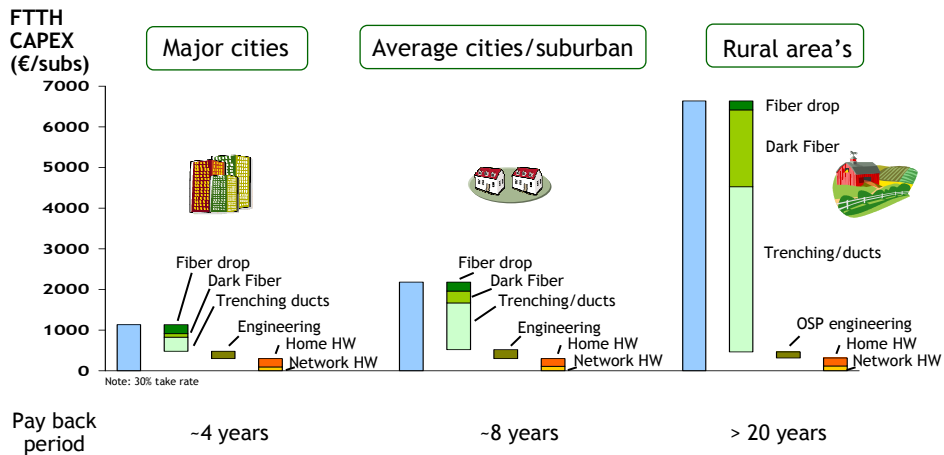
Operate & Maintain...  
Customer Acquisition...  
Physical Access...

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## Economical considerations for FTTH

The business case shows regional differences



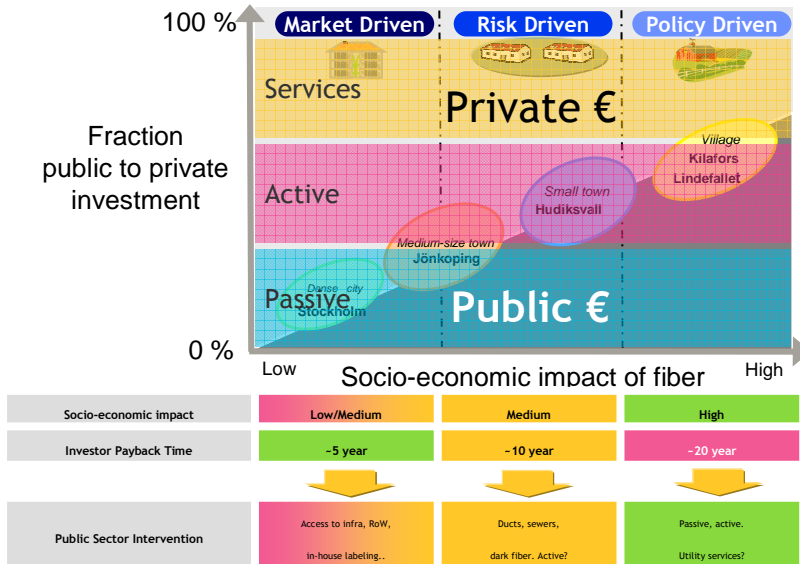
Civil works and Passive infrastructure is main parameter of the business case  
Traditional operators will not go all the way on their own

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## FTTH Regulation : The NGA investment

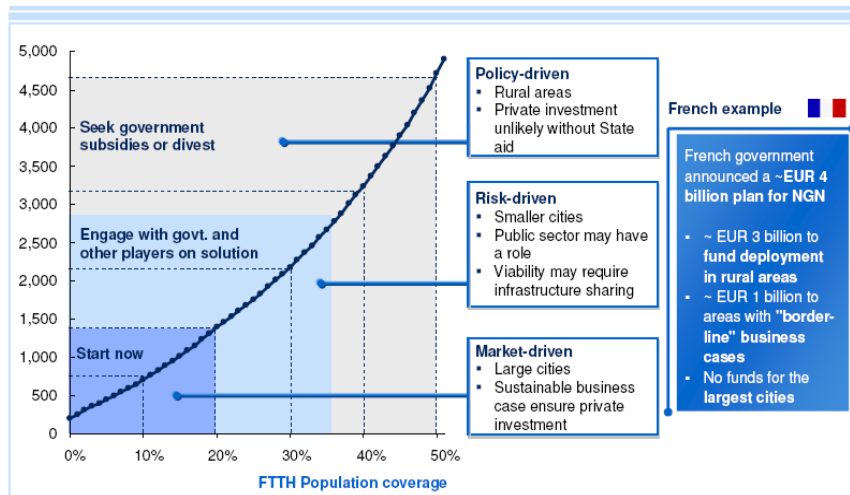
Public investment model should consider geographical segmentation



## Worldwide testimonial on FTTH investment

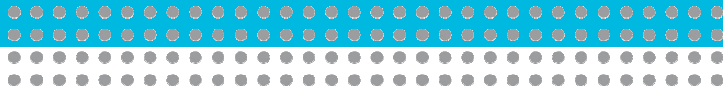
Policy makers and operators should go hand in hand

Required FTTH investment in Euros per HH

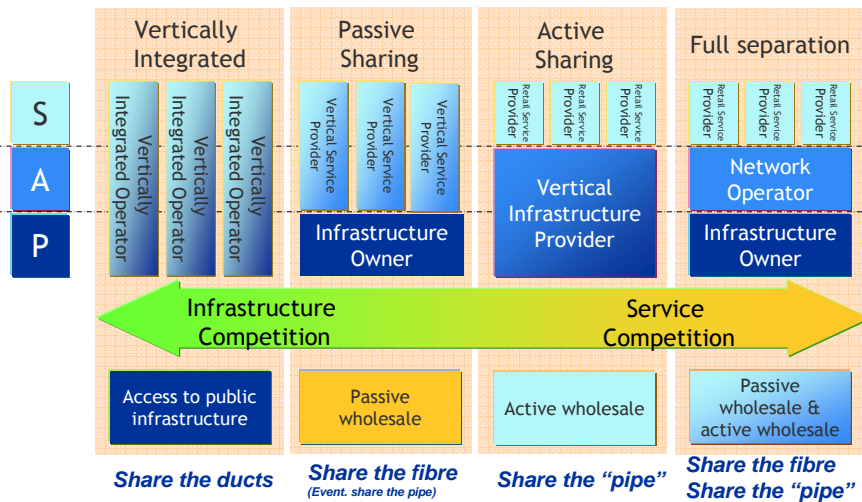


Thank you!

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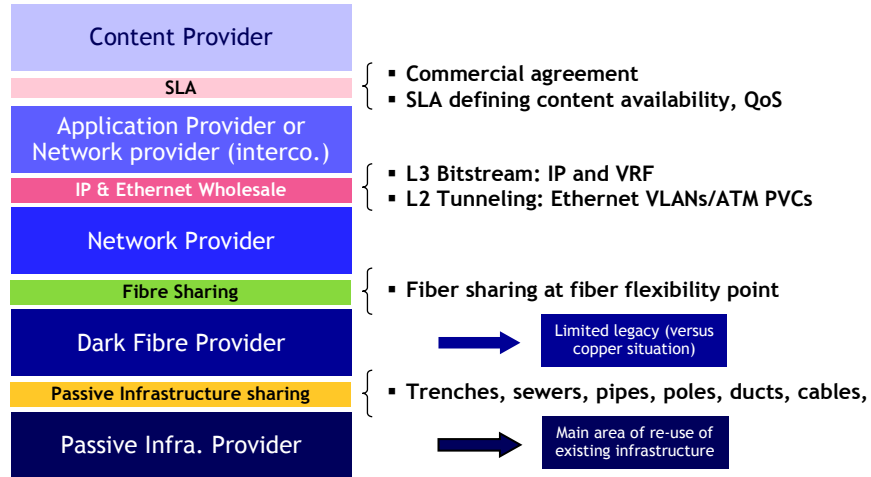


FTTH deployments - opening up at various layers  
Fibre access and infrastructure sharing



2

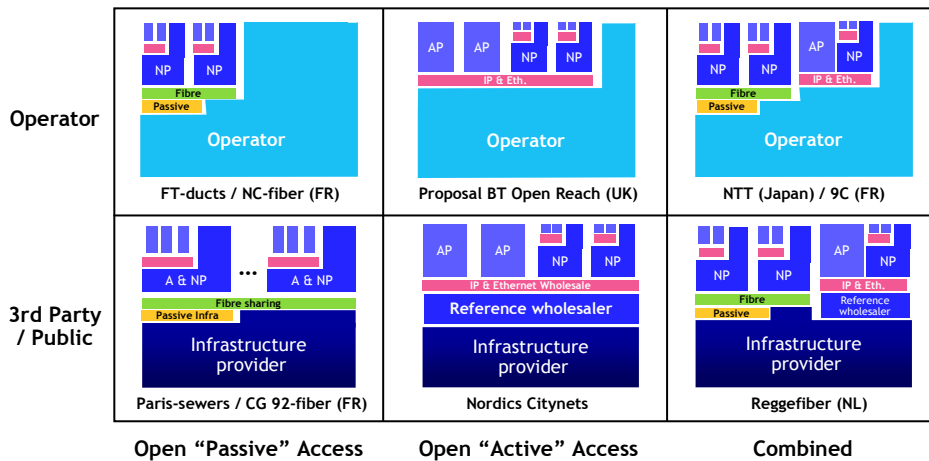
Various level to consider for sharing



Terminology "Open Access" is often used for L2 & L3 IP/Ethernet Wholesale

2

Six scenarios of FTTH sharing considered



"Access to civil works is the key driver for investments. It allows network replicability and infrastructural competition."

