The Price of Copper and the Transition to Fibre

Workshop n°1 :

Wholesale charges: setting methodologies for fixed access

2011-P65-AF-ECTA-WS n°1-Wholesale Charges

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Broadband vs. NGA: market analysis

The consumer need for NGA is limited in the foreseeable future.

Efficient investment during the next 20 to 25 years should automatically bring NGA network.

Demand side: fixed access is not (yet) a bottleneck.

- Dynamic average consumption: +10% per year but at low level in absolute terms (~0,1 Mbit/s).
- Existing demand of peak bandwidth structurally different between Internet (only few Mbps) and TV usages.
- Nevertheless, the willingness to pay for access to TV is still low, especially due to free-to-air terrestrial and satellite TV.

The willingness to pay more for NGA access corresponds to

- **a niche market in areas with more than 5/8 Mbps (~50% of households, mainly in urban areas),**
- **a mass market in areas with less than 2 Mbps (mainly in remote or rural areas).**

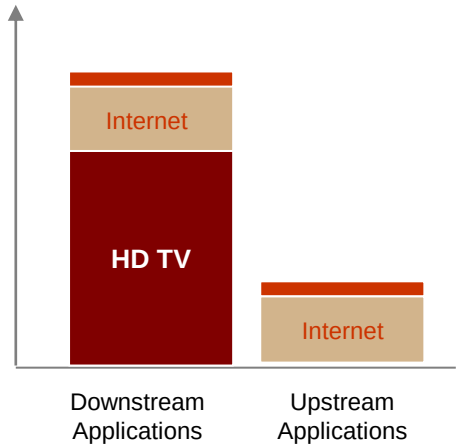
Supply side:

The migration to NGA will be slowed down since copper and coaxial access have not finished their useful life:

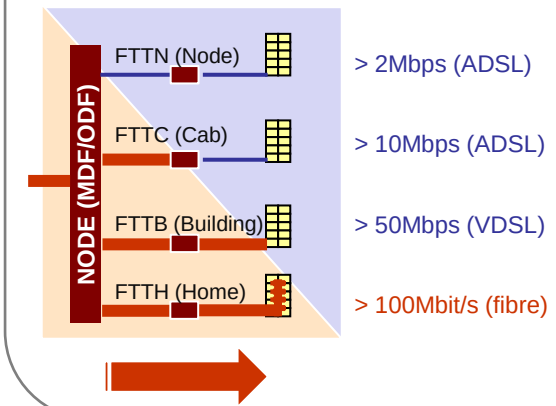
- Coaxial offers adequate peak and average bandwidth for each household with FTTC/FTTB.
- DSL: 50 Mbit/s up to 1 km (~25% of households) and 10 Mbit/s up to 2 km (~50% of households).
  - For remote/Rural areas, new NRAs ensure at least 2 Mbps for limited CAPEX.
  - Multi-line DSL ensures at least 5 to10 Mbps.

Nevertheless the deployment of a fibre access network is not more expensive and delivers better features. Without accelerated migration, NGA network should be gradually deployed during the next 20 to 25 years.

Demand at peak hour



Peak available bandwidths



Copper access pricing: 3 regulatory objectives

When setting cost-oriented copper access price during transition to the fibre network, regulators should follow three objectives consistent with the access directive: cost recovery, efficient entry and efficient migration.

1 - Cost recovery objective requires a commitment by the regulator to allow for the recovery of future costs.

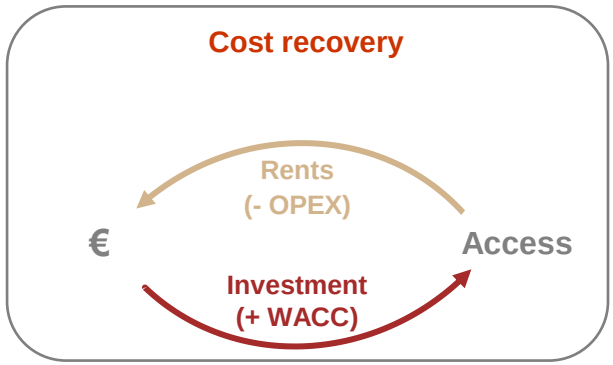
- In the interests of regulatory commitment and certainty, it is desirable that efficient costs incurred by the incumbent operator should be recovered.

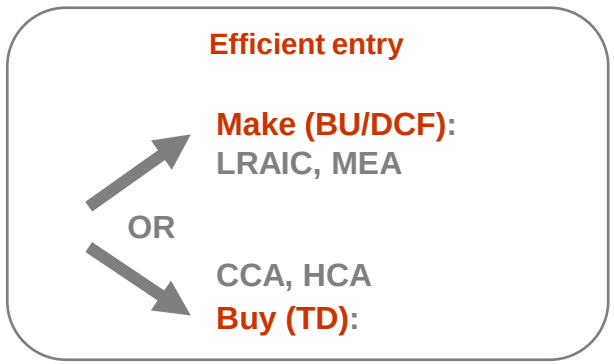
2 - Efficient entry objective ensures that prices should be set at a level which encourages efficient entry and discourages inefficient entry.

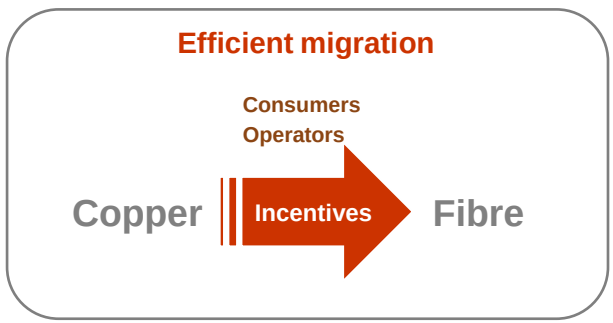
- While a wide variety of valuations can achieve the former objective, some form of current cost accounting or LRAIC pricing has been usually adopted.
- It cannot be optimal to continue using such methodologies that encourage to duplicate copper access when it is about to be replaced by fibre.
- A change in methodology may be necessary.

3 - Efficient migration objective ensures a desirable transition by creating appropriate incentives on the part of operators and consumers to switch to NGA.

- When copper LLU price changes, in a competitive retail market, retail broadband prices change. This brings in turn an impact on NGA investment incentives.







Source: "The price of copper and the transition to fibre", Martin Cave, Antoine Fournier, Natalia Shutova,

1 - Achieving cost recovery objective for copper

Different characteristics of assets lead to different optimal valuation methods: simple HCA-type valuation for civil engineering and accelerated depreciation for copper cables.

The copper local loop consist of two kinds of assets with two different valuation contexts: the copper loop, and the civil works.

Civil work is an essential facility that is used for both copper and fibre cables and is unlikely to be replicated

- The pricing of duct access is neutral with respect to the transition from copper to NGA network
- Optimal methodology is an HCA-type approach (pure HCA, or Infrastructure Renewal Accounting if maintenance costs are higher than historic costs)

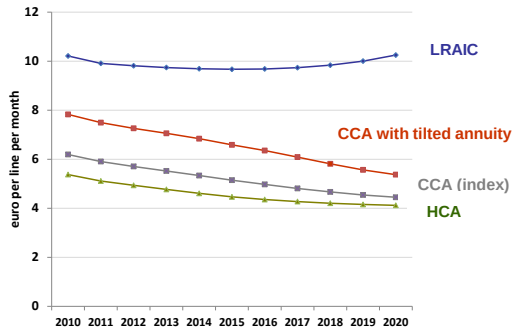
Copper loop may be replaced before the end of its expected life

- Optimal methodology is volume-adjusted depreciation

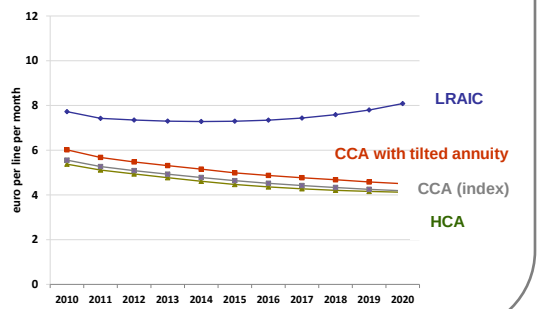
Civil engineering valuation method significantly changes the cost value (see figures)

Transition from copper to NGA leads to a change in valuation methodology. A key implementation point is to ensure continuous net value.

Simulation of LLU costs: civil work + cable



Simulation of LLU costs: civil work is valued using HCA



Sources : ARCEP, France Télécom, INSEE, TERA analysis.

Main data used is local loop investments made over a 30 year period by France Telecom, as computed by ARCEP in 2005. The number of copper lines is supposed to linearly decrease starting from 2010 and to equal zero in 2030. The cost includes both CAPEX and OPEX.

Source: "The price of copper and the transition to fibre?", Martin Cave, Antoine Fournier, Natalia Shutova,

2-3 - Achieving efficient entry and migration objectives

To avoid competition distortion and ensure quick transition to NGA, the copper access revenue should compensate the incumbent for the costs incurred and the copper and fibre access tariffs should be close to each other.

It is necessary to find an approach that respects both efficient entry and migration objectives.

The copper access price should not allow for over-recovery for two reasons:

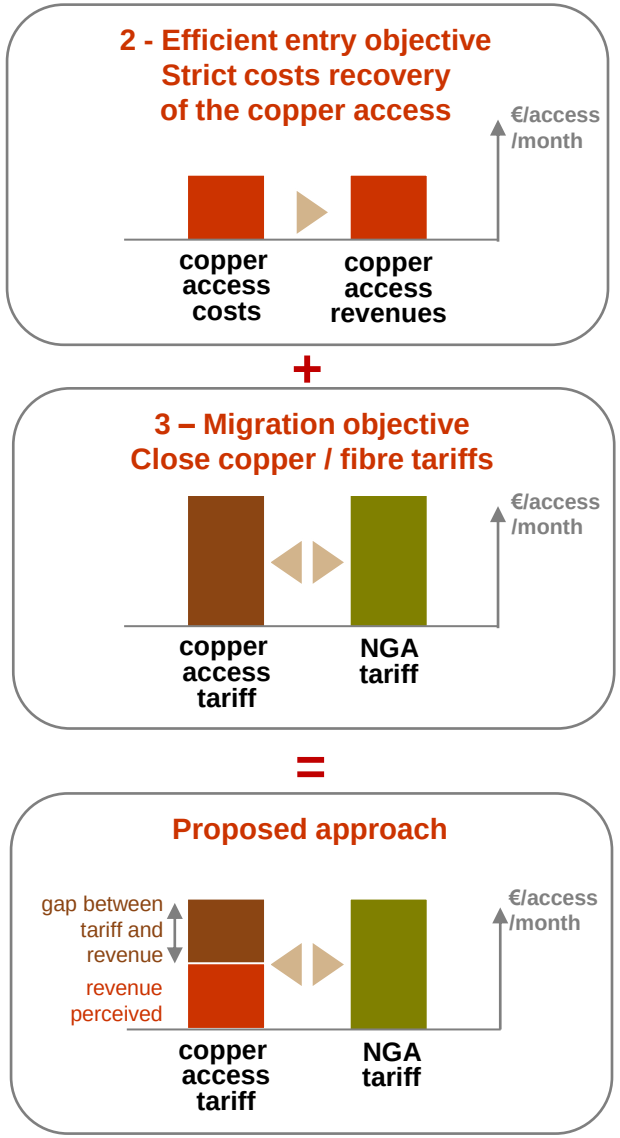
- From a consumer point of view, a too high copper access price decreases consumer surplus.
- From an alternative operator point of view, a too high revenue from copper access tilts the power on the NGA market in favour of incumbent.

An HCA type method is appropriate

Tariffs of copper access and NGA should be close to each other

- Fast and ultrafast internet access belong to the same market.
- Consequently, if copper access is less expensive than NGA, consumers will prefer to stay on the old network, slowing migration and slowing further deployments.

Proposed approach that respects both objectives might require the difference between incumbent copper cost level and NGA cost level to be dedicated to the funding of NGA deployment by increasing/maintaining copper LLU tariff close to NGA tariffs.



Source: “The price of copper and the transition to fibre?”, Martin Cave, Antoine Fournier, Natalia Shutova,

Some findings to facilitate a migration to fibre without competition distortion: wholesales charges and beyond

To ensure a faster fibre deployment than consumer need without distorting competition, wholesale charges regulation can be a powerful lever.

Beyond wholesale charges, an increased threat of deployment from alternative operators should be assessed.

Wholesale charges: 3 regulatory findings

- **Efficiency adjustment in access cost orientation:** Ensure that greenfield deployment or heavy maintenance of local loop is done with fibre
  - *Efficiency assessment of new CAPEX should be done each year*
- **Incitation to migration with tariffs neutrality:** Beware of tariff signal of broadband vs. NGA access; a quick migration needs to avoid a pricing gap (especially in urban areas)
- **Absence of distortion** requires an absence of over-pricing of copper access
  - *Distinguishing between cost/revenue analysis and tariff decisions*
  - *Pricing-gap management is needed.*

Beyond wholesale charges: increased threat of deployment from alternative operators

- Fibre deployment is accelerated in areas where the incumbent copper network is under threat of an alternative deployment
  - *Upgrade of incumbent's cable network*
  - *Investment initiative of alternative DSL operators / Public-Private Partnership*
    - → *Possible only in case of local exclusivity/monopoly (and co-investment scheme): potential alternative deployment projects are blocked by the threat related to incumbent's retail market share.*
    - → *May be interesting to favour competition for the market (tender for deployment) instead of competition in the market.*

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For further details about slides 3 to 5:
Martin Cave, Antoine Fournier, Natalia Shutova
“The price of copper and the transition to fibre”

http://www.teraconsultants.fr/en/Tera-Consultants/Which-Price-Level-for-Copper-Access-in-the-Transition-to-Fibre.html