Next Generation access networks and net-neutrality

IDATE
Transatlantic Telecom Forum

Wednesday November 14th, 2007

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NGN access networks-net neutrality

- **NGA access rollouts in France-major issues**

- **Net-neutrality**

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Ftth rollouts in France

- Main residential operators:
  - **Illiad-Free** (FttH Point-to-Point) : 1 bn€ over 5 years; rolls-out in Paris + announcements for other cities with municipal ducts (e.g. Montpellier)
  - **France Télécom** (FttH PON) : 280 M€ over 18 months; rolls-out in Paris and several main cities (Marseille, Lyon, Lille, Toulouse)
  - **Neuf Cegetel** (Fttx) : 300 M€ over 2 years; FttB in Paris (transitory) and FttH PON with the local authority SIPPEREC (around Paris)
  - **UPC Noos** (cable operator) : 300 M€; rolls out FttLA in 12 main cities

- Major local authorities projects including FTTH:
  - Conseil Général des Hauts de Seine
  - SIPPEREC
  - Gonfreville l'Orcher (Seine maritime)
  - CU du Grand Nancy
  - Syndicat Mixte départemental de la Loire
  - CA du Pays d'Aix
  - etc.

Which investment model?

Passive investment (civil engineering works, fibre):

- Long return on investment
- Sharable

Active assets (main distribution frame, terminals):

- Shorter return on investment
- Operators' core business

Two investment models

Integrated operator

Currently preferred by incumbents

Shared liabilities

Municipalities and/or utilities using liabilities

Operators implementing active assets

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Which regulation?

- Investors need a foreseeable regulatory environment and a reasonable return on risky investments

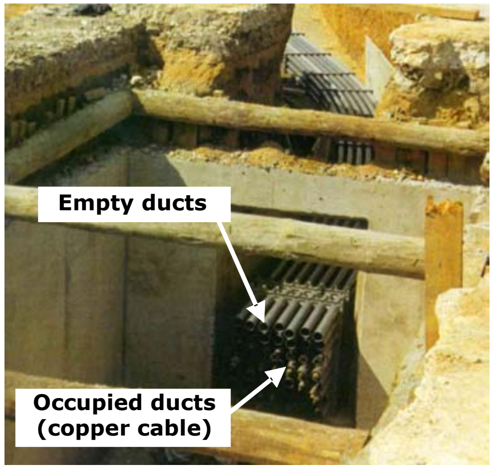
  …but the high risk of re-monopolization has to be taken into account
- There is no unique solution in the world… regulation is not black and white

- Objectives :
  - keep new infrastructures open, while guaranteeing a reasonable return on all new investments whose financing should be shared
  - necessity to take today the relevant and proportionate measures
  - …in order to avoid to have to regulate heavily and in detail tomorrow

- Concentrate on the two remaining “bottlenecks”

- Adapt the current European framework to face this new challenge

First bottleneck : Civil engineering-largest cost item
Existing infrastructures must be used…



- **Civil engineering costs account for 50% to 80% of total cost**

- **Open access sewers are found only in a few cities in France (Paris, Lyon, Marseille)**

- **Need to access existing ducts (France Telecom, Local authorities' cable PSD, others)**

- **Arcep is already engaged in different projects:**

Evaluation and negociation of a future duct rental offer from France Telecom

Facilitate access to other ducts (cable)

Work with local authorities, in the Public Initiative Networks Committee's

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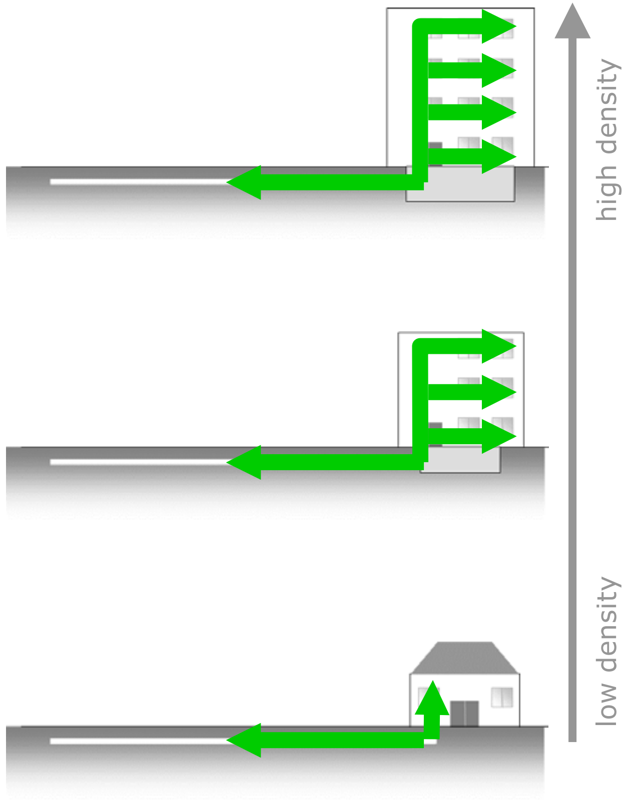
Second bottleneck: in-house wiring+end part of the local loop

- At its end part, the fiber loop appears as a non easily replicable asset…

- In-house: It is doubtful there will be more than one rolling out of in-house wiring

- Is it economically feasible, intelligent for all operators to roll-out in parallel several fiber networks to each building in all zones of our territory?

- if no access to passive facilities (either ducts or fiber), risk of downgrade of competition from unbundling to bitstream.



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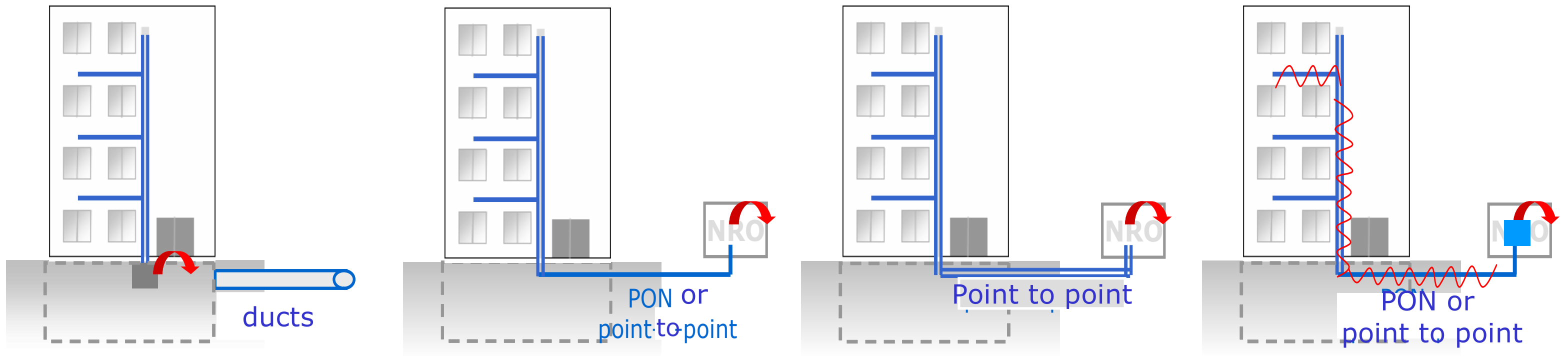
Sharing of the last part of the local loop should be considered
The different options :

option 1	option 2	option 3	option 4



Passive mutualisation Access to ducts + passive sharing at bottom of the building	Passive mutualisation Co-investment in a fiber network from NRO to the home	Passive mutualisation at the NRO Point to point Access rental	Active mutualisation at the NRO (VLAN Ethernet)
Competition between 2 fiber networks	**Co investment**	**Unbundling**	**bitstream**

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Access to content is crucial

-Content-related ARPU is not sufficient today (3€/ month/subscriber for DSL)

VOD catalogue too limited and too costly

-Need to establish a win-win relationship between operators, distributors and rights holders

NGN access networks must be seen as a new opportunity for increasing the value of contents, not as a threat

-Thus it is necessary to :

-facilitate access to contents, especially premium and sports contents

-insure an equitable revenue sharing

-develop a financing of content by operators

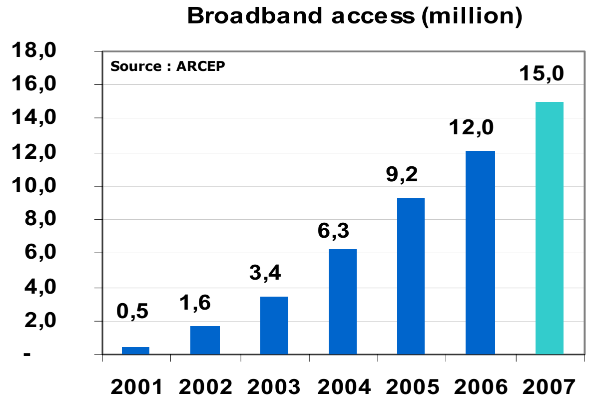
Net Neutrality : a US specificity ?

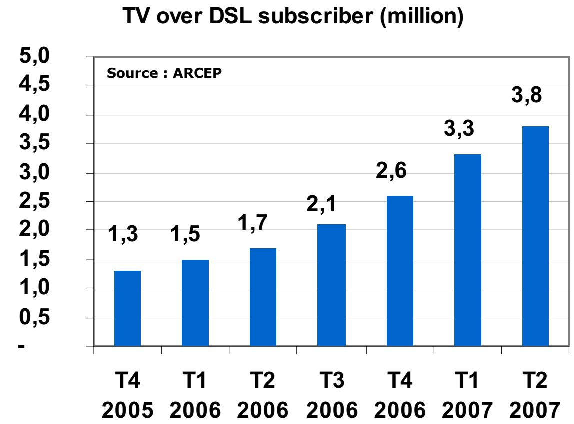
- Despite the number of broadband subscribers in France, net neutrality issue have always been analyzed as an US specificity.

- In France, unbundling has stimulated competition on access and created incentives to innovate

- The early and fast take-off of “managed” TV & VOD over DSL, as a substitute of IPTV, could explain this dissimilarity.

- Will it last? Service content providers like You Tube, Joost ,Glowria, Daily Motion are likely to dramatically affect bandwidth demand per user.





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The very first (public) case

- The very first public case in France appears last summer between Neuf Cegetel and Daily motion. Neuf Cegetel subscribers were confronted to the following disclaimer while using Daily Motion web site :

- It appears that the growing bandwidth between the ISP and the content service provider, implied to renegotiate the peering arrangement.

- Those negotiations are based on public documents called “Peering Policy”

Peering policy : billing criteria

- Among operators, most important criteria for billing are the *symmetry of the traffic* & *the number of peering points*

- When downstream traffic (from service provider to end-user) overcomes upstream traffic, operators:
  - May request service provider to multiply the number of interconnection points
  - Bill downstream bandwidth

- Today, for a standard competitive operator, Downstream/Upstream traffic ratio are the following

	Downstream	Upstream
For the whole traffic	2	1
For most popular video web sites	10	1

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Content issues in draft directives

- Today ARCEP is basically regulating disputes between operators for “access” or “interconnection” issues
- ARCEP has no competencies to regulate :
  - content service providers (competences of CSA for TV and Radio) or
  - dispute between content providers and operators

- Nevertheless, things could evolve in the next telecommunication European framework,
- **Draft Access Directive**, article 2 sets the following :
  - *“"access" means the making available of facilities and/or services, to another undertaking, under defined conditions, on either an exclusive or non-exclusive basis, for the purpose of providing electronic communications services* ***or delivering of information society services or broadcast content services.*** *"*