



Next Generation Networks : Fiber Optic Access

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Ultrabroadband opens a new investment cycle

- The regulation of broadband has encouraged investment by all operators, local loop unbundling (LLU) giving operators technical and economical control.
- Ultrabroadband is an unavoidable technological evolution in the medium term, to meet growing demand for content, and to support the concomitant rise in bit-rates.
- Major french players have announced fibre deployments
 - with respect to other European countries, the challenge here is to bring the fibre as close to the subscriber as possible (right to the base of the house or building)
- Investment is significant and will need to be spread over several years :
 - several hundred euros per connectable home
 - at a rate of 1 to 2 million homes per year
- The concern is to ensure that this investment is borne by all operators as much as possible.



Alternative operators require access to civil engineering

- For an operator rolling out an ultrabroadband network, access to existing civil engineering changes the economic viability considerably.
- All operators are not on an equal footing :
 - alternative operators can roll out FTTH only in limited cases like Paris, where sewers are accessible and reach every building ;
 - France Telecom draws optical fibre in its civil engineering ducts inherited from the former monopoly ;
 - Numericable is progressively replacing coaxial cable by optical fibre
- France Telecom's ducts are an essential facility.
- Access to France Telecom's civil engineering must be guaranteed to allow all operators to invest.
- ARCEP has audited France Telecom's ducts in about ten cities. It shows that civil engineering is not saturated, although availability is heterogeneous and will depend on engineering rules.

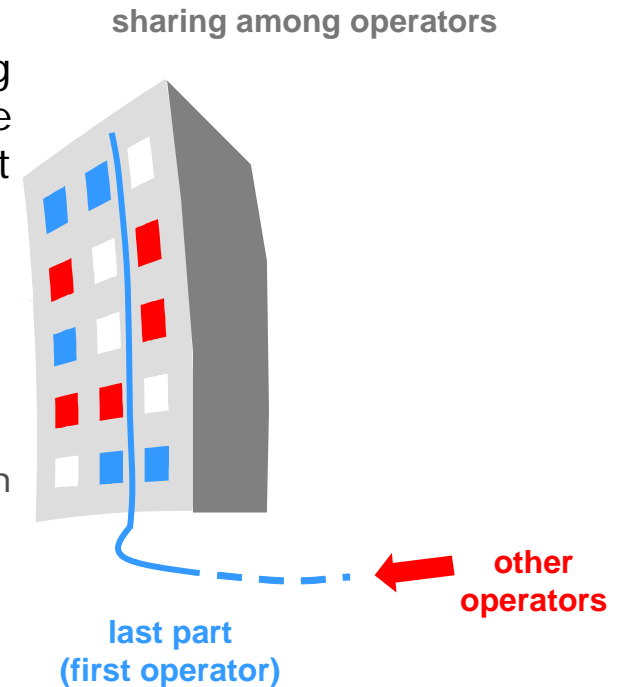


Regulation of France Telecom's ducts has been initiated

- Regulation operates in the framework of market analysis : the new Commission recommendation includes ducts regulation in order to guarantee access to the "new" essential infrastructure: France Telecom's civil engineering.
- In its market analysis for broadband, ARCEP has proposed to regulate the access to France Telecom's ducts.
- France Telecom has released its ducts' offer to operators.
- Operators are presently experiencing the process of this offer.
- ARCEP will carefully control that all operators have quickly access to civil engineering under equivalent conditions.

For all players, access to buildings is the main issue

- Rolling out fibre to the home means that private properties have to be equipped.
- Operators are prepared to bear the cost of this installation in the cores of major cities.
- However, condominium owners, landlords and building managers fear that local monopolies be created at the building or the neighbourhood level and they both want to :
 - limit the number of operators present in common areas...
 - not to restrict the consumer when choosing her/his operator.
- So, sharing among operators is necessary :
 - the first operator installs the fibre in the building and then gives other operators access to its network
- In practice, operators have not yet applied sharing.

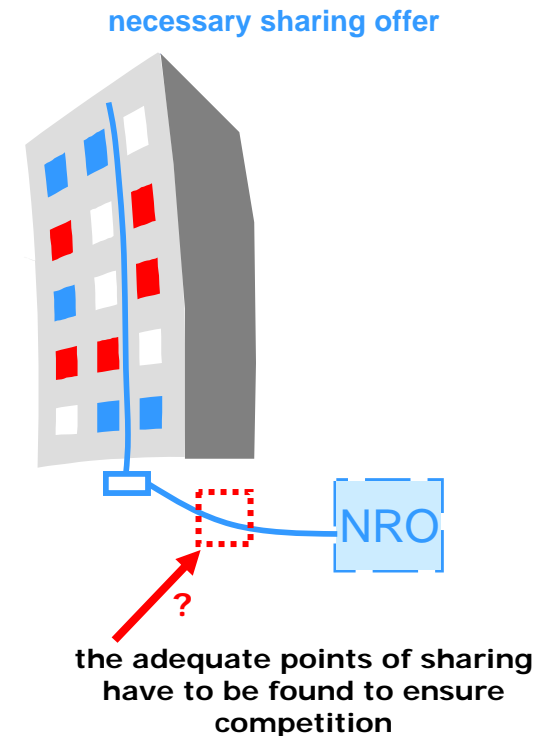


Legislative measures are needed

- The current framework doesn't include sharing :
 - Condominium owners and landlords can ask for it when solicited by operators...
 - ...but it is often difficult to set the modalities and to check effectivity.
- Symmetric regulation appears to be a relevant tool and the law could :
 - require from operators to share the last part of their fibre network,
 - make ARCEP in charge of defining modalities of sharing...
 - ... and of controlling that operators respect them.
 - This would amount to extend "symmetric" regulation (obligations applicable to all operators), which is currently limited to interconnection.
- A proper balance is to be found between operators' rights and obligations, so that drawing fibre in buildings can be simplified :
 - "antenna rights" could be extended to fibre ;
 - in new buildings, pre-equipment standards will have to be changed in the medium term.
- ARCEP launches a public consultation about the content of a typical contractual agreement between an operator and a condominium (or landlords).

Sharing must encourage competition through infrastructure while meeting economic and operational concerns

- Sharing of in-house wiring and access to ducts alone will not be sufficient to guarantee sustainable competition, especially in low-density areas :
 - it is doubtful that there will be several rolls out to the base of each building on the whole territory.
- The first operator rolling out fiber in an area will have to allow sharing, at some point which has to be chosen carefully, as it will determine the topography of the network for the following operators.
- ARCEP is now initiating multi-lateral workshops to discuss how sharing can be efficiently implemented and will issue recommendations for landlords and building managers:
 - practical guide
 - Typical agreement
- ARCEP launches a public consultation about the most adequate location of points of sharing in order to ensure competition.



Regulation includes two different tools, which can be adapted to market developments

- Two tools are needed :
 - Asymmetric regulation of France Telecom's ducts, inherited from the former public monopoly ;
 - Symmetric regulation of all operators when sharing of the last segment of fibre networks.
- A fine tuning is necessary in order to encourage investment while preventing the creation of local monopolies :
 - the initial situation significantly differs from that prevailing when broadband was first regulated, as France Telecom's now holds a dominant position in civil engineering, not on the local fibre loop ;
 - there is very little feedback from Europe, as France's starts ahead in deploying fibre to the home.
- ARCEP will review progress in one year :
 - France Telecom's wholesale offer of civil engineering ;
 - implementation of sharing ;
 - operators' rolls out in the horizontal and vertical segments.

Work will take shape in 2008

- Legislative measures are needed for access to buildings and the obligation to share the terminal segment.
- ARCEP is launching technical work to implement sharing and will issue recommendations for landlords and building managers.
- Access to France Telecom's civil engineering has now entered its operational stage
- The whole process will be assessed in one year from now.

