



Cost sharing models of NGN rollout in rural or remote areas

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Introduction

- ▶ **In France, 4 main players share the market of fixed and mobile networks :**
 - For fixed networks, historically in France, sharing model has been supported by ARCEP's decisions regarding copper local loop unbundling :
 - Copper local loop owned by the incumbent
 - Cost oriented tariffs to allow an access to the local loop for alternative operators
 - For mobile networks, each operator generally uses its own network but in some cases, operators tend to share their networks (i.e. in rural areas)

- ▶ **Today, ARCEP regulation faces multiple challenges :**
 - Fostering the roll-out of NGA networks, both fixed and mobile
 - Specifically for fixed networks :
 - Continuing and adjusting the regulation of copper local loop
 - Ensuring a smooth transition of usages from copper local loop to fiber based networks

- ▶ **Specific challenges of rural areas pleads for network sharing :**
 - Sustainable investment models to be find
 - Need for specific cost sharing models

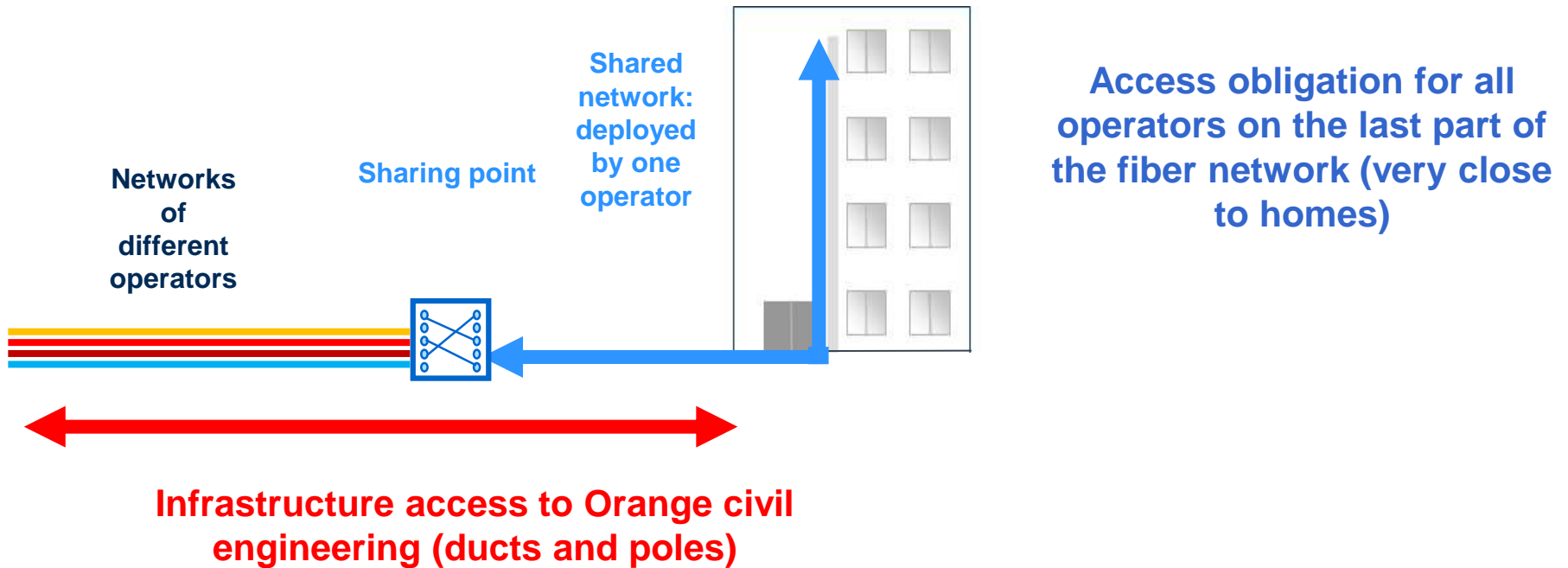
Several economic models for fixed networks infrastructure sharing

For Ultra fast broadband , economic network sharing model depends on the type of deployed network :

- ▶ **Renovation of the copper network to increase the bandwidth :**
 - Economic model network sharing based on public subsidies is a solution : favor competitive balance of unbundling at the local sub-loop
 - Regulatory model based on unbundling model (i.e. ownership of the network by the incumbent and strict cost-oriented access offers)

- ▶ **Rollout of a new fiber network in parallel with the existing copper network :**
 - Requires first to establish an incentive business model for the deployment of this new network
 - Risk premium for investors
 - Cost sharing between operators via co-financing mechanisms with property rights on the new infrastructure (i.e. IRU)
 - Incentive to migrate from the old network to the new one in a second phase

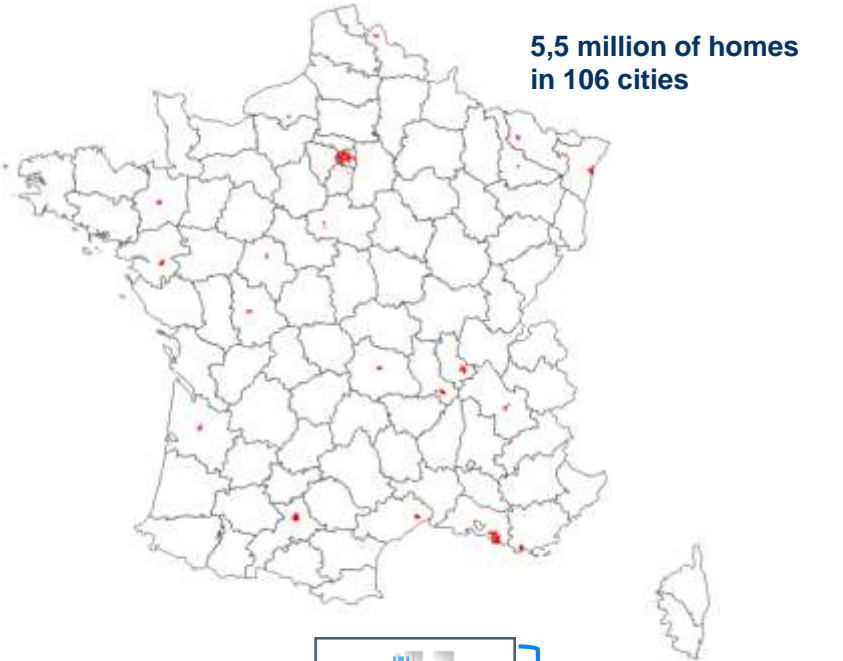
Focus on FTTH : two complementary pillars to deploy fiber to the subscriber : civil engineering infrastructures and optical fiber



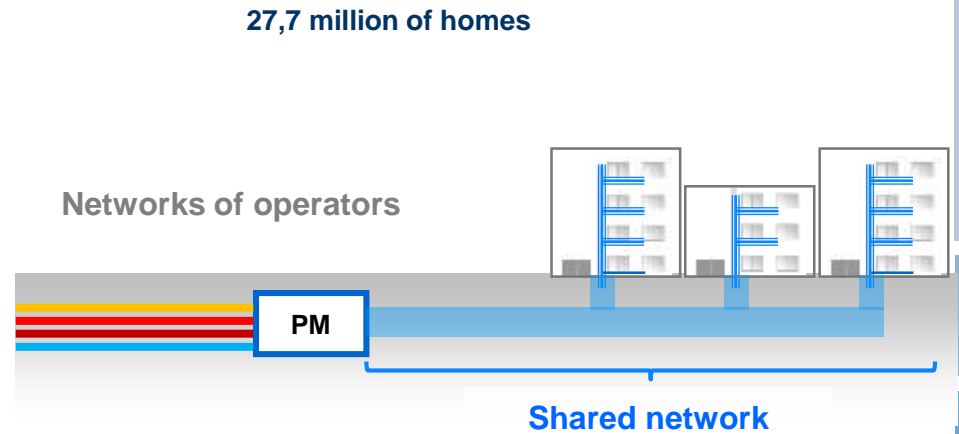
The aim of ARCEP regulation on FTTH is to give incentive to the operators to invest in FTTH networks deployment (access to Orange infrastructures), while promoting competitive and sustainable balance (access obligations to the last part of fiber)

Zoning regulatory framework taking into account rural areas characteristics: infrastructure sharing level depends on the density area

In **very densed area**, structural and historical cost efficiency of previous deployments enables each operator to have an horizontal network very close to the buildings



In **less densed area**, it is necessary, that the operators share a larger part of the network



Networks of operators

Shared network

PM

Shared network

Impact of public intervention for NGA deployments

- ▶ **In areas of the territory where a sustainable economic balance can not be achieved in case of an investment by the private sector alone :**
 - Public funding contribution then covers additional costs of deployment in these areas and give incentives to operators to invest (leveraging effect)
 - It is however necessary that this intervention should not distort market conditions with regard to areas where private initiative intervenes alone

- ▶ **Public intervention may enable the implementation of a set of rules supporting deployment of NGA networks in defining :**
 - Intervention areas of public and private players and in coordinating deployments in the area defined
 - Technical conditions of these interventions as well as economic conditions of infrastructures sharing between players

Focus on mobile networks sharing

When mobile coverage is missing in rural areas, public authorities can encourage, or even impose, the deployment of a shared network to ensure the coverage beyond the profitable zone.

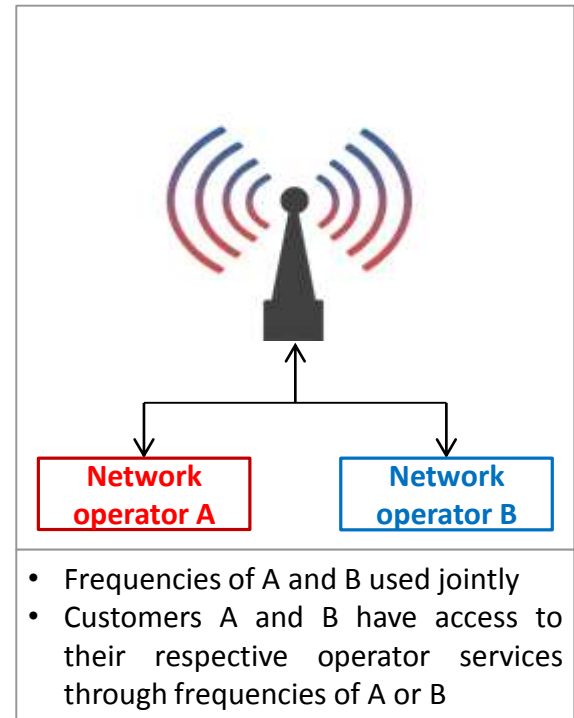
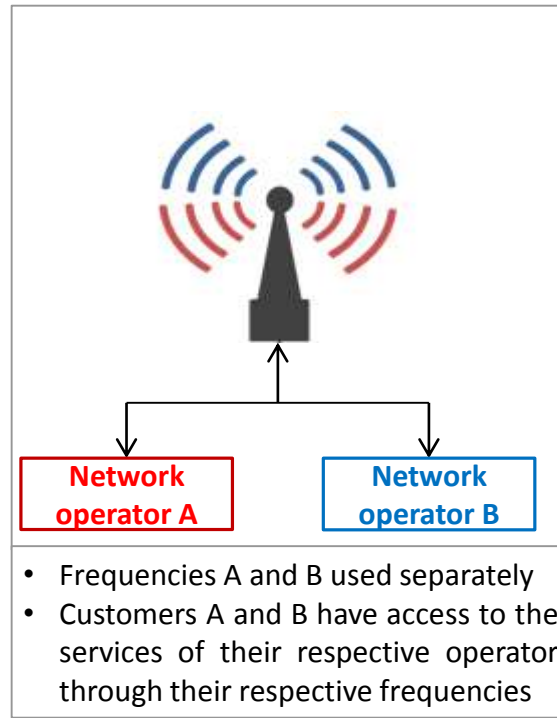
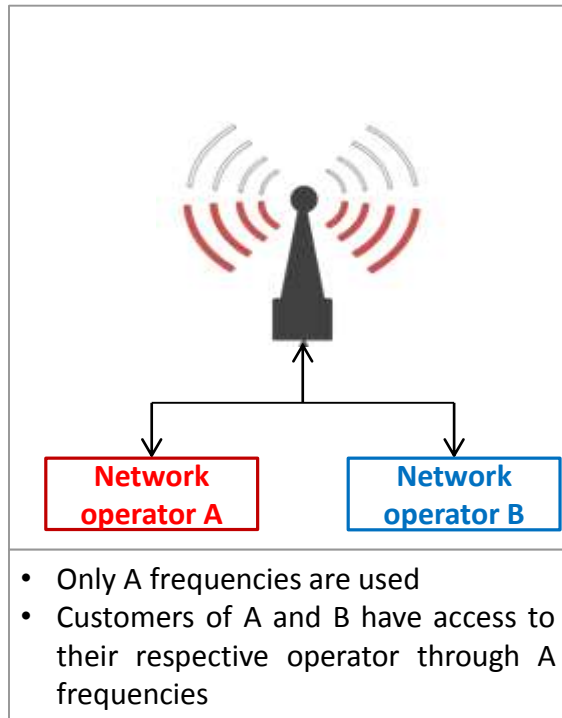
The “White area” program organizes the shared coverage for all operators of the most rural areas in France, as a territorial development policy.

- ▶ Benefits : acceleration of the service coverage, costs savings for operators under certain conditions

Operators can also take the initiative of sharing their networks, even outside the most rural areas.

- ▶ Benefits: cost savings for operators, notably for 4G deployment
- ▶ Risks: competition issues

Several options for mobile networks sharing



Active infrastructures sharing

Roaming

« RAN-sharing »

Spectrum sharing

Time frame for network sharing models

- ▶ For **Fixed Networks**, high cost of investment for deployment of **NGA** and uncertainties on the speed of their commercial success require necessarily long term time horizon (20 years) to enable operators to find economic profitability. This acknowledgement emphasizes the need of :
 - Stability of the regulatory framework prior to investment decisions
 - Implementation of flexible economic models to address uncertainties (gradual adjustments).

To reduce this uncertainties, incentives for migration from copper network towards the fiber network could be set up. In France a high level working group chaired by Mr Champsaur (Champsaur mission) studied the transition from the copper network to the fiber network.

- ▶ For **Mobile Networks**, frequent and significant investments are required to rollout new sites and to upgrade equipments. Technological generations shift every decade (2G, 3G, 4G) and amortization of investments is planned accordingly. In this context, it is important that :
 - Regulation gives sufficient visibility to players and ensures the security of investments.
 - As market conditions change (incl. new technological developments and competition conditions), regulation must be adjusted.



Thank you for your attention !

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