Finding the appropriate response for competitive Next Generation Access networks — Results of the first notifications under the Article 7 consultation procedure (1)

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1. The challenge of ensuring a competitive transition to NGA

The current first generation broadband is provided over the copper wires which have been used for fixed telephony since the 19th century, or over the coaxial cable of cable TV operators. It has allowed the development of multiple-play offers, bundling the provision of Internet access with voice and television. Copper and coaxial wires are, however, insufficient to carry the higher guaranteed throughput required for new broadband consumption schemes, including multiple broadband access per household and new applications such as interactive applications or High-Definition Television (HDTV). To provide such services it is necessary to connect the end-users by optical fibre. Partly because of the increased competition on the market, several operators have started to undertake significant investments in new fibre-based access networks, referred to as Next Generation Access (NGA) networks.

The transition to NGA represents both an opportunity and a risk for broadband competition. Entrants depend today on regulated access to the incumbent's copper network, which limits their capacity to compete on price and services. Entrants who invest in their own fibre access networks could compete more aggressively on the market. On the other hand, not all operators are on an equal footing when it comes to undertaking investment in NGA. Incumbents are better off. They own nearly all the civil engineering infrastructure where fibre can be rolled out, which represents more than two thirds of the total investment necessary to deploy NGA. They usually hold the largest share of national retail broadband markets and benefit from unmatched economies of scale and scope. It is therefore easier for them to reach the break-even point when investing in NGA. In this context, there is a risk that incumbents might try to leverage their advantage as first movers in the provision of high-speed broadband services and as owners of the NGA infrastructure to exclude entrants from the broadband market.

As a matter of principle, competition law is the proper tool to ensure a level playing field in markets open to competition. However, in the sector of electronic communications ex ante regulation is a necessary adjunct to competition law. Incumbent operators are required to provide access to their networks, which cannot be duplicated in a reasonable time period. Such access regulation is indispensable to allow market entry, ensure consumer choice and avoid distortions of competition.

The current EU regulatory framework is based on the competition law concept of market definition. In its revised version of the Recommendation on relevant markets (3), the Commission has defined two wholesale broadband markets (market 4 for wholesale (physical) network infrastructure access and market 5 for wholesale broadband access), which the national regulatory authorities (NRAs) are required to analyse. Both market definitions are technology-neutral. Given that the same services can be provided over fibre as over copper, NRAs must include fibre-based networks in their analysis of wholesale broadband markets as long as they do not show the existence of a break in the chain of substitution. They may impose access obligations regarding new fibre loops or the underlying civil engineering infrastructure, in addition to access obligations already imposed on the copper access network.

However, contrary to legacy telecoms infrastructure, NGAs remain for the most part to be deployed and regulators have to consider the dynamics of network investment when they impose access obligations. Given the high level of investment required and the uncertainty as to demand take-up, NGA investments are generally considered to be risky. When designing NGA access obligations NRAs need therefore to give investors sufficient certainty that regulation will not jeopardise their ability to recoup their investment but also to make sure that at the same time existing competition is not being prevented.


(2) The content of this article does not necessarily reflect the official position of the European Commission. Responsibility for the information and views expressed lies entirely with the authors.

So far, NRAs have developed different regulatory approaches according to national market conditions and, more importantly, according to how they balance the two policy objectives of promoting investment on the one hand and safeguarding competition on the other. This article explores some of the measures notified to the Commission under the Community consultation mechanism (the so-called Article 7 procedure) and looks in particular into the key issues of the inclusion of fibre in the wholesale broadband markets, the choice of a proportional set of access remedies, the rules for the transition from copper to fibre access and the pricing of NGA access.

2. Regulatory measures notified by EU Member States concerning NGAs

In a number of Member States, NGAs remain in a development phase and were not considered in detail in the previous analyses of the wholesale broadband markets. However, in several Member States NGAs have been deployed on a larger scale in recent years and NRAs have notified measures dealing specifically with the issue of access to NGAs. The scope and progress of the deployment, the nature of the networks deployed, the deployment strategies of the market players vary between Member States. Regulatory responses take into account such specific circumstances. However, disregarding national differences, the fact is that different strategies have been pursued by national regulators, which has led to different competitive and investment prospects. On each occasion, the Commission provided observations on the national reviews of markets 4 and 5 and requested that certain decisions be amended when the analysis did not follow the principles of competition law or when the remedies proposed were not proportionate to the objectives of the regulatory framework.

2.1. The inclusion of fibre in the wholesale broadband markets

Most NRAs confronted with large-scale development of fibre access networks have concluded that fibre-based networks are included in market 4.

NRAs have reached this conclusion because of current demand substitution between access to both copper and fibre networks. They have also, like the Finnish NRA, considered the topology and architecture of the newly built NGA and the fact that it allows the unbundling of fibre local loops. In contrast, the Spanish NRA, CMT, decided not to include fibre in market 4 on the ground that the point-to-multipoint NGA network which is being rolled out by the incumbent in Spain could not presumably be technically unbundled.

The French NRA, ARCEP, in addition to including fibre networks in market 4, also included access to civil works infrastructure. The Commission invited ARCEP to further justify such inclusion and stressed that access to civil works infrastructure was considered an appropriate remedy in relation to market 4, which could be imposed without the inclusion of civil works infrastructure in the relevant market.

As regards the analysis of market 5, most NRAs have included fibre in the definition of the relevant market in view of the limited differences between DSL copper-based broadband services and fibre-based high-speed broadband services at the retail level. Until now, NGAs only offer better quality broadband access services, mainly in terms of speed and symmetry, but not differentiated retail broadband products.

Moving away from the general trend, the German regulator proposed not to include access to hybrid fibre-copper loops (FTTN) on the ground that services provided over them were distinct from the services provided over copper loops. Accordingly, the German regulator proposed not to regulate wholesale broadband access to the FTTN network. The Commission has clearly rebutted such an approach. In the absence of evidence showing a break in the chain of substitution between products provided over copper and FTTN loops, the Commission stressed the need to regulate access to both types of networks. The German NRA reviewed its market analysis, included FTTN-based services in the relevant market and regulated access to the fibre loops.

(6) For example OPTA in the Netherlands considers that fibre and copper are part of the same market because the pricing of services over copper will constrain the pricing of services over fibre. Consumers will not take up new fibre-based services if the price difference with copper-based services is too large.

(7) Civil engineering typically refers to under- or above-ground assets such as ducts, sub-ducts, manholes and poles.

(8) VDSL, the DSL service provided over hybrid fibre-copper loops, allows bandwidths up to 50 megabits per second (Mbps) downstream while basic DSL services are capped at a few Mbps.
Along the same lines, the Commission expressed serious doubts on the proposal of the Spanish regulator to exclude wholesale broadband access at speeds above 30 Megabits per second (Mbps) from the relevant product market. While the CMT considered that, given uncertainties surrounding the substitutability pattern at both the retail and wholesale level, speeds above 30 Mbps should be excluded from the market, the Commission stressed that in the absence of detailed factual information and a sound substitutability analysis it was not possible to draw such a conclusion. Rather the Commission noted that there seemed to be a general trend towards higher speeds in Spain and that limiting the market to speeds below 30 Mbps was artificial. The CMT eventually withdrew the speed limit from its market definition, although as explained below it maintained the distinction in terms of the access remedy applied.

Below we explain that, despite having included fibre in market 5, not all NRAs have imposed a bitstream access offer over fibre and those NRAs that have regulated such a wholesale product have regulated a limited form of it.

2.2. The choice of a proportionate set of NGA access remedies

As to access obligations, some NRAs have mandated access to the incumbent’s civil engineering infrastructure to foster the roll-out of alternative fibre networks. The French and Portuguese NRAs have mandated a detailed set of access obligations (specifying processes for ducts access, monitoring compliance with such processes, ordering that a complete reference offer is put in place), while other NRAs have specified only very general obligations (10). The Commission has observed in this regard that past and current regulatory experience, most notably in the field of LLU, has shown that a proper reference offer and stringent price control obligations are key for the access to a bottleneck input to become effective and for competition to develop.

Access to civil engineering allows competition at the lowest level of the value chain (fibre network replication). In the absence of ducts or prospects for sustainable infrastructure-based competition, some NRAs, like the Dutch and the Finnish NRAs, have imposed wholesale unbundled access to the fibre loops of the incumbent. Operators willing to compete in the high-speed retail broadband market can roll out their own fibre in the existing civil engineering or up to the fibre loops and bear the risk of the fibre investment. However, operators may not be in a position to run that risk, especially in less densely populated areas where they cannot make any economies of scale, in particular if the incumbent has already rolled out its own fibre to the relevant customers. Network competition may therefore be limited to the very dense geographic areas, where there is a business case to roll out parallel fibre networks.

For this reason, some NRAs have chosen to regulate active forms of access (bitstream) as a result of their analysis of market 5. Most NRAs have, however, chosen not to impose full-scale fibre-based bitstream remedies. Given lower level remedies (civil engineering or access to the fibre loop) and the early stage of NGA development, NRAs have generally considered it would not be proportional with the objective of encouraging efficient investment to impose full bitstream access from the start. The French NRA, despite including fibre in market 5, did not regulate fibre-based bitstream. In the Netherlands, the NRA provided only a limited fibre-based bitstream product (concerning high-quality business-grade broadband products). The Spanish NRA regulated fibre-based bitstream only for speeds up to 30 Mbps.

In the Dutch case, where the prospect of infrastructure-based competition appeared to be strong, the Commission invited the NRA to closely monitor market developments and to extend the proposed bitstream access to fibre networks if fibre unbundling turned out to be insufficient to ensure competition. In contrast, the Commission was of the view that the prospects for infrastructure-based competition did not appear so strong in Spain (11). In particular, the Commission stressed the fact that it was not foreseeable that entrants could match the large-scale fibre deployments of the incumbent in the near future, which represented a risk that with a fibre-based wholesale broadband access product which is limited in speed the incumbent could preempt the market for retail broadband services during the period in which the deployment of fibre was taking up in Spain. Accordingly the Commission urged the CMT to reconsider imposing fibre-based bitstream also for speeds above 30Mbps.

(10) The bitstream service may be defined as the provision of transmission capacity (upward/downward channels may be asymmetric) between an end-user connected to a telephone connection and the point of interconnection available to the new entrant.

(11) For example, the Spanish NRA has decided to regulate the minimum content of the terms under which incumbents should provide access to civil engineering works and let the operators negotiate the rest of the conditions.
2.3. The rules for the transition from copper to fibre access

Where alternative operators are unbundling the copper network of the incumbent, their access could be discontinued when incumbent operators start decommissioning the access points to the copper network as they roll out their fibre networks. Some NRAs have stipulated a migration process to allow alternative operators to adjust their own networks and network extension plans accordingly. The Dutch, Belgian and Spanish NRAs have adopted specific rules for this purpose. The BIPT, the Belgian NRA, has adopted one of the most detailed sets of rules for migration (12).

Precise migration rules are important to avoid stranded investments that would harm the business plan of alternative operators and their confidence in the regulatory process. Absent such rules the capacity of alternative operators to stay in the market and continue investing in the NGA context could be severely undermined to the detriment of the competitive process.

2.4. The pricing of NGA access

As to the regulated prices for accessing the NGA networks, most NRAs have adopted the same regulation as that applied to prices for the unbundling of the copper local loop, namely cost orientation. Not all regulators have defined their price control methodology yet, but different approaches are already emerging.

Unlike most NRAs, the Finnish NRA does not impose cost orientation on the prices for unbundled access to the fibre loop. The reason for adopting such a decision is the early phase of the deployment of fibre in Finland and, presumably, the fact that a cost-orientation obligation could act as a deterrent for operators to take the risk of investing in NGA infrastructure. In Spain, the CMT imposes only a general obligation of cost orientation on access to ducts but does not fix the prices for access to the ducts of the incumbent. ANACOM in Portugal also establishes cost-oriented prices for access to ducts. ANACOM recognises that different duct characteristics may call for different access prices. This is the reason why the reference offer of Portugal Telecom distinguishes two geographic zones: Lisbon and Porto, where access to ducts is more expensive, and the rest of the country.

The most advanced pricing methodology was proposed by OPTA in the Netherlands. OPTA imposes cost-oriented prices for unbundled access to the fibre access network rolled out by Reggefibre, a joint venture in which the incumbent KPN holds 41% of the equity. The cost model proposed by OPTA includes geographic differentiation to reflect underlying construction costs and possible volume discounts applicable to all unbundled fibre takers per access point. But more importantly, OPTA is the first regulator to include a form of risk premium in the prices for unbundled access to the fibre loop by taking into account the remuneration expected by Reggefibre for the investment risk it takes.

The Commission has commented on the parameters of the cost model proposed by OPTA. While the Commission recognised that the business plan of Reggefibre is a good proxy to assess the risk of fibre infrastructure roll-out by an entrant company in a competitive environment, it stressed that this risk is, however, lower for an incumbent benefiting from a large customer base that it can migrate to the new fibre network, thus saving operating expenses when decommissioning the copper loops concerned. The Commission noted that the basic assumptions used by OPTA could therefore overestimate the risk of the relevant investment and invited OPTA to review the parameters of its model if KPN were to acquire the remaining shares in the joint venture.

3. The need for overall guidance:
the Commission Recommendation
on regulated access to NGA

Swift and competitive development of NGA will bring major benefits to the European economy as a whole. NGA networks will bring innovative broadband and content services to end-users and offer large growth opportunities to European businesses (13). Because it will underpin long-term sustainable growth but also create immediate jobs for infrastructure deployment, investment in broadband networks is considered key to fight back the current economic downturn and support a quicker and steady recovery of the European economy.

(12) The BIPT has established that if the incumbent decided to close down an access point to a local loop or sub-loop, it would have to leave it open for the beneficiaries of its unbundling offer for at least five years after the announcement to the NRA. A deviation from that period should be possible on the basis of a bilateral agreement with the operators concerned. The BIPT also obliged the incumbent operator to provide for migration to a suitable alternative solution before the discontinuation of the service.

To ensure investments in fibre, a predictable and consistent regulatory environment throughout the EU is required. National regulators have started regulating access to NGA and the Commission has provided guidance on a case-by-case basis. However, as shown in this overview, investors remain confronted with a patchwork of national approaches. As a consequence, the Commission is now working on a Recommendation which would define common principles to be followed by the NRAs when mandating access to NGA. The Recommendation will provide guidance on how fibre access remedies should be designed and implemented to ensure effective competition and consumer choice while fostering efficient investment in infrastructure. The level of access to be granted to the NGA infrastructure of the dominant operator, the price control mechanism, including risk sharing, and the rules for migrating certain facilities, such as the decommissioning of local exchanges, will be among the key topics the Recommendation will provide guidance upon.

The NGA Recommendation together with close follow-up and cooperation with national regulators under the Article 7 procedure will provide the right framework to support the move to self-sustaining broadband competition while increasing regulatory certainty for market players across the EU and will help to foster investment in fibre.