International asbl **ETP (07)15**

Executive Summary

ERG has issued a consultation on regulatory principles on next generation access. Before answering the questions, ETP would like to summarize the main points of comment:

- The ERG´s strong focus on incumbents Fttx roll-out plans is too narrow - the development of alternative providers and other access networks/technologies has to be considered when analysing the necessity to regulate.

- The ERG should be careful not to remove incentives for infrastructure based competition.

- According to the main principles of the regulatory framework and its intrinsic legal provisions, markets must be defined on the basis of the 3 criteria test. As the ERG correctly states and the ETP would like to emphasize independently of the findings of ERG's study these principles should be observed. They should be borne in mind when analysing the possible impact of regulation from the perspective of technological possibilities. ETP is concerned that too early and unproportional regulation of new access technologies might hinder the development of such networks.

The ETP attaches the relevant chapter of its report on Next Generation Networks in which it has analysed a likely evolution towards infrastructure competition in the access network.

Do you agree/disagree with the general approach?

The ETP suggests analysing the market evolution in a wider context. Wireless and cable technologies should be included in the ERG's analysis.

From the functional point of view, the ETP understands that the focus of the study is the evolution of the copper plant towards fibre to the cabinet or to the building/home and the regulatory implications of that. As the ETP believes and the ERG also states next generation access will not be restricted to these technologies. Especially wireline and cable technologies will complement the competitive landscape. Therefore any regulatory examination should include other technologies as well.

As stated, the main criteria for market analysis are substitutability and replicability. Wireless technologies are increasingly in a position to offer both a substitute for the user and a means to replicate access for the operator. The examination of the available technologies should not be restricted to the evolution of the copper plant, as the development of wireless and cable networks impact the technological and economic decisions of an operator.

While recognizing that Next Generation Access is not limited to fiber in access, for the purpose of this document the ERG specifically excludes cable (or powerline) from wireline NGA and also does not address the potential existence of alternative NGA wireless platforms. ETP would like to stress that the regulatory response to FTTH/FFTC deployments cannot be the same in those areas with multi-platform competition (fiber, wireless, cable, etc) and those where wireline FTTH/FTTC is the only infrastructure. The ETP would be concerned if the analysis regarding the degree of replicability and the applicability of three criteria test would be done on wireline FTTH/FTTB deployments in isolation regardless of the existence of other next generation access infrastructure platforms whether wireless or cable.

Infrastructure competition between different access technologies already exists in some geographic areas in Europe and the extent to which regulatory measures may be necessary will depend on a case-by-case analysis.

The description of the technological possibilities (Chapter 2) might be accurate. On the other hand might be totally irrelevant for the evolution of the sector. Fibre deployment was heralded a decade ago but did not emerge for various (economic) reasons. It is not clear whether the situation has changed today. The risk of a regulatory failure with a one-size fits all approach is high and should be avoided.

As recognized by the ERG, the decision process of a public company – as many operators are - does not only take into account technological possibilities. Structural parameters such as population, density, penetration rate and the ability of operators to generate higher ARPU are clearly factors that will affect the profitability of VDSL/FTTH roll-out. In this respect, it is clear that today the demand for higher speed broadband services is rather uncertain, and wireline high-speed broadband penetration rates will certainly not reach the same penetration rates reached by mobile services. Also, as prices for broadband access are falling, the possibility to charge more for higher bandwidth might also be limited.

Do the scenarios describe the relevant roll-out alternatives for NGA?

The ETP agrees with the drivers for the developments in the access network, especially the trend to shorten the copper loop and the deployment of fibre. The ETP wants to point out that there will be a long transition phase and that any analysis should also look into the issues during this transition phase.

The drivers for the development of the copper plant are shown accurately in the ERG consultation document. There is a tendency to shorten the copper loop for various reasons:

- The copper plant was not built to accommodate high bandwidth technologies. Therefore, the interference issue becomes much more important and limits the possible penetration of xDSL lines.
- The xDSL performance degrades with longer copper loops.
- Today there are still pair gain systems in place, which are optimized for voice transmission and not suited to convey broadband signals.

Also, as correctly stated by the ERG, every development in the local loop includes some deployment of optical fibre. Options range from FTTC to FTTB/FTTH and usually require the building of street cabinets in some form.

As mentioned above the main problem operators are facing is the development of the business case for transforming the outside plant. The following points should be taken into account:

- The investment is in any case tremendous and the process is lengthy. It will be necessary to start in areas which are most profitable (high density population). For some time there will be co-existence of copper loops and combined copper / fibre loops. On the other hand it might be economically reasonable to convert a complete region in order to clear a main distribution frame.
- The whole business case heavily relies on the regulatory measures applied to the operators.
- The business case also depends on the competition by cable and wireless operators.

The scenarios describe the obvious options for the roll-out of NGA networks. The ETP would like to add that there will be a long period of migration from one to the other scenario. We will for a very long time not have a clear FTTC scenario because the roll-out will only be economical in some areas. The consultation document does not sufficiently reflect migration scenarios from an existing towards a future infrastructure.

Do you agree/disagree with regard to the conclusions on economics and business case studies?

The ETP finds that the likely business cases clearly indicate a high degree of uncertainty and the conclusions must also be seen in this light.

Regarding Chapter 3 and the likely business cases, the results of the studies summarised in the consultation clearly indicate the high degree of uncertainty operators are faced with when deploying FTTH/FTTC.

The ETP believes that the conducted studies are not sufficient to draw any definitive conclusion on the possible existence of bottlenecks as these will depend on a case-by-case analysis.

What is your opinion on the regulatory implications and on the evolution of the ladder of investment? Additionally please provide more specific comments regarding the issue of multicast capabilities and their regulatory treatment.

The ERG has examined the influence on markets 11 and 12. It believes that the move to next generation networks in general might lead to a much more fundamental change of markets. Therefore, the ETP suggests conducting a more general discussion.

The general approach does not take into account that next generation networks might alter the market definitions more fundamentally. The approach, as laid out in the consultation document, is pragmatic but might not lead to the necessary investment in infrastructure.

In Chapter 4.2.1 of the consultation document the Access Directive definition is used as a starting point for a possible extension of the market. According to the Access Directive the local loop is defined as the physical circuit connecting the network termination point at the subscriber's premises to the MDF or equivalent facility in the fixed public telephone network. This definition could be extended in order to encompass the dedicated line from subscriber's premises to the distribution frame at the first aggregation point.

The ETP believes that it is necessary to adapt the definition to the current state of technological development resorting to the legal requirement mentioned in the executive summary. Markets must be defined and analysed on the basis of the 3 criteria test according to supply and demand side substitutability. Although the interpretation of the Access Directive definition might seem a short term solution, a general discussion is necessary.

The ETP believes that the impact on the ladders of investment is not clear today. In how far the ladders of investment and respective business models will have to be changed because of sub-loop and sub-fibre unbundling remains to be seen as these access networks are gradually rolled-out.

The concept of the ladder of investment is based on the assumption that competitive operators start from lower rungs like resale or carrier selection and move upwards to business models which require more investment. There are good economic reasons not to pursue this strategy. If, for instance, a resale or carrier selection business model provides a stable environment and a stable source of profit or if the customer density is too low, it might be reasonable not to change the business model. In how far the ladder of investment and respective business models will have to be changed because of sub-loop and sub-fibre unbundling remains to be seen as these access networks are gradually rolled-out.

The ETP does not comment on the issue of multicast capabilities and their regulatory treatment.

Do you agree/disagree with the conclusions?

The ETP welcomes the initiative of the ERG and would like to comment as follows:

- Next generation access should be seen in the context of a general upgrading of infrastructure. In next generation networks three different areas can be distinguished: access, core and services / applications.
- The consultation also states that NGA deployment will likely enforce the importance of scale and scope economies. This need not necessarily be the case. Further discussion is necessary.
- The ETP agrees that regional differences need to be taken into account. These differences might not only be found on a country level but also in different geographic areas within a country.
- In its executive summary the ERG states that information on roll-out strategies of incumbents is crucial for managing the transition process. The ETP recognizes that regulators have a role to play with regard to migration issues from current to next generation networks, as well as determining the need for wholesale products in an NGA environment but the ETP cautions regulators against dictating the pace of the transition.

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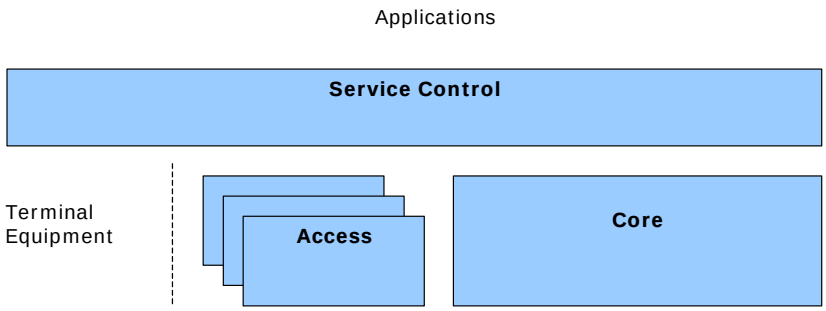
Attachment

ETP Report on Next Generation Network

ETP has developed a report on regulatory challenges for next generation networks. In this report the following structure of a next generation network is depicted:



Next generation access is an important part in NGNs and is complemented by Next generation core and next generation services and applications.

The chapter on next generation access is quoted here:

Enduring competition, the main goal of EU Information Society policy, can be fostered only by developing access competition and can thus only be achieved by establishing multiple access infrastructures.

This chapter shows the evolution paths of currently established service specific networks towards next generation access networks. All existing platforms (the copper plant, cable, wireless networks and the emerging Fttx networks) are technologically able to provide a digital bitpipe for delivery of triple play services. However, further significant investments are necessary to achieve the full benefit of NGN based true infrastructure based competition. The challenge for regulators is to provide a favourable environment for this evolution.

The most common means of access to a telecommunications network has been the twisted pair copper line. The copper plant has been designed for analogue telephony, although it has today become more commonly available for digital access (ISDN and various forms of DSL). The copper access has been challenged by wireless and cable networks. Cable networks used to be mostly uni-directional and relied on hybrid-fibre-coax technology for distribution of TV signals. Wireless networks have been built on the one hand for mobile telephony and on the other hand for terrestrial and satellite

broadcast of TV and radio signals. Although fibre to the home (FTTH) has been a buzzword since many years, few operators have ventured into a wide spread deployment of fibre in the local loop yet.

Access evolution is being driven primarily by strong demands for increasing bandwidth to support a growing variety of multimedia services. One of the drivers is triple-play services and, in particular, home entertainment, including TV services, gaming and video on demand. Video can also be embedded in other applications as for instance in video telephony or video conferencing.

The technological means to achieve higher bandwidth exist for all access technologies. This will allow true platform competition in the access network where different platforms have been established and in such cases remove the bottleneck and as a consequence the need for regulatory remedies. The operator strategy and choice of future access technology depends on their existing infrastructure.

- **Operators with a large copper plant** evolve their access network by deploying DSL technologies. Although DSL is still the most common technology of broadband access, some obstacles exist. The achievable bit rate depends on the distance of the DSL-modem from the central office depending on the type of DSL technology and to what extent fibre is rolled out to the street cabinets or similar. Technological advances allow still higher bit rates, but in any case investments are needed in order to deal with the lifecycle of ADSL equipment.

  The next generation access network will be based on a large and configurable digital bitpipe where bandwidth can be allocated according to the service needs. The physical layer technologies envisaged for this evolution are various and the Access Gateway will evolve to a multi-service access gateway building the "border element" between access and core network.

- **Cable operators** have made widespread investments to upgrade their networks to allow the sharing of upstream bandwidth among all the homes passed by the coax cable. The evolution path is deployment of fibre closer to the end-user.

- Wireless Networks can be split into different parts:

  - **Cellular networks** (such as 2G and 3G) today are mostly utilized for voice services. Data services are however expanding and GPRS/EDGE and UMTS allow much higher bandwidth and are being widely deployed.

- **Terrestrial and satellite broadcast networks** are able to provide a digital downlink channel, however for the uplink channel telephone circuits are used.

- **Various broadband wireless access technologies** (WiFi, WiMAX, WLL[1]) offer promising opportunities with speeds comparable with fixed next generation broadband either in combination with fixed or cellular networks, although some of them are not ready for large scale roll-out yet.

The next generation access infrastructure and the edge technology will be digital and it should support the whole range of services including speech, video and internet access.

Fixed, cable and cellular operators today have the technological means to upgrade or build access networks with a large digital bitpipe allowing the delivery of triple play services. Provided regulators can establish a favourable environment this will lead to true infrastructure competition and vanishing of access bottlenecks.

[1] The distinction between licensed and unlicensed bands needs also to be taken into account.