

ETNO Reflection Document on re-assessing the “ladder of investment” in the context of broadband access regulation

Executive Summary:

- ETNO is greatly concerned with the current ERG approach to broadband regulation as laid out in its “Broadband market competition report” [ERG(05)23]. The report contains a number of contestable policy recommendations, which risk limiting the emergence of sustainable competition and perpetuating a fragmented market structure on broadband markets. In particular, the report advocates the imposition of a broad range of cost-based access obligations for network assets which can no longer be considered essential inputs to competitors and bases these findings on the ‘ladder of investment’ concept.
- ETNO contests that such approach could ensure adequate incentives for investment in infrastructure and that the ladder of investment, in particular as currently interpreted by the ERG, is a suitable means to promote sustainable competition in today’s broadband markets.
- For the current generation of broadband services, NRAs should:
 - Carefully identify whether there is still an asset necessary for a particular downstream service which cannot be replicated by competitors (“non-replicable asset”).
 - In doing so, adopt a forward-looking approach and take into account regional differences.
 - De-regulate replicable assets by lifting access obligations or applying dynamic remedies such as sunset clauses or option pricing.
- The ladder concept does not create the prospect for increased investment in next generation access infrastructure and inter-platform competition in Europe either. The European Union needs a serious debate on a deregulatory approach to new broadband infrastructure and services if the goal of the i2010 initiative to promote advanced broadband services is to be achieved. This includes an evaluation of the de-regulatory approach to broadband taken by the U.S. Federal Communications Commission (FCC).

Introduction

The European Commission has set itself the ambitious target of accelerating broadband rollout in Europe until the year 2010.¹ At the same time, it recognises that one key factor for better and more innovative electronic communications services is competition between alternative platforms.²

Most experts, regulators and market players agree that investment and innovation in the field of broadband access and services are best achieved by infrastructure-based, sustainable competition.³ The EU New Regulatory Framework (NRF) moreover obliges NRAs and the Commission to pursue a regulatory policy that *inter alia* encourages efficient investment in infrastructure and promotes innovation.

In this context, ETNO welcomes all efforts by regulatory agencies, including ERG, Commission and individual NRAs, to adapt the current regulatory environment to create better conditions for investment in infrastructure and innovative services. The revision of the ERG Common Position (CP) on remedies envisaged for the fourth quarter of 2005 could mark an important step in this context.

The revision of the remedies CP is likely to include a re-assessment of the so-called 'ladder of investment' concept. In April 2004, the ERG had introduced the ladder-concept in its CP on remedies under the NRF. The concept of a ladder of investment was originally set out in a number of policy papers in Europe⁴ but does not appear to have a rigorous theoretical underpinning in economic literature. It also appears at odds with experience in markets where no 'ladder' is required for entry to occur provided provision is made for access to non-replicable essential facilities. The "ladder" is primarily a metaphor to describe the regulatory policy-making belief that allowing access to different levels of existing access network infrastructure eventually will lead to entrants investing in their own access networks.⁵

Recently, the concept has been further discussed by the ERG in its broadband report.⁶

ETNO Members are very concerned with the ERG's interpretation of the ladder of investment in this document. The report draws a number of questionable conclusions which in our view make it unsuitable as a reference document for a future regime for broadband access regulation.

¹ Commission Communication "i2010 – A European Information Society for growth and employment", COM (2005) 229 final, p. 4 f.

² Cf. extended impact assessment to the i2010 Communication, SEC(2005) 717/2, p. 30

³ See ERG remedies CP, ERG (03) 30rev1, p. 69, which talks of the "...generally held view that to promote innovation, growth and efficiency all the way through the value chain, infrastructure based competition delivers more sustainable consumer benefits in the long run."; OECD Working Party on Telecommunications and information services policies, The development of broadband access in OECD Countries, October 2001, p. 4

⁴ Martin Cave and Ingo Vogelsang. November/December 2003. "How access pricing and entry interact". Telecommunications Policy, Volume 27(10-11), pp. 717-727.

⁵ The concept has recently been further developed in M. Cave (2005), "Encouraging infrastructure competition via the ladder of investment", publication forthcoming

⁶ ERG Broadband market competition report, 25 May 2005, ERG (05) 23, in the following "broadband report"

Two elements in the report not directly linked to the interpretation of the ladder concept should be highlighted upfront:

- The ERG interprets and ‘applies’ the ladder concept retrospectively to justify regulatory interventions on EU broadband markets, rather than proving that actions by regulators have been governed by a consistent application of the concept from the outset.
- The ERG Report appears to attribute the rate of broadband penetration solely to the degree of regulation-based competition. While competition clearly plays a significant role, the fundamental relationship between broadband penetration and income, PC-penetration, availability of public services etc. cannot be ignored. This observation is further emphasised by the fact that we observe different levels of penetration in countries with a comparable level of competition⁷ and by recent empirical work showing that price is not the most important factor when it comes to broadband take-up⁸.

The approach adopted in the ERG broadband report is likely to set the wrong incentives for actors in the broadband market and may be counter-productive to the long-term goal of sustainable competition in telecommunications market driven by market-forces and innovation rather than regulatory intervention.

Against the backdrop of the report and as a contribution to the forthcoming work within ERG, Commission and individual NRAs, ETNO would like to present its observations on a re-assessment of the ladder- of-investment concept⁹ and a redesign of broadband regulation in the EU.

⁷ E.g., it could be noted that Greece has a high level of competition which is not reflected in the level of broadband penetration.

⁸ Broadband Internet access, awareness, and use: Analysis of United States household data .
Scott J. Savage and Donald Waldman Telecommunications Policy Volume 29, Issue 8, September 2005, pp. 615-633

⁹ The observations on the ladder concept in this paper will be limited to the context of broadband markets. However, many of the findings will apply accordingly to narrow-band services.

The ladder of investment and broadband regulation

As a starting point, we would like to present four points which will be shortly outlined in the course of the paper:

- The 'ladder of investment', in particular as currently interpreted by the ERG, is not a suitable concept for explaining competitive dynamics and for justifying regulatory intervention in today's broadband markets.
- Regulators should differentiate between replicable and non-replicable assets and treat the two types of assets differently. Replicability should be assessed in a forward looking manner, taking into account regional differences.
- A regulatory policy that wants to encourage investment cannot rely on finding 'just the right' cost-oriented price for wholesale products on all levels of the value chain ('consistent pricing regime'). Cost-oriented price-regulation is only justified for remaining non-replicable assets, if any, in broadband provision on a given market.
- The ladder does not provide a solution to how to encourage investment in alternative and/or new infrastructure. The claim in the ERG broadband report that access-based competition on the DSL-platform fosters inter-platform competition is neither supported by economic theory nor by empirical evidence (e.g., country cases)

The latter point is closely linked to the current development of the regulatory situation in the US which will be discussed in a separate chapter.

I. Markets have moved on: the limitations of the ladder

It is useful to recall that the influential examination of the ladder-concept by Cave and Vogelsang in 2003 was based on market developments in the Netherlands up to the year 2000.¹⁰ Since then, electronic communications markets have witnessed a breathtaking development in the field of broadband services.

In most EU markets in the meantime, market entry has taken place on several or all levels of the value chain, i.e., on each or most "rungs" of the "ladder":

- Cable operators provide broadband services over competing infrastructure¹¹;
- LLU is used by some new entrants for large scale market entry without previous use of bitstream products¹²;

¹⁰ M. Cave, I. Vogelsang, *How access pricing and entry interact*, Telecommunications Policy 2003, p. 717 ff.

¹¹ E.g., in the Netherlands, Belgium, Austria, parts of Spain, the UK etc.

¹² E.g. in Sweden, the Netherlands and Germany. An interesting example in this context is Denmark where the introduction of BSA combined with introduction of LRAIC based pricing of the local loop has led to a stand-still in the original rapid take-up of LLU, i.e. players now move 'down the ladder'.

- Competitors using resale or bitstream access (BSA) offers are clinging to their “rung” of the ladder, since they entered the market years ago without any noticeable move ‘upwards’

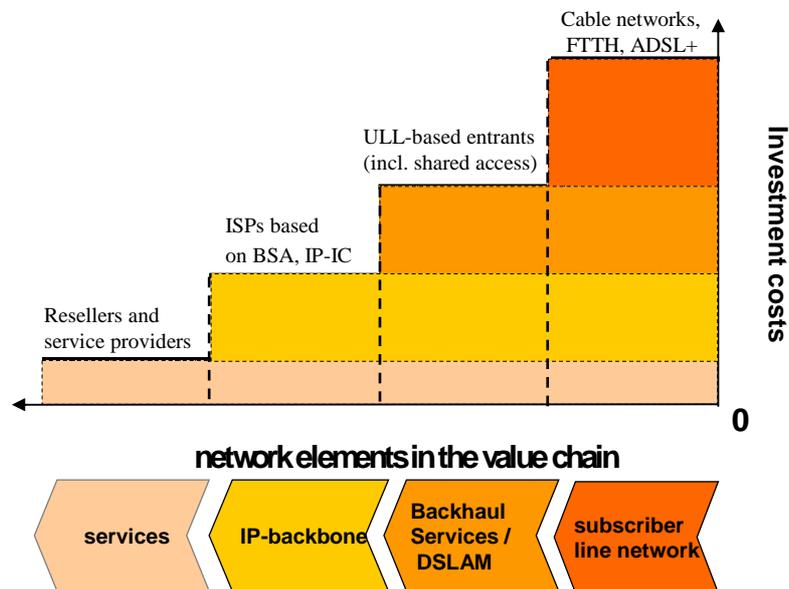


Fig. 1: broadband market 2005 – competition on all or most rungs of the ladder

Against this background, the ERG recommends that

“Access products can be introduced sequentially, but they should be introduced in logical order (starting with the lower rungs) and NRAs should announce their strategy and a timetable to provide a stable planning horizon for all market players to make sound business plans.”¹³

This guidance does not address the complex challenges facing the market place and regulators today. NRAs, some of which introduced LLU seven years ago, now are faced with calls for action on all ‘rungs’ of the ladder – for de-regulation on the one hand and for continuous intervention in favour of specific business models on the other hand.

The fact that alternative operators are active on all levels of the value chain complicates any management of a ladder approach for the regulator. Each of the established operators has a distinct business model and will request the form of regulatory intervention most favourable to its business.¹⁴

¹³ ERG broadband report, p.

¹⁴ E.g., in Germany, ULL-based operators objected the introduction of a wholesale line rental obligation in the German legislative process; In Sweden, during an NRA consultation on the pricing for shared access, different comments were submitted. Bredbandsbolaget (a major broadband network operator) argued that the price for shared access should be *at least* half the price for full unbundled access. On the other hand, Glocalnet (a broadband service provider) argued that the price for shared access should be set at marginal costs.

This points to a general weakness of the ladder concept: where entrants invest in assets following an NRA commitment to a regulatory strategy, NRAs will feel obliged to protect the investment made even if regulation is no longer justified or if the original regulatory decision that led to market entry was wrong. In this situation, it becomes evident that the concept of the ladder is overly interventionist as it is aimed not only at removing obstacles to competition in a given market but also at actively intervening to structure the market and thereby determine the business strategy of market players.

Moreover, alternative operators such as ISPs, ULL-based network operators and cable operators have - to a different degree in different Member States - acquired a significant customer base which allows them to migrate to new technology or services if required. Accordingly, the goal of the ladder to allow new entrants to acquire a significant customer base is met in most EU markets already.

It may be useful to recall that it is not the objective of the ladder to allow virtually *all* alternative operators to acquire a significant customer base. Such approach would not be in line with the objective of the NRF to encourage efficient investment in infrastructure and would impose a dispersed market structure upon the broadband market as can be observed on voice telephony markets today. Such a market structure in turn risks perpetuating the case for regulation of the largest player in the market and does not favour sustainable competition.

To sum up, considerable opportunities for replication already exist.¹⁵ In ETNO's view, the ladder of investment does not provide a meaningful concept for explaining future investment decisions in the broadband market. Not least the complex interactions between different wholesale products on broadband markets call for a less interventionist approach to remedies which is more favourable to investment.

II. Limiting price-regulation instead of “consistent pricing regime”

ETNO acknowledges that the ladder approach builds on the **important distinction between replicable and non-replicable assets**. According to recent academic work on the subject, a different regulatory treatment of assets according to this distinction is warranted.¹⁶

1. Identifying non-replicable assets

In order to differentiate regulation according to different types of wholesale products, it is necessary to identify which asset can still be considered non-replicable in view of a particular downstream service.

¹⁵ This is also demonstrated in the country case studies attached to the ERG broadband report, ERG (05) 23_Annex A

¹⁶ M. Cave (2005), Encouraging infrastructure competition via the ladder of investment, publication forthcoming, p. 21 – 22; Oldale, Padilla (2004); from state monopoly to the “investment ladder”: competition policy and the NRF, p. 72; a different regulatory treatment of ‘replicable’ and ‘non-replicable’ assets is also justified in view of the different degree of entry barriers existing in the two cases.

The ERG broadband reports insist on the complementarities of different ‘rungs’ in the ladder, i.e., different wholesale products, for the competitors’ broadband offers. This would suggest that there could be more than one non-replicable asset in a given market. However, the complementary use of different wholesale products by new entrants (e.g. ULL, BSA) appears to have its reason in **regionally different market conditions** in some EU Member States. The ERG report recognises that the use of the different wholesale products varies depending on the geographical areas.¹⁷

If market definition took into account regional differences such as different economic conditions in, e.g., high-density and low-density areas, it would become evident that there is never more than one relevant¹⁸ non-replicable asset in a given market. A new entrant would arguably not use two different products at the same time but, if regulatory decisions do not distort incentives, would only require access to the non-replicable asset in that particular market, if any. For example, in those geographical areas with high population density, new entrants have a better business case to invest in unbundling. In these areas, the initial ‘rungs’ of the ladder are obsolete because most competitors did not ever or no longer avail of them.

Whether a non-replicable access product exists should be determined in a forward-looking manner, taking all potentials for replication into account and studying carefully where replication has occurred in comparable markets. Where this is the case, an asset should be considered replicable also in a market where replication may not yet have occurred.¹⁹ This is crucial since, as the ERG rightly points out in its remedies CP, “ [...] *a great potential harm to welfare occurs when replication is feasible but not promoted.*”²⁰

In areas where replication has occurred at the highest level of the value chain (parallel broadband access networks to the end-user), no non-replicable assets remain.

In case an asset is deemed non-replicable in view of a particular downstream service, it remains nevertheless important that regulation does not preclude competitive pricing for those applications where there is no evidence of failure in downstream services.

2. Limitation of cost-based access regulation to non-replicable assets

- Adapting or lifting access obligations for replicable assets -

¹⁷ “...the migration from resale to bitstream is taking place, the increase in shared access especially in France, Sweden and Ireland indicates that new entrants are moving on, but it is also important to note that e.g. in France, Italy, and Spain where BSA was available very early, bitstream access is used complementary to unbundling in areas with less density to get national coverage and complete the offer...” cf. also the Italian country case study, p. 11:BSA-product complementary to LLU necessary “to ensure nation-wide coverage”

¹⁸ One could imagine a specific, e.g. regional market in which currently investment in alternative backhaul services would not be economically viable. In such a hypothetical case, the local loop would also be considered non-replicable but entry would focus on the level below the ‘nearest’ non-replicable wholesale product to avoid inefficient investment.

¹⁹ Cf. Cave, id., p. 8, who talks of a „strong indicator for replicability“

²⁰ ERG (03) 30rev, p. 68

In its remedies CP as well as the ERG broadband report, the ERG seems to suggest that a 'consistent pricing regime' for regulated products across the whole of the value chain will automatically set the right incentives for all market players to invest and innovate.

ETNO firmly believes that this would be a misconception. Firstly, the task of managing the evolution of competition in a dynamic industry such as the telecommunications industry merely by setting 'exactly the right' cost-based access prices on different access products seems almost impossible.²¹

To the contrary, the objective to achieve sustainable competition will not be achieved by imposing and maintaining cost-based regulation on each layer of the value chain. Next to the probable failure of any regulatory micro-management in a market as dynamic and investment-intensive as the broadband market, such an approach does not provide incentives for other market players to invest in new competing infrastructure, whether as a "move up the ladder" (where still possible) or in the form of market entry at a higher level of the value chain.

As pointed out by recent publications on the ladder, this could only be achieved by adapting regulatory instruments to the replicability of an asset, namely by **withdrawing** (or not imposing) **mandatory access to the replicable asset** or by **raising access prices** (relative to costs) to include the option value of the entrant.²²

The ERG in its broadband report does not draw any of these consequences, stating that it is "too early" for any deregulation or dynamic access pricing regime to be imposed – a judgement that hardly meets with the reality of very advanced and diverse broadband markets described in the country case studies.

- Avoiding an excessive number of 'rungs' -

The current application of the ladder by NRAs favours what could be described as 'overlapping' regulation or 'mini-rungs' in the ladder, resulting in an increased micromanagement of access products, migration processes and prices. There is a tendency for rungs on the ladder to be defined in terms of physical routing of traffic rather than economic value, so that illusory rungs and markets are created. An example for this is presented in the ERG Common Position on bitstream-access which advocates the introduction of various types of ATM and IP transport.²³ As a consequence, the withdrawal or loosening of regulation of intermediate access products becomes even more difficult since some of the options have only been introduced recently.²⁴ An excessive number of rungs also significantly increases the complexity of squeeze and predatory tests²⁵. Regulating the higher rungs of the ladder in-

²¹ Cf. Oldale, Padilla, id., p. 71 ("getting it right is difficult...")

²² M. Cave, id., p. 21 – 22; Oldale, Padilla, id., p. 72

²³ ERG (03) 33rev2, as amended 25th of May 2005, p.

²⁴ CF. recent decisions by NRAs *where introduction of 'naked DSL' at marginal costs is proposed (Sweden?) [tbc]* or, e.g., price regulation of BSA is moved to LRAIC (DK).

²⁵ E.g. in France, where the NRA regulates bitstream at regional and national level

roduces a risk of effectively intervening in retail markets by monitoring the retail price.

- No extension of disproportionate price regulation to replicable assets -

Another major risk of the ERG deliberations on a “consistent pricing regime” is linked to the pricing methodology. Currently, in many EU countries only a small fraction of wholesale products (e.g., the local loop or fixed voice inter-connection) is subjected to a cost-based pricing rule. Often, wholesale products such as wholesale broadband access are either based on commercial negotiations (as in Austria and Germany) or priced according to the retail-minus rule (UK, Denmark, Ireland and many others).

Without expressing a general preference for a specific pricing rule, ETNO is concerned that ‘consistency’ in this context seems to imply an extension of the very intrusive and resource-intensive cost-based pricing regime even to replicable assets. Such measures would significantly increase the burden on the regulated operator - and the regulator - and not comply with the requirement of proportionality in an area where complete deregulation should be envisaged in the medium term.

III. Mandatory access to broadband infrastructure does not encourage inter-modal competition

A crucial shortcoming of a regulatory policy that subjects operators deemed to have market power, including first-movers, to potential access obligations, is the lack of incentives for building new or upgrading existing access network infrastructure or for the build-out of alternative access network platforms to provide broadband services.

In this context, one of the most far-reaching claims of the ERG broadband report is the statement that

“inter-modal competition is a result of the dynamic of the intra-modal competition in the DSL part based on regulated access rather than the cause of a competitive broadband market.”²⁶

The ERG thus maintains that competition on the basis of mandatory access to DSL-services is promoting the emergence of inter-modal competition.

As this is not a result that one would expect from economic theory (s. below), the initial presumption was that the ERG had found strong empirical evidence for this finding. For example, some positive effects of a successful DSL-broadband roll-out on the availability of broadband content also for other platforms are conceivable. Surprisingly, though, the country reports by NRAs seem to suggest the opposite of the stated claim:

- In France, where a complete, price-regulated wholesale portfolio for DSL-services is in place, cable access has developed poorly according to the country report provided by ARCEP.

²⁶ ERG broadband report, p. 19

- In France, as well as in Germany, changes in the industry structure in the cable business appear to be the reason for hopes that a larger share of broadband offers will come from cable companies. A possible positive role of DSL-access regulation for inter-platform competition is nowhere mentioned in the case studies.
- In Spain, during the last year there has been a considerable growth of unbundling and DSL lines, but at the same time cable broadband connections have grown at a slower rate than in previous years.²⁷
- In the Netherlands, OPTA has recently concluded that the market for low quality wholesale broadband access can be considered as effective competitive due to competition between Cable TV networks and DSL platforms, as well as competition between multiple DSL platforms. The Netherlands therefore already reached the top of the infrastructure ladder.²⁸ The development of effective competition in this market has solely been a consequence of market dynamics as bitstream access regulation was never imposed by OPTA in the past due to a court ruling.²⁹

There is extensive economic literature examining incentives for infrastructure investment in regulated markets. In essence, experts agree that the access at regulated prices can act as a deterrent to investment in local access infrastructure.³⁰

As a consequence, it is crucial that NRAs do not apply the ladder concept if the objective is to favour the emergence of infrastructure-based competition. This is particularly important for new services and infrastructures, irrespective of whether they constitute a newly emerging “market” or not. The ladder concept was developed because it was believed that it could facilitate the roll-out of own infrastructure for new entrants after liberalisation. Today, new entrant themselves can become market leaders, e.g. in new high-speed triple-play markets. To an investor, any prospect of immediate mandatory access to its assets by competitors acts as a strong disincentive to taking the risks involved in such new investments.³¹

The ERG broadband report does not discuss this risk. It does, however, contain the unclear and worrying statement that “*Wholesale offers should enable new technologies in order to promote innovation and competition.*”³²

ETNO would like to challenge this presumption for a need for regulation in the context of new technologies. The ERG statement leaves aside the fact that, in the first place, new technologies enable new innovative services and bring

²⁷ The biggest cable operator in Spain, ONO-Auna, not solely relies on its own infrastructure but increases its coverage through access to the cooper loop or bitstream products.

²⁸ Cf. martin Cave, not Regulating Broadband Wholesale Access in The Netherlands, Paper of 9 March 2004.

²⁹ The competitive broadband situation in Austria shows similarities to the Dutch case. It is characterised by inter platform competition since 1999 with cable reaching the 2nd highest market share in the broadband market in Europe. The current DSL-bitstream offer was introduced on a voluntary basis – more important is the commitment in the market to investment in fully unbundled lines in Austria, cf. ERG broadband report, p. 7)

³⁰ See e.g. Brattle Group report by Zarakas et. al., Access Pricing and Investment in Local Exchange Infrastructure, March 2005; dot.econ, “competition in broadband provision and its implications for regulatory policy”, study prepared for the BRT, October 2003

³¹ S. P. Baake, U. Kamecke, C. Wey, *Efficient Regulation of Dynamic Telecommunications Markets and the New Regulatory Framework in Europe*, Berlin, April 2005, p. 28

³² ERG broadband report, p. 23

long-term benefits for the end-user. This, in turn, is enabled by those operators which invest in new technologies. To the contrary, any potential wholesale obligations *a priori* distort investment decisions for the deployment of new technologies and, where they hinder welfare enhancing innovations and investments may induce high social costs.

The discussion how to create an enabling framework for investments in new and alternative infrastructure should take account of the regulatory approaches adopted elsewhere in the world, e.g., in the United States.

IV. FCC approach to broadband regulation - a serious debate is needed

On August 5th 2005, the FCC announced its decision to de-regulate DSL-based broadband services. It will lift “common carrier” regulation under the U.S. telecommunications act concerning DSL-based broadband connections. The decision is the last in a series of FCC decisions, *inter alia* on cable networks and high-speed fibre access networks, which aim at allowing market-driven rather than regulation-driven investment decisions in the broadband market. The latest decision on DSL accordingly aims at creating a level playing field or “regulatory parity” between broadband providers using different technologies by de-regulating the broadband technology provided over telecommunications networks.³³

This approach follows years of a far-reaching unbundling policy, regarded by commentators as a failure which can be attributed to regulatory intervention.³⁴

ETNO acknowledges that differences in market conditions between the United States and most EU Member States exist. These differences may partly be the result of, rather than reasons for, a different regulatory approach in the two jurisdictions. In any case, the consequential FCC-approach to broadband access (de-)regulation should eventually spark an open debate in Europe over the right way to achieve sustainable competition.

The European Commission and the ERG are clearly aware of the alternative regulatory model pursued in the United States. In its broadband report, the ERG, however, chooses not to discuss the merits of the different regulatory models but presents a forgone conclusion:

³³ Quote FCC Press release

³⁴ Martin Cave (id, p. 9) writes that in the wake of the crisis on telecommunications markets, “.. *the FCC in 1999 chose to expand unbundling to include the leasing by competitors of the incumbent’s entire local service, at a substantial discount (about 50-60%) to retail prices, a product known as UNE-Platform (UNE-P). The passage of the Telecommunications Act had originally elicited significant local entry, but when UNE-P was mandated, infrastructure-based competition stagnated while the proportion of lines based on UNE-P came to account for nearly half the total. The conclusion [that regulation impeded investment in local infrastructure] is supported by Zarakas et al [William Zarakas et al.(2005) Access Pricing and Investment in Local Exchange Infrastructure, The Brattle Group] [...] which shows that higher UNE prices, while leading to higher retail prices, would have stimulated higher total investment.*”

“The finding regarding the interaction between DSL and cable in the broadband market³⁵ seems to suggest that the alternative regulatory model that assumes the mere existence of alternative infrastructures will lead - more or less - automatically to competition and thus considers regulation not decisive or where regulation does not take account of all technologies, which risks distorting the technology mix, is not a real option. The latter approach³⁶ can be observed in the USA today and might therefore be called the “American model” [...].”

This dismissal of the regulatory model adopted by the FCC is based on the assumption that access-based competition on one platform is favourable to inter-platform competition – a hypothesis which, as we have seen, the broadband report fails to test and support.

The real debate on the right approach to fostering investment in advanced and alternative broadband infrastructure therefore still lies ahead. ETNO encourages the ERG and the Commission to use the current revision of the remedies CP to take into account the recent regulatory policies adopted in other market areas, and notably in the United States.

³⁵ that “inter-modal competition is a result of the dynamic of the intra-modal competition in the DSL part based on regulated access rather than the cause of a competitive broadband market.” (s. above fn 25)

³⁶ The ERG report was published before the decision of the FCC on DSL-deregulation and therefore does not yet take account of the ‘regulatory parity’ proposed by the FCC on August 5th 2005.