

Consultation on Commission Recommendation for regulated access to Next Generation Access Networks (NGA)

Response from the International Telecommunications Users Group (INTUG)

Executive Summary

INTUG welcomes the European Commission's consultation on NGA Networks and supports the thrust of the draft Recommendation. INTUG believes this must be considered alongside the Framework Review as it raises issues broader than the specifics of NGA. Whilst the response is structured in line with the document paragraphs, this summary highlights the key issues.

INTUG believes that ubiquitously available and competitively supplied fibre-based services are vital for economic growth, productivity and jobs, and for universal social inclusion. This is essential for new ways of working, for new business models, and for improved collaboration. The direction should be towards FTTH and FTTB (fibre to the business) but FTTN will play an important and potentially extensive role en route. The topologies and technologies chosen should facilitate competition and migration to FTTH. INTUG believes, however, that the option of wireless providing an effective mechanism as a substitute technology for access should not be excluded. Regulatory principles for NGA networks should apply to fixed and wireless.

INTUG believes that a balanced strategy of technology-neutral service and content-based competition should exist alongside infrastructure-based competition. Therefore, it is essential that effective ex-ante regulation is in place for NGA networks, to ensure equivalent access to wholesale broadband inputs. INTUG supports maximising equal access and sharing at all levels of the ladder of investment from civil engineering works, through duct and mast sharing, to in-building and entry cabling, dark fibre local loop and sub-loop unbundling. Bitstream and Ethernet access are essential facilities. The recent Wik study has proved the huge advantages for first movers in terms of bigger economies of scale, lower cost of capital, higher ARPUs, and windfalls from the use and sale of legacy assets.

INTUG believes that market analysis for sustainable, effective and efficient competition must be undertaken at an international, as well as national level, and must recognise the distinct sub markets serving residential consumers and business customers. These have major differences in traffic profiles, with more demanding service quality and resilience requirements. Businesses, including SMEs, require access at multiple locations, and need transnational volume packages from single suppliers. Exclusive fibre access rights during regulatory holidays for incumbents makes this completely impossible. The existing arrangements for risk-related return are adequate for this purpose.

INTUG considers that regulation should dissuade operators from further investment in copper networks, except where this is necessary to protect the quality and manageability of existing services and the provision of essential capacity increases in the core and backhaul network. It is also important to minimise duplicate costs during migration for operators and customers.

INTUG believes that NRAs and SMP Operators must collaborate actively on regulation, technology choices, topologies and implementation in order to share learning, evolve best practice and minimise the disruption and migration impact on public and private business customers and other operators. This must include the needs for network management. A requirement to use EU approved equipment designed to facilitate migration from FTTN to FTTH would assist in facilitating interoperability between Member States, without unduly deterring innovation.

INTUG is concerned that deregulation of sub national geographic markets where there is effective local competition for residential customers will further fragment the market for business customers, who will be faced with network requirements within Member States which are partly regulated and partly deregulated. Such deregulation is irrelevant to analysis of business markets and generates a similar obstacle to exclusive access rights in terms of the non-achievability of transnational contracts with guaranteed service quality.

INTUG welcomes the decision of NRAs who recognise the risk that topology changes can foreclose competition and encourages vigilance in ensuring that the competitive assets of alternative operators, for example in copper LLU service provision, are not stranded by incumbent NGN implementation. NGA Networks must make adequate provision for collocation of equipment.

INTUG acknowledges that there are links between NGA network policy and regional and social policy. There should therefore be “joined up thinking” to ensure consistency, recognising that in each Member State there will be variances. State aid should only be implemented in ways which are overtly recognised as social policy via subsidies to the service, rather than being introduced via a tax on telecommunications services. Any public subsidies should be linked to open access to passive infrastructure. Interconnect charges between operators should not develop into a tax on trade between Member States. A single telecommunications market must be the aim.

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Introduction

The Internet revolution and the resulting explosion in demand for bandwidth have created an urgent demand for vastly increased network capacity in both core networks and access networks. This demand shows no sign of abating, and is the principal driver for NGA. The scale of demand was not foreseen even five years ago, nor was the feasibility of 100Mbps on fixed and wireless services anticipated so soon. There is now both expectation and demand for such services and the EU is fully aware of their importance to the economy.

What forms should these new superfast networks take? Who will fund them? The current legacy networks provided ubiquitous access, and were originally constructed by Member States. The challenge now is to produce regulation to encourage market forces to deliver such networks with ubiquitous reach.

With massive sums of money at stake, two markedly different philosophies have evolved. The open approach of the architects of the Internet world has transformed telecoms markets in a very short timescale. The closed world of incumbent operators with its vertically integrated approach has been turned upside down. IP has transformed what networks can offer. Wireless has undermined the economics of traditional fixed telephony. Convergence of fixed and mobile, combined with content and services, has enabled new business models for both suppliers and customers.

None of these changes could have occurred without one other important ingredient – the customer, both as a residential domestic consumer and as a national or multinational enterprise. NGAs in corporate networks already exist, to meet user needs internally as the most efficient solution. The introduction of the same technologies in public networks, seamlessly linked with private networks, promises to provide huge economic benefits to all concerned. The challenge for telecommunications regulation is to ensure this opportunity is not lost by recreating closed monopolies again.

This may occur if protectionist policies are allowed to be implemented within Member States to the detriment of the EU economy as whole. The trap to avoid is an overemphasis on infrastructure competition alone as the route to efficient and effective investment, rather than a mixture of this with service based competition, built on equal access to bottleneck infrastructure.

This issue goes to the heart of the vital objective of preserving and extending universal access for all, as a key facility for social inclusion and economic participation. The OECD 2006 report “Rethinking Universal Service,” said, *“As broadband access matures, it is becoming clearer that not all broadband access is the same. Each broadband technology has its own performance and economic characteristics, and positive or negative technical impacts. This may have long term effects on social and economic opportunities in rural areas.”*

One approach to this political challenge has been community NGAs in various countries, in some cases partly State-funded. This can be very effective, for example in new build developments, but the principle of ensuring a free and competitive market for services must be retained in such circumstances. This will be a key aim for NRAs as they regulate NGAs.

The delicate balancing act which NRAs must perform requires independence from Member State Governments and incumbents, and close collaboration and consultation with other NRAs to ensure that the environment throughout the EU supports transnational network requirements as well as domestic residential consumer needs. NRAs need effective consultation processes with both consumers and business markets at national and international level.

The Commission faces the same dilemma, but with one huge advantage. It has the power to stimulate the huge economies of scale needed if the EU wishes to remain a major player in this market space. If ever leadership was needed, it is now. An institutional structure which ensures effective and timely transposition and implementation of agreed regulation and remedies is key. Without this, the market will continue to fragment and key benefits of a single market will be lost. Telecoms services will become an internal tax on trade. The continuing damage to the EU’s economy has been shown to be huge.

It is in this context that the Commission’s recommendation on NGAs must be considered. And it is also in this context that NRAs must be willing to work together, not as a concession of control to the Commission, but as a means of adopting regulation which is best practice, and for the good of the whole EU, not just the Member State which they represent. This holistic, or “joined up” thinking is what has been missing to date and is much needed now.

The fixed network of the old world is dead, and new ways of doing business for both operators and their customers are inevitable. Within the EU there has already been success in getting people connected to broadband services. DSL technology itself was developed in Europe. Average penetration by population stands at 22%, and in some of the Nordic Countries, exceeds 35%. There are 23.5 million unbundled local loops in the Union, and a recent study for the Commission estimated that in the period 2006-2015, one million jobs and €850billion of growth could result.

The costs of migration to NGA are high, however, and models are extremely sensitive to take-up rates. Revenue assumptions vary sharply. First movers gain a significant advantage in terms of return on investment. A recent Wik Study showed that the economic advantages of incumbents makes the investment returns of subsequent operators far less attractive, given higher costs of capital, smaller economies of scale, absence of legacy infrastructure to leverage and no windfall from the sale of old exchange sites.

It is for these reasons that a one-size-fits-all strategy of seeking to force duplicate infrastructure investment everywhere is flawed. Whilst sharing of civil engineering works, way leaves, ducts and mobile masts, and collocation of equipment, all have a part to play, there is very little prospect of duplicate infrastructure being built everywhere. The strategy of progressing from FTTN to FTTH actually reduces the chances of infrastructure competition, as it sets the investment barrier much higher. This means that equal access to whole broadband is crucial to achievement of social inclusion and economic aims.

Business customers are seriously concerned that ill-conceived regulation of NGA could actually make the patchwork of fragmented networks in the EU even worse. NRAs to work far more closely together with each other, and with the Commission, to implement commonly agreed regulatory principles and technical standards. This kind of harmonisation is not a dilution of NRA powers, but the only way to reduce the burden for operators and customers alike of inconsistent regulatory approaches. It is possible to have another GSM or DSL success story with the economic advantages this brings, but only with the right approach to regulation.

Business customers and residential consumers welcomed the Commission's successful moves to reduce excessive charging in voice roaming, and support the current proposals to extend this to text and data roaming, and termination rates. These are examples of the telecom tax on trade referred to earlier. Customers understand that NGA investments must be recovered, but if incumbents seek to re-establish monopoly controls through exclusive vertical integration, NRAs must be enabled by the Commission take effective action through appropriate remedies. Such danger clearly exists with NGAs.

The granting of a regulatory holiday to Deutsche Telekom, legal moves to give Telefonica exclusive rights to their fibre network, and functional separation in Sweden which applies only to legacy networks aptly illustrate these dangers. These cases need challenge since they deny access to an essential facility, which may infringe Articles 28,29, and/or 226. INTUG's members are making representations in Member States to block recreation of effective monopolies.

Given the level of regulatory activity already in progress, INTUG welcomes the Commission timely issue of this consultation document. The numbering in the consultation and recommendation has been retained in this response.

Comments on Introductory Paragraphs

- 1 INTUG supports the view that efficient and timely transition to fibre-based broadband is key to development of the European economy.

INTUG agrees guidance regarding access is important to prevent undesirable divergence of regulatory approach, which could harm competition and undermine development of the communications single market, most notably where fibre investment is exempted from equal access to wholesale inputs
- 4 INTUG supports the view that the application of consistent regulatory remedies to SMP operators in Market 4 and 5 (see also paragraph 2), regarding access to NGA networks, is required to foster investment and innovation, and that international considerations must be included in assessing competition in market analyses
- 6 INTUG believes there are serious risks that SMP obligations could be undone by network topology changes, and that SMP operators must ensure their new network design maintains existing access options, in particular with regard to the provision of wholesale bitstream access and Ethernet services where LLU solutions are unavailable (see also paragraph 9 regarding reasonable transition from collocation)
- 7 INTUG believes that in a FTTH context, duplication of infrastructure should be avoided where impractical or undesirable, or where this requires inefficient investment without benefit to competition
- 8 INTUG accepts the desirability of negotiated agreements between SMP and alternative operators, but believes that NRAs must have the power to ensure there are adequate dispute resolution processes in the event of failure to agree
- 11 INTUG does not believe fibre based NGA represents a newly emerging market which is thus exempt from “inappropriate” obligations. It is an essential facility which must be accessible in a competitive market.

GENERAL PRINCIPLES

- 1 The recommendation addresses regulatory remedies on operators designated by their national regulatory authority as having Significant Market Power (“SMP”). INTUG believes that measures directed solely at SMP operators will not, of themselves, be sufficient to achieve the desired result. A more widely applicable Recommendation is needed.

INTUG believes that only a “joined-up” approach, covering regulation of fixed and wireless public networks in an international context, and their interface with private NGA networks, can deliver what business users need. Member States must acknowledge that telecommunications regulation must be appropriate in the context of political, social and fiscal policies. Content regulation, including the media, must also be considered, even though this is outside the scope of some RAs.

One example of joined up thinking which impacts on fair competition in telecommunications is that need for a level playing field in terms of operator tax liabilities for way leaves and local taxation. This must not be allowed to provide further advantages to incumbents.

The Commission could usefully clarify the role of state aid for NGAs, taking into account social and regional policy objectives in the context of the single market. This Recommendation could include this in the same way that the Commission handled anomalies between Member States concerning charges for use of foreshores and territorial waters to land submarine cables.

These two examples illustrate the cross-over between competition, regional, communications and general taxation policy and how NGA regulation is a far broader issue than one might initially assume. It also shows why islands of private NGN networks have arisen. High levels of policy coordination, even at national level, are difficult to achieve.

- 2 INTUG accepts the basic definition of an NGA but recommends an extension to facilitate interoperability, perhaps with words such as follows, without denying opportunities for innovation. *“Access networks should be based on approved equipment, designed to facilitate the migration from FTTN to FTTH, and based upon common European standards to facilitate interoperability between Member States and with private networks”*

This will unblock the single market for customer equipment approved devices, with beneficial effects for economies of scale and job creation. This was a major benefit of the success of GSM.

The existence of private NGA networks must not be overlooked. The ITU noted recently that *“The general Internet is the major IP network in the world, but it is far from the only IP network. In recent years, several private IP networks have been established and utilised for both corporate and residential services, and the future of communications platforms like the NGN architecture is based on IP technology.”*

There is a global trend towards private NGAs. In order to ensure they can interoperate, and play an active part in an EU-wide FTTH network, proliferation of different and incompatible technical equipment must not occur, or those investments will be stranded. A patchwork quilt of unconnectable islands will not be of benefit to the EU economy.

- 3 Market reviews are of particular importance in an NGA environment because the various NGA network topologies which, to a greater or lesser degree can foreclose competition. In the case of infrastructure competition in particular, a recent study by Wik noted that, in some Member States, the competitive advantage for being a “first mover” was so great that no competing networks might ever be built.

INTUG believes sharing should not just be about the sharing of fibre, but of everything possible, to guarantee service-based competition too. This is particularly important for rural users. The Recommendation could benefit from reference to EU regional policy aims from the start.

Infrastructure and service competition are both essential. Urgent action is required to coordinate more closely with EU regional policy goals to prevent future so called “not-spot” areas with no access. Japan and the USA both suffered from this. NGA regulation and regional policy should work together to facilitate and even actively encourage local communities wishing to implement infrastructures.

Rural construction is sometimes cheaper than urban infrastructure implementation, since 75% of NGA deployment cost is in the civil construction – digging fields is easier with minimal or no reinstatement costs, it is also possible with the equipment used routinely in farming. A standard model, setting out the key components and their costs, and a favourable rating regime, could lead to interoperable local NGAs flourishing. The same logic also applies to providing infrastructure in major “Brownfield” developments, and in community networks.

INTUG accepts that in domestic consumer markets, defining smaller sub-national geographic markets may be justified, despite the risk of “two speed development.” But this is inappropriate for the business market with multi-site needs in multiple sub-national geographies, and irrelevant to competition in international services.

The Recommendation states a long term preference for FTTH, but pragmatically understands the inevitability of FTTN infrastructure. INTUG agrees that there is a resultant need for appropriate regulatory controls if competition is not to be damaged. FTTN presents a risk of foreclosure of competition without appropriate remedies. FTTH makes duplicate infrastructure even less likely and the need for equal access regulation even more imperative.

INTUG believes that it is too early to see which technologies will win, also that there will be continued growth of private and public/private islands of fibre. There is therefore no alternative to service based competition. INTUG supports the philosophy of competition at the deepest level possible in the network, where this can be achieved through efficient investment. Incumbent operators can reduce their own investment risk by ensuring that their infrastructure is open to maximum use through equal access. This approach will also appeal to investors, and will reduce the leakage to private network solutions, which would otherwise be forced on corporate users as in the past.

Encouragement of universal access, through both fixed and wireless technologies, is not helped by fiscal policy, if it forces infrastructure implementation, regardless of investment efficiency, and adds punitive licence charges (for example via auctions) as a price for the privilege.

- 4 INTUG agrees that mandating access to civil engineering works such as ducts is essential. The aim should be to promote competition at the deepest level possible in the network. Some investors have favoured 6 and 8 way duct over 4 way or smaller because incremental capital expenditure is low, and in the event of trading difficulties, there is a better chance of recovering some or all of their investment.

If investors support over provisioning of “space”, but for competitive reasons, operators with SMP do not, operators might not upgrade, preferring to sweat existing assets until the level of risk reduces. This would have major negative consequences for International businesses. One way to encourage them to build is to incentivise others to do so. Promoting private and rural NGAs would place competitive pressure on SMP operators to roll out, or over time lose control of their stranglehold of the access market. If the economics are right, private and rural NGN builds would slow down over time as NGA-based offers became more attractive, whilst the alternative infrastructure offered competition.

Whilst incumbents might object to asymmetric regulation, this was how some cable networks were built, and for local loop investment, this regulatory approach was successful for universal access, as one government auctioned the right to build on a franchised basis.

A community near Eindhoven in the Netherlands decided that they could see the benefits of services which would require FTTH support. Neither the incumbent nor the principal cable competitor took much interest in the project, until it launched. The business case for the private investors required 35% take-up... they achieved 86%. They already have 100Mbps *symmetric* speeds to deliver services.

- 5 INTUG supports price controls on reference offers for access to existing network infrastructure, based on existing physical capacity, the extent of depreciation of the existing facilities, and consideration of the operating costs of an *efficient* operator.

INTUG believes that converged solutions for Universal Access should be accommodated. Where fixed capacity is restricted or simply does not exist, a common pan-EU spectrum band should be coordinated for the provision of Broadband services in rural areas. Such networks could sit in the 40GHz band, since the philosophy is to ensure the significant bandwidth availability which is possible at such a frequency, and the assumption is that even if not immediately, such networks will have to interface with the nearest available fibre based infrastructure, which at 40GHz can typically be 5kms away.

Some NRAs are already planning wholesale auctions with inadequate consideration of their societal duties. A drive by the GSM Association to promote something similar is viewed by some users with extreme mistrust, since mobile network expenditure is already responsible for a significant proportion of their communications costs.

A study by Analysys Mason for the UK Broadband Stakeholder Group said, "*wholesale rates are key*" if NGA is to generate adequate returns. The Recommendation might usefully reinforce previous Commission comments, regarding what NGA interconnection might look like. The regime for interconnect agreements, regarding capacity based or per minute charging could represent significant obstacles to negotiated agreements. Some NRAs have already stated that they do not intend to impose the traditional RPI-X approach to NGA price regulation.

The builders of NGAs can no longer rely on users paying metered charges for voice when Skype and free WiFi already exist for VoIP. Peering, subject to how this is viewed by the taxation authorities in terms of netting, is likely to prevail. There are dangers, however, in symmetric regulation here, as has been shown with the competitive imbalances which result from high Termination Rates. Business cases for NGAs based on legacy interconnection models will fail. INTUG does not believe wholesale rates are as important as claimed, unless yesterday's outmoded approaches are applied to tomorrow's NGAs.

- 6 Investment on the scale needed will not materialise without sufficient reward for NGA builders and operators with simple, clear, and consistent regulation. It would seem that the commercial banking sector might be best placed to decide on appropriate risk premiums, if there are any at all which are justified. The European Commission, by virtue of its ability to oversee many national markets, might also be in the ideal position to liaise with the banking community and give guidance as to the levels of acceptable return, thereby assisting the NRA's to retain their independence from government

INTUG's aim is sustainable and efficient investment and competition, and judgement of risk premiums should be made with this aim in mind.

- 7 INTUG supports the retention of current product market definitions. Quality and security considerations must be given adequate attention, in particular the control of access to e-mail and phone records.

Interoperability considerations are also important. "Forwards and backwards" interoperability must be maintained, and when a legacy service is to be terminated, there should be an agreed period of notice to prevent users making investment decisions in good faith which turn out to be fundamentally flawed through no fault of their own.

- 8 NRAs must be able to maintain the required consistency of approach over successive review periods in a dynamic and fast changing sector, especially as technology will certainly continue to evolve apace.

Regulators strive for technological neutrality, yet INTUG notes that some of the most successful pan-European developments (including the GSM standard and the development of DSL) involved conscious or unconscious selection of a technology. Regulators do, inevitably, have a hand in how technology develops over time. This reality is likely to be reflected in the access remedies chosen. It is a real problem today. Fast migration to fibre based NGA solutions would devalue the investments made in DSL, which many NRAs were keen to promote.

This Recommendation makes choices between different technologies and topologies, all of which have different costs, benefits, and access remedies. The Recommendation strives to maintain the principle of technological neutrality, but states that infrastructure competition is preferred, and, at paragraph 22, that access products should be designed to facilitate migration from FTTN to FTTH for all parties.

This is not technologically neutral, but INTUG believes the underlying rationale is nevertheless reasonable.

At the core of the technology choice dilemma are several factors:

- Cost
- What users are willing to pay
- Market control associated with different technology choices
- What is already being deployed
- What the preferred network architecture should be
- How this fits with the Union's wider objectives
- Over what time periods investments are written off

One approach would be to accept that there *is* a favoured technological solution, FTTH, and to devise a regulatory regime with inherent bias to favour it. This involves risk, but the importance of resilient reliable fibre to the deepest possible level in the network appears at this point to be the optimal choice for the European economy. Even if we cannot foresee how such huge capacities will be used in the future, we have learned of the problems that come with local loop bottlenecks, and we have seen exponential increases in demand for capacity that would have been regarded as unimaginable even 5 years ago. Were this not so, Cable Networks would not now be upgrading to DOCSIS3.

FTTN does, however, have a role as well. FTTN does bring major competitive problems of control of the access network and points of concentration, which expose the market to the dangers of excessive control by operators with SMP. But NRAs should be able to resolve this with an adequate set of remedies.

Users favour technical standardisation and harmonisation, as a route to maximum competition and choice in services, but they are faced today with 27 different approaches at the national level. This will not be overcome without an adequate institutional structure to ensure compliance by all NRAs.

INTUG believes that without acceptance by NRAs of a harmonised EU approach to NGA, enforced as necessary, there is little prospect of a consistent regulatory approach ever emerging. The current ERG has failed users since it has not delivered the degree of consistency and harmonisation needed, yet resistance from many NRAs to greater Commission powers to enforce compliance continues.

TRANSPARENCY

- 9 INTUG supports the approach set out in the recommendation, and believes that there should be standard reference offers

TUANZ, the New Zealand User Group, commented in their recent response to the NGN study, that it should not be necessary *“to prescribe particular commercial models”* but the key is to ensure *“unfettered opportunity”* for services based competition and to ensure also that there must not be *“... opportunities for particular operators to use technical or commercial means to restrict the access of competing service providers to any facility or wholesale service necessary to serve any end user.”*

These objectives could be enshrined in Reference Offers in the EU.

- 10 INTUG accepts that SMP operators might not wish to provide network modification information to others, since they should receive the main benefits of commensurately higher returns given their investment risk.

However, it is essential, especially in an FTTN environment, that such information be provided to the NRA who can then assess to the extent necessary what information should then be provided to competitors.

One area of sensitivity is network concentration points and their location in the network, since this has a significant effect on what form competition can take, and how network based competitors can exist.

The Commission has a vital oversight role to play in the provision of information, and it should be possible to formulate robust guidelines.

- 11 INTUG understands the very real practical difficulties associated with the promotion of build-and-share projects. In one case in the 1980s, Cable and Wireless decided to share in this way with a cable television company, and the difficulties in preparing and managing the agreement in the real world were legion. No further sharing occurred after this one event. In the submarine cable world, forms of shared ownership of system and capacity have existed for decades, but these now face robust competition from independent cable systems, who do have greater end-to-end control. The trend is in the opposite direction.

Partial infrastructure swapping or rental does seem to work to a limited extent, but on an ad-hoc basis dictated by the needs of the operators, who reflect the needs of the users. Build and share can have a major impact in the mobile arena, where agreements are already emerging.

- 12 INTUG supports promotion of fibre-based developments rather than copper deployment, since the latter wastes valuable capital on a limited capability, unsuitable for future business needs. Protection of customer interests on legacy networks should, however, be ensured, and hence necessary maintenance work and where unavoidable upgrade or equipment replacement should be required of operators. There is also a risk that during migration, economies of scale might deteriorate, forcing up pricing on legacy networks.

FTTH (Fibre To The Home)

- 13 INTUG agrees that building wiring is potentially a barrier to FTTH deployment, mainly due to property rights. ERG has suggested this could be addressed using Article 12 of the Framework Directive. The explanatory note to the Recommendation highlights plans in France to impose symmetrical obligations on operators in developments, and the case of the FCC, which has adopted a specific regime which prohibits the use of exclusive contracts with multi-site dwellings. There is, however, a risk of a major problem. In the UK, BT's Ebbsfleet trial was made possible by the landowner, Land Securities. All the dwellings are leasehold, and one lease condition prevents installing satellite dishes on the outside of properties. Being located in a former quarry makes terrestrial television reception problematic, and therefore BT has effectively purchased an exclusive right to be the de-facto monopoly provider of some services already. From the user perspective, this is an inherently unhealthy development. If reflected across the EU, those with the deepest pockets could buy control of users. INTUG believes this must not be allowed to happen and only a joined-up approach to this whole area can work.
- 14 The concentration point of access networks, including in-building, is vital, since it directly impacts the degree of competition. Whilst NRAs should be technology-neutral, they cannot be technology unaware. INTUG is concerned NRAs may lack the expertise or resources to act fast enough as the pace of technological evolution accelerates. Commission guidance via an enhanced ERG is essential if competition is not to be threatened by lack of detailed technical understanding. The Commission might struggle itself without greater resources.
- 15 INTUG supports mandating access to unlit fibre. This also addresses competition concerns, whilst neutralising detailed technology analysis. Dark fibre offerings to customer premises, local loops and sub-loops would be an ideal solution, but might not always be possible. Where feasible, this allows localised and specialised services and technology to use technology neutral infrastructure. The Wik study shows this could also increase infrastructure-based competition dramatically.

FTTN (Fibre To The Node)

- 16 INTUG believes that it is essential for an operator, wishing to replace part of its existing copper network with fibre, to be required to negotiate an agreed period of notice, *with other operators and with users*. This will avoid inappropriate investment or invalid contracts with other operators to use services which rely on elements of the SMP operator's network, that it is prematurely withdrawn.
- 17 INTUG agrees that where SMP operators deploy FTTN, they must be required to make reference offers for sub-loop unbundling, with appropriately viable remedies and ex-ante price controls for all inputs.
- 18 Co-location in a world of competing network architectures is not simple. Street cabinet costs, capabilities, resilience and capacity vary widely. NRAs cannot prescribe optimal street cabinet economics and remain technology neutral. NRAs could, however, give incentives for a second operator to be collocated in the same street cabinet, at similar cost.

INTUG believes these matters do, however, need be addressed. The Recommendation could advise NRAs to make these decisions with emphasis on FTTH being the preferred long term architecture.

- 19 INTUG supports ancillary remedies supplementing access measures for sub-loop unbundling. Non-discriminatory access to facilities for co-location or virtual co-location are essential for effective competition, and allows the Commission to take action base on significant body of European case law if SMP operators seek to subvert the requirements.
- 20 There would be little point in undertaking all this work at the access level if rights of competitive access to backhaul facilities were not guaranteed. This is a key tenet for the regulatory stability over the longer term that investors will inevitably seek.
- 21 INTUG supports the recommendation that new service launches by SMP operators should not cause harmful interference with the broadband services of competitors.
- 22 INTUG agrees that access products should be designed to facilitate migration from FTTN to FTTH for all parties.

This is at the core of the whole Recommendation, since it is a key enabler to achievement of the long term aim of ubiquitous FTTH, or equivalent infrastructure, in terms of capability, perhaps wireless).

Because FTTH is the most expensive solution, it is natural that some may not wish to deploy it. The fact that FTTN raises serious potential competition questions on many levels might make it more attractive to operators with SMP who might wish to recover more power at the expense of NRAs, competitors, and most importantly, users.

The unpredictable spike in network capacity demand, on a scale which was unthinkable even in the recent past, combined with the desire to remove the local loop bottleneck, suggests that the investment risk for FTTH will be lower than SMP operators claim. Customer perception that always-on network capacity is unlimited and virtually free, has led to some operators threatening to cap or disconnect heavy users.

FTTH Point to Point architectures implement easy-to-use unbundled fibre local loops, which can be sold wholesale to other operators. This decouples the risk of infrastructure deployment from the risk of having developed the appropriate broadband customer solutions, therefore reducing the risk of a large part of infrastructure investment.

Different pricing packages have been suggested to manage to enormous load from video intensive social networking in the residential consumer market. Businesses are gearing up to bandwidth hungry applications with inbuilt presence technology and machine to machine communications and high speed, for example using RFID.

Early data from users suggests that they will pay “more-for-more.” In the UK, over 40% are already struggling with copper networks that do not meet their needs (CMA user survey UK Q1 2008).

The implications of favouring FTTH are profound. The staggering cost means that the political will to support what in the longer term looks like the optimal solution *must* remain constant.

There is also danger that mandating FTTH might deter investment in FTTN, with operators, preferring to “sweat” XDSL investments instead. Furthermore, a significant number of new FTTH users would previously have been XDSL users, so the economics of migration in the current climate may not be sustainable.

All this emphasises the need for a very broad EU telecoms industry policy which must be consistent to be effective. This means spectrum on a pan-European basis for use in “superfast broadband poor areas” which will not be auctioned, public private partnerships, coordination with healthcare policy, educational policy, regional policy... and so on.

- 23 INTUG agrees that if SMP is found to exist in Market 5, wholesale broadband access remedies must be maintained for existing services. It is sensible to avoid complication and to avoid creating new markets for review.
- 24 INTUG agrees that when mandating wholesale broadband access, NRAs should mandate provision of wholesale products that best reflect the technological and commercial capabilities inherent in the new infrastructure to enable alternative operators to compete effectively.

Implementing next-generation service platforms could potentially create new bottlenecks or reduce opportunities for competitive service delivery. INTUG urges the Commission to be alert to such problems, and where necessary to act robustly to prevent such action.

Conclusions

Joined-up thinking across the EU and across ex-ante regulation of the various markets is essential. This must acknowledge the differing needs of residential domestic consumers, small and medium enterprises, often located in widely dispersed areas, and multinational enterprises, whose supply chains generate 35% of the EU economy. Their needs in terms of services are distinctly different and competition must be effective on an international basis, not just at a domestic or sub-national geographical level, to be of value.

The Commission's recommendation for NGA Networks is a positive step in the right direction, but is unlikely to deliver the benefits it promises without an effective institutional structure to ensure harmonised, timely and effective transposition and implementation of regulations and remedies within each Member State. The future of the EU economy depends on getting it right.