

**Telecom Italia response to
Draft Commission Recommendation on
regulated access to Next Generation Access Networks (NGA)**

14 November 2008

EXECUTIVE SUMMARY

Telecom Italia welcomes the adoption of a new Recommendation aiming at creating a level playing field for markets 4 and 5 and at fostering efficient investments and innovation, through the development of a tailored policy for these markets.

NGAN is an emergent market that requires light regulation which could favour commercial agreements able to attract investments and to maximise benefit for end customers. In this regards, Telecom Italia is concerned about the approach of the Draft Recommendation to the following issues.

The mere transposition to the NGA of the existing regulatory framework for legacy copper access networks is neither justified nor efficient due to the new competitive context and the overlay scenario (see §a).

The relevance of the geographic dimension in the transition towards NGAN is not adequately addressed (see §b).

The Draft Recommendation risks of unduly widening the scope of the market 5 in the NGA context and not bringing out the nature of newly emerging and not substitutable NGA services (see §c);

NGAN definition is generic and doesn't point out the several available technologies, and in particular the increasing role of wireless ones (see §d).

The principle of 'gradation of remedies' is just introduced while the Recommendation should clearly state the relationship between remedies imposed in market 4 and those imposed in market 5, as well as the relationship among the different remedies that can be imposed in market 4. (see §e).

NGAN market is strongly characterised by the fact that the "*first mover*" creates a natural bottleneck in at least some part of the production chain. Therefore, regulatory focus should move to the "*first mover*" (and not to the SMP in market 4 and 5) once agreed that the real scarce and not replicable resource of NGAN market is given by civil infrastructures. Indeed, a symmetric approach in accessing in-house wiring and, where possible, to ducts is as central point that should be assured by the new NGAN regulatory framework (see §f).

Thus access to essential infrastructure is a necessary condition for NGAN development; Telecom Italia believes that it is also a sufficient and sustainable condition to guarantee a level playing field among operators (see §g).

NGAN are characterized by a mix of architectures and technologies not stable enough to allow technical and ex ante regulation. Over specification in the Draft Recommendation is undue since it may generate unjustified architectural influences which could end up with being economically inefficient (see §h).

Similarly, FTTN solution is erroneously seen by the Draft Recommendation as an intermediate technological step and the proposed regulatory impositions may result both excessive and not allow the more adequate gradation of remedies (see §i).

Regarding the proposed costing approach, HCA appears not adequate for fostering investments in an unpredictable market context (see §j). Indeed, 'LRAIC bottom-up' approach appears more suitable as costing basis and gives the possibility to adopt geographic segmentation (see §k).

Additionally, by reflecting in the price the distinction between existing and new assets, regulator runs the risk to distort competition and reduce NGA investments. Indeed the economic value of the infrastructure is the same, regardless if the infrastructure exists or it's new and thus, such a obligation would stimulate a wait and see behaviour among second movers (see §l).

The Draft Recommendation should better introduce alternative methods to address the introduction of an appropriate risk premium and it also fails its objectives to foster infrastructure competition because it leaves uncovered the possibility to introduce risk sharing through contractual solutions or other pricing structure (see §m).

European Commission should stimulate the identification of a risk remuneration model that adequately considers the high systematic risk of the NGA project and covers both equity and debt capital. On the contrary the Draft Recommendations foresees a risk premium only on the new infrastructure and only on the equity share, thus failing to correctly see the NGA project as the product of an indivisible investment decision (see §n).

In our opinion, since the NGA project risk remuneration doesn't have regulatory precedents, the opportunities to identify market comparables for the re-utilization of CAPM methodology are scarce and questionable (see §o).

A first opportunity is to solve the inadequateness of the CAPM methodology with a layered structure which could bring in the value of wait-and-see option and the impact of uncertain demand (see §p).

Contribution to the consultation on the “Draft Commission Recommendation on regulated access to Next Generation Access Networks (NGA)”

a) Mere transposition to the NGA of the existing regulatory framework for legacy copper access networks is neither justified nor efficient

Telecom Italia fully supports the Commission’s objective to ensure a competitive environment in the transition to NGA. Nevertheless, Telecom Italia is concerned about the risk of a mere transposition of existing ex-ante regulatory regime into the new fibre-based environment that would strongly reduce incentives to new investment and, therefore, would result in an inefficient market outcome.

NGA networks competitive setting will be very different with respect to the context of the copper loop. The copper local loop was an essential facility already in place, built by incumbent operators in a monopoly regime, while NGA are going to be deployed *ex novo* by a plurality of operators – both incumbents and newcomers, also using passive infrastructures (e.g. ducts, dark fibre) installed by municipalities and other public utilities - using different technological solutions and different networks (e.g. fixed or wireless networks).

Moreover, the draft Recommendation does not distinguish whether the deployment of the NGA is carried out through a “total replacement” of the existing networks or through “overlay” solutions. However, this is a relevant point for NGA’s regulation. Where the existence of both overlapping networks for a certain time is foreseeable - with the potential choice for customers to switch to the new service or keep the old one - the new services based on the new network should be subject to less intrusive regulation with respect to scenarios where there is a total replacement of the old networks – and therefore customers have to switch to new services and networks.

Telecom Italia maintains that any regulatory intervention regarding next generation technology access platforms - not yet available and, in some cases, overlaying the existent platforms - should be carefully assessed to avoid the risk to distort market developments of newly emerging markets, such as the new network and service markets based on FTTx solutions.

The Recommendation should adequately state that possible ex-ante regulatory obligations for the development of NGAN, should be imposed only for access to previously existent assets of the legacy network which are an enduring economic bottleneck for the installation of the new access infrastructures. That’s to say, the mere SMP identification in market 4 and 5 based on the dominance in the legacy network, can not be used to impose remedies for the new wholesale services based on the new access network.

Finally, the Recommendation, besides defining an adequate and proportionate set of NGA access obligations to impose on SMP operators in markets 4 and 5, should at least recall the principle that NRAs use all the possible tools to foster a symmetric approach, based mostly on commercial agreements, for the sharing of the infrastructures necessary for the development of the NGA (ex.: ducts, in-wire line cabling), with a model open to all the operators which have invested or which are interested in investing in new networks.

b) Strengthening the guidance on geographic segmentation of markets

In our view, the draft Recommendation should also provide detailed guidance for NRAs on how to proceed in market analysis cases where either or the definition of sub-national geographic markets or the local differentiation of remedies in a national geographic market are appropriate. Telecom Italia maintains that the NGA Recommendation should put stronger emphasis on geographic segmentation measures (clearly identifying the methodological approach of market definition and the implications on remedies) that have received broad support by the EU Parliament in the discussion on the review of the regulatory framework

It is worth observing, that NGA will be developed, at least initially, in the main metropolitan areas, where the alternative operators have greater market shares, in the first generation broadband access, than the incumbent operators. It is therefore necessary that the regulation follows the approach of the geographic segmentation in order to avoid an undue imposition of remedies even in areas where the incumbent operator could have SMP in the market 4 and 5 related to the copper access infrastructures but not related to the NGAs. In the Italian scenario, for example, this is the case of Fastweb which already owns about 30% of the total FTTH customers in the EU (reaching one million according to a survey of the beginning of 2008 commissioned by "Fiber to the Home Council") and about 40% of passed homes (five million according to the aforementioned survey).

c) Avoiding an excessive widening of market n. 5 in a NGA context

TI does not share the Commission view that, analysing market 5, the product market definition must include "*any chain substitutes*". This approach is quite cumbersome and not univocal because it could bring to include in the market also services which are not actually substitutable but which, instead, belong to different markets. If a product A is substitutable with the product B, and the product B is a substitute of the product C, it is not possible to univocally conclude that A is a satisfactory substitute of product C because, even if A is similar to B and B is similar to C, technical characteristics and prices of A and C could be quite different and, therefore, they could not be a sufficient competitive influence between their demand and supply. The Commission itself in the "guidelines on market analysis" (par.62) states that:

"Given the inherent risk of unduly widening the scope of the relevant market, findings of chain substitutability should be adequately substantiated" and in the note (50) "Evidence should show clear price interdependence at the extremes of the chain and the degree of substitutability between the relevant products or geographical areas should be sufficiently strong".

Telecom Italia maintains that the definition of the wholesale market n. 5 (and of the underlying retail service markets) should take into account that the expected NGA very high speed broadband access - which enables new retail services like high-bandwidth Internet connectivity services, managed IPTV, high-definition audiovisual content or services requiring high-speed symmetric bandwidths – are a typical example of a newly emerging market that, according to the European Regulatory Framework should not be subject to *ex-ante* regulation.

Therefore, there is certainly a separate wholesale relevant market including only the wholesale broadband access services based on traditional xDSL technologies, under a given bandwidth threshold (e.g. 30 Mbit/s as stated by the Spanish regulator CMT). In fact, it is very difficult to predict if services not yet developed and marketed could be considered actually substitutable of the existing ones. Therefore, in principle, obligations regarding bitstream access should be restricted to grant the replicability of the sole broadband access retail services based on the legacy

copper access network. Possibly, if justified by future competitive conditions, a separate relevant market may be defined for ultra-broadband wholesale access (e.g. over 30 Mbit/s) that currently should not be regulated being a newly emerging market.

d) NGAN definition is too generic and doesn't take into account all the possible technological solutions

The NGA definition stated in the Recommendation¹ is very general, and applies to a multiplicity of technical access network solutions – including not only fixed line based solutions but also cable TV based solutions, and wireless solutions. The aim of NGAN Recommendation is thus “to provide NRAs with guidance that will form the basis for a consistent and coordinated regulatory approach in the transition to NGA”. This goal is very difficult to be achieved for the very nature of NGAN, strongly characterized by a variety of technologies, geographic variation of markets, demand, competition, housing structure and networks characteristics. This is a point clearly made also by ERG.

Actually, nowadays there exist potential technological alternatives, including wireless technologies, which could provide fixed-mobile convergent technologies.

TI therefore suggests to take into consideration a wider technological picture in order to consider technological alternatives. Such a new picture will clearly show that SMP position and/or bottlenecks on access network in a NGAN scenario have to be demonstrated.

On the contrary, the draft Recommendation deals with specific technical solutions that do not cover all the innovative characteristics of NGA. Therefore, as said before, we deem appropriate to better define the NGA network under the scope of such a Recommendation.

The Commission only deals with two technical solutions to provide optical fibre based fixed broadband access - Fibre to the Node (FTTN) and Fibre to the Home (FTTH) - and correspondently identifies the possible remedies to be applied by NRAs in the new market analysis, without fully taking into account the new market context and characteristics. In our opinion, the Recommendation should provide guidelines for the NRAs considering also possible alternative technologies and looking at possible civil infrastructures (e.g. ducts) that could be made available by other public utilities to foster the deployment of the new access networks.

e) Implementing the principle of ‘gradation of remedies’

The draft Recommendation deals with regulatory remedies that could be imposed on operators designated by their national regulatory authorities as having SMP as a result of a market analysis in markets 4 and 5 concerning access to NGAs networks. Telecom Italia maintains that the analyses of markets 4 and 5 should not be independent. In fact, such analyses should be done together considering that remedies deriving from both markets are linked and complementary.

As indicated in the draft Explanatory Note of the Recommendation the market to be analysed first is the market 4 that is most upstream in the vertical supply chain. Taking into account the ex ante regulation imposed on that market an assessment should be made as to whether there is still SMP

¹ NGAs are access networks which have been substantially upgraded either wholly or in part, using existing local access infrastructures and technologies and/or using new optical fibre infrastructures, and which are capable of delivering broadband access services with bandwidths significantly above those currently widely available

on a forward-looking basis on the market 5. This principle related to the “gradation of remedies” should be clearly indicated also in the text of the draft Recommendation document.

In particular, the imposition of the access to essential infrastructures as the ducts, which represents the main part of the costs to be sustained to implement a next generation network, may be sufficient to guarantee (together with a way of sharing the in-house wiring) a level playing field between operators that may build at their own costs the other parts of their new network.

In Telecom Italia’s view the Recommendation should clearly sets out a prioritisation of remedies imposed to SMPs aiming to ensure infrastructure-based competition at the deepest level inside the network. In addition, it should be taken into account the opportunity to achieve commercial agreements among operators that can anticipate and substitute regulatory interventions (as demonstrated by the recent agreement between Fastweb and Telecom Italia on ducts and manholes).

f) Fostering a symmetric approach in accessing in-house wiring and, where possible, access to ducts in different geographic areas

As regard to in-house wiring solutions like fibre to the home or fibre to the building, a “symmetric” approach should be applied, as it’s evident that it’s unviable that a multiplicity of operators can provide “in building” cabling, neither it’s extendable to the fibre in-building cabling a possible dominance in the market of legacy copper access network (previously defined as market 11).

In other words, the in-house cabling should be considered as a separate issue considering the presence of more providers.

As far as the possible obligation to give access to ducts is concerned, TI deems that this obligation should not be automatically applied to “SMP operators in market 4”, considering that also other players, operators and public utilities, may have the capacity of providing civil infrastructures useful for NGA deployment. In addition, the availability of alternative civil infrastructures (e.g. ducts) may widely differ across different geographic areas and, therefore, the obligation to provide a reference offer concerning duct access should be applied on a geographic basis.

In addition, also in the framework of access to ducts, a symmetric approach should be privileged, where possible, favouring the sharing of the ducts of alternative operators, rather than focus the regulation on the access to incumbent’s ducts.

Accordingly, TI maintains that the development of new infrastructure, in particular the commitment needed to invest on civil works for the deployment of fast NGA networks, deserves further analysis by the Commission and the adoption of a new recommendation with a focus on symmetric access to passive infrastructure.

As a matter of fact, the Recommendation under consultation is proposing a policy focused on market analysis (according to the current regulatory framework) that leads to the application of SMP remedies, without addressing the possibility of an appropriate symmetric policy regime.

However, symmetric regulation is indispensable, in a new scenario in which a new access network, which will be based on a new technology, is likely to be developed not only by the traditional incumbent operators but also by new, alternative operators without significant market power at national level.

This market development should be supported on one hand by means of symmetric regulation, mainly focused on the need to promote facility sharing among network investors through commercial agreements, and, on other hand, on a balanced asymmetric regulation based on an appropriate application of the tool of geographic segmentation.

As the symmetric sharing of basic facilities is already covered by Art. 12 Framework Directive, it therefore can form part of a Commission Recommendation under Art. 19 Framework Directive. In addition, in order to ensure consumers benefits TI also stresses that art. 5 of Access Directive is providing a legal basis to ensure a proportionate symmetric access regime.

Moreover, TI believes that such a regulatory intervention should take into account not only all the infrastructure of telecom operators but also the ones built by other utilities (such as electric companies, aqueducts, sewer trunk lines, municipalities).

Summing up, a regulatory approach that would limit itself to SMP obligations, without clear provisions to allow the application of passive network access sharing, appears unbalanced and ultimately not focused on customer welfare.

g) Establishing sustainable access obligations to essential infrastructure

TI reiterates that the possibility of sharing or building ducts should be left to commercial agreements amongst operators. In fact, such infrastructure cannot be considered to be the exclusive asset of incumbent operators. On the contrary, alternative operators (as well as facilities and municipalities) often own such infrastructure. As an example, in Italy several utilities and municipalities have their own fibre optic network and – generally – own infrastructure.

Nevertheless, in case of failure of such agreements, SMP operators in market 4, while rolling out new ducts, other civil engineering works and other elements which are not active, should not be required to allow sufficient space for other operators to make use of these facilities, without having agreed with such operators the details of the deployment.

More in details, regarding the opportunity of hosting other operators in own non active network elements, it is necessary to consider two possible cases: (i) existing elements; (ii) new elements.

- i) Existing element: in this hypothesis, an SMP Operator can host another Operator in its ducts (or other non active element) only in case some of these elements contain an available unused capacity that can be resold. If no capacity is available, it means that the SMP operator itself, to expand its network, should build new network elements (that lead us to case ii)
- ii) New elements: in this case, operators that are really interested in sharing the investments have to agree on the details of the deployment. If an Operator didn't participate into the building of the new elements, may not find available capacity. The obligation to foresee spaces for other operators, which did not accept to participate to the investments, is a concrete barrier and disincentive to NGA investments because of the increase either of costs and risks or of complexity of projects and permissions required from local administration (e.g. wider cabinets on the sidewalks).

In both cases, if there are no network elements that can host other operators, when defining obligations to give access to unlit fibre for SMP operators, NRAs should take in the utmost account the existence of all the possible providers of unlit fibre on commercial basis: not only alternative

operators, including wireless network operators, but also municipalities and other public utilities (electricity, natural gas, etc.) operating in the relevant geographic area.

Only when the SMP operator is the only provider of unlit fibre in the relevant geographic area, it should be obliged to reach a commercial agreement with other operators, including the definition of possible access points. Where the parties don't succeed in reaching an agreement, NRAs should intervene to solve the dispute.

h) Over specification about FTTH technology in the draft recommendation is undue and may generate unjustified architectural influences as well as inappropriate regulatory obligations

The draft Recommendation states that NRAs should require SMP operators in market 4 to provide access to fibre sub-loops - i.e. the terminating segment of the FTTH access network, including fibre in-house wiring.

NRAs should *“determine where the concentration point of the terminating segment of the access network, including inside-building wiring, should be for the purpose of granting access”*²

Even agreeing with the Commission that multiple physical access deployments may be impractical or undesirable within buildings, it would be unfeasible for any operator to plan and install concentration points able to host end user connection provided by other operators, without knowing which operators are really interested, and without agreeing the details of the deployment.

TI contends that the best option is to encourage market forces to find out right balance. Infrastructure sharing can be the result of freely negotiated agreements rather than the result of a regulatory intervention. Again, TI points out that only in case of market failures the second best option is to address the in-house wiring issue by means of symmetrical regulation. In other words, each operator owning the in-house network, should offer access to it.

Moreover, the in-house wiring of FTTH solution is a matter of standardisation activity not yet in place. It's not reasonable to wait for a standard definition before starting to provide possible FTTH based services. As a consequence, it's unavoidable that operators developing FTTH networks would adopt “ad hoc” solutions, depending on access network topology and other technical, economic and commercial elements.

The determination, by the NRA, of where the concentration point of the terminating segment of the access network, including inside-building wiring, should be for the purpose of granting access, would impose to SMP operators' architectural choices that should make part of the free entrepreneur preferences.

Telecom Italia also believes that the additional obligations regarding a possible unbundled access to the optical local loop may negatively affect the rolling out of NGA since the burden of these measures would be borne solely by SMP operators. Instead we reiterate that such a regulatory approach is essentially wrong since it neglects the existence of other fibre networks that could play a fundamental role in the transition towards NGA especially in metropolitan areas.

² point (14) of draft recommendation

i) FTTN solution is erroneously seen as an intermediate technological step for which the gradation of remedies is not proposed

The draft Recommendation states that NRAs should ensure agreement is reached between the SMP operator in market 4 and alternative operators *"within a specified deadline"* on a migration path from LLU to access under the new network structure.

We agree with the Commission about the necessity of a common migration path³ involving all the operators operating in a specific area, when the copper access network is partially or totally replaced with fibre, to avoid negative impacts on the services provided and the customers' satisfaction.

On the other hand, NRA must guarantee that the deployment plans of operators investing in new technologies won't be delayed or distorted by tendentious behaviour of other operators.

NRAs, according to the operators needs, would have to balance the commercial freedom of the SMP operator to develop its network and the objective to promote competition, e.g. when setting conditions under which MDFs may be phased out.

Finally, the Commission says that the *"gradation"* of remedies approach should not apply to FTTN deployments because the investment required supplying sub-loop unbundling and associated backhaul and co-location has already largely been made, see point (10) of Recommendation: *"NRAs should ensure that the street cabinet itself facilitates competitive access and that all necessary ancillary services (e.g. power supply) are available in the reference offer with appropriate pricing provisions. Sub-loop unbundling together with backhaul products should also be adequately specified in revised reference offers to allow continuity of existing competitive offerings"*.

Telecom Italia strongly disagrees on this point with the Commission's view; in our opinion Commission doesn't consider that:

- new investments are required in order to deliver FTTCab services and new equipment has to be installed, thus gradation of remedies should be seriously considered;

- in any case, the possible provision of access to ducts in itself guarantees the possibility to have a broader competition in the new fiber-based service markets and represents the only way to realize a true infrastructure competition in the new networks.

Possible obligations in relation to Market 4 are to be imposed after a specific market analysis made by NRAs, independently from changes to the existing network structure or topology. More in general, unnecessary obligations of the extension of wholesale portfolio would negatively interfere on the operators' deployment plans.

Regarding this last aspect, it's important to highlight:

- The collocation obligations mean to plan huge street cabinets, large enough to host several operators. This will be certainly unviable because it will be impossible to obtain permissions to locate huge cabinets on the sidewalks and, as it should not actually be possible to reserve enough room to other operators, especially if wholesale service demand are uncertain and deployment plans of operators are unknown. The so called "distant collocation solution", by

³ point (16) of draft recommendation

which the cabinet is linked by a “tie cable” to the Point of Presence of the Alternative Operators seems more technically and economically feasible.

- As a matter of fact, the LLU experience pointed out that unbundling was not required by alternative operators for all local exchanges but for a limited portion of them. We can assume that such a situation could be replicated also with regard to NGA. Therefore, requiring SMP operators to reserve space in their own street cabinet would not grant efficiency.
- In fact, the number of operators which an operator could host per cabinet will necessarily vary in relation to the area involved (cabinet in an urban area will certainly be more attractive to a large number of operators rather than cabinets in rural areas due to a greater density and consequently to the possibility to reduce connection costs). This implies that a one-size-fits-all solution cannot be adopted since – otherwise – there would be cabinets with more (unused) capacity than needed, and more capacity means higher costs and a higher environmental impact, which not all municipalities could accept. On the other hand, differentiating the number of operators each cabinet could host would be inefficient for the operator who could not rely on economics of scale with regard to the planning and buying new cabinets.
- The obligation to provide ancillary services to alternative operators seems critical, like, as an example, the imposition to SMP operators to provide electric power to Alternative Operators collocated in its street cabinet. It should be left to the operators the choice according to effective needs and feasibility without imposing ex ante obligation to SMP Operator. Nowadays, the current sub loop unbundling offers provided by SMP operators don't necessarily include the provision of electric power, so the Recommendation would require a drastic change in the wholesale service practice.
- The obligation to provide own backhaul to street cabinets or in general the availability of ancillary services such as dark fibre is not necessary once agreed duct sharing as observed before. Should duct sharing be unviable, dark fibre lease should consider risk premium in order to support huge investment needed to reach street cabinets by fibre.

In addition, TI also points out that – apart from the difficulty of imagining co-location obligations in an uncertain market scenario in which operators still have undefined technical conditions for services and have not yet signed a related contract – co-location based on commercial agreements would help operators to test the interest of other operators in the possibility of sharing the cabinet (therefore allowing the operator to plan its network in advance) and would allow alternative operators to share the costs of cabinets.

As a matter of fact, the sharing of infrastructures (cabinets as well as ducts) left to commercial agreements is certainly possible and there are clear examples in this sense. Commercial agreements can surely foster investment, risk assumption by all operators and highline common development plans. On the contrary, regulation based on asymmetrical obligations could lead many operators to wait for incumbent investments rather than support risk assumption and investment sharing.

Only in the case that commercial agreements fail, TI believes that an obligation of negotiating co-location could be imposed. Either way, we deem this obligation to be a symmetrical obligation on every operator having infrastructure. As a matter of fact, if the reason for such an obligation is to open cabinets of an operator being considered as non replicable, it follows that such a symmetrical obligation should be imposed on every operator owning its street cabinets.

Finally we would like to highlight that it's not necessarily in the scope of every operator to migrate from a FTTN solution to a FTTH one, neither there are evidences that FTTH solutions represent an advantage for customers or operators. So, there are no reasons to require access products that facilitate migration from FTTN to FTTH (“Access products should be designed so as to facilitate migration from FTTN to FTTH for all parties “see draft recommendation – General Provision - (22)).

j) HCA pricing approach is not adequate for fostering investments in an unpredictable market context

Draft Recommendation affirms (see p 2 of Annex I) *“the usage price for an existing duct should be based on cost estimates contained in the regulatory accounts of the SMP operator. These cost estimates should be historical costs minus depreciation, or, where this information is not available, current costs minus depreciation. A mark-up reflecting the common costs of an efficient operator should be added to these cost estimates”*

Firstly, TI deems this approach incoherent and contradictory to guidance of the Commission on cost accounting and accounting separation (Recommendation on accounting separation and cost accounting systems under the regulatory framework for electronic communications of 2005, 2005/698/EC).

Secondly, economists and the European Commission have constantly stated that the historic costs method is not an efficient basis for tariff calculation: *“Charges based on HCA give poor signals for investment since they reflect cost of when the asset as been purchased rather than what it could cost now. There is a danger that basing prices on HCA could stifle efficient investment in access networks in the longer term”⁴.*

The Recommendation proposal determines an under recovery of the costs sustained by the incumbent, clearly violating the cost orientation principle, recently confirmed by an European Court of Justice (ECJ) sentence (Arcor vs. DT), dated April 24, 2008.

According to the ECJ, it is the NRAs' task to define detailed rules for determining the basis of calculation:

“193.6. It is apparent from Article 4(1) and (2) of Regulation No 2887/2000 that, when examining the rates of notified operators for the provision of unbundled access to their local loop in light of the pricing principle laid down in Article 3(3) of that regulation, the national regulatory authorities have a broad discretion concerning the assessment of the various aspects of those tariffs, including the discretion to change prices, and thus the proposed tariffs. That broad discretion also relates to the costs incurred by the notified operators, such as interest on invested capital and depreciation of fixed assets, the calculation basis of those costs and the cost accounting models used to prove them.”

The ECJ also states that the real costs must be taken into account and that historic costs place the SMP in a disadvantageous situation:

“115- It results from the above mentioned provisions that the principle that rates for unbundled access to the local loop are to be set on the basis of cost-orientation requires account to be taken of actual costs, namely costs already paid by the notified operator and forward-looking costs based on an estimation of the costs of replacing the network or certain parts thereof.”

” 193.2- When applying the principle that rates for unbundled access to the local loop are to be set on the basis of cost-orientation, laid down in Article 3(3) of Regulation No 2887/2000, in order to determine the calculation basis of the costs of the notified operator, the national regulatory authorities have to take account of actual costs, namely costs already paid by the notified operator

⁴ Ofcom, “Valuing copper access, Proposals” (2005): 3.10, page 11.

and forward looking costs, the latter being based, where relevant, on an estimation of the costs of replacing the network or certain parts thereof”,

“108- It follows that the cost calculation basis which must be taken into account when setting rates for unbundled access to the local loop cannot be based exclusively on historic costs, otherwise the notified operator would suffer, compared with the beneficiary, unjustified disadvantages, which is precisely what Regulation No 2887/2000 seeks to prevent. The aim of that regulation is to enable both beneficiaries and the notified operator to operate on the market so as to establish normal competition in the medium term. »

The court also supports the NRAs’ practice of using analytical bottom-up or top-down cost models in the absence of complete and comprehensible accounting documents:

”193.4- When national regulatory authorities are applying the principle that rates are to be set on the basis of cost-orientation, Community law does not preclude them, in the absence of complete and comprehensible accounting documents, from determining the costs on the basis of an analytical bottom-up or top-down cost model.”

The Recommendation proposed approach may consider that depreciation is already recovered through the traditional ULL services. As a consequence, the NGA costs would be based on a “marginal” approach driven by the concept of “new” infrastructures. The Recommendation approach doesn’t consider that:

- the risk of a NGA business is related to the new generation services offered by an Operator rather than typology of asset invested;
- NGA rollout needs additional investments either to build new infrastructures and to develop the existing network; the use of already existing infrastructure changes the point of view for the economic decision to roll out a NGA network (e.g. time to market, architectural decisions, ...) and may improve the economics itself, lowering the really needed critical market share and allowing to roll out in those areas
- the substitution, in next future, between the reduction of “traditional ULL” services and increment of the “NGA access” services. According to the general pricing rules, in terms of cost accounting, it may determine a different apportionment of the common costs between the two services, with a decreasing of the common costs attributed to the LLU and an increasing of the cost attributed to the NGA services, including infrastructures. If so, The Commission proposal excludes this possibility, preventing the recovery of a quote of common costs (sunk costs).

By proposing price components at historic costs (HCA), also considering that NGA assets in no way can be assimilate to legacy copper-based ones, Commission policy could undermine the ability of network operators to maintain and update this vital infrastructure and would distort investment decisions by market players. Eventually, such change in pricing methodology could even lead to a comparative disadvantage of newly-built infrastructures instead of supporting new roll-out as intended by the Commission.

k) The LRAIC bottom-up approach appears more suitable as costing basis and gives the possibility to adopt geographic segmentation

According to TI, the most efficient solution is to make use of actual cost based on a forward looking bottom – up approach (LRAIC), suitable to set usage wholesale pricing:

- on medium/long term, adequate to NGA long term investments and to the strong evolution of the services demand characterized by the increase of the emerging services and decrease of traditional services;
- coherent and independent by the existing and/or new ducts, other civil engineering works and other elements which are not active;
- able to individuate a long run “market price” which provide a right signal for a “make or buy” long run decision;
- appropriate for a price squeeze control, for emerging services, in long run perspective..

On the other hand, tariffs based on historic costs (minus depreciation) are strongly below the efficient level that guarantees the durability of the infrastructure in the long term, because it does not ensure the necessary revenue to keep this vital infrastructure alive in the long term.

Therefore it is essential that the Recommendation establishes the principle that LRAIC, in a bottom up approach, is the standard costing reference irrespective of whether an infrastructure is already in place or to be deployed. That means the mentioned approach has model the total cost of the services considered under efficient conditions, taking into account the cost of all network elements needed to produce these services (e.g. those for all ducts needed).

Efficiency may be introduced through LRAIC methodology that, on the other hand, does not prevent the introduction of different capital employed remuneration in order to take into account that new wholesale services provided over a NGAN may require a higher risk premium compared to the existing wholesale services.

Furthermore the Commission sets that “*Usage prices for ducts, other civil engineering works and other elements which are not active, should not be bound by the principle of geographic averaging in the presence of substantial cost differences between various areas*”.

TI agrees about the geographic differentiation, but the approach suggested by the Commissions explicitly referred to the *usage prices for .. elements which are not active* implies a relevant level of detail in accounting system that should not take it for granted. TI underlines that top down regulatory accounts – but also the general ledger accounts – do not provide geographic data; also, neither Italian neither European Laws impose to collect investment and costs data at geographic level. So that, on the basis of an HCA or a CCA methodology, there is not the possibility to appreciate geographic differences on costs.

As matter of fact, TI (but we believes all Operators) has not the data to determine at “area” level the essential parameters (such as depreciation of the assets, useful lives or operating costs) needed to differentiate the costs.

Differently, in view of a “de-averaged price” approach, a possible differentiation would be feasible using an LRAIC bottom – up methodology, that allows to acquire the most relevant geographic parameters needed. LRAIC bottom – up model can reproduce the network planning process letting the opportunity to individuate the infrastructure consistency and value.

As last consideration, TI underlines that the Recommendation does not analyze the impact and the consequence of the geographic differentiation neither on the retail prices nor on margin squeeze controls. TI asks for a revision of the text. In particular, if the Commission would really an appreciation of cost difference between various areas, introducing price squeeze control for emerging services in lung run perspective, also the costing principles must be modified adopting a bottom up LRAIC methodology...

I) The distinction between existing and new assets may distort competition and reduce NGAN investments

The Commission proposes two different approaches for costing the infrastructures, one for the existing assets (HCA minus depreciation) one for the new assets (cost plus).

On that approach TI cannot agree, since NGA assets can be in no way assimilated to legacy ones.

The proposed distinction may influence the nature and timing of investments in NGA. and could distort competition (especially considering the possibility to differentiate geographically the costs) and prevents alternative investments:

- the “economic value” of the infrastructure is the same, regardless if the infrastructure still exists or it is new. From an economic point of view, an infrastructure – existing or new – generates the same income flows, element that the Commission approach does not consider.
- If an existing infrastructure must be priced at HCA minus depreciation, it is quite clear that alternative Operators have not convenience to invest, simply because the actual costs of an investment will be higher of the cost to rent an existing infrastructure. Maintaining this approach prevent investments of It can determine different prices for the same wholesale service (access to the infrastructures): for example, an existing duct may cost less than a new one, even if both are in the same area!

Furthermore, referring to fibre backhaul from the street cabinet to MDF, the Commission introduces a concept related to “*modernization of the copper based network*” which should not encompass high risk remuneration than other modernization and maintenance expenses (see Draft Recommendation p 5 of Annex 1).

According to TI, it is not possible refer the “modernization” to single part of the access network, and in particular to those parts where copper based network has been “substituted” with fibre, avoiding to recognize an adequate risk premium. Referring to fibre backhaul from the street cabinet to MDF the so called “substitution” means the necessity to dig and to deploy new infrastructure in order to provide NGAN services. Therefore TI asks for a revision of the text.

The approaches proposed by the Commission cannot support risk assumption and investment on infrastructure.

TI proposes a different strategy and is already discussing on a commercial basis with all main other Italian infrastructured operators. At this time, TI has already consolidated a non-exclusive agreement with the other most infrastructured Operator which:

- 1) allows, under full reciprocity terms, the use of existing ducts owned by the parts at the current price in use for TI ducts,
- 2) the obligation to inform the other parts in case of plans of investment in new ducts for more than 500 housing units;
- 3) the possibility for the other parts to participate to the investment giving requirements in terms of quantity of ducts and then directly own a number of the new ducts;
- 4) sets a higher price for new infrastructures for the operators which did not participate to the investment.

m) The draft recommendation explicitly mentions the opportunity to adopt alternative methods but leaves uncovered the possibility to introduce risk sharing through contractual solutions or other pricing structures

Telecom Italia agrees with Commission on “*Other methods could be used if they are fully justified as meeting the same quality standards*” . We deem it necessary to define other methods respect to traditional (or standard) CAPM enabling the telecommunication industry to deal with the complex challenges posed by the NGA deployment and investments. European guidelines should help National Regulatory Authority to identify a concrete “easy to handle” pricing model, built on realistic assumptions and rigorous implementation through an objectively verifiable methodology but able:

- to provide adequate incentives for companies to invest;
- to properly reflect the risks faced by potential investors in NGA networks;
- to take into account the wait and see option in a context of uncertain demand and irreversible investments.

Telecom Italia maintains that the Recommendation should better introduce the above methodological guidelines.

Furthermore, the determination of the appropriate allowed rate of return for NGA, also requires the introduction in the regulatory framework of the risk sharing concept by means of the possibility of long term contracts. From this point of view, TI believes that the general principles proposed in Annex 1 should be consistently modified, because not applicable and not useful to reach the overall objectives of the Commission aimed at promoting NGAN investments.

In particular, the approach suggested by Commission :“*All duct usage prices should be based on a volume measure for physical capacity used (such as m³)*” would implies a pricing model simply based on “consumption”; in other terms, it would allow alternative Operators to buy what they need without sharing the risk in new infrastructures that will left to SMP operators totally. In this context, the second mover will have the option to “wait and see” and take advantage from (risk) investments made by SMP.

In Telecom Italia view, in order to effectively ensure the infrastructure competition (without unbalancing toward second movers), the risk could be shared among operators who intend to invest by granting investment sharing or a long term commercial agreements such as IRU (*indefeasible right of use*).

Therefore, according to TI, the European Commission and NRAs have to consider the possibility to introduce more appropriate contractual terms or other pricing structures allowing a better sharing of the risk among operators and a higher level of flexibility at retail level in order to foster infrastructure competition.

In the following, the main points that should be covered by the EC guidelines are further discussed.

n) The risk remuneration model should consider the high systematic risk of the NGAN project and should cover both equity and debt capital

Guidelines provided by the European Commission on the determination of the rate of return allowed on investments in Next Generation Access Network shall be aimed at both setting more

harmonised rates of return across Member States and also at encouraging NRAS to adopt new methodologies enabling the telecommunication industry to deal with the complex challenges posed by the NGAN deployment.

European Commission states that “*The return that is allowed ex ante on equity capital to finance NGA networks strike a balance between providing adequate incentives for companies to invest-* (TI comment: implying a sufficiently high rate of return)- *while at the same time promoting efficiency and sustainable competition and maximising consumer benefits* - (TI comment: implying a rate of return that is not excessive-).

Telecom Italia acknowledges that finding the right balance between the potentially conflicting objectives set out by the European Commission is not an easy task. However where potentially conflicting objectives are at stakes and whether there is no certainty over the value, below which or above which, the achievement of a set objective is guaranteed it is necessary to analyse the consequences of a failure in meeting either of the two conflicting goals. Failing to provide the necessary incentives to deploy the new infrastructures would certainly lead to far worse consequences than those that may be caused by a suboptimal level of competition. There is no point in framing the rules of the most competitive NGA market which will never be created!

Thus, when the provision of new services and quality improvements is at stake, Telecom Italia believes that the European Commission and NRAs decisions shall err on the side of providing cautionary safeguard ensuring that the investments are effectively carried out rather than clinging to the idea of establishing fiercely competitive and highly contestable markets from their very first infancy stages.

TI confirms that, a possible way to ensure that regulatory decisions do not undermine operators investments NGAN could be also to promote the feasibility of commercial agreements among operators in order to achieve a fair risk sharing regime.

However if commercial agreement fails to be reached and the introduction of wholesale services granting access to the incumbent civil infrastructures becomes indispensable to promote infrastructure competition NRAs will be required to set the prices of the mandatory wholesale services⁵. Under general circumstances the prices of mandatory wholesale services set by NRAs shall be aimed at promoting investment decisions that, as far as is practicable, mimic those that would be made in competitive or contestable markets. Mandatory prices should reflect risk premium as well as a way to share the risk among operators who intend to invest, for example, long term contracts would represent potential tools which operators could opportunely utilise.

However Telecom Italia believes that, in cases where investments by telecommunications operators are likely to generate significant positive externalities and Member States economies are likely to reap significant benefit from these externalities, regulatory decisions deliberately underpinning investments incentives (of all telecommunication operators) would be fully justified⁶.

Furthermore, TI needs to point out the following aspect: the affirmation relating to “*The return that is allowed ex ante on equity capital to finance NGA networks ...*” could lead to a misunderstanding approach as the remuneration, as known, refers both equity capital and debt capital: also systematic risk has to be remunerated.

⁵ point (20) of draft recommendation

⁶ With the aim of promoting the diffusion of broadband services regulators have already endorsed this principle by allowing the allocation of the copper local loop costs predominantly to voice services and setting the prices of wholesale service, such as the shared access, below the prices that would have resulted from a strict application of the accounting principles.

- o) NGAN project risk remuneration doesn't have regulatory precedents and the opportunities to identify market comparables for the utilization of CAPM methodology are scarce and questionable**

Within the draft Recommendation it is stated that in order to achieve what above mentioned, the *"regulated returns should compensate companies for relevant risks they face when making the investments"* and furthermore *"the required rate of return should be set bearing in mind the risks involved in making the particular investment"*

NRAs have traditionally assessed the cost of capital at a company level. However in theory, and, as far as possible in practice, firms take their investment decisions on the basis of project specific economic parameters (project specific leverage, project specific systematic risk, projects specific cost of debt etc).

For example if the project is expected to be entirely financed through debt, the project expected revenues stream shall then be actualised by using the cost of the debt (the interest rate applied to the debt taken on to finance the project). However, in practice, since identifying project specific leverage or systematic risk might be quite complicate and time consuming, firms quite often, when the project is not of great importance, carry out the investment analysis by using parameters reflecting the company as a whole.

Clearly, this is not the case of NGA investments no "regulatory precedent" is available in this new context. Therefore TI believes that an "ad hoc" methodology (i.e. the hint to a CAPM calibration and the suggestion that all dimensions considered within the model shall be project specific) proposed by the European Commission to determine the rate of return to be allowed on investments on NGAN is fully justified.

As regards the suggestion to look for comparables within the media industry, it is Telecom Italia's view that the media companies systematic risks (especially those faced by broadcasters, publishers and so forth) do not properly reflect the risks faced by potential investors in NGAN networks. Business model of media company are indeed quite stable and mature and the services they provide respond to deeply rooted consumer needs. Risks faced by operators on the edge of investing billions of euros to deploy new networks enabling the provision of new services, the majority of which are still unknown, and whose commercial viability is still untested deeply differs from those of well established industries such as the media industry.

The demand for wider bandwidth has always been driven by the provision of new services. IPTV and other TV services represent just one of the multitude of the new services which is expected to be delivered over NGA platform (and it will generate only a portion of the expected NGAN revenues), this is why the parallel between telecommunication operators deploying NGAN and broadcaster does not hold.

Services to be provided over NGA could be of the sort of those so far provided by the first wave of internet players such as Google (internet search engines services), Face Book (social networks and virtual communities), U-tube (video sharing portal and user generated content portal), Amazon and Ebay (e-commerce portal). In the remainder of this document these internet players will be referred to as "first generation application service providers". Furthermore at the time when the first generation application service providers started up their operations (i.e. at the beginning of the zeros) the economic viability of advertising backed business models or that of on-line sales were still untested as much as it is today the viability of business models based on the provision of NGA enabled services.

It is thus the opinion of Telecom Italia that it is reasonable to believe that the uncertainties on returns on NGA investments could be very similar to those faced by the first generation service

application providers in their start up phase. Clearly, being the future uncertain, even the size and the kind of uncertainty (systematic versus idiosyncratic risk) is indeed unknown, nonetheless Telecom Italia believes that assuming that the size and the kind of uncertainty of NGA investments will resemble that faced by the first generation application service providers represents the best guess we can make as of today. Furthermore very likely this is the assumption that is going to be incorporated into the telecommunications operators' decision making process.

In order to provide some preliminary insight on the WACC figure to which the above considerations may lead Telecom Italia has run some draft calculations and has calibrated the CAPM by replacing the Telecom Italia Unlevered Beta with both the Unlevered Beta of Mediaset (Media Company) and than with the Unlevered Beta of Google and Amazon. The gearing figure used is that of Telecom Italia as of mid October. All other parameters (Risk Free, Equity risk premium, Cost of debt, taxation) are those used in the AGCOM Decision n. 4/06/CONS. The results are shown in table 1.

Table 1: Pre-tax WACC increments using betas from firms of other industries**

WACC increments** using betas from firms of other industries	
<i>Media Company</i>	<i>WACC increment*</i>
Mediaset	1
<i>Service Providers</i>	<i>WACC increment*</i>
Google	9
Amazon	9

** Increments with respect to TI WACC

* Percentage points

Data and Parameters Sources: Reuters, Yahoo Finance and AGCOM Decision n. 4/06/CONS

Media companies unlevered betas do not differ significantly from those of historic telecommunication operators. Using as Comparable Betas those of media companies would not appropriately reflect the increase in the cost of capital which will be faced by operators striving to raise the huge amount of capital required to deploy NGA networks. Conversely for the reasons explained above the internet player Beta calibration seems more reasonable and more close to reality.

Telecom Italia believes that the gearing included in the calculation of the NGA-specific CAPM have to be set at a level comparable to the average leverage prevailing in the industry chosen to calibrate the WACC

In light of what stated above, Telecom Italia fully supports the Commission position to reflect NGA specific characteristics in the determination of the allowed cost of capital. Furthermore it is the opinion of Telecom Italia about the necessity to introduce some adjustments in order to determine (to calibrate) a fairer rate of return. However, Telecom Italia also believes that any attempt to assess rates of return relying entirely on a standard CAPM still miss to capture a fundamental feature embedded in a NGAN investments: the value of the wait and see option in a context of uncertain demand and irreversible investments.

p) A first opportunity is to solve the inadequateness of the CAPM methodology with a layered structure which could bring in the value of wait-and-see option and the impact of uncertain demand

Due to a relevant *systematic risk* faced by investors and a relevant effect in terms of *assets specificity* and *assets divisibility* of NGA investment, the stand alone application of CAPM methodology to NGA is not the adequate model for a regulatory context and would fail to provide the sufficient incentives to invest in new infrastructures, because of its inadequacy to capture the *value of a wait and see option* (i.e. delay the investment in order to gain further information) in context of uncertain demand and irreversible investments.

In order to remedy the CAPM inadequateness to capture the potential value of wait and see strategies, "*significant in the cases of next generation access networks*", OFCOM proposed⁷ to use real options models⁸. The case for the application of real options to the determination of the allowed rate of returns on investments in NGA is reaffirmed and reinforced in the final statement issued the 18th August 2005⁹ where OFCOM, while suggesting a case by case analysis of the appropriateness of the real options to BT individual wholesale products, also claims that "on very large investments projects that clearly involve a strong element of specific risk such as BT's next generation access network" it would envisage "taking the lead" in carrying out the analysis.

Professor Robert Pindyck developed a methodology by means of which the cost of capital figure applied to calculate Unbundling Network Elements (UNEs) might be marked up to reflect, "the transfer of option value from incumbents to entrants".¹⁰ The paper explains how different assumptions on the volatility of demand growth might lead to widely differing real option values. In this paper Pindyck uses as input figures for the volatility of telephony line growth (standard deviation of telephony line growth) values included in the range +4,8% to +9,4%.

Clearly these values are only suitable to reflect uncertainties of demand underlying the provision of standard voice telephony services while they would be significantly inadequate to reflect the expected uncertainties on the customer response to the provision of NGA services. Furthermore uncertainty on the NGA revenues stream is not confined solely to volumes (or as in the Pindyck paper to the y-intercept of the inverse demand curve) but also to the consumer willingness to pay for those services (i.e. the demand elasticity is also unknown).

Bearing this in mind it should sound obvious that the conclusion to which the model developed by Pindyck leads (i.e. a five percentage points increase) using the upper bound of the volatility range mentioned above can only be used as a lower bound providing insights on the size of the adjustments that may be called for by models appreciating the value of the foregone wait and see option.¹¹

⁷ Ofcom's approach to risk in the assessment of the cost of capital, 26 January 2005 (OFCOM January 2005) (http://www.ofcom.org.uk/consult/condocs/cost_capital/) – "the first consultation";

⁸ Notably Ofcom states that the option surrendered when an investment decision is made is likely to have a significant value and thus it shall necessarily be taken into account in the determination of the allowed rates of return when the following conditions are met: (1) there is an option to wait and see – i.e. investments are not now-or-never; (2) net returns are uncertain; and (3) investments are irreversible. Furthermore Ofcom claims that NGAN investments fully satisfy these three conditions (i.e. conditions under which real options adjustments might be relevant)

⁹ (OFCOM August 2005)

¹⁰ See on this R. Pindyck, "Pricing capital under mandatory unbundling and facilities sharing", Working Paper 11225, <http://www.nber.org/papers/w11225>, National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138, March 2005.

¹¹ The sensitivity analysis conducted at page 18 of Pindyck (2005) suggests that simply by doubling the demand volatility the mark up (correction to be applied to the WACC) may exceed 15 percentage points.