

General Comments on the ERG Consultation Document

Arcor wishes to thank the ERG for the careful and considered analysis of the regulatory principles of NGA. We agree that regulatory measures taken to ensure non discriminatory participation in this evolving market are of utmost importance for today's and the future competition in the telecommunications market.

Arcor agrees with the general outcome of the analysis, it identifies the most pressing problems. The technical description of the networks and the required equipment is correct and the deduced solutions fit the problems in an adequate manner.

It is in the nature of European consultation process that the problems and suggested regulatory solutions are presently rather abstract. Subsequently, we therefore wish to substantiate the problems competitors are facing in the German context in particular, and wish to suggest regulatory measures which from our point of view will be effective in ensuring sustained competition. We strongly believe that our proposals will also be valid in the wider European context.

General Comments

ERG distinguishes two broad NGA scenarios, FTTCab versus FTTH/FTTB:

We believe that this distinction is valid and therefore allows the identification of the adequate regulatory measures.

Economics of NGA

ERG is stating that NRAs are obliged according to Art. 8 of the Framework Directive to promote effective competition as well as efficient investment.

Arcor fundamentally agrees that promotion of infrastructure based competition should be the primary aim of NRAs. Regulation should target the deepest level in the network where this is practical and economically feasible. In general access networks consist of at least some elements, which currently are not replicable assets. This will also be true for future NGA, with the difference that access networks are no longer reaching from the end customers CPE to MDF but ending at the SDF, in the FTTCab scenario. In other words the first aggregation node will migrate downwards from the MDF to the SDF. As a consequence, the network segment between SDF and MDF may become replicable, provided that the economic prerequisites are in place. NRAs play a major role in creating these prerequisites by setting favourable conditions for access to SDF, namely mandating collocation within the SDF and a cost-effective access to the backhaul link.

ERG states that it is likely that the most effective strategy for NGA deployment will utilize a mixture of technologies to deliver the services depending on a number of parameters and specific local characteristics.

We agree with ERG's assessment. As a consequence, regulatory measures must be technology neutral. For deployment of their backhaul links, competitors must be able to choose freely between the equally-important alternatives access to ducts, lease of dark fibre or WDM.

Additional measures towards ensuring a level playing field for competition are the implementation of cost sharing by equipment sharing, which enables competitors to also benefit from SMP's advantages of scale and scope.

ERG concludes that network replicability depends on various factors, namely population density and distribution, existence of multi-dwellings, lengths of cables, network topology and network architecture, in particular the number of street cabinets per MDF. The resulting main cost drivers are horizontal civil engineering costs, costs of horizontal fibre cabling deployments, costs of vertical in-house wiring and the equipment and collocation costs per node.

In order to reduce the costs of network replication and promote infrastructure based competition, it is essential that the regulatory framework opens bottleneck infrastructure to competitors. Access to ducts is a case in point. Horizontal civil engineering costs are a main cost drivers for FTTx deployment, which are ranging from 3 €/m calculated at marginal costs to around 64 €/m in case of a Total Service LRIC approach up to around 130 €/m on a stand-alone basis. We strongly believe that the incumbent respectively the SMP face costs close to 3 €/m while competitors in the worst case face stand-alone costs. Regulators will in order to increase infrastructure-based competition have to make sure that competitors of SMP's will have access to such ducts on a non discriminatory basis, i.e. at marginal cost. We agree with ERG that access to ducts significantly reduces roll-out costs. In fact, the cost of own duct laying and trenching is prohibitive and will prevent NGA roll-out by competitors. Existing empty ducts therefore represent an economic bottleneck and require a regulated access obligation.

The degree of network replicability depends among others on network structure. Thus access to ducts is not always sufficient and must be complemented by access to dark fibre and WDM where this is required and technically feasible.

ERG argues that for reasons of proportionality commercial offers of SMP should also be assessed before imposing an obligation to provide backhaul services. German experience shows that commercial offers, in particular leased lines based on SDH/Sonet but also Ethernet-based links, don't allow economically viable SDF backhaul links. This assessment results from two considerations: First, as a matter of fact, the SMP operator is the sole supplier of the link between SDF and MDF/CO and therefore he is also dominant in this network segment. Even if this offer was price regulated, NRA intervention in this instance would be useful only to limited extent, because secondly, the alternative operator will be restricted by the leased line/Ethernet transmission system so that he cannot gain in scale at his choice.

Above statement does not apply to wholesale access to dark fibre and WDM. This allows the competitor deployment of own transmission systems in order to meet his actual demand. As a matter of principle, competitors should be able to satisfy their requirements on a maximally unbundled level such that they can generate maximum possible own value added (analogous to ladder of investment).

The ERG suggestion, that non-telecommunication infrastructure such as sewers or ducts owned by power suppliers or municipalities represent alternative possibilities for connecting the backhaul network to the SDF, would be rated by Arcor as a regularly unfeasible alternative. The transaction costs of negotiation alone are too high in this scenario, so that an alternative operator cannot rely on this possibility for her roll-out plans.

Arcor endorses the analysis by ERG that equipment and collocation costs are other key cost items which under certain conditions will prevent infrastructure roll out by competitors. We believe that collocation *within* the SDF is essential because of cost sharing effects with SMP and participation in existing economies of scale. The solution of erecting a SDF next to the SMP's SDF can only be a second best back-up solution because in this instance alternative operators carry stand alone costs. Moreover, there may not be room adjacent to the existing SDF, and in most cases municipalities may refuse to grant the necessary permission as to protect the townscape.

We further agree with ERG that infrastructure sharing – of all required infrastructure, i.e. backhaul as well as SDF – requires explicit transparency of both the SMP party and the alternative operators about what space and facilities they actually need. In that case the SMP party can take all the needs of the interested parties including itself into account and make an efficient design or upgrade of the SDF. Lack of collocation space in the SDF will thus be avoided. If the SMP is not compelled to make its roll-out plans transparent, he will gain an irreversible first mover advantage which will result in discrimination of competitors. It should be emphasized that non-tariff barriers to competition are presently a major source of distortion in competition as they impede competitors' roll-out plans. This is the case in Germany where the SMP by starting its roll –out in an intransparent fashion created facts which are now difficult to amend.

As a matter of principle it should also be possible that alternative carriers roll-out their NGA in time ahead of the SMP. Obviously it would not be justified to expect that competitors only copy the SMP's business model in terms of geographic coverage.

In conclusion, regulatory measures should be designed such that the deployed equipment and infrastructure is shared by the market participants in order to realize maximum efficiency gains.

ERG expects that the coexistence of different network infrastructures (fibre and copper main loop) is inefficient and therefore will not last indefinitely. Given that the SMP is obliged to provide LLU, the design of regulatory measures must find a

balance between the commercial freedom of the SMP party to develop its networks and the objectives of the NRA to promote competition. A way to find this balance is to define a proper migration path and to set conditions under which the SMP party is allowed to phase out its MDFs.

Arcor agrees that the parallel provision and maintenance of two networks is highly inefficient. For this reason we believe that the main copper loop should compulsorily be decommissioned in due time and be subject to a reasonable migration period. For one, the copper main loop technology is outdated and therefore inefficient. Second, decommissioning frees up duct capacity for the SDF / MDF fibre backhaul link.

The regulatory precondition for decommissioning is that as a minimum two carriers (including SMP) are delivering xDSL services from the SDF in question. The migration period starts when one alternative competitor has linked her backhaul network to the SDF. Because of operational (implementation of the necessary measures) and economical (depreciation period) reasons we believe that a migration period of 7 years per MDF concerned is adequate.

Furthermore, decommissioning of the copper main loop has consequences for ex-ante ULL price regulation. Since the copper wire is not being replaced – neither in a technical way nor from a regulatory perspective (which assumes that a new entrant rolls out a new copper network) – regulated prices can no longer be deduced from a replacement cost standard. Given that the existing copper loop investments were undertaken years ago and are actually depreciated, regulated prices must only include maintenance and operational cost.

Regulatory Issues of NGA

The principle of promoting competition at the deepest level in the network where it is likely to be effective and sustainable is still appropriate for the regulation of enduring economic bottlenecks in NGA networks. Where it is practically and economically feasible to promote infrastructure-based competition, this should be the aim of NRAs. In those instances where replication of access is not considered feasible, promoting service competition is an important goal for the NRA.

As has been discussed in depth above, the NGA network segment between SDF and higher levels of the network hierarchy is in general a replicable asset. Fostering competition by ensuring infrastructure investment is thus the by ERG mentioned aim of NRAs, which can be achieved by setting an adequate regulatory framework. In our opinion this consists of:

- Sub-loop unbundling (SLU)
- Obligation to grant collocation within the SDF
- Access obligation to ducts, dark fibre and WDM respectively

All those regulatory measures must be subject to ex-ante price regulation which means that the cost-based LRIC standard has to be applied. Ex-ante regulation is required to enable and sustain competition, as otherwise only the

SMP would benefit from economies of scale and scope. In other words, ex-ante regulation implies cost-sharing.

We wish to emphasize that this ex-ante regulation should target the deepest replicable level of the network hierarchy. This regulatory approach corresponds with today's approach, e.g. in the case of ULL regulation.

As the ERG pointed out, it is important that investors in assets that constitute enduring economic bottlenecks can be confident that they will be allowed to earn an appropriate level of return. This return should adequately reflect the degree of risk faced at the time the investment is made.

NRAs face the challenge of designing a consistent price system, which meets the requirements of both SLU infrastructure based and Bitstream Access based competitors. Inconsistent, miss-set prices would distort incentives to climb up the ladder of investment. As a consequence, service competition would be preferred over infrastructure-based competition. The stated objective of fostering infrastructure-based competition would be missed.

In unison with ERG, infrastructure-based competition is associated with dynamic efficiency, given the prospects for innovation. Competition over competing infrastructure has many advantages. The pressure to minimise costs is exerted over the whole value chain, inducing greater scope for innovation in products and processes which creates a downward dynamic for costs. Consumers also benefit from more diversified offerings, which correspond more closely to their individual needs. Additionally, the need for regulatory intervention will diminish over time due to competition.

The incentive to invest into NGA roll-out is not only determined by the prices of required wholesale services but is also influenced by other regulatory decisions. One possibility to strengthen the incentives is to impose mandatory access to SMP wholesale Bitstream products at the MDF/OC only for limited time (whereas a wholesale bitstream product of the SMP should be available permanently at a higher network hierarchy level). As explained earlier, this request is only applicable in areas where the SMP and a minimum of one competitor have deployed VDSL equipment into the SDF. This request has already been put into practice by the 2007 revised Swiss Telecommunications Act and Telecommunications Ordinance. Obviously, there are good reasons:

- A permanent mandatory Bitstream access obligation at the MDF reduces the incentive for competitors' NGA roll-out
- It can be expected that the market price mechanism – via static and dynamic efficiency gains – will find the efficient price compared to a regulated price associated with an access obligation

Finally, Arcor strongly endorses ERG's findings concerning regulatory challenges in the existing framework, especially with respect to markets 11, 12 and 13.