

Response to the European Commission's public consultation on the open Internet and net neutrality in Europe

RTR welcomes the opportunity to comment on the important issue of the open internet and net neutrality in Europe.

First of all, we would have appreciated clear definitions on net neutrality, traffic management and managed services in the questionnaire for the public consultation which would have facilitated the discussion about this complex topic. We agree with BEREC's definitions outlined in their response and refer to them when using the above mentioned terms in our answers.

The open internet provides everyone with the opportunity to promote ideas, views or services to a larger public. In the past, this creative and innovation boosting character of the internet has led to a substantial positive impact on all areas of Europe's economy and society, especially to innovation from the periphery of the network e.g. small start-ups and private innovators. The internet has become the main source of information and entertainment for many people which increasingly seems to lead to a massive growth of traffic and consequently to an overload¹ of current best effort networks that does not allow the development of new high quality requiring services e.g. latency sensitive applications. New traffic management mechanisms are considered to be a solution to this problem. However, the introduction of advanced traffic management practices and managed services could threaten the open internet and its positive impact on economic growth. ISPs are looking for new business cases which could infringe net neutrality principles and be contrary to today's understanding of an open internet in case ISPs discriminate content, services or applications of independent providers which compete with their own services or those from their associates or in case they set up exclusive contracts with other content/application/service providers, in the following CAS providers. For the time being we have serious doubts that in the current situation the disciplining

¹ For the sake of simplicity and clarity we accept in this input paper the assumption that there is a massive increase in traffic which leads to an overload of best effort networks and to a deterioration in service quality resp. that it impedes development of new services. Nevertheless, this assumption is questionable with respect to core networks (and international IP capacities) and may only be valid for some time for access networks (or certain backhauling services) until they become upgraded. Temporary bottlenecks always accompanied the development of the internet and at any time up to now technical solutions were found to overcome this scarcity without putting into doubt the best-effort principle. Whether the situation is fundamentally different today (eg. because the access network is at its capacity limits) and hence justifies a completely different approach, would need a more detailed analysis.

force of demand, namely the end-user, has enough countervailing power to prevent such practices unless at least further transparency obligations for ISPs and extended consumer rights are implemented. In the following, our suggestions in a nutshell:

Two step approach:

Step one:

- Implement mechanism which allows the demand side to exert control in a competitive market.
- Observe whether customers are in fact in the position to exert this control.
- Observe with appropriate mechanism the impacts on innovation (private and companies).
- The European Commission should issue a report on regular basis with findings of these observations especially with a focus on developments affecting innovation.

Step two:

- In case the customer control does not work properly and/or innovation is hampered, adjust instruments.

To conclude: The following answers are given on the basis of the long run overall consequences on society and economy.

Question 1: *Is there currently a problem of net neutrality and the openness of the internet in Europe? If so, illustrate with concrete examples. Where are the bottlenecks, if any? Is the problem such that it cannot be solved by the existing degree of competition in fixed and mobile access markets?*

In fact, there have been only a few and minor breaches of the net neutrality principle to date e.g. the blocking of VoIP by MNOs in Austria, independent of the exact definition of net neutrality. However, this question refers to the current situation, which can not provide in our view a reasonable basis for projections and might be misleading as technologies are progressing and traffic management is improving constantly (which in turn feeds into new business models). With these developments the possibilities e.g. to guarantee for certain quality of services (QoS) but also to filter

and discriminate certain types of traffic e.g. P2P, are advancing as well. On the one hand, this technological progress facilitates the rise of new services like telemedicine or invention of yet unknown latency sensitive applications. On the other hand, this progress enables ISPs to realize new business cases as their stream of revenues stagnates while their consumers ask for higher bandwidth and the workload of their networks is rapidly increasing. These new business models could infringe the net neutrality principles as ISPs could

- i.) try to discriminate (implicitly e.g. throttling or explicitly e.g. blocking) services of independent CAS providers in order to boost their own revenues.
- ii.) conclude exclusive contracts (with or without active discrimination of third parties providing similar services) which could bring about the same constellation of interest as if the provider was integrated on its own.

The nature of these new business cases is unknown to date, however the developments should be monitored very carefully.

In our view the physical bottleneck in the structure of the internet is the customer access itself. ISPs now try to commercialise the access to their customers in a new/additional way (against the background of NGA/NGN investments, to avoid degradation to a bit pipe etc.). In addition, a lack of customer awareness of net neutrality issues or overburdening of the customer when transferring the whole responsibility to correct undesirable developments to the demand side could constitute a socio-demographic bottleneck.

At this point in time we are not convinced that mechanisms (competition and regulations) as they exist today can solve future net neutrality breaches. Although the new regulatory framework provides further tools to the demand side like transparency (see answer to question 14), better information and the possibility for NRAs to set minimum quality standards etc. together with SMP-regulation it is in our view questionable whether this is a sufficient basis, as there are incentives for integrated operators to discriminate (independent of SMP). Moreover we have doubts that switching costs can be eliminated to an extent that allows customers to exert sufficient disciplining control. These issues are critical, as a lack might have serious impacts on innovation from the periphery of the network.

Question 2: *How might problems arise in future? Could these emerge in other parts of the internet value chain? What would the causes be?*

In the short history of the internet most innovation came from small independent CAS² start-ups or private innovators supported by angel investors, for example: Ebay, Google, Facebook or Amazon. The internet as a multi-sided market connects the CAS providers, the advertising industry and other actors with the consumers. Due to its openness it is a source of innovation and gives everyone the opportunity to promote his or her new services, ideas or applications. The crucial point is that it is the consumer who decides which business case or which idea will succeed in the future and not the ISP through its traffic management policy or intransparent contracts with single CAS providers. Vertically integrated ISPs, independent of SMP, in pursuit of new revenue streams have an incentive to discriminate³ independent services or prioritize their own or those of their associates in order to realise their business cases and increase profits. Moreover ISPs could try to offer managed services with higher quality to deep pocket CAS providers while small, new entrant CAS providers could have a massive disadvantage as they may not be able to afford such services.⁴ Consequently there is no common position of all CAS providers but rather a battle between small and major companies in the neutrality debate.⁵ In case ISPs would restrain competition through the introduction of traffic management and exclusive services, the creative and innovation boosting character of the internet would be changed and broader innovation might be hampered. This in turn might have negative impacts on the willingness to access the internet as it is the multitude of information, applications etc. which is a prerequisite to make the internet an interesting media for a highly differentiated demand. In fact not all discussed potential problems are likely to occur with the same probability hence some work should be spent on setting priorities in order to allow NRAs to assign necessary resources.

From a dynamic point of view, the open internet is an important productivity factor in any economy's overall productivity function (impact on Total Factor Productivity) and has a significant impact on the economic output of the EU. Hence

² CAS = Content, Application, Service provider, either organised as companies or private

³ There is an incentive to discriminate in order to protect revenue streams. However, the traffic managing ISP will have to take into account the customer's reaction in response to its shaping policies. This may lead to a conflict, as the ISP has no interest to inform the customer about such practices and may avoid precise description of the shaping consequences.

⁴ This is further aggravated by the weak performance of capital markets on seed financing.

⁵ See Google-Verizon deal

the open internet and its positive contribution to innovation are a prerequisite for a successful outcome of various EU policies and agendas e.g. Digital Agenda (KOM(2010) 245) and should if the outlined reasoning is correct be preserved.

Question 3: *Is the regulatory framework capable of dealing with the issues identified, including in relation to monitoring/assessment and subsequent enforcement?*

It is difficult to say whether the new regulatory framework is sufficient or not due to two reasons: (1) the scope of future net neutrality issues/problems is not well known and (2) the transition, implementation and interpretation of the framework into national law will determine which tools are available and how effective they are.

As written in the answer to question 1, the transparency requirement (Universal Service Directive) and the possibility to set minimum quality requirements standards (Universal Service Directive) for the NRA are important as the disciplining force of demand requires customer information and awareness. The minimum quality/information requirements should be implemented (if this did not happen so far) and minimum standards have to be in place in case of the existence of a best effort channel (see answer to question 5 and question 11).

The EU regulatory framework is SMP based whereas the incentives to discriminate content, services or applications from independent providers or other ISPs are not only depending on SMP. However SMP companies have a greater incentive to do so as their demand side has no sufficient countervailing power. In our view a new approach is necessary when dealing with net neutrality issues. But as there are incentives for all operators/ISPs to “manage” more actively their traffic an active NRA is needed, which monitors ISPs’ traffic management practices and provides requirements to be fulfilled by the operators. ISPs should be obliged to provide the customers with information and tools to check the quality of their internet access for themselves. A common approach at least on principles in all member states would be appropriate to avoid high entry barriers into the European market for small CAS providers.

Question 4: *To what extent is traffic management necessary from an operators' point of view? How is it carried out in practice? What technologies are used to carry out such traffic management?*

Traffic management is necessary in all networks and is per se not a breach of the net neutrality principle. The actual traffic management practice is critical for the question if the practice is infringing net neutrality. In addition to that it has to be pointed out that certain kinds of network traffic management practices are likely to be in conflict with existing data protection provisions. Moreover, with the new technologies and business models the end-user has to understand the impact of certain management practices to be able to react to an ISP's change in traffic management policy. Hence ISPs should be obliged to inform their customer about the impacts of their practices. There is a need for a common understanding of certain key terms such as "reasonable traffic management".

In addition, traffic management practices are not restricted to the ISPs network but are also a core element in transit/peering contracts which ensure end to end connectivity.

Question 5: *To what extent will net neutrality concerns be allayed by the provision of transparent information to end users, which distinguishes between managed services on the one hand and services offering access to the public internet on a 'best efforts' basis, on the other?*

According to our understanding, the so called two lane approach implies a best effort channel and the existence of managed services with a defined superior quality, on the same infrastructure. Hence the difference between these channels has to be transparent and well defined in the interest of the end-user. A clear separation between the channels and an exact definition is critical as the capacity of the best effort lane should not be reduced in case of an increasing demand of managed services. Many questions concerning managed services are unanswered at this point in time e.g. interconnection arrangements, definition of the best effort channel. Nevertheless net neutrality concerns may be mitigated with transparent end user information but the existence and definition of a best effort lane is crucial for innovation and the open character of the internet. Against this background, we would

support further work on common principles and a common underlying definition of a best effort lane.

Another crucial question is whether the end-user has the right to dedicate his whole bandwidth to managed services. In other words, what if the end-user abandons his best effort channel and allocates all bandwidth to managed services. From the point of consumer sovereignty, this of course should be possible and is therefore welfare enhancing. As managed services constitute additional revenues for ISPs, they could offer a subsidised but restricted internet access which would attract customer due to a low price. However, the exclusion of independent providers would be a negative side effect which is not internalised in the customer's decision. From a dynamic point of view, this possible scenario and its substantial negative impact also need to be considered when the frame of action and requirements are set.

Question 6: *Should the principles governing traffic management be the same for fixed and mobile networks?*

The same net neutrality principles should be applied for fixed and for mobile networks although problems in mobile networks are aggravated as they are a shared resource (in the cell) with more limited capacity than shared fixed networks like CA-TV.

Anyhow, these problems can be solved without infringing net neutrality principles. Due to the diffusion of Smartphones and cheap mobile broadband products the mobile internet – like its fixed counterpart - has become part of the daily life of many end-users and in some countries like Austria mobile broadband is already a substitute for certain customer groups. MNOs promote their broadband products in the same unrestricted way as it happens for fixed networks.

Question 7: *What other forms of prioritisation are taking place? Do content and application providers also try to prioritise their services? If so, how – and how does this prioritisation affect other players in the value chain?*

At this stage of the internet, a network overload causes quality deterioration and there are only two solutions for CAS providers to solve this problem: managed services or Content Distribution Networks (CDN).⁶

Currently no wholesale offers for a provision of managed services are available but discussions are ongoing and will materialise soon. In contrast, CDNs are offering their services to everyone and they are specialised in distributing content e.g. software updates of their customers over the best effort internet. As the CDN servers are getting closer to the end user this results in a better availability of these updates. Hence CDN are a commercial strategy to overcome the problem of weak performance/quality in best effort networks. Direct peering contracts between CAS providers with ISPs are another option which illustrates that the hierarchical structure of the internet becomes flatter. However, both options are neither a prioritisation in a technical sense nor a breach of the net neutrality principle.

Larger CAS providers and CDN are connected to ISPs via peering and transit arrangements. The rise of new contract types like paid peering or partial transit and their impact on the relationship between ISPs and CAS providers should be observed carefully as this new development could have significant influence on the bargaining power of all stakeholders.

Question 8: *In the case of managed services, should the same quality of service conditions and parameters be available to all content/application/online service providers which are in the same situation? May exclusive agreements between network operators and content/application/online service providers create problems for achieving that objective?*

In case of managed services, information on quality, price and availability should be available for all CAS providers otherwise high transaction costs for these providers could hinder innovation and create more difficulties for small start-ups, which would exist on top if the CAS providers would have to pay for the access to the customer. Moreover should the same quality of service conditions and parameters be available for all CAS providers in the same situation (service class) to ensure competition on

⁶ Leaving outside for the moment, that big CAS can act as CDNs on their own (e.g. Google).

these markets; a common approach on the definition of these service classes and on interconnection arrangements would help to reduce transaction costs across Europe.

Exclusive contracts between network operators and CAS providers could have a substantial negative impact on innovation as such contracts could lead to the discrimination of services of independent CAS providers or of services of non-associated providers. This is the case especially when the superior quality is only offered to one competitor instead of everyone on the same basis. Two companies linked together via exclusive contracts could act like vertically integrated providers, which have a higher incentive to discriminate independent services that compete with their own. A prioritisation of their own services or those of a contractual partner leads automatically to a deterioration of other services simply because the end-user chooses faster and better services rather than such based on best-effort quality.

Question 9: *If the objective referred to in Question 8 is retained, are additional measures needed to achieve it? If so, should such measures have a voluntary nature (such as, for example, an industry code of conduct) or a regulatory one?*

In its extreme there would be a need to define (or agree on) service classes for managed services and ISPs would need to agree on interconnection parameters to ensure the quality for end to end connectivity.

However, more practically - on the wholesale level, information about the services classes and the access to end users needs to be publicly available for all CAS providers as this has an impact on the CAS provider's business model. Moreover, all relevant information for the end-user should be available on the retail market to put the end-user in place to make well informed decisions.

Regulatory measures are possible but in our view a code of conduct would be preferable and should also provide the information for all CAS providers which in addition need ISP specific information. However the NRA has to observe the developments and react in case of anti-competitive behaviour.

Question 10: *Are the commercial arrangements that currently govern the provision of access to the internet adequate, in order to ensure that the internet remains open and that infrastructure investment is maintained? If not, how should they change?*

This question refers to the current commercial arrangements, which is in our view a misleading perspective because existing contracts are adequate for the retail as well as for the wholesale level to ensure an open internet and infrastructure investments and the regulatory frame is fit for (this) purpose. Given current technological possibilities and commercial practices the regulatory framework seems to provide at the moment sufficient tools for the NRA to intervene in case of net neutrality breaches although there were in fact only few cases to proof. However, the more important question is whether the commercial arrangements are adequate for future challenges as traffic management practices progresses and NGA/NGN investments are needed. We answer question 10 from that future point of view.

First of all, we want to stress that infrastructure investments and open access to the internet need not be mixed up. The NRA has stakes in both (on the basis of the goals formulated in the framework directive), including tools to support efficient NGA investments.

As noted in the answer to question 1, ISPs are in search of new business cases and may create end user offers that infringe the current understanding of an open internet. Existing contracts offer mostly unlimited access with mobile broadband as an exception but include little information about the traffic management practice and the operator's practice to discriminate certain protocols. Transparency obligations should strengthen consumers' rights and raise awareness about potential net neutrality issues (see answer to question 14). New pricing mechanisms might be needed (although they are not easily implemented) because the current flat rate contracts do not provide a proper price signal as the customer's monthly payment is independent of the status of the network load.

The current interconnection arrangements are changing and the hierarchical structure of the internet becomes flatter. The whole interconnection market has never been regulated and there is only little information available to get an overview on these rather complex interrelations. Hence it is uncertain and difficult to tell how the changes in the IP interconnection internet market affect the end-user market especially the net neutrality principle (see answer to question 7)

Question 11: *What instances could trigger intervention by national regulatory authorities in setting minimum quality of service requirements on an undertaking or undertakings providing public communications services?*

Once an ISP introduces managed services on retail or wholesale level, the crucial question is whether the consumer has the possibility to switch to a best effort provider given that switching barriers are not too high and a best effort provider is available. In case that most end-users are satisfied with managed services only or in case of a lack of best effort providers there should be the option to act to ensure the open internet and its innovation boosting character irrespective of customer sovereignty because customers' decision do not internalize the long run effects of their decisions whereas from a broader social and economic perspective these should be a core consideration. In case there is a lack of best effort providers, NRA need to react and implement minimum quality of service requirements for the best effort channel to guarantee that there is sufficient bandwidth and capacity available. The open character of the internet should be preserved at least by the best effort channel which offers end users the possibility to promote their ideas, services etc. The minimum quality of service requirements should foster innovation via the best effort channel as small CAS providers have the chance to enter the market without high entry barriers.

Question 12: *How should quality of service requirements be determined, and how could they be monitored?*

The quality of service requirements could be determined in a code of conduct by the industry (accompanied by the NRA with its customer protection and competition oriented perspective) or if not attainable with direct regulatory measures of the NRA. The monitoring role of the NRA would be facilitated by an obligation of the ISPs to deliver quality parameters on a regular basis. The end user himself needs software tools provided by the ISP or the NRA to check the quality of his access. A study carried out by the NRA or a third party could measure current network performance and a fixed amount of this performance could be dedicated to the best effort channel. However the technical possibilities for measuring and defining minimum

requirements are limited, and if incentives exist, there will always be possibilities to circumvent technological mediated control.

Question 13: *In the case where NRAs find it necessary to intervene to impose minimum quality of service requirements, what form should they take, and to what extent should there be co-operation between NRAs to arrive at a common approach?*

Independent of the actual form of the minimum quality of service requirements, a common policy across all member states to avoid different settings for CAS providers would be the preferred approach. The exact technical details of a possible best effort lane do not have to be the same but the understanding for the need, the aim and for key-parameters of such a channel should be given. The development of a common understanding could be an important future task for BEREC.

Question 14: *What should transparency for consumers consist of? Should the standards currently applied be further improved?*

If consumers should play an active role and disciplining force in the net neutrality context, they need to receive all relevant information in an adequate form so that at least a relevant part of the end users⁷ can understand the implications of the contract e.g. the influence of network management by the ISP.

Consumers must have the possibility to compare different ISP offers and understand all the important details e.g. minimum contractual duration, included data volume, bandwidth, quality of service, managed service practices, etc. If properly transposed into national law, transparency requirements of the Universal Service Directive should be sufficient for the achievement of these goals. Software tools provided by the ISPs and/or the NRA should give the end user the possibility to check the quality of their own internet access. An online customer platform which gives internet users the possibility to discuss internet access related problems which is hosted by the NRA could catalyse the detection of possible abusive traffic management practices. Often used phrases like “reasonable network management”

⁷ The other (probably large) group of the end users would be protected by the containing force of this relevant group of end users.

or “measures to ensure network integrity” need to be defined. The customer should have the possibility to monitor the key performance parameters of his services and in case of a substantial reduction of the quality of his services he should have the extraordinary right to terminate a contract. ISPs should be obliged to promote their products in an informative and meaningful manner. The NRA should receive certain quality parameters from the ISPs. However, the existing standards need to be improved and new ones have to be put in place depending on future developments.

Question 15: *Besides the traffic management issues discussed above, are there any other concerns affecting freedom of expression, media pluralism and cultural diversity on the internet? If so, what further measures would be needed to safeguard those values?*

The freedom of expression and information (Art. 11, charter of fundamental rights of the European Union) could be infringed by exclusive contracts between CAS and ISP providers which could act as gatekeepers as these contracts could negatively impact the customer’s access to the internet. Freedom of expression, media pluralism and cultural diversity on the internet are important values which are not core responsibilities of most NRAs. However, it is the openness of the internet as a service/information platform (general purpose technology) which makes the net neutrality discussion so important. While the existing framework only deals with electronic networks and services, rules or access etc. it excludes information society services. The open internet guarantees both and any change in the set of rules for access/interconnection may therefore impact both layers. Moreover, we think that there is a link between the openness of the internet and these values in the sense that an open internet supports the achievement of these policy objectives while the introduction of managed services and its possible restricting character could negatively impact these objectives.

Additional comment/Annex:

First of all, we are not certain if we have grasped the intention of every question due to a lack of certain precision in some of the questions.

On substance, the current consultation on the open internet and net neutrality in Europe deals mainly with traffic management, prioritisation and challenges that arise from the introduction of managed services. In our view, the important topics of innovation and the open internet as a prerequisite for economic and social progress are not sufficiently covered and discussed by those questions. Most net neutrality issues have a direct impact on the creative and innovation boosting character of the internet which is crucial (also for a successful outcome of several EU agendas and policies) but these issues are not even touched by the initiated discussions. However, we want to stress the importance of the foreseeable changes and impacts on innovation and we would welcome in this context if a monitoring process on innovation impacts was implemented together with a commitment by the European Commission to release updated reports.