

Response to the Public consultation on the open internet and net neutrality

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1 Summary

1. Net-neutrality is a business-term for a technological concept.
2. Regulate ISPs to adhere to the end-to-end principle.
3. Break up vertical monopolies, abolish vendor lock-in.
4. Empower non-commercial, libre and public ISPs, assign 33% of the Digital Dividend for this purpose.

2 End-to-End principle

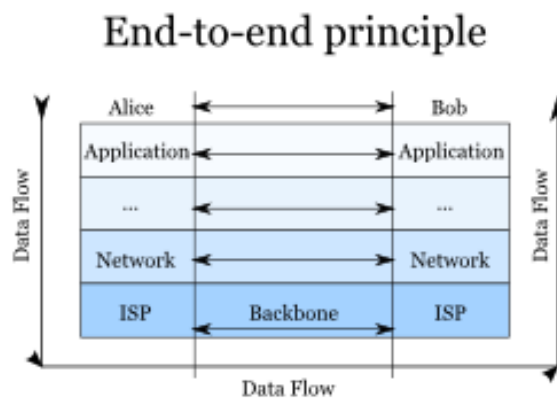


Figure 1: End-to-end principle

Net-neutrality is business terminology for a fundamentally technical concept, the so called end-to-end principle.

The Internet is based on a stack of various so-called protocols. The user interacts with some application, which passes the data down the stack to the operating system and further on. At the bottom of stack there is some physical medium, like a cable or a radio-wave (essentially the ISP). On the receiving side similar layers of protocols handle the data from bottom to top until it reaches the user on the other end. The layers have no knowledge of the data being passed from above and do not alter it in any way. Each layer is directly addressing the matching layer on the other end. Processing happens at the communicating parties ends - not in-transit - hence the name.

This end-to-end principle decentralizes the intelligence in the network. Telecommunication companies from a classical telephony background are used to having the intelligence of the network under their control, at the “center” - first human operators, nowadays switching-centers. By keeping tight control of the complete infrastructure, true competition and innovation is generally lacking. The Carterphone 1968 regulation was essential in opening up telephone operators and decentralized the network using modems, which resulted in the dramatic economic growth of the Internet.

True net neutrality means, that ISPs are just one of the lower layers in this stack. And any kind of content sent through an ISP should be processed regardless of the source, destination or data making it up. That is the end-to-end principle and this is also what is now being twisted as network neutrality.

It is imperative to oblige infrastructure providers to adhere to the end-to-end principle and handle all data without prejudice.

3 Competition

The offering of both infrastructure and content by the same business entity raises anti-trust concerns, this creates incentives to discriminate against 3rd party content and to favor content owned by the operator. Extreme examples of discrimination even completely ban competing VoIP (Internet telephony) offerings or access to legal and alternative audio and video content. This behavior is also a violation of the end-to-end principle, where the content sent should be handled by the lower layered network infrastructure without prejudice.

The regulation must provide long-term solutions to the underlying root cause. The separation of content from infrastructure providers (e.g. triple-play where Internet, TV and telephony is bundled) and the unbundling of products and services (e.g. SIM locks in mobiles) is essential as it removes some of the incentives for breaking network neutrality.

Overselling the bandwidth is another problem caused by the lack of competition. Network operators that sell more capacity than they are able to deliver need to resort to filtering, throttling and blocking. If this is discriminatory, then this is also a violation of network neutrality.

4 Fundamental Rights

Recent developments in regards to network neutrality endanger also fundamental rights. Analog content distribution industries unable to cope with the changing business environment - distribution at near zero cost - try to push governments and ISPs to filtering and automatic blocking of access for wide portions of the population. The basic rights to communicate, privacy and expression are threatened. Very strict judicial oversight must be enforced if - at all - any of these needs to be violated. Essential parts of everyday life (from traffic information, banking to interaction with public services) depend on the access to a free Internet. Blocking and filtering has been ruled unconstitutional in some member states. The right to Internet access is already a fundamental right in Estonia, Finland, France, Greece¹.

The developments regarding free speech on the Internet in some EU member-countries are worrisome. Anonymity and freedom of speech must be protected especially in countries where most of the media is already controlled by the government. Government transparency, anti-corruption whistle-blowing, political opposition and democracy demand for free and unrestricted Internet.

5 Digital Dividend

In order to ensure a balanced neutral infrastructure, it must be possible to provide non-commercial libre public Internet access. Community networks must be empowered to provide last-mile services. The Digital Dividend provides ample possibilities to assign at least a third of the analog television spectrum for non-commercial libre public ISPs, initiatives like the Openspectrum initiative² must be supported to create prospering public non-commercial ISPs that increase competition and investment in infrastructure. The US FCC decided on the 23rd September 2010 to allow the use of unlicensed whitespace spectrum³:

“TV white space spectrum is considered prime real estate because its signals travel well, making it ideally suited for mobile wireless devices. Unlocking this valuable spectrum will open the doors for new industries to arise, create American jobs, and fuel new investment and innovation.”

The EU must follow suit and foster non-commercial public actors on the market.

¹http://en.wikipedia.org/wiki/Internet_access#Internet_access_as_right

²<http://www.openspectrum.eu>

³http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-301650A1.pdf

6 Answers to the questionnaire

6.1 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?

The strict control over the devices on mobile networks prohibits the end-users among others from using alternative VoIP solutions. Currently the operators do not allow to connect to mobile devices directly from another network. The devices of the end-users are not able to communicate directly using a non-voice channel, there is also no way to connect from the Internet to a device on a mobile network connection. These facts alone restrict fundamental rights, economic growth and innovation. Speeding up the adoption of IPv6 on mobile devices should remove the biggest technical obstacle to opening up these networks.

The end-to-end principle must also apply to wireless communication media.

From a customer point of view there is not much competition either on the fixed, nor the mobile access market. A local market with only less than 4–5 providers is not a competitive one. Having a public non-commercial spectrum available would increase competition in the wireless last-mile market.

For the cable market it would be also advisable, to open up the end-user set-top boxes, allowing for further competition, innovation and business growth in the home entertainment industry.

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

Fundamental rights - such as freedom of expression and privacy - will certainly be violated by Deep packet inspection and blocking technologies. These technologies will also be misused for suppressing competition and commercial interests.

Alternative content producers, such as small studios, artists and amateur communities will not be able to participate as equals among content providers. This reverses the multiplicative effect on content generation on the Internet, reducing competition for the dominant players in the content industry. The generative nature of the Internet could be decreased from a participatory to a consume-only medium.

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

The regulatory framework must change the focus from 'regulating the Internet' to the regulation of infrastructure industry. As long as there is only a limited number of competitors on the market, the importance of strict oversight is higher - with "big oligopolies" come big responsibilities.

It's also vital to resist the aggressive efforts of other industries in and outside the value-chain to interfere with network neutrality.

6.4 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 should only be allowed for short-term management of spikes in usage or security incidents. If such a short-term traffic management is necessary, it must be done without discrimination of the users, the data or any other property unrelated to the incident. If the capacity of bandwidth is not sufficient - due to bandwidth over-selling for example - to provide the service without traffic management, the service will inevitably degrade. If there is strong competition on the market then this will be either countered by expanding bandwidth or by competing offers of other providers, for example by non-commercial public services.

6.5 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?

Transparency does not change the fact of violating network neutrality. Service providers are already stating in their contracts the fact, that certain services are discriminated, this practice must be uphold. In fact no transparency is needed, if there is nothing to be transparent about, when no filtering or blocking is occurring, which should be the norm. Transparency is essential for monitoring real-time bandwidth usage and when end-users need to be informed about temporary network or security problems.

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

From the perspective of the end-to-end principle, the physical medium of the network is completely irrelevant, thus indeed the rules must be the same on both kind of networks.

6.7 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?

A radical form of prioritisation - blocking - is implemented by most content industries, the vendor-lock-in of different music, video and book services blocks also competition and innovation.

6.8 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?

Yes, all participants should enjoy the same quality of service regardless of any discrimination. Such agreements between market participants should be strictly regulated. There should be no discrimination when it comes to connecting networks to each other, being able to connect networks is essential for ensuring network neutrality. Thus also such exclusive agreements as on the wireless spectrum must follow this principle and must additionally also allow for connecting (tethering) other networks.

6.9 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?

Prohibition of any kind of discrimination should be strict and regulatory.

6.10 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?

Commercial arrangements generate profit through over-selling their capacities and reinvesting into operating content and service operations, which are currently the defining factors for competition. Unfortunately re-investment of profits into infrastructure is less common. Vertical monopolies based on the last-mile, must be separated into distinct markets, restricting access providers to focus their re-investments on only on this competence, while restricting participation in other segments.

6.11 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?

General over-selling of capacity must be regulated, providers not being able to serve the sold bandwidth, must at least compensate for the unavailable bandwidth to customers. In such cases transparency must be also ensured, so that customers are aware of the true capacity of a provider.

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

QoS can be monitored by all users, real-time transparency of bandwidths speeds and quality enables users to measure and react independently. Especially if the end-users have access to open tools on their devices and switching providers is very easy. There should be free/open-source tools available for any user to monitor the quality for oneself, this also implies the freedom to run any kind of software on our devices. Currently the vendor (provider) lock-in of the end-user devices makes this hard. Encouraging easy switching between providers, open standards and free and open-source software on these devices will empower citizens to act as better-informed agents on the market.

6.13 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?

Business practices by international service providers should be monitored across all EU countries, thus EU-wide coordination between NRAs is obligatory.

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

If there is true end-to-end network neutrality, then transparency is necessary for end-users to monitor the available bandwidth and for temporary network and security problems on a real-time basis. If a provider does not adhere to the end-to-end principle, then transparency should mandate this provider to advertise other providers that adhere to the end-to-end principle. For this to be feasible, we need non-commercial public access providers, that can act as such actors on the market.

6.15 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 filtering of content, will lead to the deployment of sophisticated Deep Packet Inspection solutions, which will have an adverse effect on fundamental freedoms. The technologies developed for the EU market will also be available in other regions of the world, with minimal reconfiguring these can be used for harming political dissidents, opposition in these regions. In fact these technologies are already available and harming democratization and political dissidents⁴.

7 Conclusion

While commercial and public interests collide, it is important to note that the short-term business interests are in no relation to the long-term societal benefits that this debate is trying to reverse.

sincerely,
Stefan Marsiske

⁴<http://samibengharbia.com/2010/09/17/the-internet-freedom-fallacy-and-the-arab-digital-activism/>