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Protecting Net Neutrality in Europe

Network Neutrality is a constitutional principle of the Internet's architecture. It was conceived as an efficient decentralized network and was designed according to an axiom that technological neutrality is the foundation of freedom in communications infrastructure. Built into the network was also an idea about equality, that society as a whole benefits when we defend against discrimination and unfair advantage.

Network Neutrality is the safeguard of civil and human rights, and of fair competition for innovation. It is now that the principle of network neutrality is being challenged by telecoms operators and governments that it has become a matter of public policy debate in Europe.

This memorandum lays out the public interest issues at stake legal battle over Net neutrality. It explains what Network Neutrality is and why openness is important to telecommunications infrastructure. It outlines the social and economic benefits of a regulatory regime that preserves network neutrality. It identifies the specific language in the key provisions that risk fundamental rights and freedoms. It concludes with a guide to making Network Neutrality a fundamental regulatory principle in the European telecommunications market.

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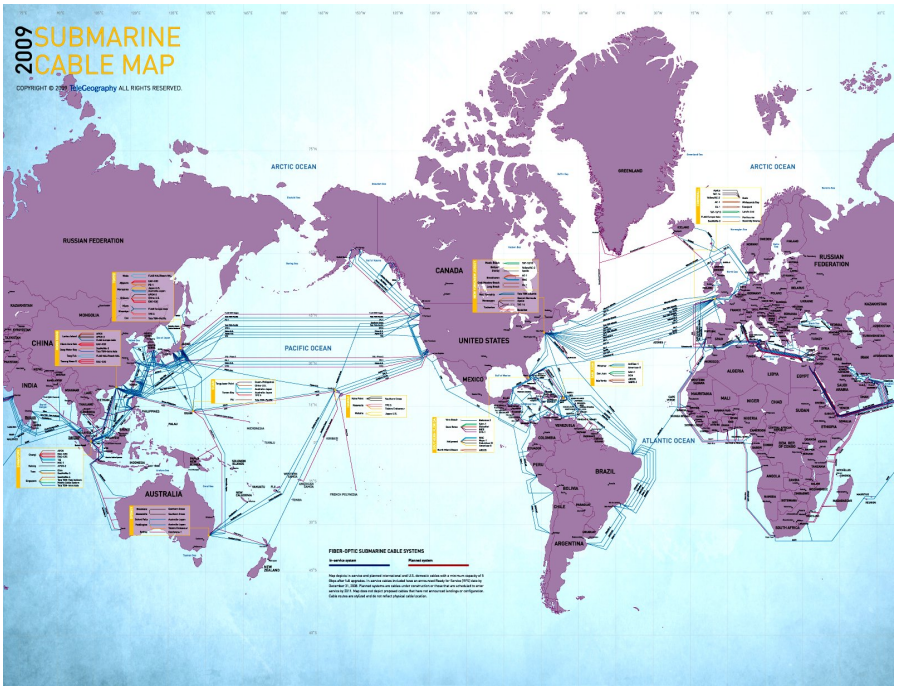

A map of submarine telecommunications cables

Net Neutrality, A Definition

Net neutrality has been an indispensable catalyst for competition, innovation, and fundamental freedoms in the digital environment. **A neutral Internet ensures that users face no conditions limiting access to applications and services**. Likewise, it rules out any discrimination against the source, destination or actual content of the data transmitted over the network. In the words of Tim Berners-Lee, the inventor of the World Wide Web, it is "t**he freedom of connection; with any application; to any party**".

Net neutrality thus guarantees that the flow of information that runs trough the communication architecture is **neither blocked nor degraded** by telecommunications operators, so that end-users can freely and efficiently make use of the network. Thanks to this principle, the Internet remains open and free.

Deviating from Net neutrality is however acceptable when ordinary **network management measures** are used to temporarily to address security threats or network congestion and capacity constraints due to any kind of unexpected. If the problem persists, the only sustainable solution, for the benefit of all, is to invest in more bandwidth.

As a matter of fact, **the development model of the Internet has always been based on addressing capacity constraints by investing on bandwidth.** Such investment allows for the new resources added by the operators to be used for the benefit of all users, thus enabling the growth of the network and of its usages.

Recent Developments Threatens Net Neutrality

The Internet is comprised of a physical infrastructure and a logical infrastructure. Both are critical for the Internet to be neutral. The physical infrastructure consists in the physical networks (or "pipes") interconnected with each other, and which are usually operated by private actors. The logical infrastructure is neutral, mainly formed by the standards and protocols that facilitate the smooth transmission of data across the many physical networks. Dozens of different protocols are used for the exchange of generic information (Web

information for instance) or for specific media or communication. The most generic protocols have adopted a commitment - similar to the Internet Protocol's - to equitable (or neutral) transmission. One example is the HTTP protocol that supports the World Wide Web. In other protocols, there can be a differentiated treatment of packets in order to achieve some desirable property of efficiency or media-specific quality.

Relying on these public protocols, applications and services are developed to run across the network and content is created and distributed on the Internet without the approval or consent of centralized Internet operators, who have control over the physical infrastructure. The synergy of both the physical and the logical layers enables end-users to engage in productive activities that benefit society as a whole, and the openness of the physical infrastructure is instrumental in guaranteeing the sustainability of such activities.

However, **Net neutrality is at risk**. S**ome Telecoms operators are developing business-models that are harmful to consumers and are based on discriminating, filtering or prioritizing the information flowing through the networks they operate.** Affiliated content, services and applications providers could benefit from "fast lanes" on the Internet, available at a high price, when the rest of the Internet traffic would be slowed down through constraints creating artificial scarcity of bandwidth.

Because of recent technical evolutions, **Telecom operators can now implement discriminatory practices by modifying the core of both the physical and logical infrastructures.** Indeed, new -partially deployed- versions of the Internet Protocol (IPv6) could enable them to signal various levels of priority for Internet traffic, which could be used to discriminate between transmission of various kinds of packets. This possibility does not imply that an IPv6 network will stop being equitable: it depends on how this information will be used by by physical equipment, such as routers and other types of hardware, but also network management practices and commercial contracts between peer networks.

But there are good reasons to be worried. N**etwork operators are installing traffic management equipments that use a technology known as "deep packet inspection".** Such "deep" inspection, which is carried out surreptitiously and without the users' knowledge, technically amounts to communications interception. It patently contravenes users' fundamental right to privacy, and is very questionable under European law. Among other things, it allows operators to engage in traffic shaping, whereby different types of traffic - such as video, P2P, voice over IP, standard email and web - can be slowed down, stopped or re-prioritized according to the operator's decisions.

Such equipment enables what is known as "policy management", which allows operators to set different rules for different customers. As a simple example of how powerful this technology is, the network operator's monitoring screen could display the types of games people are playing on the network, and distinguishes between say, *World of Warcraft* and *Lord of the Rings*. We know that controlling P2P traffic, as Comcast or the Dutch operator UPC have done, is just the beginning,. The network operators and ISPs want to use it for "traffic prioritization" and "preferred service delivery". **Operators are also considering preferred partnerships with content providers, for revenue sharing.** As a matter of fact, hardware equipment is being explicitly sold to them for this purpose, as the sales pitch can be seen in the brochures distributed by equipment vendors makes clear[1].

1 *See: Cisco 1999 White Paper: Controlling Your Network-A Must for Cable Operators, at* http://www.cptech.org/ecom/openaccess/cisco1.html

The Socio-Economic Benefits of Net Neutrality

The importance of Net neutrality is best understood as the social and economic benefits that result from openness in communications infrastructures. The result of more than 25 years of technological innovation, **the wide spread of communication and computations capacities in developed countries is having deep structural consequences in our societies.**

As every citizen or business-oriented organization can now rely on the openness of the Internet to perform their activities, the production and the circulation of information, knowledge and culture are being democratized. The barriers to entry are sufficiently lowered for people to participate more fully into the social, economical and political life. **A neutral, non-discriminatory communications network preserves users' ability to engage in vast array of strategies, producing and distributing either market and non-market informational goods**. It is this inclusiveness that explains the incredible socio-economic benefits brought about by the Internet.

➔ **Net neutrality benefits citizens.** Contrary to older traditional means of communications such as radio or television, producing and circulating information on the Internet does not require significant money. Thus, the ability to produce information and knowledge on the net is much more equally distributed in society, which have positive effects on democracy as a whole. **Net neutrality ensures that the ability to voice opinions on the Internet does not depend on your financial capacities or social status.** It gives people the freedom to express themselves as they wish, and to access the information they want **without risking to be put at disadvantage by the few actors who operate the network.**

In its decision against the HADOPI law implementing "three strikes" policy against file-sharing[2], th**e French Constitutional Council outlined the importance of the Internet for citizenship.** Finding that the law disrespected the 1789 "Declaration of the Rights of Man and of the Citizen", the Council stressed that free access to the Internet has become essential for the proper exercise of the freedom of expression and communication. By doing so, **the constitutional judges implicitly recognized that an open Internet provides us with the oppo**rtunity to deepen people's freedom and autonomy, and therefore improves democratic processes.

For all that, this freedom and autonomy are very much under threat. Media corporations, which have been continuously merging with the telecommunications industries for the past 30 years[3], would like to **re-establish the control they have on traditional media on the Internet.** Hence, if Net neutrality was abandoned or even weakened in Europe, the control of the new, networked media ecosystem would be handed out to private actors, who could use discriminatory traffic management as a way of achieving control on the network.. It would turn the Internet into yet another predominantly commercial media.

➔ **Net neutrality is also key to innovation.** Studies[4] show that Net neutrality facilitates innovation and competition, as economic actors take advantage of the level-playing field in communication networks to launch new services. **The concept of "innovation without a permit", where new entrants compete fairly with the incumbent giants is at the root of the development of Internet as we know it.** Entrepreneurs of the Internet have become the linchpin of the emergent knowledge economy. Google, Wikipedia, Skype, eBay, Bittorrent, Twitter and so many other essential

2 Decision rendered on June 10th, 2009: *www.conseil-constitutionnel.fr/conseil-constitutionnel/root/bank/download/2009-580DC-2009_580dc.pdf*

3 See: Bernd W. Wirtz, *Reconfiguration of Value Chains in Converging Media and Communications Markets*. Long Range Planning, Volume 34, Issue 4, August 2001

4 A thorough overview of the way new networked technologies transform markets is offered in *The Wealth of networks*, by Yochai Benkler: *http://cyber.law.harvard.edu/wealth_of_networks/Download_PDFs_of_the_book*

parts of the Internet took advantage of an open network and became widely used all over the world only a few months after being created, because it was relatively cheap to produce and distribute their innovative services.

However, **when a service provider breaks the neutrality of the network, new entrants become vulnerable to unfair competition,** given that their access to the Internet infrastructure can be restricted. Obviously, powerful actors in the telecom industries have an interest in imposing their control over information and communication networks. They do so by, for instance, banning innovative VOIP applications from mobile telecommunications services[5]. **Anti-Net neutrality practices are thus fundamentally anti-competitive and harm consumers as well as economic growth.** They discourage innovation and result in rent-seeking behaviors from established players. They put barriers to entry that do not allow the emergence of the "next Skype" or "next Google". It follows that an **open and equitable access to the communications infrastructure is the foundation of social and economic benefits and needs to be preserved.**

5 Such strategy is being pursued by telecom operators like Orange and O2 in Europe or AT&T in the United States. These companies have unilaterally decided to disable the use of the Skype iPhone application over their 3G networks: *http://www.intomobile.com/2009/04/06/skype-for-iphone-banned-by-carriers-in-us-europe.html*

Regulating Communications Infrastructure as Commons

One of the main arguments made by opponents of Net Neutrality is that Telecom companies have invested a lot of money in broadband deployment, that they own the pipes, and therefore should be let free to operate them as they wish. It is a claim that denies the public interest responsibilities of the regulatory environment and ignores the development of harmful and anti-competitive business practices.

It should first be noticed that today's dominant players in the European market are usually historical operators, which – for the most part – used to be state monopolies. **All along the twentieth century, the development of communications networks was largely funded by taxpayers**, because such networks were seen as a public good. With the deregulation of the telecom sector, networks were gradually transferred to the private sector. As a consequence, incumbent operators, some of which are strongly pushing for anti-Net neutrality measures, have been able to make significant profit thanks to this inheritance, and still do.

Moreover, **public funding for broadband deployment is still very much a reality.** In France, for example, many local authorities have funded local networks on their own budgets, in order to compensate for the lack of investments from private operators in rural areas[6]. Legal requirements ensure that these publicly-funded infrastructures are opened to all Internet service providers, which have had a very positive impact on competition, bringing greater choice to more than 4,5 million households since 2004. Likewise, both at the national and European level, recovery plans include subsidies for high speed Internet lines in rural areas. The EU stimulus package unveiled in January 2009 provides €1 billion for rural broadband[7], while in France, the government announced in April that €750 million from the recovery plan had been earmarked to that end[8].

Based on the history of telecommunications, and considering the fact that the Internet is the ultimate communications infrastructure, current public interventions in the sector come as no surprise. Although operated by private actors, our communications network is in many ways a public asset. **It is therefore totally legitimate for regulators to impose Net neutrality provisions to telecoms operators, so as to ensure that the Internet will keep fueling Europe's prosperity.**

6 See report by the ARCEP, the French national regulator: *http://www.arcep.fr/fileadmin/uploads/tx_gspublication/rapport-bilan-rip-221208.pdf*

7 See the Commission's press release: *http://europa.eu/rapid/pressReleasesAction.do?reference=MEMO/09/35&format=HTML&aged=0&language=EN&guiLanguage=en*

8 See*: http://pro.01net.com/editorial/501983/nathalie-kosciusko-morizet-ajoute-un-volet-numerique-au-plan-de-relance/*

Net Neutrality Stimulates the Growth of Network Capacities

The very infrastructure of the Internet was not designed for any particular service and application. This has allowed for tremendous innovation that has encouraged the development of faster networks that would allow these new services and applications. It can be said that the Internet exists because DARPA, the US government organization that originally set up the Internet, did not adopt what was the dominant telecom operators view in the 1960s and early 1970s about what the « network of the future » should look like. It was built as a "future-proof" infrastructure that would welcome any application. In that way, **openness would give end-users total control in the way they want to make use of the network, and so control was pushed at the edges.**

This structure has made Internet the one invention in the history of mankind that has scaled seamlessly from an experiment connecting 4 or 5 local networks of research centers to a global network connecting a billion and a half humans, and on which information is transmitted that represents ten orders of magnitude more traffic in 20 years[9] (10000 millions times). With the arrival of new technologies, Internet applications became more sophisticated and more demanding in terms of network capacities. **To deliver these innovative services to end-users, Telecoms operators have invested in more bandwidth. It is this development model that has allowed for the formidable growth of network capacities and increased the potency of the global infrastructure we call the Internet.**

Today, some Telecoms operators would like to create an artificial scarcity of bandwidth, arguing that network capacities have been reached. The truth is it would allow them to develop new business-models based on the management and valorization of the information flow. **With these new possibilities of lucrative anti-competitive practices, operators could switch to a new business model: investing in the control of what is going through the pipes, instead of investing in better networks.** This model would create the perfect self-justifying conditions for these policies: "*Internet has become too slow, we are therefore forced to control it and prioritize content, services and applications whose owners are ready to pay the more money*." Such arguments, along with the threat of "the end of the Internet" were used to convince the Members of the European Parliament to let Net neutrality go in the second reading, but do not stand in the face of technical reality. **Cheaper bandwidth and ordinary network management[10] still allow for a growth of the network based on structural investments.**

Network operators should be spurred to invest in bandwidth, and "traffic management" should only be necessary to deal with specific temporary congestion such as bottlenecks in the backhaul (the part of the network that runs from the user's home to the main network).

9 See: Andrew Odlyzko, *Internet traffic growth: Sources and implications,* http://www.dtc.umn.edu/~odlyzko/doc/itcom.internet.growth.pdf .There is debate on whether this ability to scale up is today endangered by an acceleration of the growth rate of traffic. Andrew Odlyzko, the leading expert on Internet statistics and modeling stresses that this claim is not founded. See Andrew Odlyzko, Threats to the Internet: Too Much or Too Little Growth?, http://www.internetevolution.com/author.asp?section_id=592&doc_id=146747& . For an in-depth analysis of the issues that lie behind the debates on Net neutrality or equitable networks, see : Andrew Odlyzko, network neutrality, search neutrality, and the never-ending conflict b*etween efficiency and fairness in markets , http://www.dtc.umn.edu/~odlyzko/doc/net.neutrality.pdf* .

10 *Ordinary network management practice allows operators to control their networks against security problems and to share the available bandwidth without discrimination against all users.*

Europe Risks Lagging Behind if it Fails to Protect Net Neutrality

On Monday, September 21st, Julius Genachowski, the Chairman of **the U.S Federal Communications Commission announced a major plan to protect a free and open Internet on all wired and wireless networks**, thus making good on President Barack Obama's pledge to protect Net neutrality. The new principles outlined by Chairman Genachowski in his speech will lay the foundations to ensure that the Internet can remain an emancipatory tool, by **prohibiting discrimination of content or applications by Internet service providers[11] and ensuring that network management practices are transparent**[12].

The underlying idea is a simple, and represents a real progress. As Julius Genachowski insisted, it favors consumers as well as innovative businesses: **"*The Internet must continue to allow users to decide what content and applications succeed*"**. However, it should be noted that Chairman Genachowski made a worrying reference to "lawful content". Such addendum possibly leaves the door open for interceptions of communications by Internet service providers under the form of monitoring and filtering practices that could threaten citizens' rights and freedoms. This specific point will have to be clarified during the rulemaking process that will lead to the codification of Net neutrality. The overall goal, though, is laudable. "*We have an obligation to ensure that the Internet is an enduring engine for U.S. economic growth, and a foundation for democracy in the 21st century. We have an obligation to ensure that the Internet remains a vast landscape of innovation and opportunity*", said the FCC Chairman. A consultation will be launched with stakeholders and interested citizens in order to codify these principles.

Meanwhile, in a recent assessment of the i2010 E.U program the European Commission bemoans that **"*Europe is at risk of losing its competitive edge when it comes to new, innovative developments*"**. It also notes that Europe is lagging behind the United States in the development of innovative services and applications. Yet, if the anti-Net Neutrality provisions currently contained in the Telecoms package were passed, the situation could dangerously aggravate.

The FCC's announcement puts the U.S a big step closer to enforcing Net neutrality. If Europe doesn't do the same, European citizens and businesses will be at disadvantage with U.S counterparts. **It is not only Europe's competitively that is at stake, but also the social and democratic benefits brought about by the Internet.**

11 Fifth principle of non-discrimination - *http://www.openinternet.gov/read-speech.html#book5*
12 Sixth principle of transparency - *http://www.openinternet.gov/read-speech.html#book6*

Annex 1 - CASE STUDY : Protecting Net neutrality in the Telecoms Package

The following section consists in a legal analysis as well as policy recommendations formulated in the context of the Telecoms Package, which was debated by European lawmakers from mid-2008 to the end of 2009.

Concerns About Article 20, 21 and Recital 26 of the Telecoms Package

Summary: Amendments to the Universal Service directive pushed by American Telco AT&T currently allow operators to implement anti-Net neutrality measures. These provisions:

➔ are mainly targeted to allow a Net discrimination

➔ are harmful for the growth and innovation models of the Internet,

➔ are a clear disincentive to the model based on cost-efficient bandwidth-based investments,

➔are against the benefit of consumers,

➔ raise concerns about the protection of fundamental rights and freedom of European citizens.

Article 20.1.b.2

> The contract shall specify in a clear, comprehensive and easily accessible form at least] the services provided, including in particular, **information on any other conditions limiting access to and/or use of services and applications, where such conditions are allowed under national law in accordance with Community law.**

Article 21.3.b

> Member States shall ensure that national regulatory authorities are able to oblige undertakings providing public electronic communications network and/or publicly available electronic communications services to (...) **inform subscribers of any change to conditions limiting access to and/or use of services and applications, where such conditions are allowed under national law in accordance with Community law.**

Recital (26)

> A competitive market should ensure that users enjoy the quality of service they require, but in particular cases it may be necessary to ensure that public communications networks attain minimum quality levels so as to prevent degradation of service, the blocking of access and the slowing of traffic over networks. In order to meet quality of service requirements, **operators may use procedures to measure and shape traffic on a network link so as to avoid filling the link to capacity or overfilling the link, which would result in network congestion and poor performance.** These procedures are subject to scrutiny by the national regulatory authority acting in accordance with the provisions of the Framework Directive and the Specific Directives to ensure they do not restrict competition, in particular by addressing discriminatory behavior. If appropriate, national regulatory authorities may also impose minimum quality of service requirements on undertakings providing public communications networks to ensure that services and applications dependent on the

network are delivered to a minimum quality standard, subject to examination by the Commission. **National regulatory authorities are empowered to take action to address degradation of service, including the hindering or slowing down of traffic, to the detriment of consumers**. However, since inconsistent remedies can impair the achievement of the internal market, the Commission should assess any requirements intended to be set by national regulatory authorities for possible regulatory intervention across the Community and, if necessary, issue comments or recommendations in order to achieve consistent application.

➔ ***Information on any other conditions limiting access to and/or use of services and applications***

This phrasing suggests that anti-Net neutrality practices could be adopted by operators as long as they are clearly notified to Internet subscribers. One might note that it is quite regrettable that the directive aimed at protecting consumers was in fact used by some operators to actually introduce dispositions that harm consumers' rights by giving assent to Net neutrality measures.

More importantly, it should be noted that, by default, Internet access service allows, with due respect to national laws, access to any content and service, and use of any application or hardware of user's choice. Here, it is agreed that "use of" or "access to services and applications" could be limited by operators. **This is in total contradiction with the essence of Internet, where the operators don't regulate or influence their customers' uses.** It leaves doors opened to "sub-internet" access, where Voice over IP, Peer-to-peer, sometimes video and audio streaming are restricted, in order to unduly favor the operators' own services, or those of their affiliates. **Access in such conditions is anti-competitive and cannot technically be called "Internet".** It neither benefits users nor the growth of Internet.

➔ ***where such conditions are allowed under national law in accordance with Community law.***

The fact is that today, no regulation exists regarding Net neutrality. The ambiguous language adopted by the Parliament in articles 20 and 21 leaves room for interpretation infringing on Net neutrality, thereby putting at risk all the benefits brought about by the Internet.

It is of the utmost importance for European lawmakers to unequivocally repeal these sentences in order to **give regulators adequate tools to protect individual freedoms as well as innovation in the internal market**.

Recital (26) states that:

➔ ***National regulatory authorities are empowered to take action to address degradation of service, including the hindering or slowing down of traffic, to the detriment of consumers.***

However, this is a recital and **not an enforceable article**. Its normative force is thus subject to debate and cannot represent a satisfactory guarantee regarding Net neutrality. Moreover, it could be interpreted as allowing national regulators to protect Net neutrality but

by no means will force them do so.

Also, it is worth noting that the smooth functioning of the internal market requires that this fundamental principle be applied in the whole European Union. **Lawmakers must avoid regulatory fragmentation and seize the opportunity of the conciliation procedure to unambiguously impose Net neutrality in the whole European Union.**

➔ *Operators may use procedures to measure and shape traffic on a network link so as to avoid filling the link to capacity or overfilling the link…*

The model of development of the Internet has always been based on addressing capacity constraints by investing on bandwidth. **This investment model allows for new resources added by the operators to be used for the benefit of all users, thus enabling the growth of the network and its usages.** This crucial parameter enables the bottom-up model of innovation, where people and companies located on the edge (often on the "bleeding" edge) of the network can reach their customers without discrimination, with the same chance as the dominant players. Going against this investment model would allow operators, in order to gain more control over their part of the network, to dissociate it in practice from the interconnected network, leading to anti-competitive barriers.

Network management measures should only be used to temporarily address network congestion and capacity constraints, when they are due to an attack or any kind of unexpected and unusual event. If the problem persists, the only sustainable solution, for the benefit of all, is to **buy more bandwidth**. This is the investment model that should be incentivized.

➔ *… which would result in network congestion and poor performance.*

The issue here is whether it is about legitimate network congestion or about discriminating against content, services or applications. In reality, **we know that operators are tempted to use 'traffic management' equipment to 'control peer-to-peer' traffic.** In the US, the FCC declared that such behavior was not a legitimate practice in its order to the network operator Comcast[13].

Network congestion typically occurs at specific points in the network, creating choke points or bottlenecks, and can be dealt without discriminating against specific services or protocols. Many providers experience congestion in the part of the network that carries the user's data back from the point of access to the network core (the "backhaul"). **Investment in more network facilities and bandwidth is an appropriate way to deal with this problem. This principle applies to mobile and fixed networks alike.**

While operators may claim to be dealing with congestion, there are also experts who believe that by increasing the complexity of the network, traffic management technology could slow down traffic and cause of quality of service issues. With respect to traffic management systems, there are different effects depending on whether the equipment is placed in the core of the network or towards the edge. For example, there is a case being examined in Canada[14], where a network provider slowed down P2P traffic in the core of the network, which impacted users of the downstream networks that were operated by

13 See: *Commission Orders Comcast to End Discriminatory network Management Practices FCC Affirms Its Authority to Protect Vibrant and Open Internet* http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-284286A1.pdf

14 The Canadian Association of Internet Providers asked the regulator to order Bell Canada to stop throttling their traffic on its core network. *http://www.p2pnet.net/stuff/CAIP%20finalanswer.pdf*

different companies.

AT&T argues that competition law takes care of disputes, but in fact, **many of the issues are not related to competition law and would normally fall under the duties of the regulator, as indeed the American FCC did in the Comcast case**

How To Mandate Net Neutrality in the Telecoms Package

The public interest agenda in telecoms regulation is to codify clear limits for these practices for the protection of network neutrality. The provisions of the Telecoms Package as they stand suggest otherwise: they can be read as authorizing operators to abandon network neutrality for the sake of business models or the protection of private interests. These provisions must be amended or they must be placed under the umbrella of an overarching principle that clarifies that they can not lead to any form of network discrimination against contents, sources, destinations, media, applications, services or protocols running over the Internet Protocol.

As the conciliation committee negotiates the final text of the Telecoms package directives, European lawmakers must protect the value of the Internet for enhanced citizenship and more innovative markets :

➔ by **getting rid of the anti-Net neutrality phrasing** of Article 20 and 21 of the Universal Service Directive

➔ and by amending the Framework Directive, to clearly **make Net neutrality a fundamental regulatory principle in the European telecommunications market**.

Annex 2 – Open Letter to the European Parliament (17/09/2009)

We Must Protect Net Neutrality in Europe!

Net neutrality has been an indispensable catalyst of competition, innovation, and fundamental freedoms in the digital environment. A neutral Internet ensures that users face no conditions limiting access to applications and services. Likewise, it rules out any discrimination against the source, destination or actual content of the information transmitted over the network.

Thanks to this principle, our society collectively built the Internet as we know it today. Except in some authoritarian regimes, everyone around the globe has access to the same Internet, and even the smallest entrepreneurs are on equal footing with the leading global enterprises. Moreover, Net neutrality stimulates the virtuous circle of a development model based on the growth of a common communication network that enables new uses and tools, as opposed to one relying on investments in filtering and controlling. Only under such conditions is Internet continuously improving our societies, enhancing freedom — including the freedom of expression and communication — and allowing for more efficient and creative markets.

However, Net neutrality is now under the threat of telecom operators and content industries that see business opportunities in discriminating, filtering or prioritizing information flowing through the network. All around Europe, these kind of discriminatory practices, detrimental to both consumers and innovation, are emerging. No court or regulator seems to have adequate tools to counter these behaviors and preserve the general interest. Some provisions introduced in the Telecoms Package could even encourage such practices.

We who have signed this open letter urge the European Parliament to protect the freedom to receive and distribute content, and to use services and applications without interference from private actors. We call on the Members of the Parliament to take decisive action during the ongoing negotiation of the Telecoms Package in order to guarantee a free, open and innovative Internet, and to safeguard the fundamental freedoms of European citizens.

The first signatories of this letter are (in alphabetical order):

	Altroconsumo - Italy Altroconsumo is the largest independent consumer organisation in Italy, with over 300,000 members.
	ANSOL - Portugal Portuguese association for the promotion of Free Software.
	April - France April is the main French advocacy association devoted to promote and protect Free/Libre Software
	Asociación de Internautas - Spain Asociación de Internautas fights for the rights of Internet users against unfair practices from Telecom operators,the government and the cultural and industrial lobbies in general.
	Bits of Freedom - The Netherlands Bits of Freedom defends digital civil rights, such as privacy on the Internet and online freedom of speech.
	Chaos Computer Club (CCC) - Germany Europe's largest hacker group, founded in 1981.
	eXgae - Spain The first legal advice service specialised in the liberation of all citizens and creators from the abuses of cultural industry's trade groups.
	Електронна граница България (Electronic Frontier Bulgaria) - Bulgaria EFB defend human rights in the digital world and the Internet.
	FFII e.V. (Foundation for a Free Information Infrastructure) - Europe The Foundation for a Free Information Infrastructure (FFII) is a non-profit organisation dedicated to establishing a free market in information technology, by the removal of barriers to competition.
	Föreningen fri kultur & programvara - Sweden FFKP is a non-profit organisation that foster free culture and open source software.
	Free Hardware Foundation - Italy La Free Hardware Foundation si impegna nella realizzazione della Civiltà della Condivisione della Conoscenza, attraverso i valori della Cooperazione, della Condivisione, della Creatività, della Lealtà, della Collaborazione, della Trasparenza, della Volontà di Partecipare e di far Partecipare, della Sostenibilità, ma soprattutto della Libertà.
	Free Knowledge Institute - Europe The Free Knowledge Institute (FKI) is a non-profit organisation that fosters the free exchange of knowledge in all areas of society.
	French Data Network - France FDN is the oldest Internet access provider in France. It is a non-profit, volunteer-based organization.
	Hacktivistas - Spain An open technology enthusiasts collective focusing on free culture, free society and privacy.
	ISOC-ECC - Europe ISOC-ECC coordinates the work of the European ISOC Chapters. It helps to educate European users, industry and researchers and fosters their participation in decision-making processes about Internet-related issues.

	IT-Political Association of Denmark - Denmark IT-Politisk Forening arbejder for at indsamle viden om IT og formidle den til politikere og samfundet, for at give det bedst mulige grundlag for lovgivning.
	La Quadrature du Net - France La Quadrature du Net is a citizen group informing about legislative projects menacing civil liberties as well as economic and social development in the digital age.
OPEN RIGHTS GROUP	Open Rights Group - United Kingdom The Open Rights Group exists to preserve and promote UK and EU citizens rights in the digital age.
	Open Source Consortium - United Kingdom The Open Source Consortium represents companies that deliver solutions and advice based on Open Standards and Free & Open Source Software.
	Open Video Alliance - International A coalition of organizations and individuals devoted to creating and promoting free and open technologies, policies, and practices in online video.
	P2P Foundation - International The Foundation for P2P Alternatives studies the impact of Peer to Peer technology and thought on society.
	Scambio Etico - Italy ScambioEtico is the concrete and daily practice of a community of 270.000 people who engage in free movement of knowledge, in copyright reform and in defense of civil rights, which must be guaranteed also in the Internet.
The Julia Group	The Julia Group (Juliagruppen) - Sweden The Julia group is a non profit organisation working for a free and open internet.
	The WeReBuild clusters - Europe We Rebuild is a decentralized cluster of net activists who have joined forces to collaborate on issues concerning access to a free Internet without intrusive surveillance.
	UFC - Que Choisir - France UFC - Que Choisir is the main French consumer organization, with more than 124.000 members, oldest consumer association in western Europe.
vrijschrift.org	Vrijschrift - The Netherlands Vrijschrift creates awareness about the economic and social meaning of free knowledge and culture for our society.

Annex 3 – Essential Readings on Net Neutrality

The Wealth of Networks, Yochai Benkler, Berkman Professor of Entrepreneurial Legal Studies at Harvard, and faculty co-director of the Berkman Center for Internet and Society.

Yale University Press, 2006.
http://cyber.law.harvard.edu/wealth_of_networks/Sentence-sliced_Text_Chapter_5#Autonomy_and_the_Information_Environment

"The structure of our information environment is constitutive of our autonomy, not only functionally significant to it. While the capacity to act free of constraints is most immediately and clearly changed by the networked information economy, information plays an even more foundational role in our very capacity to make and pursue life plans that can properly be called our own. A fundamental requirement of self-direction is the capacity to perceive the state of the world, to conceive of available options for action, to connect actions to consequences, to evaluate alternative outcomes, and to decide upon and pursue an action accordingly. Without these, no action, even if mechanically self-directed in the sense that my brain consciously directs my body to act, can be understood as autonomous in any normatively interesting sense.

All of the components of decision making prior to action, and those actions that are themselves communicative moves or require communication as a precondition to efficacy, are constituted by the information and communications environment we, as agents, occupy. Conditions that cause failures at any of these junctures, which place bottlenecks, failures of communication, or provide opportunities for manipulation by a gatekeeper in the information environment, create threats to the autonomy of individuals in that environment.

The shape of the information environment, and the distribution of power within it to control information flows to and from individuals, are, as we have seen, the contingent product of a combination of technology, economic behavior, social patterns, and institutional structure or law."

(...)

"There are two primary types of effects that information law can have on autonomy.

The first type is concerned with the relative capacity of some people systematically to constrain the perceptions or shape the preferences of others. A law that systematically gives some people the power to control the options perceived by, or the preferences of, others, is a law that harms autonomy. Government regulation of the press and its propaganda that attempts to shape its subjects' lives is a special case of this more general concern. This concern is in some measure quantitative, in the sense that a greater degree of control to which one is subject is a greater offense to autonomy. More fundamentally, a law that systematically makes one adult susceptible to the control of another offends the autonomy of the former.

Law has created the conditions for one person to act upon another as an object. This is the nonpragmatic offense to autonomy committed by abortion regulations upheld in Planned Parenthood v. Casey-such as requirements that women who seek abortions listen to lectures designed to dissuade them. These were justified by the plurality there, not by the claim that they did not impinge on a woman's autonomy, but that the state's interest in the potential life of a child trumps the autonomy of the pregnant woman.

The second type of effect that law can have on autonomy is to reduce significantly the range and variety of options open to people in society generally, or to certain classes of people. This is different from the concern with government intervention generally. It is not focused on whether the state prohibits these options, but only on whether the effect of the law is to remove options. It is less important whether this effect is through prohibition or through a set of predictable or observable behavioral adaptations among individuals and organizations that, as a practical matter, remove these options. I do not mean to argue for the imposition of restraints, in the name of autonomy, on any lawmaking that results in a removal of any single option, irrespective of the quantity and variety of options still open. Much of law does that. Rather, the autonomy concern is implicated by laws that systematically and significantly reduce the number, and more important, impoverish the variety, of options open to people in the society for which the law is passed.

"Number and variety" is intended to suggest two dimensions of effect on the options open to an individual. The first is quantitative. For an individual to author her own life, she must have a significant set of options from which to choose; otherwise, it is the choice set-or whoever, if anyone, made it so-and not the individual, that is governing her life. This quantitative dimension, however, does not mean that more choices are always better, from the individual's perspective. It is sufficient that the individual have some adequate threshold level of options in order for him or her to exercise substantive self-authorship, rather than being authored by circumstances. Beyond that threshold level, additional options may affect one's welfare and success as an autonomous agent, but they do not so constrain an individual's choices as to make one not autonomous.

Beyond quantitative adequacy, the options available to an individual must represent meaningfully different paths, not merely slight variations on a theme. Qualitatively, autonomy requires the availability of options in whose adoption or rejection the individual can practice critical reflection and life choices. In order to sustain the autonomy of a person born and raised in a culture with a set of socially embedded conventions about what a good life is, one would want a choice set that included at least some unconventional, non-mainstream, if you will, critical options. If all the options one has-even if, in a purely quantitative sense, they are "adequate"-are conventional or mainstream, then one loses an important dimension of self-creation. The point is not that to be truly autonomous one necessarily must be unconventional. Rather, if self-governance for an individual consists in critical reflection and re-creation by making choices over the course of his life, then some of the options open must be different from what he would choose simply by drifting through life, adopting a life plan for no reason other than that it is accepted by most others. A person who chooses a conventional life in the presence of the option to live otherwise makes that conventional life his or her own in a way that a person who lives a conventional life without knowing about alternatives does not.

As long as our autonomy analysis of information law is sensitive to these two effects on information flow to, from, and among individuals and organizations in the regulated society, it need not conflict with the concerns of those who adopt the formal conception of autonomy. It calls for no therapeutic agenda to educate adults in a wide range of options. It calls for no one to sit in front of educational programs. It merely focuses on two core effects that law can have through the way it structures the relationships among people with regard to the information environment they occupy. If a law-passed for any reason that may or may not be related to autonomy concerns-creates systematic shifts of power among groups in society, so that some have a greater ability to shape the perceptions of others with regard to available options, consequences of action, or the value of preferences, then that law is suspect from an autonomy perspective. It makes the choices of some people less their own and more subject to manipulation by those to whom the law gives the

power to control perceptions.

Furthermore, a law that systematically and severely limits the range of options known to individuals is one that imposes a normative price, in terms of autonomy, for whatever value it is intended to deliver. As long as the focus of autonomy as an institutional design desideratum is on securing the best possible information flow to the individual, the designer of the legal structure need not assume that individuals are not autonomous, or have failures of autonomy, in order to serve autonomy. All the designer need assume is that individuals will not act in order to optimize the autonomy of their neighbors. Law then responds by avoiding institutional designs that facilitate the capacity of some groups of individuals to act on others in ways that are systematically at the expense of the ability of those others to control their own lives, and by implementing policies that predictably diversify the set of options that all individuals are able to see as open to them."

Internet Governance: The Next Steps. **European Commission**

COM(2009) 277 final . June 18, 2009.

"The early history of the Internet reflects its origins in research and academia. Decisions about what we now understand as 'governance' were made by engineers and scientists. To the benefit of millions of subsequent Internet users, this resulted in an open and interoperable architecture, where efficiencies and reliability were achieved by distributing intelligence to the edges of the network. As long as relatively simple protocols were respected, any network could connect with any other network.

This has allowed innovation to occur from anywhere, including from individual users and completely new actors uninhibited by significant entry barriers. Moreover, the distributed nature of the global Internet is also a key security strength since any localised failure is less likely to interfere with traffic elsewhere.

The success of this open and neutral architecture led to many other actors exploiting the inherent flexibility and efficiency of the Internet to deliver services and use it as a platform for their own innovations."

(...)

"The experience of the last 10 years demonstrates the viability of the policy approach advocated by the EU for Internet governance so far. The Commission believes in maintaining the EU's strong emphasis on the need for security and stability of the global Internet, the respect for human rights, freedom of expression, privacy, protection of data and the promotion of cultural and linguistic diversity.

[One of] the key principles enabling the success of the Internet promoted by the EU remain the open, interoperable and 'end-to-end' nature of the Internet's core architecture must be respected. This was stressed by the Council in 2005 and reiterated in 2008."

Why AT&T Killed Google Voice**, Andy Kessler, former Hedge-Fund Manager.**

The Wall Street Journal, August 18, 2009.
http://online.wsj.com/article/SB10001424052970204683204574358552882901262.html?mod=googlenews_wsj

"What [Apple's rejection of Google Voice] really uncovers is that AT&T is dying. AT&T is dragging down the rest of us by overcharging us for voice calls and stifling innovation in a mobile data market critical to the U.S. economy.

(...)

The trick in any communications and media business is to own a pipe between you and your customers so you can charge what you like.

Cellphone companies don't have wired pipes, but by owning spectrum they do have a pipe and pricing power.

It wouldn't be so bad if we were just overpaying for our mobile plans (...). But it's inexcusable that new, feature-rich and productive applications like Google Voice are being held back, just to prop up AT&T while we wait for it to transition away from its legacy of voice communications. How many productive apps beyond Google Voice are waiting in the wings?"

Infrastructure Commons in Economic Perspective, Brett M. Frischmann, Associate Professor in the School of Law at Loyola University in Chicago

First Monday, volume 12, number 6, June 2007.

http://outreach.lib.uic.edu/www/issues/issue12_6/frischmann/

"Social surplus (i.e., the amount by which the social value exceeds the private value) may result from a "killer app," such as e–mail or the World Wide Web, that generates significant positive externalities or from a large number of outputs that generate positive externalities on a smaller scale. That is, in some situations, there may be a particularly valuable public (or non–market) good output that generates a large social surplus, and in others, there may be a large number of such outputs that generate small social surpluses. Both types of situations are present in the Internet context. While the "killer app" phenomenon appears to be well understood, the small–scale but widespread production of public and non–market goods by end–users that obtain access to the infrastructure appears to be underappreciated (and undervalued) by most analysts. Yet in both cases, there may be a strong argument for managing the infrastructure resource in an openly accessible manner to facilitate these productive activities.

The social costs of restricting access to public or social infrastructure can be significant and yet evade observation or consideration within conventional economic transactions. Initially, we may analyze the issue as one of high transaction costs and imperfect information. Yet, even with perfect information and low/no transaction costs with respect to input suppliers and input buyers, input buyers would still not accurately represent social demand because it is the benefits generated by the relevant outputs that escape observation and appropriation.

To the extent that infrastructure resources can be optimized for particular applications, which is often the case, there is a risk that infrastructure suppliers will favor existing or expected applications. If we rely on the market as the provisional mechanism, there is a related risk that infrastructure suppliers will favor applications that generate appropriable benefits at the expense of applications that generate positive externalities. Even putting aside the generation and processing of demand signals, it remains unclear whether markets will operate efficiently with respect to the supply of public and social infrastructure. There may be significant transactions cost problems that may hamper markets. For example, transaction costs associated with price setting, licensing, and enforcement (may) increase as the variance of public good and non-market good outputs increases.

Economists recognize that there is a case for subsidizing public and non-market goods producers because such goods are undersupplied by the market. The effectiveness of directly subsidizing such producers will vary, however, based on the capacity for subsidy mechanisms to identify and direct funds to worthy recipients.

In some cases, open access to the infrastructure may be a more effective, albeit blunt, means for supporting such activities than targeted subsidies. Open access eliminates the need to rely on either the market or the government to "pick winners" (or uses worthy of access). On one hand, the market picks winners according to the amount of appropriable value

generated by outputs and consequently output producers' willingness to pay for access to the infrastructure. On the other hand, to subsidize production of public goods or non–market goods downstream, the government needs to pick winners by assessing social demand for such goods (based on the social value they create). The inefficiencies, information problems, and transaction costs associated with picking winners under either system may justify managing public and social infrastructure resources in an openly accessible manner."

(...)

"Consider what makes the Internet valuable to society. It is very difficult to estimate the full social value of the Internet, in large part because of the wide variety of downstream uses that generate public and non-market goods. Despite such difficulty, we know that the Internet is "transforming our society" [10]. The transformation is similar to transformations experienced in the past with other infrastructure, yet things are changing in a more rapid, widespread, and dramatic fashion.

The Internet environment is quickly becoming integral to the lives, affairs and relationships of individuals, companies, universities, organizations, and governments worldwide. It is having significant effects on fundamental social processes and resource systems that generate value for society. Commerce, community, culture, education, government, health, politics, and science are all information- and communications–intensive systems that the Internet is transforming. The transformation is taking place at the ends, where people are empowered to participate and are engaged in socially valuable, productive activities. As Jack Balkin has observed, the "digital revolution makes possible widespread cultural participation and interaction that previously could not have existed on the same scale".

The Internet opens the door widely for users, and, most importantly, it opens the door to many different activities that are productive. End–users actively engage in innovation and creation; speak about anything and everything; maintain family connections and friendships; debate, comment, and engage in political and non–political discourse; meet new people; search, research, learn, and educate; and build and sustain communities.

These are the types of productive activities that generate substantial social value, value that evades observation or consideration within conventional economic transactions. When engaged in these activities, end–users are not passively consuming content delivered to them, nor are they producing content solely for controlled distribution on a pay–to–consume basis. Instead, end–users interact with each other to build, develop, produce and distribute public and non–market goods. Public participation in such activities results in external benefits that accrue to society as a whole (online and offline) that are not captured or necessarily even appreciated by the participants.

Further, active participation in these activities by some portion of society benefits even those who do not participate. In other words, the social benefits of Internet–based innovation, creativity, cultural production, education, political discourse and so on are not confined to the Internet; the social benefits spill over. For example, when bloggers engage in a heated discussion about the merits of proposed legislation or the Iraq war, citizens that never use the Internet benefit because others have deliberated. With respect to weblogs, in particular, political scientists, journalists, economists, and lawyers, among others, are beginning to appreciate and more carefully study the dynamic relationships between this new medium of communication and traditional, offline modes of communication and social interaction (whether economic, political, social, or otherwise).

Consider the fact that a significant portion of the content traveling on the Internet is non–commercial, speech–oriented information — whether e–mail and Web pages, blog postings, instant messaging, or government documentation — and the economic fact that such information is a pure public good generally available for both consumption and productive use by recipients. The productive use and reuse of such information creates benefits for the user, the downstream recipients, and even people that never consume or

use the information. These benefits are positive externalities that are not fully appropriated or even appreciated by the initial output producer.

It is worth noting that welfare can be ratcheted up in incredibly small increments and still lead to significant social surplus. As participants educate themselves, interact, and socialize, for example, the magnitude of positive externalities may be quite small. Diffusion of small–scale positive externalities, however, can lead to a significant social surplus when the externality–producing activity is widespread, as it is on the Internet. Widespread, interactive participation in the creation, molding, distribution, and preservation of culture, in its many different forms and contexts, may be an ideal worth pursuing from an economic perspective because of the aggregate social welfare gains that accrue to society when its members are actively and productively engaged.

Basic infrastructure is critical to the fabric of our society. That is, basic infrastructure contributes to more than just commercial goods which are often best provided by markets — basic infrastructure also contributes to social and public goods. This means there are significant "non–market" uses for the infrastructure that are not well reflected in demand for and willingness–to–pay for access to infrastructure. Therefore, relying on market provisioning of these goods will result in under–consumption by public/non–market goods producers. Generally, attempts to directly subsidize these public/non–market goods producers are not effective because there are too many and the implications are too diverse. Open access is a fix to ensure that willingness–to–pay is not used to allocate access to infrastructure. By disabling the capacity to exclude on the basis of market–value/willingness–to–pay, access to infrastructure is not biased against uses that produce public and social goods."

Preserving a Free and Open Internet: A Platform for Innovation, Opportunity, and Prosperity.
Julius Genachowski, Chairman of the United States Federal Communications Commission.

Speech delivered at The Brookings Institution, Washington DC. September 21, 2009.

http://www.openinternet.gov/read-speech.html#book6

*"The fact is that we face great challenges as a nation righ*t now, including health care, education, energy, and public safety. While the Internet alone will not provide a complete solution to any of them, it can and must play a critical role in solving each one.

(...)

Historian John Naughton describes the Internet as an attempt to answer the following question: How do you design a network that is "future proof" -- that can support the applications that today's inventors have not yet dreamed of? The solution was to devise a network of networks that would not be biased in favor of any particular application. The Internet's creators didn't want the network architecture -- or any single entity -- to pick winners and losers. Because it might pick the wrong ones. Instead, the Internet's open architecture pushes decision-making and intelligence to the edge of the network -- to end users, to the cloud, to businesses of every size and in every sector of the economy, to creators and speakers across the country and around the globe. In the words of Tim Berners-Lee, the Internet is a "blank canvas" -- allowing anyone to contribute and to innovate without permission.

(...)

"And let us not forget that the open Internet enables much more than commerce. It is also an unprecedented platform for speech, democratic engagement, and a culture that prizes creative new ways of approaching old problems."

(...)

"In 2000, Jimmy Wales started a project to create a free online encyclopedia. He originally

commissioned experts to write the entries, but the project only succeeded after moving to volunteers to write them collaboratively. The result is Wikipedia, one of the top 10 most visited websites in the world and one of the most comprehensive aggregations of human knowledge in our history. The potential of collaboration and social media continues to grow. It is changing and accelerating innovation. And we've seen new media tools like Twitter and YouTube used by democratic movements around the globe."

(...)

"I am convinced that there are few goals more essential in the communications landscape than preserving and maintaining an open and robust Internet. I also know that achieving this goal will take an approach that is smart about technology, smart about markets, smart about law and policy, and smart about the lessons of history."

(...)

"The rise of serious challenges to the free and open Internet puts us at a crossroads. We could see the Internet's doors shut to entrepreneurs, the spirit of innovation stifled, a full and free flow of information compromised. Or we could take steps to preserve Internet openness, helping ensure a future of opportunity, innovation, and a vibrant marketplace of ideas."

(...)

"We have an obligation to ensure that the Internet is an enduring engine for U.S. economic growth, and a foundation for democracy in the 21st century. We have an obligation to ensure that the Internet remains a vast landscape of innovation and opportunity.

This is not about protecting the Internet against imaginary dangers. We're seeing the breaks and cracks emerge, and they threaten to change the Internet's fundamental architecture of openness. This would shrink opportunities for innovators, content creators, and small businesses around the country, and limit the full and free expression the Internet promises. This is about preserving and maintaining something profoundly successful and ensuring that it's not distorted or undermined. If we wait too long to preserve a free and open Internet, it will be too late.

Ensuring a robust and open Internet is the best thing we can do to promote investment and innovation. And while there are some who see every policy decision as either pro-business or pro-consumer, I reject that approach; it's not the right way to see technology's role in America.

An open Internet will benefit both consumers and businesses. The principles that will protect the open Internet are an essential step to maximize investment and innovation in the network and on the edge of it -- by establishing rules of the road that incentivize competition, empower entrepreneurs, and grow the economic pie to the benefit of all."

(...)

"We are here because 40 years ago, a bunch of researchers in a lab changed the way computers interact and, as a result, changed the world. We are here because those Internet pioneers had unique insights about the power of open networks to transform lives for the better, and they did something about it. Our work now is to preserve the brilliance of what they contributed to our country and the world. It's to make sure that, in the 21st century, the garage, the basement, and the dorm room remain places where innovators can not only dream but bring their dreams to life. And no one should be neutral about that."