Network nEUtrality by Policy Design
Empowering the European Consumer

By
Laura Ranca

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Supervisor: Assistant Professor Kristina Irion

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Executive Summary

Increasing debates and controversies have emerged during the past years around the Network Neutrality issue and especially concerning the risks of possible abuses of the principle as affecting content and users in the Internet environment. A core symbol of network equity advocated by the fathers of the Internet, Net Neutrality is nowadays being challenged both technologically and from a regulatory point of view especially in the United States and the European Union. However, up to date, there is no concrete regulatory stance on how to tackle the issue, neither in the US, nor in the EU, where the debate emerged over half a decade later than in the US, in 2006. Today, the extent of the Network Neutrality relevance as subject for EU regulation is currently under debate at the level of the European Commission (EC). Coupled with several recent alarming cases of abuse on content and consumer access in the US and EU, the momentum is optimal as the EC is undergoing a process of reviewing its framework for Telecommunications services.

The paper captures the opportunity and engages in assessing the state of the Net Neutrality debate in EU with attention to the various opinions and policy alternatives preferred by key European stakeholders such as NRAs, Internet Service Providers, content providers and last but not least, consumers. While presenting a general overview of these stakeholders' interests and initiatives toward the issue, the paper will concentrate on a deeper theoretical and policy

analysis of the consumer perspective, as an identified area where little direct regulatory support has been granted. Moreover, a policy mechanism of "consumer empowerment", as a new policy paradigm, will be developed in direct connection with the issues of Net (non)Neutrality risks facing the European Internet user today. As end result, the study will introduce the scheme of a novel consumer empowerment policy framework, which beyond its EU applications, may be considered adequately 'neutral' so as to be implemented in other regions, especially US.

Key words: Network Neutrality, Internet Service Provider, Content Provider, Consumer Empowerment

List of Key Abbreviations

EU – European Union

EC – European Commission

FCC – Federal Communications Commission (US)

IP – Internet Protocol

IPv6 – Internet Protocol version 6

ISP – Internet Service Provider

NGN – Next Generation Networks

NHH – Hungarian National Communications Authority

OECD – Organization for Economic and

P2P – Peer to Peer

QoS – Quality of Service

VOIP – Voice-Over Internet Protocol

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INTRODUCTION

1. Net (non)Neutrality: the Background of an Unsettled Debate

Network Neutrality (also Net Neutrality), symbolizes for the Internet what democracy in its untainted form stands for in an ideal society: equal rights for all. It is the democratic principle of the Internet world: equal rights to access for all, at equal conditions. In the Net environment, "All" consist of content providers and end-users/consumers as well as data flow as in content and applications. In charge with providing access for "all" are the Internet Service Providers (ISPs) also known as Internet Access Providers (IAPs).

Not always however, access is available to all or conditions are equal. Moreover, not always Net Neutrality depicts the same reality for all. Described from as many and as controversial approaches as the democratic ideal, Net Neutrality initially emerged as an issue in the United States in early 2000, within the camps of techno-economic stakeholders and legal scholars. It further gained the proportions of a fierce public debate starting from 2005 when the "common carrier" access obligations were ruled out by the US Federal Communications Commission (FCC). At that point, the ISPs gained full and almost unregulated control over communications networks and theirs access points. Furthermore, behind the scene and beyond US, in Europe and elsewhere, technological advances attributed to the most recent upgrades of transmission networks and protocols allow even further control over content and network capacity management. In turn, business operations and models are within reach which would deploy the newly gained capability to discriminate between content, thus abandoning little by little the neutrality of

data or signal conveyance. This trend is calling for a re-positioning of the policy that is taking into account the new roles of command and possible abusive control at the level of infrastructure management and operation.

Beyond these recent trends, the Net Neutrality principle in itself originated from the fundamental conviction that access to Internet networks should be treated separately from any content provided throughout. Thus, networks should be "neutral" and non-discriminatory towards the data flow which they were built to convey. In a less-egalitarian Internet environment governed by the innovation "arms-race", breaches of this principle have grown to occur at the level of ISPs and affect the access of content providers as well as end-users. Such exclusionary practices may consist of blocking access of content providers or selected applications, unjustified delays in data transfers to end-users, degraded quality of transmission, unlawful prioritization of affiliated content and discrimination of competing applications and the list could run much further. "Victims" of discriminatory provider practices are content providers and end-users, in one word the consumers of transmission capacity and signal conveyance. Possible remedies for a segment of this category, namely consumers as end-users will be further addressed as central point of discussion in this paper.

A core principle advocated by the fathers of the Internet, Network Neutrality has been increasingly challenged both technologically and from a regulatory point of view by Internet Service Providers, Cable Operators and Telecoms, in one word carriers. The US generated literature on the topic is thus very abundant and covers a more complex array of viewpoints on the technical and legal aspects of the principle. However, up to date, there is no concrete regulatory stance on how to tackle the issue, neither in the United States, nor

in the European Union, where the debate emerged later on, in 2006. Extensive policy studies in the area of Network Neutrality outside US are rather scarce and there are only few comprehensive anthologies of expert and academic positions with a clear EU focus on the debate. This is due to the fact that Net Neutrality has emerged only very recently as a topic for public and legal discussion in Europe. At the same time, the extent of its relevance as s subject for EU regulation is currently under debate at the level of the European Commission (EC). Coupled with several alarming cases of abuse on consumer access recently occurred in the US and EU, the momentum is optimal as the EC is undergoing a process of reviewing its framework designed to regulate the entire array of electronic communications and information society services across EU. It is thus high time to engage in assessing the state of the Net Neutrality debate in EU with attention to the various opinions and policy alternatives preferred by key European stakeholders currently active in the field. Furthermore, the real state of the consumer and the available consumer-oriented regulatory safeguards will be assessed in the context of access discrimination and similar challenges posed by Net (non)Neutrality promoters.

Within the mentioned ongoing regulatory review, the European Union has already shaped its general position and a set of directive provisions, which appear, as it will be further argued, insufficient to tackle the entire array of possible discriminatory behaviors preformed by ISPs against consumers. Consultations are still on and as, the final decisions on the adoption of the revised regulations will occur only in 2009, there is plenty of room open for further stakeholders' reactions and rephrasing of the current EC proposal (EC 28 June 2006 SEC(2006) 816). Moreover, it is expected that, if approached as a major economic issue able to challenge the European market for telecommunications services and its business players, the debate will become fiercer since the stakes are high for

commercial interests and the investment climate. This has already happened to a certain extent in the European cable operators' camp as result of rising fear of high investment risks entailed by major network upgrade actions as well as deployment of new infrastructures such as the Next Generation Access Networks. It is justified by market forces that for business oriented actors and ISPs, the 'risk' of legally imposed non-discrimination of access, thus, Net Neutrality, may reduce investment incentives especially from new market entrants and developers of higher capacity networks and transmission services, thus harming ICT innovation at its infrastructure core.

At the other side of the battle field, content providers and application developers such as Google or Skype, would applaud a regulatory approach that explicitly safeguards the neutrality of networks. Free - as in open – network access would allow these stakeholders to pursue unrestricted innovation plans, content creation and un-disturbed end-to-end sharing of data and applications. Somewhat at the juncture point between ISPs and content providers, the end-user or consumer is the one who would benefit most in an ideal environment where both other camps could be fully satisfied: the ISPs will have regulatory incentives to build high-performance infrastructure with unlimited transmission capacity while content providers would gain un-discriminated access to these networks. At the end of the traffic line, consumers would enjoy the effects of everybody's benefits. However, reality is completely different from this ideal triple-win situation. As ISPs do not enjoy regulatory protection of investments, they will try to gain the return by imposing access restrictions and higher fees on content providers who want to reach their consumers. Furthermore, unlawful content blockage and quality disruptions may occur, all in the detriment of the end-consumer who, by rule, is bearing his ISP's subscription fees. This is a basic illustration of how consumers risk becoming the main losers along the network

should Net Neutrality not be taken into account by effective regulatory and policy attention.

2. The Roadmap to nEUtrality

Drawing from the outlined background of the debate and learning from the longer US experience, the first chapter of this paper will explore the current state of Network Neutrality discussions at regulatory level in the European Union (EU). It will emphasize the dominant attitudes and reactions facing the transition of the issue from the United States to Europe. The attention will be dominantly focused on consumer related provisions and practices in order to identify potential mechanisms to counteract access discrimination as side-effects of neutrality abuses. Furthermore, the chapter sets out to explore the polarized scholarly and regulatory literature that has emerged around this issue in US and EU. The main technological and economic fundaments of Net Neutrality controversies will serve as a departure point. The discussion will also touch upon several technical issues of content packaging, methods of management and quality of content and applications transported through the networks. It will draw the attention on technologically driven inter-policy clashes especially in matters of data protection and user privacy in EU context. Attention will be paid to the new Net Neutrality portrayals determined by the widening application of the so-called principle of Quality of Service (QoS), which allows access discrimination as a healing effect of increasing network congestions and is said to secure optimal transfer of more complex and time-sensitive applications.

Framed within the European regulatory area of electronic communications the second chapter will look into the current EU debate on whether it is possible and feasible to

safeguard the principle by law so as to effectively address potential abuses experienced by content providers and especially end-consumers. The investigation will be taken further to the challenges that a regulatory approach to Network Neutrality is likely to infuse into already established consumer relevant regulatory areas of key importance such as competition, privacy and electronic data protection provisions as well as emerging innovation driven policy mechanisms. Such currently developing policy areas at the edge of technological innovation concern the deployment of Next Generation Access Networks (NGN), consumer adaptable Ambient Intelligent devices, the migration to Internet Protocol version 6 (IPv6) and numerous other fast-progressing technologies of priority for the European Commission's Information Society goals (cf. i2010 Information Society goals, EC 2005c). All these complex interdependencies and "spill-over" relations frame the environment of the Information Society for users and consumers which are meant to be at the core of any EU policy making endeavor. Consequently, the further exploration of such policy 'spill-over' is undertaken with a perspective on the European consumers and the expected effects that any policy towards Network Neutrality would pose on them in the Internet environment. The chapter will also assess the current shy attempts of the Commission to address threats to the neutrality principle by existing regulatory frameworks of competition and sector specific rules governing electronic communications, the latter being currently under EC review. The main critical arguments that signal the weaknesses of this approach will also be outlined.

Typically in a network sector, the policy challenges related to Network Neutrality affect all stakeholders vertically and horizontally, with the consumer or user receiving and ultimately bearing the cumulated consequences of regulatory intervention or non-intervention. What solutions may be viable and effective in addressing the complex

problems at the consumer end of the network and at the same time avoid the risks of insufficient or innovation distorting regulatory intervention in such a fast-progressing domain of technological development? Moreover, as consumer attitudes and aptitudes themselves are evolving as driven by these technological innovations, what is the new profile of today's Network environment inhabitant and how should consumer policy adapt to an "updated" subject? It will be the task and the aim of the third chapter to propose a set of consumer oriented policy guidelines that the EC and the National Regulatory Authorities (NRA) could undertake based on already available or proposed regulatory provisions at the level of the Commission. In this chapter as well as all throughout the paper, a strong emphasis will be placed on the importance of shifting the existing consumer protection paradigm towards a consumer empowerment approach to policy making in communications services. Such empowerment perspective will be undertaken as guiding path for the proposal of a policy design aimed to safeguard key features of Net Neutrality as attainable in today's context of market supply and demand.

Important to note, it is not an aim of the author to imply that a shift in the regulatory paradigm is needed simply because there is a lack of pro-active consumers in the electronic communications environment. On the contrary, the direction of the approach is targeted from a rather opposite perspective. It is driven by the reality of today's' Internet environment where pro- and inter-activity shape the dynamic of the communications and information flow. The advent of Web 2.0 - the Internet of citizens for citizens - beyond being a technological and commercial innovation, to a certain extent, is the effect of escalating consumer inter-activity, increasing engagement in online content development and online social networking. It is the Internet's answer to the demands of an emerging population of net citizens or "netizens". This is the main reason for which the present

paper advocates for a migration from the existing regulatory paradigm of market regulation for the public interest through “consumer protection” towards a “consumer empowerment” approach to policy making.

3. Terminological Aspects

The highly complex debate that has enfolded around network neutrality has a very weak characteristic that is the lack of a consistent terminology and a common understanding of the notion of network neutrality per se. Prior to further elaboration of the subject, this contribution will frame the main concepts that the paper will employ. In the context of this topic, the notions “Network Neutrality” (also Net Neutrality), “network”, content”, “network environment”, “user”, “consumer” and “consumer empowerment” shall be frequently used in addition to a pool of technical concepts and processes that shape the current scholarly and regulatory approach to the topic.

The notion of “network” refers to the conveyance of signals through the physical infrastructure. For the purpose of this paper the term is strictly reserved to the Internet Protocol (IP) based infrastructure, the so-called network of networks that facilitates transfer of any content in the form of data packages. Thus, forming the transport layer upon which any remote exchange of information depend and enables higher applications that provide for online interactivity and communication.

”Content” covers the large array of data and applications transferred or retrieved through the networks thus being the subject of IP facilitated traffic. Under the IP regime the

content is dissembled to packages that can carry a standardized amount of data and contain all necessary information for delivery and resembling of the content at the destination.

The "network environment" consists of all the stakeholders: Internet Service Providers, content providers, end-users or consumers, and the regulators (policy makers) addressing the networks from own perspectives. As stated previously, while reviewing all these perspectives, the present paper will wrap up by providing a position that will focus on the user and consumer approach to Network Neutrality policy in the European Union.

"Network neutrality" describes a concept of how network and content interact with each other. One of the leading technology scholars in the field, Tim Wu, defines "Network Neutrality" as "a network design principle in which a maximally useful public information network aspires to treat all content, sites, and platforms equally. This allows the network to carry every form of information and support every kind of application" (Tim Wu, 2006). The concept refers to a prohibition on discrimination based on the source and destination of Internet traffic (Norio Murakami, 2007) as well as on the type of content (video, audio, text) that is being transferred. EU defines it as "carrying traffic without discrimination" (EC Information Society, January 2008) as included in the EC Communication on "Creative Content Online" launched in January 2008. However, in practice, there is a wide margin between equal treatment and non-discrimination of content, which is imposing even greater ambiguity to the notion itself. In specific context of Quality of Service (see below), equal treatment may mean that same type of transfer-sensitive applications, such as video streaming, are granted same priority as opposed to less demanding services, email for example, that are intentionally "discriminated" by delayed delivery.

The present paper shall be employing both the notion of "consumer" and "user" of networks, content and services delivered by means of these networks. The terms "consumer" and "user" shall be used interchangeably as also employed in the European regulatory language. Moreover, in the electronic communications environment the two concepts may apply to same actors at different points of the communication flow, a user can easily become consumer, while in the next second, a consumer may become content provider, especially in the present Web 2.0 interactive content environment. It may be argued that the more neutral but complex term "user" has become more justified in the new context of Web2.0 developments where citizen-generated content and services will increasingly serve as the core of Internet facilitated services, peer-to-peer (P2P) interaction, communication and community building. However, for the purpose of this paper and for consistency with already existing regulatory and policy approaches, the notion of "consumer" will be employed predominantly and treated as a complex concept, equally to user.

"Consumer empowerment" stands at the center of this paper's discussion and will be further developed in the frame of the Net Neutrality debates in Chapter 3. In the context of electronic communications and Internet based services, "empowerment" is seen as the capacity or gained aptitude to make self-determined service choices based on informed analysis of available alternatives and in pursuit of ones' acknowledged needs. Consumer empowerment stretches beyond mere protection. It assumes a high level of consumer literacy and awareness coupled with unrestricted access to transparent information from market players on offered services, products, prices, conditions and contract specifications. In order for such empowerment to occur, active input, cooperation and

maximum information transparency is required from all regulatory and commercial stakeholders. In essence, the basic ingredient to an empowered consumer is information, a core element which equips consumers "to obtain the best deal they can" (Ofcom 8 February 2006, p.4).

Throughout the course of analysis, further information technology and network service concepts shall be employed. Thereby, Quality of Service (QoS) and Next Generation Networks (NGN) will be often touched upon as key factors shaping the environmental setting for the current Net Neutrality debate.

NGN is the new buzz-word in the global Internet Protocol (IP) based environment of communications infrastructures. A standard definition issued by the International Telecommunications Union's (ITU) describes NGN as "a packet-based network able to provide Telecommunication Services to users and able to make use of multiple broadband, QoS-enabled transport technologies and in which service-related functions are independent of the underlying transport-related technologies. It enables unrestricted access for users to networks and to competing service providers and services of their choice. It supports generalized mobility which will allow consistent and ubiquitous provision of services to users" (ITU definition, online). Investments in NGN are high-risk initiatives that only large formerly incumbent Telecom companies and market dominant ISPs are able to support at the moment. This adds several challenges to the agenda of Net Neutrality debates and increases the gap of arguments between network owners and operators on the one side and content providers and consumers on the other side.

Opposed to a "best-effort network" that does not prioritize traffic, Quality of Service (QoS) is the capacity of a network or Internet protocol to "monitor the achieved level of performance, for example the data rate and delay and […] control scheduling priorities in the network nodes" (Wikipedia, on QoS) thus releasing the retained data during a second-priority phase. QoS runs through software that enables traffic control by content filtering, and is thus often supported as a solution by the anti-Net Neutrality campaigners. A "best-effort network" presupposes a high-capacity network that can hold the highest traffic load without prioritizing, whereas QoS is a compromise to limited-capacity network congestion when traffic reaches its peak. The Internet did function as "best effort network" at its very beginning when by far less capacity challenges were in place. "Quality of Service comprises requirements on all the aspects of a connection, such as service response time, loss, signal-to-noise ratio, cross-talk, echo, interrupts, frequency response, loudness levels."(Wikipedia, on QoS) and it is required by such applications as multimedia streaming, IP telephony or video conferencing.

Whereas the Net Neutrality debate is far from being new to regulators and other stakeholders, the recent enhancement of QoS enabled networks has the potential to revive the challenge in the new NGN environment, thus raising further discrimination concerns. From this perspective, it will also be argued that the current literature and official regulatory discussions in the EU risk concentrating on a too narrow focus if looked at from the perspective of already available regulatory frameworks. This position is likely to drive the adoption of policy approaches that may not be applicable to the technological functions and real-life communications challenges increasingly encountered by users in the Internet environment.

4. Methodological Aspects and Envisaged Results

While approaching the yet unsettled discussions on Network Neutrality in Europe, the proposed research and methodology will aim at framing a practicable policy tool that will merge the available regulatory principles and mechanisms while shaping them toward a consumer empowerment approach The paper will coordinate available information and regulatory stances which will serve as supportive background for a further policy proposal. It will draw from current practice-originated input from actors in the field as well as recent and more general but innovative consumer empowerment approaches initiated in the area of telecommunications by international organizations such as OECD and National Regulatory Agencies (NRA) such as Ofcom in UK and the National Communications Authority in Hungary. The research will grant priority to qualitative data collection methods, predominantly to document analysis complemented by a semi-structured elite interview. Extensive document analysis of official documents and published articles - was conducted. The results of this analysis and especially the identified gaps in both scholarly research and existing regulatory provisions have provided the necessary theoretical background and policy ideas at the origins of the proposed policy framework.

Prior to designing the proposed policy framework, the information generated from literature review, document analysis and conducted interviews will be employed to provide answers for a set of questions that the study will address and aim at clarifying in European context:

- Does Net Neutrality really exist in its pure form? Should it?
- Can Net Neutrality be enforced by means of specific regulation? Should it be?
- Does it still make sense to address Net Neutrality in the traditional context of isolation between networks and content?

- Should EU undertake any regulatory steps towards Net Neutrality protection? What are the necessary legal mechanisms and what is already available at EU level?
- What are the main arguments for securing a 'practicable' level of Net Neutrality for consumers' benefit by policy design rather than regulation?

Drawing from the answers and own perspectives the study will propose a policy approach to tackling the issue of Net Neutrality in EU and it will address the challenges expected to occur at the consumer end of the debate. At present, there are no comprehensive policy frameworks and scarce applicable regulatory solutions able to address the debate around Network Neutrality and the possible breaches of the principle in the European Union and elsewhere. Moreover, due to the predominance of physical infrastructure driven discussions, there has been little scholarly attention and no specific policy provisions concerning the effects of non-neutrality on the two major stakeholders: content providers and users. However, the EU competition law and telecommunications regulation does include several provisions that could be transposed into concrete and more elaborate policy guidelines tackling the effects of unlawful actions and consumer effects within the Net Neutrality debate. Guided by these challenges and facilitated by available scholarly research, the following chapters will investigate the regulatory grey-zones and proceed with drafting a consolidated policy framework aimed at empowering the European consumer face to face with the identified Net (non)Neutrality risks. The overall aim of this framework will be to pacify policy/legal expectations of the regulators with business strategies of network operators/content providers while safeguarding and enhancing users' access to qualitative services, safety and related communications benefits.

Chapter 1. At the Crossroads: Net Neutrality between Tech-ideology, Reality, "Academy" & Policy

The Internet as we know it today was initially imagined as a small scale data transfer network. However, its limitless potential and openness to innovation up-graded it to a global network of networks, able to provide borderless transfer of information, services and communication up to now in a non-discriminatory manner regardless the content or the user specifications. Non-discrimination is the main feature that defines the principle of Network Neutrality. This fundamental principle represents the ideology behind Internet networks as designed by their developers. It stands for a single transport layer standard intended as not to discriminate any applications and information packages, be it text, voice, image or their more advanced complex developments (e.g. interactive online games, Voice-Over IP, Webcam applications). According to co-developer of the Internet Protocol, Vincent Cerf (2006), "the Internet was designed to maximize user choice and innovation, which has led directly to an explosion in consumer benefits. The use of layered architecture, end-to-end design, and the ubiquitous Internet Protocol standard, together allow for the decentralized and open Internet that we have come to expect." (Cerf, 2006, p.2).

1.1. Tech-ideology

It is due to the open-for-all feature and the unregulated status of these networks that giant applications like Google, You Tube and Skype, virtual social communities like MySpace, Facebook or Second Life as well as on-line TV and Radio streaming have emerged and became available to all, most often free of charge and easily customizable. Furthermore, the Internet allowed for major IP business enterprises to emerge and develop, innovative service and product markets to open and thus, new markets for customers to "surf" into. At the same time the Internet's facilitating networks became themselves business tools for the Internet Access or Service Providers. As any technological innovation has its tradable goods and bads as well as limitations of unregulated use, these networks are revealing new challenges to all stakeholders, from regulators to business actors and consumers.

In concrete terms and an ideal world, each stakeholder would and should act according to its "natural" instinct. Business actors would follow own profit by all means, regulators would impose rules to fence the "all means" approach on a level playing field whereas consumers would seek the product and service that best satisfies their needs and expectations. This hypothetical world behavior requires that all actors are fully aware of their role and opportunities and act as such. The assumption holds in most cases, especially with regard to businesses (ISP in this case) and regulators, but to a lesser extent to consumers. One could even note that consumers often benefit from double concern, of their own and from behalf of the regulators, whose important aim is to secure consumer benefit and protection. This is a network node where several of these actors' interests clash, causing turbulences at policy and regulation levels. Such is the debate created lately around Network Neutrality and the question whether Internet networks should be

regulated, if yes to what extent and most importantly whether it is technically possible and feasible to do so. As mentioned, the debate is fierce in the US within and between all stakeholders' camps. In the EU it has been occurring within rather closed circles of regulators, ISP and Telecoms, international telecommunications organizations and data protection focused consumer rights organizations.

Nowadays, the "to be or not to be" equivalent in Network Neutrality terms is the question of whether to legislate so as to maintain "Net Neutrality" or not. At the moment, in the US to a greater extent than in Europe, to fight for Network Neutrality is aimed at preserving intact the "current status quo of prohibiting broadband service providers from charging websites for preferential access to their residential and commercial customers" (Cheng et al., 2008). "Allowing broadband carriers to control what people see and do online would fundamentally undermine the principles that have made the Internet such a success..." (Cerf, 2006. p.2). The later statement was issued by one of the fathers of the Internet Vincent Cerf in the context of the vivid US debate on Network Neutrality as a result of the Federal Communications Commission (FCC)'s repeated hesitations to protect Net Neutrality by means of a legal ruling.

1.2. Reality

1.2.1. Background: the US Net Neutrality Debate and Stakeholders

The regulatory debate on Network Neutrality surfaced initially in the US at the beginning of 2000. At what was considered to be the end of a long-lasting public and highly publicized deliberation, the FCC decided to adhere to an informal-like list of Network Neutrality principles without passing any law to enforce them. Then FCC issued its notorious Policy Statement on Network Neutrality that promotes five rights and freedoms aimed at enhancing net neutrality: the freedom to access the (lawful) content of its choice, the freedom to use the applications of its choice, the freedom to attach any personal devices, the freedom to obtain service plan information, and the freedom for users to distribute their own (lawful) content (adopted at a later date) (see Federal Communications Commission – FCC. 5 August 2005: Policy Statement on Network Neutrality FCC 05-151).

At the level of stakeholders on the US telecommunications field, there are numerous voices that argue for imposing net neutrality by law. However, there are as many fists rising against this approach mainly from the internet technicians' camp. The U.S. Congress has been debating whether to enact Net Neutrality laws that would prevent "second-class" treatment of data and applications. "Net neutrality would force Internet service providers such as AT&T Inc. and Comcast Corp. to give all Internet traffic the same quality of service. Advocates of these laws say they are essential to preserving the openness that has made the Internet a success" (McMillan, Robert, August 2, 2006). On the other side of the battle-field broadband providers argue that "such laws could prevent

them from developing a new generation of services" (McMillan, Robert, August 2, 2006). In the end, FCC issued a more-or-less neutral follow-up ruling in June 2006 that promotes non-discrimination without using the specific language and principles advocated by net neutrality supporters. The public and political debate is however still on and growing fiercer (see NNSquad forum archive). As a follow-up to this unsettled regulatory issue, the government, the FCC and the network /service providers are still discussing possible legislation while no Net Neutrality safeguard exists by norm, be it legal or policy approach.

This lack of official stance has led to several cases of actual breaches of the principle by major US based ISPs. So is the case of Comcast, a large provider that in late 2007 was exposed as performing unjustified and unannounced traffic blockage against the Peer-2-Peer file sharing application BitTorrent. By applying traffic discrimination to the amount of actual delivery failures of P2P file sharing, Comcast crossed even the loose lines of the FCC net freedom principles. This lead to the Commissions' stance to take action at the company's practice and further investigations are currently undergoing (see Reardon, Marguerite, 10 March , 2008). A representative of the Net Neutrality frontrunner organization Free Press said that if the FCC will finally decide to take action on behalf of consumers, this may be "an historic test for whether the law will protect the open Internet. If the commission decisively rules against Comcast, it will be a remarkable victory for organized people over organized money" (cited in Anderson, Nate. 11 July 2008).

There is little neutrality in the discussion about Net Neutrality, which may bring about several problems or distortions at the policy level. Both technology and media scholars as well as business stakeholders such as ISP, content providers, Telecoms have been

identifying and placed themselves in clearly demarcated and polarized camps: pro and con- regulation-enforced Network Neutrality. In spite of this, or maybe as a result, no major focus has been directed to designing an alternative policy framework that would provide especially end-users or consumers with a basic set of effective (soft-law) tools to employ in "self-defense".

Network Neutrality regulations are supported by consumers-rights groups such as Consumers Union seconded by large Internet content companies (e.g., Google, Yahoo, and eBay), several high-tech trade associations such the American Electronics Association (AeA), and politically liberal blogs. Google has reached as far as launching its own "*Guide to Net Neutrality for Google Users"* (see Google, online). Among supporting technology scholars and lawyers are Steve Wozniak, Susan Crawford, and David Reed who have also endorsed a distinctive legislative proposal for Net Neutrality in the US. Microsoft has also announced itself in support of neutrality regulation. Network Neutrality regulations are opposed by some of the Internet's most distinguished engineers, such as professor David Farber and software technician Bob Kahn, one of the creators of the Internet Protocol (see Wikipedia page on Bob Kahn). They advocate Internet freedom and argue that, from purely technical point of view, the Internet cannot be neutral and no law may change that fact. Increasing data traffic due to light-speed fast product and service innovations are imposing great pressures and sometimes causing sever blockages within existing digital networks thus making the ideal non-neutrality in data delivery unavoidable. An answer to this network capacity crisis has been proposed and enacted by means of the Quality of Service (QoS) principle which allows prioritization of time-sensitive applications such as real-time multimedia streaming or Voice Over IP (VoIP). However, there are sever backdrops of QoS as this practice favors content sniffing and

discrimination of packages based on the actual data they contain, a practice that is an absolute antagonism to the principle of Net Neutrality.

At an overview of the ongoing debates, the main regulatory arguments against enforcing Net Neutrality by regulation can be summed up as follows. Firstly, from a technological point of view, Network Neutrality doe not exist in its pure idealist form, thus, no law can enforce a non-existing phenomenon. Secondly, there are matters of networking security concerning piracy and other cybercriminal behavior of consumers that should not be treated neutrally, thus automatically leading to a need to filter certain traffic in the Internet environment. Thirdly, applauded speed-light innovations have resulted in highly complex applications and services whose quality and basic operation depend on transport prioritization (see interactive gaming, on-line TV, VOIP). Fourthly, the business incentive perspective must be treated as determining factor as more and more cable operators, broadband access providers (ISP) and Telecoms plan to condition further investments in up-graded NGN highways on anticipated financial returns gained by introducing fee-based conditioning of consumer access to their new networks. These are all strong arguments that the pro-Net Neutrality camp is counteracting by the same token both in the US and, stakeholders-being equal, in the EU and elsewhere.

What US supporters of Net Neutrality have been repeatedly demanding is for the principle to be enforced by law. The basic goal of this advocated approach is to contain Internet Service Providers from discriminating trafficked packages, thus from the temptation to employ differential transport layers and prioritize delivery to users for own business gains. Furthermore, at one level before reaching the end user, such discrimination is due to occur among ISPs themselves, when interconnection between different providers is necessary.

Explicitly, there may be cases when a major, first tier ISP (e.g Verizon) blocks, filters or delays data packages delivered through its network by other ISPs in order to prioritize data delivered to its own customers. Furthermore, there are recent cases when ISPs demanded extra fees for delivering certain content through their networks. The Comcast case stands as recent example of P2P file-sharing discrimination for such purposes. Similarly, in Canada, BellCanada has been throttling P2P connections at set times of the day when traffic congestion was said to reach its highest point. The company has been secretly managing, filtering and delaying such traffic in order to prioritize video streaming (see Anderson, Nate. 11 July 2008).

1.2.2. *Net Neutrality in the EU Context of ICT Innovations and Regulatory Reviews*

70% of the EU internet traffic runs through North America and more than 4% of European telecommunications traffic runs through US networks. However, the US Federal Communications Commission has been repeatedly ruling out Network Neutrality from all legislative initiatives since 2005. How does that affect the European Union market and its regulatory environment in 2008 and what (if any) are the possible regulatory and policy approaches to safeguard a neutral, open-access Internet for all?

Although one would expect that regulatory debates on borderless aspects of communications such as the Internet networks should occur in a concerted manner, discussions about the state of Net Neutrality in EU were launched much later than in the

US. Official talks around the principle emerged at the end of 2006 and more intensive in 2007, raising several regulatory questions in the field of electronic (tele)communications and related policy agendas of various stakeholders. Consequently, European literature on the topic is still rather scarce but very recent official documentation and scholarly assessments have emerged and already established a commonly agreed feedback and answers to the basic regulatory questions regarding the optimal legal approach to Network Neutrality in EU.

With the aim of advancing Europe's Information Society, the European Commission (EC) is currently adapting its telecommunications regulatory framework as well as adopting new policy tools to enhance mobile communications, digitalization and facilitate wider access to innovative Internet-based means of interaction and information. These regulatory tools are being (re)designed so as to encourage business investments in Next Generation Networks (NGN) as well as promote users' adoption of the newest Internet Protocol version 6 (IPv6), intelligent dynamic web interfaces (the so-called Ambient Intelligence project of the EC) and digital devices that can empower users and facilitate the spread of mobile Internet communications in Europe (cf. EC Information Society 2008a & 2008b). The so-called migration to NGN reflects the ultimate 'technological (r)evolution' of the global telecommunications sector and stands at the core of the regulatory and policy planning of EU's communications policy experts. For consumers NGN connections "could create a range of new applications including on-demand high definition (HD) TV, DVD quality film downloads in minutes, online video messaging, CCTV home surveillance and HD gaming services" (Wakefield, J., 23 January, 2008). Although still at an incipient level, the development of NGN has already started to cause great debates in the dynamic fields of telecom business competitors and regulators – both within and between the two

groups - especially when attempting to draw the relevant regulatory coordinates for the future. One of the challenges that have emerged during the electronic communications framework reviews in 2006-2007 is the issue of Network Neutrality and specifically, the question whether any targeted regulation is needed in order to safeguard the neutrality of networks especially in the context of the above-mentioned developments.

Besides several indirect notes on Net Neutrality in the 2006 draft review of the electronic communications regulatory Framework (EC, 28 June 2006), the first EC issued-statement that mentions Network Neutrality as a significant policy matter to be addressed at the policy level in EU was the EC "Communication on Creative Content Online" launched in January 2008 and open for comments and contributions from all EU stakeholders until 29 February 2008. By mid-2008, the EU Commissioner for the Information Society and Media, Viviane Reding, was expected to issues a follow-up statement and recommendation but it is not yet certain whether Net Neutrality will be specifically addressed at that stage. At the moment, this statement is still pending. However, based on extensive documentation of available public declarations of the Commissions as well as stakeholders, it is expected that no major action steps will be promoted at legal and regulatory level as Network Neutrality is not regarded as a major issue for the European Union. This position has also been supported by legal and scholarly assessments and the argument stands in the fact that the EU competition and telecommunications regulation already include several provisions that could counteract the major negative effects of Net Neutrality abuse.

However, recently emerged issues and particular cases reveal that the Commission's neutrality on the matter may be harmful on the long term. At the level of concrete threats

to Net Neutrality and thus precedent case setting, EU in its turn has already experienced similar attempts of traffic throttling as exercised by Comcast in the US. Such was the 2007 case of the BBC online programs delivery application (the InternetPlayer), when major ISP threatened to block BBC from reaching its users unless a fee would be covered by the broadcaster (see Murray-Watson, 2007). Such unjustified anti-competitive conditioning is prohibited both in the US (by soft law) and in the European Union (through competition regulation). However there are significant differences between the strength of the two regulatory approaches and their impact on key areas concerning the users and consumers of IP-based services. One argument brought forward by the ISPs in the BBC case was the Quality of Service principle and the fact that due to the volume of congestion that the iPlayer would cause to their networks, the QoS for other applications would be harmed. Thus, they argued that for BBC to be able to deliver its content to consumers, a higher fee should be paid for increased network capacity and preferred QoS by the broadcaster.

On a different regulatory position than the FCC in US, the European Commission has already ruled the adoption of the so-called Quality-of Service (OoS) approach to Internet Protocol (IP) based traffic. QoS is possible and allowed in a configuration of more than one standard transport layer. For the users and consumers of IP telecommunications services this means that different information, data packages and applications are being delivered to them in a “discriminatory” manner or with prioritized speed according to the bandwidth capacity that they have access to. QoS was enacted with the purpose of avoiding network congestion due to limitations of network capacity. Such limitations occur in the context of very fast developing complex applications (e.g. real-time multimedia streaming, VoIP) whose delivery to the consumer is time sensitive. These applications or packages require fast delivery to the end-user and thus QoS prioritization

may be applied only when the limitations of network capacity would otherwise cause delivery delays which render the service pointless. At its core, the principle sounds fair but it also offers a straightforward and lawful cover to possible unlawful traffic management (unjustified delay, blockage), data mining and more alarming, it provides the right tool for content identification and intrusions, thus affecting users' privacy and potentially interfering with strict EU policy areas of privacy and data protection.

This may be the high-time to capture the momentum by framing a consistent and comprehensive policy framework that would focus on a service, content and user approach to Network Neutrality rather than the much feared preemptive regulation, which shall be further reviewed in the following sections.

1.2.3. Net (non)Neutrality and the Consumer Reality

Given the consumer centered approach of the thesis and the need to identify all related aspects that may lead to a feasible solution, it is important to frame the main risks and inconveniences that Net Neutrality threats posed by broadband providers may cause to consumers in the Internet environment.

Until recently, there has been little discussion about the potential inconveniences and harms caused to consumers by discriminating acts exercised at various levels of content and application transfers (see among others Wu, T. 2003; Peha, J.M..2007; Marsden C.T. 2007). Such problems may occur at various levels of the content distribution chain and in a diversity of situations that the consumer might be directly engaged in. Based on the

concurring scholarly assessments (see Marsden R.C., 2007; Chirico F. et al, 2007), the main effects of Net Neutrality abuse affecting consumers can be divided in: types of content and service provider discrimination; breaches of the Quality of Service principle; and matters of user-generated and user-distributed/shared content.

Firstly, at the level of content discrimination, such practices can impact consumers from at least two identifiable points: at ISP inter-connection points (peering level) and between ISPs and the content providers (consumers in their turn) distributing their content and applications to end-consumers or end-users. Marsden (2007) identifies four main types of content discrimination that affect consumer welfare: (1) non-transparency and misleading advertising of actual services offered by ISPs; (2) "throttling" or content blocking/discrimination and traffic shaping, which affects both content providers and consumers and touches upon issues of unfair competition, consumer data security and privacy; (3) charging termination fees to content providers in order to reach end-users, thus indirectly also conditioning consumers access to content (see BBC case 2007, in Murray-Watson, A. 12 August 2007) ; and (4) "certain types of more extreme and anti-competitive 'walled gardens'" (Marsden 2007, p. 413) where broadband providers (e.g. Telecoms) can behave as content gatekeepers for their customers. In this case providers condition to varying degrees the access of their subscribers to "external" third-party online content based on direct fee payments. Thus, they are on the one hand holding customers hostages within their pre-paid branded portals while also restricting the access of competing content and application providers to these consumers on the other hand.

Quality of Service (QoS) has already been explored in the introductory chapter as an issue of utmost relevance at the level of the EU debate on Net Neurality. QoS as ruled by the EC

may be seen as a potential danger to the neutrality principle even though proposed with best intentions. The principle allows ISPs to compare and discriminate packages in order to prioritize those requiring best traffic efforts for an optimal transmission to the end-user. However, once "discrimination" is allowed, it is almost impossible to separate anti-competitive discrimination of content providers and mall-intended package sniffing from well-intended prioritization. It is not in the aim of this paper to argue against the concept of traffic discrimination as functional prioritization. Instead, the goal is to signal the fact that such practices, as currently adopted in Europe, are not refined enough as to effectively tackle the potential challenges of the technological environment, which they address. This concern has been augmenting in parallel with the advent of Web 2.0 user-generated content, where the boundaries between traditional content providers and users are blending. This mean that major citizen content developers of sophisticated applications may also risk being treated in a discriminatory manner by mall-intended ISPs while the latter's justification for QoS standards may still stand. The European Commission acknowledged that the "European user generated content industry's future entry barriers and business model are at stake in this debate" (see Marsden C. T., 2007, p. 419). The recent EC communication on "Creative Content Online (EC, 3 January 2008. SEC(2007) 1710) reveals the Commission's awareness of these risks and aims at encouraging the "creation of an open and competitive single market for online content" (EC 2005c) as one of the key aims of the EU's i2010 initiative. On the same line, the review of the Framework Directive itself is centered on better meeting the public interest by enhancing consumer protection. However, concrete mechanisms would require more that better public interest protection and should aim beyond, at a higher level of consumer ability and awareness enabling.

Regarding broadband access, by rule and practice, it is the end-user who pays the highest fees to ISPs in order to gain access to networks, employ different applications, retrieve content and lately create content online (see European Commission Information Society "Creative Content Online", 3 January 2008. SEC(2007) 1710). While traditional content providers bear some costs only to reach the end-user point of the network, there is no such general provision that requires content and application creators to pay ISPs for better QoS. More and more voices argue that such fee payments by major content providers (i.e. Google, Yahoo, You Tube or BBC iPlayer for that matter) should be introduced at wholesale level. However, the current state of affairs still holds even in the context of highly complex and time-sensitive applications that may, as some signal, cause network congestion and thus require further investments into network upgrades. The ongoing migration to NGN stands out as an answer to such requirements but voices from the industry are lobbying to gain more investment incentives by requesting content providers and smaller ISPs to compensate for their access share.

1.3. "Academy" & Policy

The literature review will depart from the fundamental theoretical debates that emerged in the US in early 2000. It is important to touch upon the authors and main legal aspects shaped across the ocean in order to realize that although both US and EU are facing the same technological challenges, their diverse regulatory frameworks drive the stream and the volume of the debates to diverging ends. As expected given the nature of the topic, the scholarly literature on Net Neutrality is highly dominated by the major technological, legal and policy perspective that were previously outlined throughout sub-chapter 2. Key actors

involved in the debate (lawyers, technologists, activists) or affected by the issue (regulatory agencies, ISPs, consumers, content providers) are often themselves authors of detailed studies and reports, legal interpretations, opinion pieces and evaluations. All these views must be taken into account as they react and respond to the current realities. Therefore, focusing the attention on any purely literary debates related to neutrality of networks would be very difficult and rather unrelated to the policy approach aimed by the present paper.

Nonetheless, it is important to mark the theoretical starting point and the ideology behind as roots that generated the current regulatory discussions primarily in the US starting from early 2000 onwards. The fundamental idea seen as the core of the concept of Internet and its use is that it should be universally accessible, open to everybody's further development initiatives while maintaining it "free and equitable for all" (Weinstein, L. 21 November 2007 blog entry). The "Father of the Internet" , computer scientist Vint Cerf reiterated the basic technological founding and functioning principles of the Internet, at the Personal Democracy Forum (PDF) in 2008. In a short videotaped speech, Cerf emphasized "Internet has become an innovation infrastructure. The system was designed without any particular applications in mind, and as a consequence almost anything is possible …you don't have to get permissions to try out new ideas on the Net" (Cerf, V., 2008) In other words, the Internet is a means of conveying signals which can be re-assembled to any application and innovation happens whenever there is a sender and a receiver that understand and run each other's code.

There are numerous and detailed US-originated technological and econometric analyses of network employment and performance that focus on the reality and functionality of Net

Neutrality at various market levels. Most recent widely acknowledged studies of authors like Cathy Keen et al. (2007), Hsing Kenneth Cheng, Subhajyoti Bandyopadhyay and Hong Guo (2007) have provided in depth network economics and game theory analyses how markets and users may behave in different regulatory regimes on Net Neutrality. On the other hand, academic accounts of Network Neutrality have also provided several legal-philosophic and political-theory perspectives on the topic. However there seems to be a gap between their quantitative research results and the normative aspect of Net Neutrality that could apply to the EU regulatory environment. Such gap could be thus filled by establishing a policy-oriented link as practical solution for the EU communications market and its key players: providers and consumers.

When it emerged in the US, the Net Neutrality debate was raised as concerning possible menaces to the end-to-end nature of the internet, in particular the fear that "vertical integration of cable firms with ISPs would prove a threat to the e2e design of the internet" (Wu, Tim. Network Neutrality FAQ webpage). However, in an attempt to address the growing end-users' fear of the danger of treating certain data as "second-class" (See McMillan R. 2 August 2006) the policy relevance of Network Neutrality was officially acknowledged by the FCC in 20051 through its Network Neutrality Policy Statement (FCC 5 August 2005). Nonetheless, agreement seems to emerge on the fact that Network Neutrality in its 'pure' format does not exist and cannot be achieved today. Consequently, it cannot be enforced by law or by practice – it is simply technologically unfeasible. Experts such as Edward Felten (See Felten, Edward W. 6 July 2006) and Tim Wu argue for a reality-based policy approach that understands and accepts that evolving networks

1 In early 2005 the FCC enforced Network Neutrality principles in a documented case of abuse involving Madison River Communications, a small DSL provider that blocked a VOIP service. See WIKIPEDIA, Network Neutrality (omline). Available from: http://en.wikipedia.org/wiki/Network_neutrality

and diversifying services faced with constantly increasing traffic require more and more distinct ways of transport and delivery, thus being technically unfeasible to treat them non-discriminatorily at the same time and on a one-tiered Internet.

There is moreover, a clear distinction between the arguments and proposals of two major camps in Net Neutrality: Internet engineers, practitioners and tech scholars vs. legal academics. On one side, as expected, the telecommunications and cable companies argue that allowing them to govern their networks as they see fit gives them a financial incentive to innovate at the core of the network, and develop new technologies that could guarantee more security and better quality of service. Legal proponents of Net Neutrality counter that the principle is the reason that the Internet and the corresponding online ecosystem have developed into the commercial and cultural phenomenon they are today. They argue that without a level playing field, telecommunications companies will force content providers—a broad category that includes anyone with a website—to pay up or see access to their content shifted to the slow lane" (CIO 13 April 2006) On the other hand, USA Today technology columnist Andrew Kantor says that Net Neutrality "doesn't force Internet traffic into the slow lane, it prevents the building of a fast lane" As quoted by Jim Lippard in his Lippard Blog entry, Kantor states that "the most a Net Neutrality law should say is that A) network providers must carry any legal data regardless of the content or who it comes from, and B) network providers must offer the same services at the same prices to any customer — i.e., they couldn't charge YouTube more for a connection than they charge Disney" (Cited from Lippard Jim, blog entry, 16 June 2006)

US-based Consultant Martin Geddes advocates that **"**Neutrality is a sign of healthy supply competition and sophisticated ways of demand expression. It's an output, not an input."

Looking at new neutrality as a tool rather than an enforceable principle, he states that imposing "Net Neutrality messes up freedom of contract, freedom of association, and property rights" (Geddes M. 15 November 2005) Geddes proposes a 'third way' based on the argument of ex-post regulation, "an open, free net is an emergent outcome, not an a-priori input to be legislated into existence. We need to capture and accelerate the experiments in how networks are built, financed and sold; and protect those experiments from incumbent wrath until the results are in" (Geddes M. 3 April 2006).

Furthermore, in light of the emerging NGN revolution and more recently with the advent of Network Neutrality as a factor and issue that challenges existing regulatory boundaries, there is an urgent need to coordinate law with technology and establish an effective compromise that would conclude the otherwise never-ending debates over a best policy approach. As "relatively few people understand the mechanics of network discrimination"[2] there is currently a danger of idealizing the debate and taking the supporting arguments of Network Neutrality laws too far from their technological reality. If no agreement can be reached on a 'best approach' then at least the principal standards of access, interconnection and quality should be implemented at their best in order to please (as much as possible) both business investors and individual consumers.

In terms of Quality of Service (QoS) – with reference to specific interactive applications such as video or voice-over (VOIP) – a typical argument against Network Neutrality laws is, according to Felten, that network providers technically need "to provide QoS

2 See Felten, Edward W. (July 6, 2006), Nuts and Bolts of Network Neutrality (online), Center for Information Technology Policy, Princeton University, p. 1. Available from: http://itpolicy.princeton.edu/pub/neutrality.pdf Accessed on December 28, 2007. - Felten's full argument: "One of the reasons the Network Neutrality debate is so murky is that relatively few people understand the mechanics of network discrimination. In reasoning about Net Neutrality it helps to understand the technical motivations for discrimination, the various kinds of discrimination and how they would actually be put into practice, and what countermeasures would then be available to users and regulators."

guarantees to certain kinds of traffics… and if Net Neutrality rules would hamper QoS by requiring all traffic to be treated the same, then Net Neutrality rules must be harmful" (Felten, Edward W. 6 July 2006, p.1). The same applies for VOIP-like applications such as Skype. Experience supports it that these traffics are often more vulnerable to delivery delays and congestion of transmission networks thus causing inconveniences to individual users and network providers. Consequently, when delays could be a result of equality taken to extreme, then what should a regulator stubborn to implement a legal framework that could harm services to both users and providers? Edward Felten takes the argument further and emphasizes that when analyzing Network Neutrality "it helps to understand the technical motivations for discrimination" (Felten, Edward W. 6 July 2006, p.1) and how excessive discrimination (more than the 'minimal discrimination' supported by the author) may be tackled by users and regulators. He distinguishes between *minimal discrimination*, that discriminates only when it cannot serve everybody simultaneously[3] and the more drastic and malicious *non-minimal discrimination,* when services packets are unjustifiably delayed even though it is not a necessity. Based on these technical assessments, one can design a policy that that "allows minimal discrimination but limits or bans non-minimal discrimination" as such a rule, if ever implemented, should treat "minimal and non-minimal delay discrimination differently."[4]

Going back to the ideology behind the technology of the Internet, Tim Wu argues that "the Network Neutrality principle, which the internet sometimes gets close to, is that a neutral

3 Felten states that "With minimal discrimination, if the network is not crowded, lots of low-priority packets can get through. Only when there is an unavoidable conflict with high-priority packets is a low-priority packet inconvenienced." Felten, Edward W. (July 6, 2006), Nuts and Bolts of Network Neutrality (online), Center for Information Technology Policy, Princeton University, p. 3. Available from: http://itpolicy.princeton.edu/pub/neutrality.pdf Accessed on December 28, 2007.

4 Felten notes that "minimal and non-minimal discrimination are supported by different arguments. Minimal discrimination sometimes may be an engineering necessity due to the finite speed of network links, but non-minimal discrimination is never technologically necessary—it makes service worse for low priority packets, but doesn't help high-priority packets." Felten, Edward W. (July 6, 2006), Nuts and Bolts of Network Neutrality (online), Center for Information Technology Policy, Princeton University, p. 3.

network should be expected to deliver the most to a nation and the world economically, by serving as an innovation platform, and socially, by facilitating the widest variety of interactions between people. The internet isn't perfect but it aspires for neutrality in its original design" (Wu, Tim. Network Neutrality FAQ webpage). Originally a supporter of Net Neutrality, Wu also found that "the Internet is not neutral in terms of its impact on applications having different requirements" (cited from in WIKIPEDIA) and he suggests a regulation "on Internet access networks that define Net Neutrality as equal treatment among similar applications, rather than neutral transmissions regardless of applications" (WIKIPEDIA, Network Neutrality, website). He suggests that operators should be allowed to "make reasonable tradeoffs between the requirements of different applications, while regulators carefully scrutinize network operator behavior where local networks interconnect" (Wu, Tim 2003, p.141)

What emanates from the above arguments of Wu and Felten is that Net Neutrality is mainly a pursuit that does not always have a technological back-up but this pursuit should be attained as much as possible through non-restrictive rules that allow for exceptions according to strictly establishes boundaries. By rules, it is meant protective policies and not laws. Wu himself does not support the idea of a law on Net Neutrality as, he says, laws are to punish misconduct. Indeed, laws have an ex-ante effect that assumes that illegalities have already been consumed. They can also limit the activities to such an extent that, in case of high-risk investments in infrastructures like NGN, they could ex-ante filter-out new market players that might have had otherwise invested in innovative services addressed to specific customers (e.g. businesses, banks, even governments) that, by nature, require adapted, possibly exclusive services. Competition and services would thus be hampered and in the end, the very victims would be the consumers.

This is one major reason for which designing Net Neutrality laws may be an extreme approach. Moreover, a law would not be able to erase the technical reality that is: pure Network Neutrality cannot occur, let alone be imposed law in an environment that progresses every second. Nevertheless, there are reasons to argue that regulation in some form cannot and should not be avoided. According to Wu, self-regulation would not be a good idea either. He states that "basic economic theory suggests that operators have a long-term interest coincident with the public: both should want a neutral platform that supports the emergence of the very best applications" (Wu, Tim. Network Neutrality FAQ, p. 143). Nonetheless, data collected by the author reveals that network operators tend to show less interest to their long-term interests and tend to favor short-term results by applying some form of discrimination when providing services and access to certain applications for their consumers.[5] In this context and learning from the on-going debates overseas, what would be the optimal policy approach for the European Commission?

5 Wu, Tim (2003). NETWORK NEUTRALITY, BROADBAND DISCRIMINATION (online). Available from: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=388863 . Accessed on January 11, 2008. - A 2002 survey of operator practices conducted by Wu "suggests a tendency to favor short-term results. In that year, evidence of a discrimination problem became clear from several sources, including consumer complaints about operators who ban classes of applications or equipment, like servers, Virtual Private Networks, or WiFi devices…"

Chapter 2. Consumer Net Neutrality "Rights" in EU Context

> *"What public policy options are available to mitigate the risk of deviations from Network Neutrality? What is the best course going* forward? (European Commission, December 2007) – Questions launched by the European Commission with the occasion of its December 2007 conference on "Network Neutrality: Implications for Europe"

Building on the elaborated exploration of the background, regulatory challenges and factual questions raised by the Net Neutrality debate, this chapter adapts the discussion to the present setting of the EU communications regulatory environment and its stakeholders: ISPs, content providers and consumers. There seems to be already a consensus that EU may not need to follow the US debate to a great extent as several of its existing directives could be "stretched" sufficiently in order to meet envisaged challenges. Is this a sign of exaggerated self-confidence or a means to avoid over-regulation at a time when pro-innovation and investment policies and plans are also a priority? Following an overview and assessment of existing regulatory provisions that may indirectly apply to cases of neutrality abuse against consumers, attention will be dedicated to analyzing the current status of consumers as subjects to current and future policy plans at EU level. Thereby, the transit will also be made towards the recent development of the consumer empowerment paradigm in electronic communications policy.

2.1. The EU "Neutrality" towards a Phantom called Neutrality

In late 2006 and 2007 when the issue of Network Neutrality and the possible repercussion of its abuse gained EU's attention , most parties characterized it as "a US-centric debate" (Orlowsky, 20 March 2007). UK politicians seconded by Ofcom and later on by the EU Commission were rightfully concerned about the risks of proposing prescriptive regulation "which had to be technical by nature, when no harm had been caused and the problem couldn't be described" (Orlowsky, 20 March 2007). UK was the first member state to undertake the issue in 2006 and host initial debates by involving representatives of the trade and telecom regulators as well as politicians and key industry members such as Google. Following this debate, the former UK trade minister Alan Michael assessed the question of pre-emptive technical legislation to enforce Net Neutrality in UK and Europe as "extreme... unattractive and impractical" and "an answer to problems we don't have, using a philosophy we don't share" (Orlowsky, 20 March 2007).

According to Douglas Scott, Policy Director of the UK Office for Communication (Ofcom), "neutrality issues were being pushed up the agenda by the emergence of time-critical applications (such as video), and the ability of equipment vendors to deliver a smarter network" (The Register, 20 March 2007). Contrary to the US legal environment and conventional view that all packets should be treated equally, the European telecommunications framework allows Internet Service Providers (ISP) to prioritize information packets depending on application type. This is part of EU's regulatory philosophy to encourage competition through limited market intervention of the NRAs. Translated to a case of abuse to the neutrality principle that would affect content providers and consumers such regulatory philosophy may however fail in addressing caused harm post-facto. At the same time, Scott added that neutrality was not an issue, "so long as customers could migrate to an alternative provider quickly and easily" (The Register, 20

March 2007). - That is also true and possible nonetheless, if relying on consumers' ability to chose, more effort should be placed by regulators jointly with ISPs on equipping them with effective policy tools and comprehensive information on all possibilities and risks attached. The Head of UK Telecoms Policy at the Department of Trade and Industry, Claire Hobson, supported Douglas Scott's view that so long as people knew what deal they were getting, and could switch easily, "Neutrality" wasn't an issue. (The Register, 20 March 2007). - But do consumers really know what they are dealing with when ISPs manage the traffic and content packages without transparency and even the content providers are taken by surprise? (see Comcast case, BellCanada or BBC iPlayer case above).

Although signaled in 2006, the customer-approach to Network Neutrality was shadowed by the focus on high-level legal discussions around risks to market competition that may occur by abuses of dominant position between major Telecom industry players, ISPs versus smaller cable operators whose rights of access and interconnection may be hampered should the principle be abused by the former. At the same time, the question on the regulatory - consumer dimension remains unchanged in the context of the proposal for the Telecom package review of the European Commission: *how can regulation protect consumers better?* (see EC Information Society and Media, "Proposals for Reform", homepage). Although not rejected as an idea, there is yet little declared regulatory initiative to propose mechanisms that would activate consumers from a passive to a pro-active mode. This is where the empowerment perspective on policy design should be present, at the higher EU regulatory discourse. Instead, very often in European discussions, the issue of Net Neutrality "has been dismissed as an <American problem>

caused by the abandonment of Local Loop Unbundling (LLU)" (Marsden C.T. September 2007. p. 410).

2.2. The Regulatory Environment

Drawing from the above and from further reading of EU stances on the issue, there seems to be already a consensus that Europe may not need to follow the US debate to a great extent as several of its existing directives could be "stretched" sufficiently in order to meet possible challenges. Moreover, a standing argument explaining the late emergence of the Net Neutrality debate in EU could be related to the fact that the existing regulatory frameworks have been somehow tackling issues related to network neutrality without actually calling it the name. Several applicable provisions from the Competition law and Telecommunications regulation could have indeed created the market environment where, at a first glance, Net Neutrality abuse is not so tempting for the ISPs in dominant position. Nonetheless, bad practices can be learned from overseas. Moreover, the problem with Net Neutrality breaches occurs when ISPs go beyond managing their networks and interfere with content, area which, until now, has been left outside of the above regulations that are set to govern infrastructure matters only. It is thus essential to briefly outline these provisions and note their (in)effectiveness in preventing or remedying Net Neutrality abuses that may occur from ISPs towards consumers.

The tech-neutral EU competition law and certain areas of the sector-specific Telecom Package (currently under review) contain several mechanisms, which some scholars (see

Chirico, Filomena et al. September 2007; Cave, Martin and Crocioni, Pietro. 2007) argue that EU and National Regulatory Agencies (NRAs) may employ in securing that Network Neutrality remains a status to be achieved by every network provider and operator. The regulatory framework for Electronic Communication Services and Electronic Communication Networks allow operators to offer different services to different customer groups, but subjected to the market significance tests, they may not tolerate that certain incumbents and dominantly positioned providers apply layering and discriminate customers in similar circumstances (EC. 3.1.2008, {COM(2007) 836 final} pp. 30-31). Authors like Martin Cave (2007) support the argument that EU does not even need more rules aimed at protecting Net Neutrality, it would be enough to adapt the already existing regulatory tools and make sure that applications to Net Neutrality are framed in a way that respects the technological requirements and realities of innovation.

To the question whether Net Neutrality should be specifically addressed in the updated version of the Telecom Package, there are practical and regulatory arguments to support a proposal that EU should not take an either-or approach to policing Net Neutrality by law under its jurisdiction but establish itself in a 'grey area', by choosing to address those technical aspects that can be realistically tackled normatively. What is clear-cut in the approach to Net Neutrality is that EU, alike US, wants its internet to be and remain 'open' in a non-discriminatory manner to both consumers' access as well as to providers wanting to introduce innovative services on the market. Preserving fair user access and fostering competition and investments in new networks and applications at the same time is a difficult task to perform for any regulator, especially for an intergovernmental actor like EU.

2.3. The European Consumer Face to Face with Net (non)Neutrality

There are several enlightening assessments of Net Neutrality that seem follow the consumer perspective from its traditional and still predominant posture of victim or at least passive end-point of the debate. These evaluations, although reiterating previously mentioned definitions, must be brought to the readers' attention in order to acknowledge the missing links in the current EU regulatory approaches to the subject.

When defined from a consumer economics perspective by Hahn and Wallsten (2006), the Net Neutrality principle assumes that "broadband service providers charge consumers only once for Internet access, don't favor one content provider over another, and don't charge content providers for sending information over broadband lines to end users." However, further alarms are raised by more recent economic assessments that warn on the emergence of "two-sided market" models imposing "two-sided fees" (see Economides and Tag. November 2007) Economides and Tag (November 2007) analyze the regulatory aspects of Net Neutrality from a complex two-fold perspective namely "in the context of a two-sided market model in which platforms (ISP) sell Internet access services to consumers and may set fees to content and applications providers" (p.1) What the authors introduce further is the possibility that ISP will go beyond charging end-users for Internet access and impose charges to content and application providers (e.g. Google You Tube, Skype) that are currently providing heir content online for free. With no clear rules for Net Neutrality, major ISP may and have already attempted in some cases to charge content for using their networks. Furthermore they can condition and even threaten with blocking

consumers' access to such content should their requests be ignored providers (see BBC iPlayer case 2008). This brings along a loss to the content provider as network access consumer, while imposing a double-loss situation for the end-consumer who has already paid a fee for accessing the network in order to retrieve content. Similarly, analyzing Net Neutrality from a consumer perspective, Frieden (2006) reflects the areas "where regulators' perspectives need by law to be focused" (Marsden C.T. September 2007. p. 410). He acknowledges the concern of Net Neutrality advocates that major ISPs poses the resources and the business centric motivation "to bifurcate the Internet into one medium increasingly prone to congestion and declining reliability and one offering superior performance and potential competitive advantages to users able and willing to pay, or affiliated with an ISP operating a major bitstream transmission network" (Frieden R. 2006). Furthermore, Frieden (2006) finds the business-side focus of the problem at the level of "network owners with vertical integration into content or alliances have enhanced incentives to require content owners (who may also be consumers) to pay a toll to use the higher speed networks that they offer to end-users."

Best capturing the consumer perspective in its complexity, Tim Wu analyses Net Neutrality debates as means to "address concerns raised by some specific behavior of the broadband service providers" as follows: "(a) blocking of some content providers; (b) preferential treatment of one provider over another and (c) transparency failures, whereby a broadband provider fails to notify its customers and content providers what service they offer in terms of estimated bandwidth, latency, etc." (Wu 2006, cited from Cheng, Subhajyoti and Guo, 2008, p. 3). In Europe, several regulatory proposals and practiced misconducts of broadband service providers (Telecoms and ISPs) have already signaled that challenges are to occur especially at the level (a) noted by Wu. The 2007 BBC

Internet Player case (see Murray-Watson, A. 12 August 2007), where access services providers British Telecom and Tiscali concerted to threatened with blocking consumers' access to BBC TV programs unless BBC pays a fee, reveals a sample of such preferential treatment applied to selected content providers. The policy challenge and danger emerging from such cases is "the possibility that one content or application provider pays the broadband service provider for preferential treatment of its packets, and the ISP acts effectively as a gatekeeper between the content providers and the customers it serves" Cheng, Subhajyoti and Guo, 2008, p. 3). In fact, similar challenges are not new for the EU regulatory environment as several signals have been launched by large cable operators since 2006. Deutsche Telecom, one of the frontrunners of NGN deployment in Europe, repeatedly applied for and demanded that the Commission grants the company with a so called 'regulatory holiday" in order to secure protection of its high-risk investment from market competitors (see EUbusiness, 2006). The Commission rejected this proposal but soon after both Deutsche Telecom and Telecom Italia began lobbying the EC to allow charging of Google and other large Internet applications for carrying their content to end-consumers (see OpenRightsGroup 2008, Orgwiki page on Net Neutrality).

2.4. Regulatory Grey-zones For EU Consumers

At the level of its review of the Telecom Package, the European Commission looked into possible ways to tackle Net Neutrality, however rather swiftly as critics may argue. It followed what Marsden (September 2007, p. 410) called "a more sophisticated approach" by planning to master possible misbehavior through interoperability, interconnection principles and minimal service quality level of transmission. Point 6.4. of the EC review

document is addresses "'Net neutrality': Ensuring that regulators can impose minimum quality of service requirements" (EC 28 June 2006, p. 26-27). Stressing how the EU competition regulation and the SMP principle are able to tackle the issue in its major aspects, the document states that "a competitive market means that if one supplier seeks to restrict user rights, another can enter the market with a more 'open' offer" (EC 28 June 2006. p. 26). Furthermore the document restates that "In Europe the regulatory framework allows operators to offer different services to different customer groups, but does not allow those who are **in a dominant position** to *discriminate* between customers in similar circumstances." At the moment the existing provisions equip NRAs with the power to impose obligations on operators with significant market power in order to safeguard interconnection and prevent these from undertaking "any blocking of information society services, or degradation in the quality of transmission of electronic communication services for third parties" (EC 28 June 2006. p. 27). What about beyond-mainstream situations when discrimination and access conditioning may be imposed by ISPs who are not significant market players? It can even be further argued that while the well-functioning competition regulation may be successful in keeping an eye on laser market players, its positive effects have allowed smaller ISPs to enter the market and manage network portions where packet blockage, if it occurs, it does so by passing unnoticed. While it would have the exact same restrictive effects on consumers, this question remains unaddressed by regulators but might represent a future trend that pro-Net Neutrality advocates could undertake in Europe. The EC review also acknowledges the risk that "in some situations, the quality of service could degrade to unacceptably low levels" and as a solution it proposes "to give NRAs the power to set minimum quality levels for network transmission services in an NGN environment based on technical standards identified at EU level" " (EC 28 June 2006. p. 27). It is unclear however how this approach would

ensure QoS while still safeguarding the non-discriminatory approach to similar applications transferred in same conditions and in non-SMP situations.

Another step towards the European Commission's goal to enhance consumer protection through the newly proposed e-communications directive review is by enhanced personal data privacy and security mechanisms (see EC, 8 June 2006). This would impose more obligations for ISPs to publish service information in publicly accessible areas. Furthermore, it would drive the establishment of new European bodies[6] in charge to overview the application of these requirements. It is not certain however, whether more such Brussels based boards and bodies, although justified as intention, would bring the expected remedies. The current procedural problems will persist if their role remains dependant on consumer complaints and post-facto "remedies" rather than disseminating tools for pre-emptive Net citizens' awareness. These two actions may as well be simultaneously coordinated and a step towards generalizing such practices should be taken in the near future.

In real terms, it must be noted there is very little room from pro-active legal maneuver by consumers themselves within this debate. In fact, none of the competition rules or the sector specific provisions provides any directly enforceable rights to consumers. They govern relations between ISPs at wholesale level and to a limited extent, between ISPs and content providers at retail level. It is also unfortunate that the proposed review of the directive on Universal Service and Users' Rights relating to e-communications services (see European Parliament COM(2007)698. 13 November 2007) does not apply to broadband Internet services, being restricted to narrowband communications only.

[6] in particular the creation of a Chief Network Security Officer within the European Telecom Market Authority (EC. 16 June 2006)

Moreover, the Data Protection directive, which empowers users with specific data protection and privacy rights in the Internet environment as well as direct complaint mechanisms, cannot be of use in any Net Neutrality abuse situations. Complaints filed to the data protection authorities must include detailed documentation of users' rights abuses and obtaining such data in the context of Net Neutrality would be impossible by the consumer alone. It is noteworthy that this directive does not oblige the ISPs to support such requests for proofs on their end. All these cumulated, the regulatory gaps faced by consumers in this context lead to direct infringements of the citizens' fundamental right to Freedom of Expression and Information (art 11 of EP 2000/C364/01) from the Charter of Fundamental Rights of the European Union. Abuses of the neutrality principle as affecting user content and access to content has a double infringing effect on freedom of information as well as freedom of expression, should transmission of data be blocked, damaged or discriminated unlawfully by ISPs.

As already noted in previous chapters, several EU policy areas of utmost priority are aimed at enhancing the incentives for faster deployment of NGN and promoting pan-European adoption of innovative complex applications such as IPv6, the upgraded version of InternetProtocol version 5 (cf. EC webpage on "IPv6: Enabling the Information Society"). Technologists now hurry to signal that the emerging IPv6 is "something worth watching as it is easier to set so that it discriminates packets" (OpenRightsGroup 2008, Orgwiki page on Net Neutrality) in the transmission of content than its older version 5. Hereby once more, it is worth restating the danger of future policy clashes in the detriment of consumers, be they content providers or end-users. If the EC itself is in danger of promoting conflicting policies while not being able to estimate the risks, how can the very-end consumer be elevated to a level of literacy that could enhance his/her awareness?

Chapter 3. A Consumer Empowerment Approach to Net nEUtrality

Having identified the regulatory gaps as well as possible opportunities for the design of a Net Neutrality policy based on a consumer empowerment approach, this chapter will follow-up by developing the proposed alternative. It will do so by firstly introducing two recent initiatives of enhancing consumer empowerment at an overall dimension in the telecommunications market. Examples will be drawn from the OECD stance at international level and from the new approach of the Hungarian National Communications Authority (NHH) at national level. In the latter case, a face-to-face semi-structured expert interview was conducted with the Vice-President of the NHH Dr. Krisztina Rozgony. The interview was followed-up on by written questionnaire filled in by Dr. Rozgonyi, the answers to which are available in the enclosed Appendix. Building on this background, the second part of the chapter will propose a set of policy recommendations tailored to the debated context of Net Neutrality and aimed at enhancing consumer empowerment and aware "netizenship" in the European Union member states.

3.1. Consumer Empowerment Initiatives in the European Regulatory "Literature" and Practice

Scholarly literature on consumer empowerment in the context of threats to Net Neutrality is yet absent, thus the exclusion of this section from the literature review. However there are several sources where practical background information and points of reference can be drawn from in order to further build the policy argument of this thesis. Firstly, the "switchover" of roles from traditional consumers as content receivers (downloaders) to consumers as more complex users also engaged in content developing and distribution (uploaders) must be acknowledged. This is the reality of nowadays' Web 2.0 context of online networking, interactive content sharing and virtual community building. The Web 2.0 citizens or the "netizens" are consumers with upgraded technological literacy. According to Marsden (2007) these "netizens" will soon stand up and require more effective policies and mechanisms that enable them to individually counteract possible broadband access inconveniences. This is where the call for an empowerment through policy paradigm emerges from. Furthermore, it is important that consumers who are still lagging behind be activated, informed and equipped to advance to a higher level of awareness and initiative. Secondly, emerging attempts to define consumer empowerment and frame the tools for its accomplishment in the Internet environment of the future have been undertaken at the level of several OECD sessions facilitated by the Committees for Information, Computer and Communications Policy (ICCP) and Consumer Policy (CCP).

In 2006, the EU Commissioner for Information Society and Media Viviane Reding issued a statement that defined the main features of the new consumer in the emerging Web 2.0 shaped Internet environment:

> "We are now living through a new disruptive phase of the Information Society. Some people call it Web2.0 or social networking. I can list some of the components: blogs, podcasts, wikis, social networking websites, search engines, auction websites, games, VoIP and peer-to-peer services. What is new about these uses of the Internet is that they exploit the Internet's connectivity to support people to network and to create content. This is a new paradigm in which users are co-producers of services."(Reding V., Speech/06/773.2006)

In this context, the European Commission aims at enabling the European user generated content industry to foster in an open access Internet and it has done some initial steps in this direction. In an attempt to focus more on the end-user benefits, the EC issued a proposal to amend Directive 2002/22/EC on Universal Service and Users' Rights (see EC, 14 November 2007). If adopted, the proposal would fill several important gaps in the old regulatory provisions, of which most significant for the end-user are:

> "*Article 21* … NRAs are given powers to require from operators better tariff transparency (paragraph 4) as well as clear information on possible restrictions on access to all types of content and applications (paragraph 5). The possibility for the Commission to take implementing measures is intended to ensure, where appropriate, a minimum level of harmonization in this area (paragraph 6).
>
> *Article 20(5):* provides for a transparency mechanism concerning possible restrictions on end-users' choice of lawful content and applications in order to empower end-users to make an informed choice of services, thus allowing them to reap the full benefits of technological developments in the Information Society.
>
> *Article 22:* grants to the national regulatory authorities the power to prevent degradation of quality of service by setting minimum quality levels for network

> transmission services for end-users. The possibility for the Commission to take implementing measures is intended to ensure, where appropriate, a minimum level of harmonization in this area (paragraph 3)" (EC, 14 November 2007, cited from Marsden, C.T., 2007, p. 426)

At this stage, it would have been expected that more concrete specifications could have been proposed by this directive in the area of consumer empowerment. Without the intention of conducting text analysis, the mere statement on consumer empowerment does not bring about any new approach beyond the general public interest support that the EC brings forward in any discourse. Nonetheless, the above outlined article reforms take a step forward and provide a conceptual thread that the present paper can further build its policy approach on. The fact that NRAs will be granted more local power to safeguard and impose remedies under their jurisdiction on unlawful ISP behavior is already a valuable feature that will enable the implementation of the proposed policy framework at the level which is closest to the consumer. In this context, the need for a stronger policy statement and guide of action at the level of consumers is also noted by Christopher Marsden (2007). While assessing the EU regulatory framework and its weaknesses in addressing content-access discrimination, he acknowledges that "it is a very untypical, highly sophisticated and motivated consumer who currently is able to analyze the different bandwidth and throttling options and select to which provider to switch at the end of their contract" (Marsden, C.T., 2007, p. 419).

Exploring other international environments, general discussions on the relevance of consumer empowerment to the development of electronic communications were identified within the information and communications forums of the OECD. Such dialogues have

been undergoing at official ministerial levels of the organization since 2006 and have resulted in a recently published background report on "Enhancing Competition in Telecommunications: Protecting and Empowering Consumers" (OECD 2008). The document serves as important source of written reference revealing future regulatory intentions to adopt consumer-activating policies in the international communications environment. There are yet no identifiable signs of similar EU initiatives or attempts to undertake the issue of consumer empowerment as a stated paradigm shift in the Commission's approach to public interest protection in e-communications. However, as this document is very recent, it is still too early to draw any long-term predictions on the EU reactions at this point.

The aim of the OECD report is to switch the regulatory focus from adjusting the supply side in the spirit of product and service competition for the public benefit toward assessing the reaction and receptiveness of the demand side to the effects of the former. Specifically, the OECD report was set out to examine "the available evidence of actual consumer behavior and analyze implications for policy and regulation" (OECD, June 2008, p.4) Most importantly for the aspect of consumer empowering ingredients, the document addresses, beyond common issues of consumer satisfaction towards their providers, questions of awareness of and easiness to switch providers, fear of switching and (non)confidence in information issued by providers, information asymmetry and systematic bias in service selection and decision-making by following the deceiving "hyperbolic discount" acquiring strategy (see OECD, June 2008, p.4-5). The relevance of the last two issues is crucial for the consumer empowerment paradigm as it reveals the fundamental role played by accessible and acquirable information. Information asymmetry is seen as a result of insufficient transparency on behalf of providers to publish and explain

all service details in a general consumer language but is also a result of lacking pro-active information assessment capacity of consumers themselves.

In preparation of the OECD report, Ofcom conducted investigations at the level of consumer behavior, literacy and awareness of choices in mobile telecommunications and Internet based communications, thus initiating the collection of important data in these areas. As both mobile telephony and Internet services are relatively new markets relying on continuing technological innovation, close parallels can be drawn between the two fields in terms of regulatory initiatives for raising consumer awareness and enhancing empowerment by means of tailored policy approaches. Such parallels are fostered especially by the constantly shifting technological environments of these markets causing successive regulatory challenges no longer possible to address effectively by means of legal amendments. Technology neutral regulation has become the new keyword at EU level while everyday changes and challenges need focused policy mechanisms designed by means of active multiple-stakeholders' active involvement. This has been the case in the electronic communications market and its Telecom Package provisions currently under review. Time-wise, the mobile phone communications market of services and products has been a frontrunner in this perspective as attempts to design empowering policies, choice tools and mechanisms are already in place in some European countries.

One such initiative was undertaken in Hungary in 2005. The Hungarian National Telecommunications Authority (NHH) launched a mechanism designed to compare all available mobile telephony and Internet services in the country. NHH established an interactive on-line database called TANTUSZ designed for consumers to compare and assess what types of services, contract packages and products better suit their needs. This

was the first step in preparation of a more advanced approach to consumer empowerment focused policy mechanisms. Although established and running since three years ago, this electronic database of customer needs and service/product assessment has enjoyed very few "hits" from Hungarian mobile telephony and Internet users. During an expert interview conducted in July 2008, Dr. Krisztina Rozgonyi, Director of the NHH Board, mentioned that until today, this database has proven rather ineffective or at least the NHH's strategy of promoting this tool has been insufficient. The lesson drawn was, according to Dr. Rozgonyi, that an aggressive national PR campaign should have been undertaken much in advance. Merely providing a tool is not a guarantee for the achievement of any policy aims. The reality is that often, consumers' level of awareness is so low that many are barely conscious of own realistic necessities. It is thus unrealistic to expect that many consumers would be able to knowledgeably select the proper products and services as well as feel confident enough so as to cease contractual agreements should the provider fail to meet their expectations. Moreover, in this context it is unrealistic to assume that one would be equipped to assess the benefits and obligations that different types of service contracts entail, especially if service providers do not always expose complex information in a transparent way as it is often the case.

With the aim to encourage "the development to a conscious consumer" (Rozgonyi K. questionnaire July 2008) this year the NHH initiated a new action plan set out to enable more aware, better informed and more confident consumers "with full faith in their service providers and the authorities." The Authority's next 3-year telecommunications strategy will be based on the ideology of consumer and user empowerment, a welcomed attitude switch from the previously practiced market-focused regulatory approach. As Dr. Krisztina Rozgonyi stated during the interview "the consumer empowerment ideology

should overtake the old-fashioned consumer-protectionist approach" (Rozgony, K. 15 July 2008) while facilitating complaints should become secondary to facilitating preventive consumer aptitudes. The strategy will promote a "decent opening to the consumer" both by authorities and service providers and it will move "towards more understandable, consumer-friendly information … and towards consumer relationship management – besides keeping the 'raw material' information (laws, decisions)" (Rozgony, K. 15 July 2008). The NHH consumer empowerment-based regulatory strategy is currently under the review of the Agency's Board and is expected to be voted on and approved in September 2008.

Drawing on these initiatives and on the explored regulatory challenges at EU level, the following section sets out to employ the concept and features of a "consumer empowerment" approach to a proposed policy strategy to address possible consumer disputes caused by abuses of Net Neutrality rules.

3.2. Net nEUtrality by Policy Design: Proposal for a Consumer Empowerment Approach

While this paper agrees that Net Neutrality in a pure form cannot and should not be imposed by EU regulation, the remaining question emerging from the above depictions is thus, how can authorities and policy makers handle the possible two-leveled threat where the end-consumer – the public – may stand as a double loser? The focus here is indeed on the end-consumer, the European public and the fundamental right of freedom of access to

information. The problem is that often, by lacking awareness, information to rely on and literacy to master available regulatory mechanisms, consumers may not always be able to identify where the problem of his/her access shortages originates from. The problem restated is that while public interest regulatory tools and market competition mechanisms may be available, there is a perpetuating gap between these tools and the end-consumer's prospects to enact them due to lack of skills, awareness and confidence to employ the opportunities. This issue is very relevant and at the same time intriguing in EU context where the core of the telecommunications regulatory design is and has been public interest oriented.

3.2.1. Relevance and Outline of the Proposed Policy Approach

The proposed line of action builds on the common-sense idea that information is the core ingredient for empowerment. As also emphasized by the OECD report (2008), consumers' access to equitable information and elaborate description of available services and related contractual conditions should be the very initial point of departure for any potential consumer-provider relationship. Such remarks are far from being breaking-news in the field. On the contrary, they should precede any further regulatory action and if implemented with proper effort as "ex-ante" or preventive awareness raising tools, they should suffice to prevent a major share of any further misunderstandings and complaints that might otherwise emerge. Yet, this mechanism is not as easy to implement as it may seem at a first glance. For success to be achieved, such preventive policy guidelines would require a very complex and active tri-party cooperation engagement from the behalf of multiple stakeholders: authorities (NRAs), ISPs and last but not least consumers.

The guiding mindset should build on the acknowledgement that ordinary consumer protection is no longer an effective paradigm as such. "Protectionist" mechanisms are no longer adequate to address their subjects in an innovation driven Web 2.0 environment where they are increasingly motivated to upgrade from passive consumers as receivers to pro-active consumers as potential content creators and providers. The mere adoption of such new roles already entails a self-motivated mindset towards pro-active learning stance, increased awareness and technological literacy at the consumers' end. The proposed set of policy recommendations, aimed at enhancing the level of consumer empowerment, builds upon these realities. It subsequently frames concrete plans of action for a concerted approach to addressing possible unlawful actions against Net Neutrality principle in the Internet services environment.

3.2.2. A Policy Framework for Consumer Empowerment

A concerted approach to consumer empowerment is the key feature of to the proposed policy framework. In order to secure the desired effects on the consumer end, this entails an active involvement from the following three stakeholder categories: ISPs, NRAs and consumers. In promoting and driving the policy implementations at first stage, NRAs would exercise the highest enforcement power over ISPs and disseminating responsibility among consumers. The timing for such an exercise is perfect as the enforcing role of NRAs in terms of setting national service quality standards and similar consumer favorable actions has been strengthened by the European Commission in the course of the Telecommunications Package review process.

A set of rules and guidelines will be further outlined as applying to each of the three stakeholders within the framework as follows.

A. Rules addressing ISPs and aimed at enhancing transparency of information on ISP practices towards consumers and content providers. – These rules are set as mandatory for both SMP (significant market power) and non-SMP providers and apply to each contracted service that ISPs may offer to potential customers.

1. **Obligation to publish and share full information on current and future network management plans and techniques** (network management software, applications), including detailed practices and plans to treat time and transfer sensitive applications such as VOIP, multimedia streaming. Same practices should be mentioned in the case of all other application types such as email services, P2P file sharing. Indications on categories of possible discriminations (if the case) and circumstance when they are expected to occur should be made straightforward for each application. Within this category, further specifications should be included:
    i. Any specific plans to charge extra access fees to particular content providers for access to end-users
    ii. Any plans to impose "walled gardens" on their customers, including detailed features and conditions of such practices as well as opportunities for opting-in and opting-out
    iii. Any specific plans and justification of circumstances when the following actions need to be lawfully undertaken for purposes of

avoiding network congestion and securing QoS: lawful content throttling, packet sniffing, transfer delays and prioritization

iv. Specific situations when content access by the ISP is required and possibilities for prior notification to consumers should be included

v. General opt-in and opt-out possibilities and conditions for each of the above cases should be made clear

2. **Obligation to provide transparent price information** for each package of services and features as mentioned above. These should be made available in an easily comparable standard format. Any possible extra fees for opt-in, opt-out, service up-grades and contract cancellations should be included.

3. **Detailed specifications on interconnection relationships** and hierarchies of dependence between the contractor ISP and its peer ISPs that may provide any wholesale infrastructure services to the ISP in cause.

4. **Web 2.0 NetCitizen specifications** – Specific details should be provided regarding practices of treating consumer generated applications and content (blogs, photo and multimedia uploads and sharing, etc) as well as sharing of such content and applications by means of P2P, file uploading, etc. Minimum – maximum size and network capacity specifications/standards should be made clear for each case as well as any additional costs (if the case). Copyright clauses for commercial file sharing should also be made specific.

5. **Electronic Contract for subscribers –** This is a central requirement for the contractual enforcement of all the above service packages and related conditions and costs. Following choice of preferred services, an electronic contract should be made available to the customer. The contract should have a special Net Neutrality statement page dedicated to outlining all possible breaches of the principle that may be justified as required and thus lawful by the ISP. The consumer must be theoretically obliged to click through all specifications and decide whether to agree to these or not (a similar procedure to common software installation practices). Although, the customers' actual reading of the clauses cannot be controlled, it is a step forward to providing detailed information on any possible service inconveniences. By signing the contract, both the ISP and the consumer engage in a legal act, which can be taken forward at anytime should any of the parties breach a clause. Furthermore, it is recommended that the contract includes a section on punitive damages (with a standard fining fee) and customer complaint mechanisms. This clause included, consumers would gain a material incentive to pay attention to purchased services and related contractual conditions. In situations when a Net Neutrality abuse complaint is in line, ISPs must grant their customers the requested data to help them clarify or support their complaint with facts.

   In addition, specifications on contract termination or switching conditions and fees must be included. Online and offline contract related FAQ lists and definitions of all technical terms employed should be made available by the ISPs.

B. Rules addressing the National Regulatory Agencies and the European Commission

- It should be noted that the major responsibility in publishing, coordinating and enforcing the implementation of these policy provisions would pertain to the NRAs, the Commission's role would be crucial only at the first stage of adopting and communicating the framework at EU level. NRAs would also be in charge with gathering and addressing unsettled cases of consumer complaints.

1. **The EC and NRAs should prepare the introduction of the policy framework** by aggressive public awareness raising and PR campaigns as well as informative sessions open to the public.

2. **The NRAs with EC support should prepare a comprehensive list of all relevant EU provisions (sector specific, competition, user rights) and communications** that may apply to situations of unlawful, mal-intended content access and discrimination exercised by any network operators and service providers. NRAs would then have the responsibility of directly distributing this list and relevant background clarifications to all ISPs acting under their jurisdiction as well as making it available in an easily accessible way to content providers and consumers.

3. **NRAs with the coordination of the EC will design a standardized EU consumer satisfaction survey** that would address customer experiences with access to ISP services, treatment of content and applications, feedback on ISP behavior and responsiveness, fulfillment of contractual provisions, accuracy of ISP provided service specifications, etc. Overall, the survey should refer to all items

mentioned at point A. as ISP obligations, and it should be conducted on annual basis under the coordination of the National Consumer Empowerment Boards (expanded on at point C. below)

4. **NRAs should establish comprehensive online service-comparison databases,** including all the service packages (features, prices and conditions) offered by ISPs operating under their jurisdiction.

C. Consumer provisions

- It should be noted that consumers have the theoretical opportunity to apply and benefit from all provisions mentioned at point A. as well as to actively participate in the annual surveys. The "empowerment" approach consists in providing consumers with very detailed and easily accessible information. Nonetheless, no direct enforcement of "duty-to-learn" is envisaged as reasonable.

1. **All consumers seeking to sign a contract with ISPs have the obligation to run through the electronic contract procedure,** which displays all the net management specifications of the respective ISP and selected service package. The Consumers have the obligation to opt-in and out from particular clauses and services, thus leading to a personalized contract based on the consumer's needs and preferences. The success of this procedure will be at its best if consumers are granted access to all the details and options mentioned at point A.

2. **The Creation of National Consumer Empowerment Boards.** These bodies would function based on the self-regulatory approach. The process of initial construction of the bodies, elections and formulation of statuses and codes of practice would be facilitated by the NRAs. The Boards may be comprised of representatives of local and national consumer rights NGOs, lawyers specialized on the areas of consumer protection and consumer rights, one NRA representative. The main responsibilities of the Body would be:
    i. Acting as a consumer consultancy and complaint commission – however with limited case decision-making power as this would be granted to NRAs should the matters be impossible to settle between the contracted parties (consumer and ISP)
    ii. Acting as central information and dissemination headquarters, in charge with organizing periodic public consumer awareness and empowerment campaigns.
    iii. Conducting constant monitoring of the implementation of the present policy framework at the level of ISPs and notifying NRAs as soon as a provision is not followed or misused.
    iv. Conducting the annual consumer satisfaction surveys and centralizing the database of results.
    v. Establishing coordination of practices and constant contact with the Consumer Empowerment Boards from other Member states.

All these multi-stakeholder policy recommendations as outlined above draw the general framework for the proposed consumer empowerment approach to a Net Neutrality safeguarding policy. It is expected that more provisions and mechanisms could be

included based on a more detailed needs assessment. The present proposal is thus designed with the awareness of yet unidentified limitations or gaps. One acknowledged limitation, deliberately not considered within the present framework, concerns the detailed reference to the different hierarchies of ISPs within the Internet network of networks. This is an important aspect to not as not always the ISP which is contracted by the end-user is responsible for the entire network management procedure. In some cases small ISPs depend on the network behaviors of larger and hierarchically higher operators that are not tied by any contractual agreement to the end-user. Instances when such operators may apply Network Neutrality abuses independently from the end-user delivery ISPs are not accounted in the present framework but should be considered for further polishing of the policy proposal. In such instances however, as this is a clear case of anti competitive behavior, EC competition law may usually apply between the two ISPs.

CONCLUDING REMARKS

Positioned within the general current context of increasing discussions around the Network Neutrality issue in the EU regulatory environment, the aim of this thesis was to focus on a previously under-explored area of policy and regulatory attention to the principle. Namely, the aim of the study was to concentrate on a deeper theoretical and policy analysis of the consumer perspective on Net Neutrality, especially as related to possible effects that abuses of the principle may impose on these stakeholders. Acknowledging that Net Neutrality is rather an ideal which may be translated into much more restrictive terms within today's Internet environment, the investigation sought to identify whether any existing EU regulatory provisions may apply in order to safeguard the feasible neutrality features as applied to consumers' interests specifically. Having concluded that no direct consumer applicable regulatory tools are in use up to this moment in EU, the paper set out to propose a new policy approach to empowering the consumer while also securing a reasonable level of Net Neutrality "protection." It was argued that by introducing a novel "consumer empowerment" approach to policy design, the lack of consumer enforceable legislation could be partially compensated. The gap would be filled by the introduction of several consumer centered policy mechanisms that would involve all major stakeholders in the Net Neutrality debate and that would function at the closest level possible to the consumer.

APPENDIX I

Questionnaire addressed to Dr. Krisztina Rozgonyi, Vice-President of the Board, National Communications Authority, Hungary.

By Laura Ranca

Note:
Dear Dr. Krisztina Rozgonyi,

The Hungarian National Communications Authority's action plan for the next 3 years has been designed to follow a new approach to telecommunications services and their market environment, namely a 'consumer empowerment' focus. Based on your involvement in framing this strategy, please provide your feedback to the following set of questions:

NO.	QUESTION	RESPONSE (please insert in the rows below)
1.	**Please name two core characteristics of "consumer empowerment" as per NHH's definition of the concept.**	Our most important priorities are: • **Encouraging the development to a conscious consumer** (elemental priority – 50%) The aim of NHH is to reduce the number of discontent consumers and thus the need to allocate resources for their management through making the consumers more conscious. Therefore, making the consumers more conscious should be the priority out of the 3 goals of NHH, both with respect to the strategic goals, the actions and also with respect o the allocation of resources. • **Generating transparency in the market conditions** (secondary priority – 30%) The transparent supply of the services and suppliers is one of the basis of the informed and conscious decision of the consumers (unfortunately, the suppliers are not interested in facilitating the comparison and transparency). This is the area where the market is unable to regulate itself, it needs help from the authority. The authority should encourage transparency through encouragement and own means. • **Handling of the dissatisfied consumer's complaint** (Tertiary priority: 20 %) Complaint handling is necessary and not negligible work. This work can measure the market efficiency and the consciousness of the consumers. Dealing with a lot of complaints is 'triply' bad for the NHH: 1. it reveals that there are some anomalies and ignorance in the market. 2. Admitting, examining and answering complaints consumes and commits a lot of resources. 3. The complaint-handling can hardly enhance consumer satisfaction, if at all since the NHH is not able to compensate the putative or actual disadvantage of the consumer.
	Does the 'consumer empowerment' approach	2, **No**. Our resources were :

	follow any general regulatory and policy directions issued by the European Commission to the National Regulatory Authorities?	• Interviews (international relationships, board) • Disclosure documents of the ERG Customer Empowerment Conference • Ofcom studies (Capturing the Consumer Interest 2006. Febr/2008. March) • Analysis of the websites of foreign authorities (British, Swedish, German) • Studying the foreign practice of the HFJK
	a) <u>If yes to 2</u>. - Are these directions proposed or imposed?	
	b) <u>If NO to 2.</u> - What was the source of this initiative?	
3.	**Why 'empowerment' and not 'protection'? What is the ideology behind?**	3. There has been a great deal of work done to create a liberalized and evolving electronic communications market to enhance consumers' welfare in terms of price, choice, quality, diversity, affordability and safety. Providing consumers with choice is only the first step towards empowerment. All of the government authorities associated with the consumer sector are striving to make individual consumers better-informed and more confident while at the same time enabling them to be as comfortable in their decision-making as if they were regular people with full faith in their service providers and the authorities.
	tion	
4.	**Do you believe that consumer empowerment is more likely to be achieved in telecommunications services than in other areas of consumption (e.g. food**	4. Yes I do. In my opinion web base services like TANTUSZ are very useful tools, and these tools are more efficient in telecommunications services than in other areas of consumption (e.g. food products..)

	products, health care services)	
5.	**Are you aware of any other Telecommunications NRAs adopting consumer empowerment oriented policies and regulation in other countries, whether Europe and/or elsewhere?**	**<u>The characteristics of the basic consumer problems are the same in the different markets</u>** The consumer complaints experienced by NHH are similar to those experienced by the foreign authorities (spam, slamming, loyalty declarations, bundles, transparency). Given that the representatives of the Hungarian telecommunication sector are affiliates of multinational corporations, thus the NHH has to battle with anomalies recently evolving in the international telecommunications market, imported by the affiliates to Hungary. That is why it is important that NHH should follow and adopt the foreign practice. **<u>The international trend is unambiguous: 'decent' opening to the consumer</u>** The analysis of the websites shows that all authorities have moved towards more understandable, consumer-friendly information publicized in a colloquial language and towards consumer relationship management - besides keeping the 'raw material' information (laws, decisions).
	<u>If yes to 5.:</u> **a) Please name one or two such country cases.**	**<u>With respect to consumer complaints, all countries try to find a „tender balance"</u>** Certainly, the authority is still an authority and note the client service department of a company. That is the examined authorities rigorously aim for that they should deal only with the relevant complaints (other complaints being re-directed to other authorities). The Ofcom applies „problem-solving process" for this purpose, whereas the German authority uses forms for the filing of the different types of complaints.
	<u>If YES to 5.:</u> **b) Did NHH draw any lessons from such available regulatory and policy practices implemented elsewhere? Please name the main lesson drawn, if any.**	We sent a questionnaire to several countries like Croatia, Romania, Portugal, Netherlands, Norway, Ireland, England, Sweden etc. to get to know the practices of these countries and we try to implement the most efficient models.

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Blogs:

Lauren Weinstein's Blog: http://www.vortex.com/lauren (a blog about Internet technologies and related regulatory challenges, freedom of access to information, privacy; founded by Lauren Weinstein – quoted expert on issues of Internet, privacy, and other issues relating to technology and society)

Mailing lists/ discussion forums (that the author has been a member of and participated in since December 2007):

Network Neutrality Squad (NNSquad) mailing list and forum. Accessed from: http://www.nnsquad.org/ (a project of PFIR People for Internet Responsibility: http://www.pfir.org/ , managed by Lauren Weinstein)

The archive of NNSquad discussions (online) Accessed from: http://www.nnsquad.org/archives/nnsquad/maillist.html

The Privacy Forum, Accessed from: http://www.vortex.com/privacy

Direct Expert Interviews:

Semi-structured direct interview with Rozgonyi K. (Vice-President of Regulatory Board, Hungarian National Communications Authority (NHH) - 15 July 2008

Written questionnaire answers with Rozgonyi K. (Vice-President of Regulatory Board, Hungarian National Communications Authority (NHH) - 28 July 2008. document enclosed (Appendix 1)