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BEYOND NET NEUTRALITY: THE TURKISH LEGAL PROGRESS

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ABSTRACT

Net neutrality, the concept that all data forms should be treated in the same impartial way by network providers and governments alike, is currently virtually inexistent in Turkey. Although all information regions proclaim the necessity of implementing net neutrality, few have actually regulated this concept in their networks and communications policies. İn the few countries and regions that have significantly implemented net neutrality moreover, debates and summits on the specifics of the regulations have stalled the advancement of this crucial phenomenon. Proponents of net neutrality have praised it as the driver of innovations by allowing non-discriminatory Darwinian evolution of technology in the end-points of computer networks. Opponents of neutrality have cited that it impedes sustainable competition among network and services providers, thereby thwarting the rate of progress of telecommunications and technology at large. The contemporary computer networking world is in division whether neutrality-pro guidelines such as open access to the internet would fuel of inhibit technology growth. Fronts such as the US, which have from 2004 embraced net neutrality are on the verge of overturning their approach should the FCC take the direction that its new Chairman captains. The EU moreover is still testing the BEREC guidelines on neutrality and is waiting to pass the ePrivacy Directive on data protection. However, even with these apparent positive strides towards freedom and safety of the Internet, Turkey still retrogrades towards internet censorship and surveillance, which are counter to the principles of net neutrality. Thereby, to foster net neutrality in such a state, the approach employed must not only emulate successful installments of neutrality regulations in the EU and the US, but also address shortcomings of the political instruments inherent in the country.

Keywords: Net Neutrality, Technology Law, IT Regulation, Turkey, Federal Communications Commission (FCC)**.**

LIST OF ABBREVIATIONS

BEREC - Body of European Regulators for Electronic Communications

DSL – Digital Subscriber Line

DTV – Digital Television

EC – European Commission

ECL - Electronic Communications Law

EP – European Parliament

ETID - E-Commerce Business Association

EU - European Union

FCC – Federal Communications Commission

FTP – File Transfer Protocol

HTTP – Hypertext Transfer Protocol

IA – Internet Act

ICT – Information Communication Technology

ICTA - The Information and Communication Technologies Authority

IP – Internet Protocol

ISIS- Islamic State in Iraq and Syria

ISP - Internet Service Provider

LGBTI - Lesbian, Gay, Bisexual, Transgender, and Intersex

NRA – National Regulating Authority

NRK – Norway Broadcasting Corporation (in Norwegian)

OTT – Over the Top

P2P - Peer-to-Peer

PTSN – Public Telephone Switched Network

QoS – Quality of Service

SBC – Session Border Controller

SMP - Significant Market Power

US - United States

USTA – United States Telecommunication Association

VoIP – Voice over Internet Protocol

VPN – Virtual Private Network

INTRODUCTION

Net Neutrality is a fairly new term in the landscape of internet networking. It refers to the principle of treating all data streams on the internet as equal and not thereby charging some data at a higher price than others[1]. The phenomena of network restrictions on sites with larger internet traffic by governments and Internet Service Providers (ISPs) has in the past few years elicited charges of net bias and data discrimination from users all over that world. For example, in the US, companies such as Comcast, Verizon and AT&T have faced accusation of throttling their bandwidth to intentionally block out some sites for various purposes[2]. Comcast for instance up to the year 2004 was intentionally blocking packets of data from peer-to-peer (P2P) protocols such as BitTorrent through forged packets[3]. This example is widely cited as a Net Neutrality violation. In the case, the Federal Communications Commission in accordance with net neutrality laws then prohibited Comcast from continuing with the bandwidth throttling. The enforcement of net neutrality takes on different legal approaches in different world regions. In a recent attempt to revise the extant net neutrality laws by new head of the commission, Ajit Varadaraj, FCC showed their belief in public opinion by giving sixty days to the people to comment on the proposed policy instruments[4]. In Turkey, net neutrality is enforced with a bent on giving the government more power to survey and restrict internet access by citizens[5]. It is in this light of increasing global support for Net Neutrality and Open Internet that debate has ensued in Turkey over their network regulations policies. Like some developing countries, the country views the proliferation of the internet among its people as a potential threat to their cultural values and national security. This is since the internet has the power to open up people to new ways of thinking that may be considered dangerous to conservative cultures.

[1] Wu, T., (2006). Network Neutrality: Competition, Innovation, and Nondiscriminatory Access. -hearing before the Task Force on Telecom and Antitrust on of the Committee on the Judiciary, House of Representatives, One Hundred Ninth Congress, second session, 25 April 2006. Accessible: https://babel.hathitrust.org/cgi/pt?id=pst.000058166635;view=1up;seq=3, 7 December 2017.
[2] Gans, J., (2015). Weak Versus Strong Net Neutrality. -*Journal of Regulatory Economics*, Vol. 47, No. 2, pp 183-200.
[3] Ibid.
[4] Berghel, H., (2016). Net Neutrality vs. Net Neutering -*Computer*, Vol. 49, No. 3, pp 73-77.
[5] Freedom on the Net 2015: Turkey. Freedom House 2015. Accessible: https://freedomhouse.org/report/freedom-net/2015/turkey, 3 January 2018.

In September 2014, a law on Regulating the Internet, No. 5651, was amended giving the Turkish government more power to block and allow the authorities to get user data without the use of a warrant[6]. However, even though the provisions were not passed outright, they were in March 2015 adopted as the new law after the chief judge retired[7]. Following that, the government can ban any content in protection of life, property, national security, public order, and public health without the need for a warrant or court order. In the light of these net neutrality legal issues in Turkey and the United States, the following paper will discuss the topic within the academic environment as well as practical legal environment and adding a reasonable perspective within the concept of hereinabove referred legal issue within the Turkish ICT Law.

The paper had the aim of making a legal approach on the issue of Net Neutrality within the Turkish ICT Law and coming up with solution suggestions for potential regulation problems on it.

To achieve the objectives of the study, the paper posed two research questions to guide it in the collection and analysis of the necessary data. The questions are as follows:

- How is "Net Neutrality" regulated within different countries' legal systems and how is it in practice?
- What are the legally relevant implications of the net neutrality paradigm in Turkey? How to best balance the various interests that are affected by net neutrality?

The hypothesis formulated by the study is that Turkey needs a holistic regulatory framework on net neutrality.

A global awareness on the issue of free sharing of information has revolutionized the entire landscape of internet regulation. Major information frontiers in the world such as the United States, the European Union and Asia have all in the recent past redefined the legal implications of internet regulation. Turkey's relation in the European Union has however made the research necessary

[6] Akgul, M., Kirlidog, M., (2015). Internet Censorship in Turkey. -*Internet Policy Review*, Vol. 4, No. 2, pp 1-22.
[7] Freedom on the Net 2015, *supra nota* 5.

since the country has from the year 1987 willed to join the EU without success[8]. The numerous aforementioned restrictions that the country enforces on its citizen's access have moreover sparked the debate on the legitimacy of its legal regulations in the face of an increasingly open information accession age. The study is thereby significant in that it will show why Turkey needs to implement net neutrality.

The adopted research approach will be qualitative and will derive data from secondary sources. Information used to analyze the thesis will primarily come from books, journals statutes, and other relevant sources. Therefore, the scope of the research will not cover quantitative methods and primary sources.

This paper will employ a qualitative methodology in its quest to answer the formulated research questions. Internet searches will be conducted on online libraries to derive material needed to illuminate the topic of the dissertation. Moreover, the deductive research approach is going to be used for designing research strategy to test the hypothesis of this thesis as well.

In order to cover the entirety of the research objectives earlier on stated, the dissertation will be divided into five major sections: The first section will be the introduction. Here, the thesis background, the problem statement, the research objectives, hypothesis, methodology, and research questions will be discussed. The second section will discuss in detail the historical background of net neutrality. To do this, the paper will discuss the theoretical background of used in analysis of existing literature and in addition conduct a literature. The third section of the dissertation will expound on the different approaches on net neutrality that are employed across the world especially in the US and the EU. The fourth section will then narrow down the research scope by discussing net neutrality consideration within the perspective of Turkish Law. Finally, the fifth section will summarize key issues and points from the entire paper. It will be instrumental in concluding ideas from all sections of the paper and providing the recommendation. Ideally, the recommendation will be the new proposed regulatory framework in Turkey.

[8] Hill, C., Smith, M. and Vanhoonacker, S., (2017). *International relations and the European Union*. 3rd ed. UK: Oxford University Press.

1. HISTORICAL BACKGROUND OF NET NEUTRALITY

1.1. General overview

Net neutrality first became an issue in the regulation of communications networks in the early 1980's. Then, it was engrossed in a debate that sought to define whether the internet was a community utility or just a tool of profitmaking by corporations. After the establishment of the FCC 1996 under the premise that the internet was a social utility, companies started being prosecuted for practicing activities that were counter to this premise. Such activities included bandwidth throttling and price discrimination. For example, the FCC fined the Madison River Communications $15,000 for complete network access restrictions on Vonage, a stream that rivaled one of their services[9]. FaceTime was also restricted by AT&T in such a way that only the users that paid new data plans could be allowed to access it[10][11]. Verizon Wireless, another popular communications services provider was caught in 2017 throttling net usage to sites such as YouTube and Netflix[12]. In this case for example, public outrage on the slowness of the network elicited action from the FCC showing that users are powerful in controlling the type of connections that ISP provide. This power wielded by the public to dictate the extent to which Internet Service Providers can affect connectivity has been a central force guiding the capabilities of the FCC[13]. It has in fact led the federal government to regulate internet provision in the same way it does other utilities such as gas, water supply and electricity.

In Turkey, net neutrality has also elicited issues with regulation. However, in the country, the government has been the major perpetrator of net neutrality violations as opposed to network operators in the case of the US. For example, Facebook, YouTube and Twitter were banned

[9] Faulhaber, G.R., (2007). Network Neutrality: The Debate Evolves. -*International Journal of Communication* 1, Vol. 1, pp 680-700.
[10] Court of Appeals, Dist. of Columbia Circuit, 740 F.3d 623, *Verizon v. FCC.*
[11] Yoo, C.S., (2014). Wickard for the Internet-Network Neutrality after Verizon v. FCC. -Federal Communications Law Journal, Vol. 66, No. 3, pp 415-466.
[12] Berghel, *supra nota* 4.
[13] Herman, B.D., Kim, M. (2014), The Internet Defends Itself: The Network Neutrality Debate on the Web. -*Information Society*, Vol. 30, No. 1, pp 31-44.

temporarily in 2015 till they consented to restricting access to material considered sensitive by the Turkish government such as the murder of a prosecutor[14]. In fact, in the same year, 92% of court orders and requests to Twitter about removal of content emanated from Turkey[15]. However, internet restrictions in the country have not been limited to content removal and blocking but to even more serious legal issues such as detentions and prosecution due to online activities. For instance, about 67 Turkish citizens have been met with criminal complaints for allegedly insulting the Turkish President Tayyip Erdogan since August 2014.[16] However, even in the face of apparently improperly enforced privacy laws, the authorities in the country have also faced criticism and legal action for violating such laws. An example is Turkey's civilian police who had conducted illegal wiretaps to eavesdrop on the public[17]. Moreover, the unit also faced allegations of contracting a hacker team that spied on Turkish citizens between 2011 and 2014. Privacy, surveillance and anonymity were also in March 2015 affected by the passing of the Homeland Security Act, which lengthened surveillance without a warrant to 48 hours from the previous 24[18].

1.2. Theoretical framework

The paper will discuss the topic of net neutrality with the primary goal of analyzing the legal issues tied to it. However, since net neutrality is a broad subject and due to its relation to technology, the theoretical framework of this study will at times overlap between the technical and the legal aspects of internet regulation. The technical aspects, albeit downplayed, will include the end-to-end principle, the dumb pipe and over-provisioning. Issues such as traffic management, throttling, blocking and deep-packet inspection will also be touched on. However, since the thesis primarily serves the legal aspect of net neutrality in Turkey, the major issues in discussion will be regulation, policy, strategy and guidelines that are tied to freedom of accessing data and information from the internet. The insistence on including the technical aspects stem from the fact that the main methods

[14] Freedom on the Net 2015, *supra nota* 5.
[15] Ibid.
[16] Karakaya Polat, R., Pratchett, L., (2014). Citizenship in the Age of the Internet: A Comparative Analysis of Britain and Turkey. -*Citizenship Studies*, Vol. 18, Iss. 1, pp 63-80.
[17] Freedom on the Net 2015, *supra nota* 5.
[18] Ibid.

employed by the study involve analysis of previous literature on the matter, of which technicality bears a large portion and thus cannot be ruled out. For example, Hart provides a rich information source on the technical side of net neutrality but at the same time discusses the ongoing legal debate over internet regulation in the US[19]. The literature review will nonetheless mainly focus on the legal implications of the application of these technical aspects of net neutrality. The table shows how the theoretical framework will be implemented.

Appendix 1: Conceptual framework

TECHNICAL ASPECTS	LEGAL ASPECTS
End-to-end	Regulation
Dumb pipe	Policy
Over-provisioning	Strategy
Traffic management	Guidelines
Throttling	
Blocking	
Deep-packet inspection	

1.3. Literature review

Although the concept of net neutrality holds that all data sharing and communication networks should be treated equally in that providers and governments should not restrict access to some networks, the internet since its inception has been noted to be fundamentally different from other communication systems. Tim Wu, the originator of the term net neutrality in a paper about the history of networking states that there are factors that can be traced that separate the internet from regular networks[20]. First, there is the infrastructure principle. The principle holds that

[19] Hart, J.A., (2011). The net neutrality debate in the United States. -*Journal of Information Technology & Politics*, Vol. 8, Iss. 4, pp 418-443.
[20] Wu, T., (2004). The Broadband Debate: A User's Guide. -*Journal of Telecommunications and High Technology Law*, Vol. 3, No. 69, pp 69-96.

communications networks are firstly public infrastructures and therefore possess an importance to the public as would other infrastructure such as road networks. The importance of the internet is therefore not defined what the owners of the network can do with it as with what creative members of the public are capable of accomplishing where they give access to seamless networks[21]. The neutrality principle is second and provides that all users and uses of a network should be regarded as equal and should not thereby be discriminated. Michael Copps, the then commissioner to the FCC stated that one of the primary roles that the internet was meant not play during its conception and inception is that of fostering free sharing of information[22]. He states that the very idea of this now invaluable network stemmed from a need to prevent interference by governments and corporations. Essentially, the internet stands for defeating discrimination against technologies, ideas and user. This is the reason that the network is cross-platform.

The third principle cited by Tim Wu that differentiates the internet from other networks is the end-to-end principle (e2e) touched on earlier[23]. The principle represents an innovation theory. It is in rejection of the presupposition that innovation can be caged or centralized and instead supports the idea that for innovation and development to grow within any community, end users must delegate from remote decentralized points. A popular perspective of considering what the internet is known as the openist approach[24]. The approach believes that these three principled are inextricably embedded within the design and framework of the internet. Instead of taking a deterministic view on the conceptualization of the internet, openists prefer to view the creators of this network as communications revolutionaries. A deterministic view, in their opinion, limits users to the idea that the creation of the internet was inevitable. Furthermore, such a view would contradict the traditional way of comprehending society; one that is attracted to order and close monitoring of a nation's subjects. According to Tim, communications revolutionaries such as Paul Baran, Robert Khan, and Vint Cerf in the first place wanted to take society from such a societal order and instead empower people to freely share information without regard of who they were[25].

[21] Yoo, *supra nota* 11.
[22] Ibid.
[23] Wu, T., (2003). Network Neutrality, Broadband Discrimination. -*Journal of Telecommunications and High Technology Law*, Vol. 2, pp 141-180.
[24] Yoo, *supra nota* 11.
[25] Wu (2006), *supra nota* 1.

Another approach of understanding the internet discussed by Tim Wu is that of deregulation. This approach supports the concept of media convergence[26]. Media convergence is the idea that technology naturally progresses to a singular network. This can be cited by the example of how historically, different data types were conveyed over different media. For instance, voice was propagated over the telephone and data over facsimile machines. However, with the proliferation of the internet, they were all carried under one single dumb pipe[27]. The approach of deregulation is supported by network owners as opposed to users. Proponents of the view promise to increase the efficiency of all network services, should the idea be ultimately realized. They are moreover privy to a few principles as well. First among them is propertization, which holds that resources reach their full potential only if they are made properties of certain entities. Deregulationists thereby believe that the internet can only be maintained by an assigned owner[28]. Moreover, they assert that such an owner should possess the right to dictate access rights to users. Thereby, the approach can be said to be in contrast to the principle of neutrality supported by openists. The other principle that may help users to understand the ISP perspective is that of incentive. The principle holds that for corporations to invest in technologies that support the internet and other networks there must be an opportunity that could lead to profit[29]. Thereby, the issue of net neutrality, however appealing it may be to users, is far from being achieved since corporations that support the internet have to make money out of people's interactions. This fact thereby somewhat collides with the view of the internet as a public infrastructure, since governmental monetary input in today's networks is minimal compared to when the internet first publicly appeared. Therefore, it is inevitable that commercial enterprises attracted to incentives inherent in the network will seek investments in the internet.

Deregulation is the final principle of this approach of conceptualizing the Internet. The principle is combatant to governmental interference in the running of the internet[30]. Outside of appropriating

[26] Wu, T., (2006). Why Have a Telecommunications Law?: Anti-Discrimination Norms in Communications. -*Journal on Telecommunications and High Technology Law*, Vol. 5, Iss. 15, p 15.
[27] Yoo, *supra nota* 11.
[28] Herman, *supra nota* 13.
[29] Wu, T., Yoo, C., (2007). Keeping the Internet Neutral?: Tim Wu and Christopher Yoo Debate. -*Federal Communications Law Journal*, Vol. 59, No. 3, pp 575-592.
[30] Wu, T., (2007). Wireless Carterfone. -*International Journal of Communication*, Vol. 1, pp 389-426.

property rights to the infrastructure and intellectual property, the principle does not readily accept the role of governments in the network. According to Kim, one of the factors that made the internet a successful project is that the government and the FCC did not meddle in its initial implementation[31]. Deregulationists promulgate the idea of the smart pipe, in contrast to the dumb pipe, in that it brings quality of service into the operations of the internet[32]. This abstract idea may be explained by how broadband operators can increase profits through distribution of applications that have basic connections. This way, users can get access to next-generation services rather than being offered commodity bandwidth. In this way, the communications industry is expected to grow since users are in possession of technology that is expected to be the convention in later years. Thereby, they oppose openists' end-to-end principle by saying that innovation is centered on the network rather than the users.

While each of the above approaches gives a differing perspective of the internet, both can be used to guide the way net neutrality is viewed by different stakeholders in the contemporary communication front. While openists are for the idea of net neutrality with a bent on stopping interference and restriction from both the government and corporations, deregulationists are for the idea that government intervention in regulating the communications industry ultimately impedes progress. However deregulationists also contend that the concepts of net neutrality, open access and the e2e principle are infeasible. One would argue that both approaches give differing perspectives to the same problem of advancing the internet. While openists prefer to consider the ends of the network that represent the creative commons, deregulations prefer to view the internet advancement riddle from the perspective of the network connections. All in all, a place for reconciliation between the two mindsets exists[33]. This place is described further in another article by Tim Wu on network neutrality and broadband discrimination. Wu in the article pays credence to the debate looming between the public who view the internet as a tool for innovation and broadband providers with economic agendas over how best the internet should be policed[34].

[31] Narechania, T.N., Wu, T., (2014). Sender Side Transmission Rules for the Internet. -*Federal Communications Law Journal 467*, Vol. 66, pp 467-490.
[32] Yoo, *supra nota* 11.
[33] Zelnick, R., Zelnick, E. (2013). *Illusion of Net Neutrality: Political Alarmism, Regulatory Creep, and the Real Threat to Internet Freedom*. 1 st ed. USA: Hoover Institution Press.
[34] Yoo, *supra nota* 11.

Net neutrality, however imperative, slows down the rate at which broadband is deployed since it is a hurdle to broadband companies[35]. This is not to say that net neutrality per se is a step in the wrong direction since ultimately, every party in the resolution of this debate must be satiated for equitable growth of the communication and information sector. According to Wu, in the contemporary setting, most critics challenge the regulation of open-access[36]. However, in this paper, policies governing open access are taken generally to stand for not only the internet but also varieties of the communication sector such as telephone networks and operating systems[37]. In such a general setting, Wu views the role of regulation by the government as that of ensuring that private corporations do not focus on theirs interests and fail to provide quality services to the consumers. In the same general perspective, the author views the role of the openists' perspective of net neutrality as Darwinian in nature in that it ensures that the internet will be mostly used by those with the most pressing needs and skills[38]. The paper thereby does not take a technical approach to the problem of regulation but rather a policy-based approach. In this approach, the author establishes three perspectives of viewing the problem. The first perspective involves structural remedies while the second involves non-discrimination government regimes. The last perspective involves non-regulation. The first perspective in the approach is critiqued to uncover the merits of open-access over lesser-intrusive models for the purposes of fueling network innovation. Open-access is seen by the author to be counterproductive in promotion of net neutrality[39]. One example of this scenario is where data applications are favored by the network over applications with latency-sensitivity such as video streaming. This is since in an open network, downloading or uploading data is preferred over transactions involving time-consuming applications[40]. For this reason, open-access can be flagged as potentially capable of network discrimination. Therefore, structural remedies can be ruled out as unhelpful when it comes to fostering net neutrality.

[35] Hart, *supra nota* 19.
[36] Wu (2004), *supra nota* 20.
[37] Yoo, *supra nota* 11.
[38] Lee, R.S., Wu, T., (2009). Subsidizing Creativity Through Network Design: Zero Pricing and Net Neutrality. -*Journal of Economic Perspectives*, Vol. 23, No. 3, pp 61-76.
[39] Yoo, *supra nota* 11.
[40] Berghel, *supra nota* 4.

Scrutinizing broadband discrimination according to Tim Wu is more helpful in fostering net neutrality than structural remedies[41]. In this perspective, network end users should be accorded the right to utilize network applications and attachments that are not harmful while also giving innovators and originators the right to supply them freely. This perspective thereby revolves back to the idea of finding a common ground between the openists and deregulationists earlier discussed. However, this premise of vertical integration is not easily applicable since network companies can at any time violated the rights accorded to users in the agreement. This situation thereby calls for the involvement of legal provisions to protect the users' freedoms. Since the purpose of the approach applied was to find out whether regulation of networks is necessary, one must consider whether it is possible to foster this vertical integration without the use of regulation. Wu provides an allusion in the economic theory to solve the dilemma. According to the author, operators have been known to pay little attention to consumers' long-term interests[42]. To prove this, the paper cites a survey in 2002 that concluded that network operators prefer satiating the short-term needs of the consumers. Discrimination thereby was evident in a number of complaints from customers and in FCC filings by program developers that operators banned classes of equipment and applications such as Virtual Private Networks (VPNs), servers, and Wi-Fi devices[43]. The paper provided more evidence of network discrimination by citing that network operators implemented architectural and contractual limits on some classes of devices and applications. A recent example of discrimination is the Comcast saga where in the year 2004 they intentionally blocked packets of data from Peer-to-peer (P2P) protocols such as BitTorrent through forged packets[44]. In Wu's article on net neutrality and the discrimination of broadband, operators in search of short term profits often ban new and emerging network technologies to achieve price discrimination[45]. Price discrimination in this sense is the overpricing of certain technologies due to their apparent demand in their market trends projections. However, the situation is not as bleak since such operators were found to have legitimate ends to their bans. Such ends or goals often covered the issue of bandwidth management. Therefore, the problem according to Wu lay not in such cited goals but in the means the operators applied to restrict networks[46]. For example, such

[41] Yoo, *supra nota* 11.
[42] Ibid.
[43] Ibid.
[44] Verizon v. FCC, *supra nota* 10.
[45] Yoo, *supra nota* 11.
[46] Wu, Yoo, *supra nota* 29.

bans had the realistic potential of inhibiting innovations such as application development or disrupting market trends. Thereby, the author concludes that self-regulation in network discrimination is subject to doubt. In conclusion, the role of government regulation of network policies was encouraged as companies should not be given free reign if their short-term priorities inhibit the realization of users' long and short-term needs.

Tim Wu discards the issue of regulation to focus on the need for net neutrality, its implications and limitations. The author defines net neutrality as a goal in networking where network applications are treated similarly[47]. The need for net neutrality is best understood from the perspective of the innovation belief. The perspective resembles the Darwinian evolution model where the best technologies are given precedence over those that do not advance computation. The perspective, as expected, abhors any form of control from private and public players who may claim to optimize the path that development and progress will take. Thereby, the perspective is in line with the openist view of the internet as an end-to-end entity. The suspicion is however not blind since the evolution of technology is unpredictable. Thus, any party, whether public or private claiming to direct the course of this technological evolution is undoubtedly privy to cognitive biases that may lead the process astray even though the party started out with good intentions. Therefore, networks are best left to evolve out of their own accord through a natural competition among program developers. For example, the internet can be cited as an instance of successful technological evolution. Thereby, the need for the network to be neutral is pragmatically meritocratic. However, the author claims that although the evidence for the merit of evolutionary networks such as the internet is overwhelming, it may not be flatly superior; only that other models of growth which are currently not yet perfected may be in truth better[48]. Nonetheless, the observed merits of the network evolutionary model express the need for net neutrality consideration in the internet's communication policy. Open access is one remedy that may help achieve net neutrality[49]. In net neutrality, the concept is a structural provision that prevents the bundling of cable internet with broadband service by broadband operators. Proponents of net neutrality such as Mark Lemley, Larry Lessig, and Jerome Saltzer argue that were cable operators allowed to

[47] Hart, *supra nota* 19.
[48] Ibid.
[49] Freedom on the Net 2015, *supra nota* 5.

combine other cable services with internet provision, they would destroy neutrality by regulating natural competition among applications of the internet[50]. However, this argument has elicited oppositions from authors and players in the communications industry such as Jim Speta, Glen Robinson, and Phil Weiser[51]. Opponents to the argument claim that regulation of cable companies is irrelevant and that net neutrality may not be the most appropriate goal.

The author believes that imposition of open access is not as effective in fostering neutrality as regulating broadband discrimination. Wu traces arguments against network discrimination to 1934 in the D.C Circuit Communications Act that says subscribers had the right to use their telephones in privately beneficial ways that did not result into public harm[52]. In communications regulation moreover, methods such as common carriage and limiting vertical integration have been ways in which the US government has in the past employed to limit discrimination. A certain level of network discrimination has been logically shown to be acceptable. Criteria providing the rationale for acceptable discrimination are often in the lines of non-internalized costs to the network operator or due to issues such as irrationality of the application. Thereby, in a discrimination approach, certain applications are permissible while others are suspect and unjustifiable. A clearly unjustifiable application is such as that of a network virus that may crash a network[53]. Thereby in such a context, even though the decision of the network operator to bring the virus offline may be counter to the concept of net neutrality, other users on the network may appreciate the operator's decision. Nevertheless, a network operator may choose to ban a service such as IP Chatting citing that the application has too much latency on the network[54]. Such a ban is however detrimental to the entire network. Harm to the network may be in the context of direct harm or that of loss of advantageous externalities linked to the application. In the direct harm example, users who rely on the application will be locked out of their favorite communication avenue and creators of programs that enable the application will suffer financial costs. The ban may moreover be in the form of losing advantageous externalities. For instance, secondary programs may in fact rely on the IP

[50] Hogendorn, C. (2007). Broadband Internet: Net Neutrality Versus Open Access. -*International Economics and Economic Policy*, Vol. 4, Iss. 2, pp 185-208.
[51] Freedom on the Net 2015, *supra nota* 5.
[52] Ibid.
[53] Ibid.
[54] Hart, *supra nota* 19.

Chatting application to enable some of its protocols such as is the case with Aimster which uses the application for FTP purposes[55]. Thereby, the irrational ban may end up hurting multiple stakeholders in the network sphere in ways that the provider had not anticipated.

It is crucial to analyze the significance of the reasons most cited by network operators for discriminating certain applications so as to assess whether the companies are justified. Often, ISPs cite bandwidth management and price discriminations as rationales that may necessitate restrictions of certain network usages. Price discrimination is used by ISPs in the form of overpricing the rare and unconventional network usages. For example, in a reply from Comcast to one of its subscribers in 2001, Comcast cited that for the permission to continue using VPN in their networks, the customer had to subscribe to a bundle specially tailored for VPN users at an obviously higher price rate[56]. Evidence of hiking subscription charges to certain network commercial packages has been surfacing since private ISPs took over the control of network provision from the government. For instance, Verizon offers T-1 lines at higher prices than they do basic cable or DSL services[57]. This trend has been adopted by network operators since giving free reign to subscribers who use the internet in more specialized ways may erode their profits. However, price discrimination is not that much contested since it helps some consumers while hurting others. Moreover, it ensures more profits to the network operator. ISPs also cite bandwidth management as a cause for restricting networks. This is often the case if the restricted application reduces the quality of reception of other network users. Such discrimination is often applied to networks such as cable owing to the fact that it uses shared connections. In such scenarios, general programs like ftp and games are restricted since the network may lack technology that allows it to individually restrict a single user or application. Bandwidth management has a two-fold relationship with net neutrality. First, it inhibits neutrality on a certain level by restricting some applications in the network. Second, on another level, it fosters neutrality by enabling the running of applications that require a certain amount of bandwidth to function. In such a case, the lack of management of bandwidth may mean that certain applications may not run. Thereby, while

[55] Freedom on the Net 2015, *supra nota* 5.
[56] Cheng, H.K., Bandyopadhyay, S., Hong, G. (2011). The Debate on Net Neutrality: A Policy Perspective. - *Information Systems Research*, Vol. 22, No. 1, pp 60-82.
[57] Wu (2004), *supra nota* 20.

achieving bandwidth management is laudable for it fosters neutrality, restricting some applications may come as a drawback.

So far, a discussion has been made for what net neutrality stands for and the importance of achieving this neutrality. Moreover, the technological approaches that achieve neutrality have also been discussed. These include open access, network discrimination and bandwidth management. Vertical integration between the end-users and network operators has been suggested as a possible way in which an appropriate net neutrality policy may be drafted. However, the importance of regulation in achieving this integration has also been established to ensure that commercial interests of network providers do not deter consumers from pursuing their interests. Regulation can occur in the form of self-regulation by the companies of that imposed by the government through legal networks. This premise thereby seeds to the question of whether either form of regulation has the potential to come up with the best policy. The author suggests that regulation done by legislatures may enlighten the ISPs to consider if the restrictions that they impose serve the interest of maximizing the quality of their services. For example, in 2003, Cox and Comcast Communications disavowed their long-held banning policy on VPNs following the announcement of the FCC regulatory threat in the same year[58].

Wu in 2002 surveyed the extent of discrimination and favoritism in a variety of network applications of broadband networks. He categorized this favoritism in the form of either contractual or architectural. The survey reviewed the design of networks and the subscriber agreements of ten cable operators. These operators included Time Warner, AT&T, Cox Communications, Comcast, Mediacom, Adelphia, Charter Communications, Cableone, Cablevision, and Insight[59]. Six DSL operators were moreover surveyed for the same discrimination. These operators included BellSouth, Quest, Verizon, SBC, WorldCom, and Sprint. Broadband operators were found to favor HTTP and client-server protocols since they were older than more recent applications such as peer-to-peer, home telecommuting and home networking. Cable operators were furthermore found to use more contractual restrictions than DSL operators[60].

[58] Hart, *supra nota* 19.
[59] Yoo, *supra nota* 11.
[60] Ibid.

AT&T even threatened customers with criminal and civil penalties citing that using home networking was a form of theft of their services. Conversely, Sprint and Verizon, both DSL operators permitted home networking in their service contracts[61]. Comcast was found to have the strictest restricting framework while Time Warner and Charter Communications had the least. Sprint was found to be the least restrictive networks as it allowed users the freedom to establish web servers, home networks and even promised their users completely unrestricted internet access to all applications. As per the year 2002, the following was the extent of the network restrictions in the United States for both Cable and DSL operators.

Appendix 2: Percentage of restrictions in the US in 2002

RESTRICTION	CABLE	DSL
Use of VPNs	10%	0%
Attachment of Wi-Fi equipment	10%	0%
Making connections to be network end-points	10%	0%
Home networking usage	40%	0%
Misuse of IP Addresses	60%	0%
Commercial use of networks	100%	33%
Server operation and provision of public information	100%	33%
Overuse of bandwidth	100%	33%
Resell of bandwidth	100%	33%
Conducting consumer fraud or spam	100%	100%
Security breaches and hacking	100%	100%
Unlawful purposes	100%	100%
Immoral and offensive purposes	100%	100%

The review of available literature on net neutrality will next take a legal approach as this is the major scope of the paper. However, the legal aspect of net neutrality will be discussed in more depth in other sections of the paper and thereby this section will only serve to provide a historical account of legislative contributions in the effort to achieve neutrality. The internet and other types

[61] Ibid.

of networks have over the years become crucial parts of most nations' infrastructure, driving change in societies through innovation. For these reasons, the networks have become invaluable. This has led to the growth vices such as monopolization, unhealthy competition among network providers and corruption that has necessitated regulatory oversight. Communication laws have provided regulation through the application of certain legal instruments. The key goals of these laws have been to manage discrimination, allocate stakeholder rights, and to achieve a variety of social goals such as the regulation of indecency. Laws have been meted under the mantra of boosting the innovation commons[62]. Schools of thought that support the laws have been openist rather than deregulationist. As such, the main goal of these communication goals has been to maximize the value of networks not for its own sake per se but as a catalyst that influences other activities. Therefore, laws have been drafted as reactions to unfair restrictions in the network policies of operators. For example, in the early days of the FCC's creation, Bell was blocked from discriminating against non-Bell telephones just because they were made by third parties. This blockage was largely considered successful while the Cable Act of 1992 and the Telecom Act of 1996, which both forced companies to share cable lines where considered unsuccessful[63]. Therefore, a difficulty in drafting appropriate laws is apparent. Wu suggests three rules that any communications law should possess to meet the qualification of effectiveness[64]. The law for one is supposed to be technologically neutral. Next, the law should be *ex ante* with regard to form and should have *ex post* provisions. Finally, the law should be supported by a consumer rights model.

Net neutrality law in most regions of the world has not yet been fully refined and enforced in comparison to laws in other business sectors. This has been primarily due to the seemingly intractable debate over how regulation should be best applied as has been earlier on discussed. The two often-cited arguments against its enforcement is that it is firstly unnecessary and secondly that encouragement of competition among operators is the best way to reduce network discrimination; the major goal of net neutrality laws[65]. However, enforcement of the law has been partially done

[62] Guo, H., Cheng, H. K., Bandyopadhyay, S., (2012). Net Neutrality, Broadband Market Coverage and Innovation at the Edge. -*Decision Sciences*, Vol. 43, Iss. 1, pp 141–172.
[63] Coase, R.H., (2013). The Federal Communications Commission. -*The Journal of Law and Economics*, Vol. 56 No. 4, pp 879-915.
[64] Wu (2006), *supra nota* 1.
[65] Ibid.

in several regions of the world such as the US, Asia and the EU. Levels of the current enforcement range from full neutrality, to allowed discrimination based on data type, to paid prioritization without blocking or throttling up to the total absence of direct enforcement. Full neutrality embodies the total lack of discrimination[66]. While several countries have passed legislature under this category of enforcement, exceptions of illegal activity such as spreading of malware and in cases where user security is concerned have been a necessity. However, such laws are still considered fully neutral. Examples are Chilean neutrality laws and those in the Netherlands[67]. Allowed discrimination on the basis of data type has been a proposed enforcement criterion by Tim Wu, who cited that since applications differ with regards to data, neutrality enforcement should be done on sets of similar net applications rather than treating all data on the internet as neutral. The criterion has since been adopted by Verizon and Google who propose the enforcement of this policy in their self-regulation[68]. Paid prioritization without blocking and throttling on the other hand proposes the enforcement of neutrality by charging willing consumers the provision of faster unrestricted internet connections[69]. Companies such as Comcast have spearheaded this enforcement criterion[70]. The last category of enforcement echoes the intractability of the neutrality debate earlier on discussed. The lack of direct enforcement is for example is the current approach employed by the FCC. The approach as described by Andy Kessler and Aparna Watal ensures that the threat by the public to cry out on discriminatory networks and backlash from the FCC is enough to deter network providers from engaging in bad practices[71]. Such authors believe that governments' responsibilities regarding the enforcement of the laws lie not in controlling how providers manage their networks but in ensuring that users can access other ISPs should their current provider fail to satiate their networking needs.

[66] Ibid.
[67] Krämer, J., Wiewiorra, L., Weinhardt, C., (2013). Net Neutrality: A Progress Report. -*Telecommunications Policy*, Vol. 37, Iss. 9, pp 794-813.
[68] Wu (2006), *supra nota* 1.
[69] Marsden, C.T., (2010). *Net Neutrality: Towards a Co-regulatory Solution*. 1st ed. UK: Bloomsbury Academic.
[70] Wu (2006), *supra nota* 1.
[71] Albertson, Stephanie L., (2012) *Law and Society: Open Internet for All: Free Speech and Network Neutrality* (1). El Paso, USA: LFB Scholarly Publishing LLC.

2. DIFFERENT LEGAL APPROACHES ON NET NEUTRALITY

2.1. General overview

Legal regulations on net neutrality differ in their approaches across the entire world. This dissonance in enforcement is primarily due to differences in interpretations of several core elements of network neutrality from region to region. The elements will firstly be discussed to ensure consistency throughout the paper while making comparisons of these approaches to net neutrality in different world regions.

Application agnosticism is the first recurrent element[72]. It refers to the equal treatment of data traffic to and from different applications by the network provider. Since this is the core goal of net neutrality, regulations are expected to ensure its safeguarding and provision. Common ways this can be implemented is through regulating throttling and blocking. Bandwidth management is the other element. Since net neutrality is regulated to ensure the effective operations of the internet and other communications networks while also ensuring protection of users, traffic from networks should be managed to allow the fulfillment of such goals. However, this should be carried out reasonably within a framework that prioritizes objectives such as preservation of security and network integrity. Another element in net neutrality across the globe is specialized services. These services encompass those that do not require internet access. They should thereby be exempted from enforcement of neutrality laws. However, certain rules dictate whether a service is to be regarded as special. One rule is that the services should run separately from the internet traffic. The other is that they must not run in such a way that they upset those that access the internet. As such, internet services therefore require protection from those that don't require the internet. This is since special services come with quality of service mechanisms, meaning that they are not affected by those with internet access. The final element is that of price discrimination and zero rating. In different regions, zero-rating and data caps have elicited debate especially in mobile-

[72] Thierer, A., (2006). Are "Dumb Pipe" Mandates Smart Public Policy? Vertical Integration, Net Neutrality, and the Network Layers Model. -*Net Neutrality or Net Neutering: Should Broadband Internet Services be Regulated*. / (Eds.) Lenard, T.M., May, R.J. Boston: Springer.

based internet services[73]. Zero-rating of some services is thereby considered by some regional regulations as in opposition to application-agnosticism and in extension, to net neutrality.

While the major comparison between net neutrality will be drawn from contrasting the US and the EU regional regulations owing to their thoroughness in enforcement, it is crucial to consider how the rest of the world has considered net neutrality. Chile for example became the first country to include preservation of net neutrality in their communications law in June 2010[74]. The law added three articles to their existing communication law. The articles forbade ISPs from the arbitrarily blocking, throttling, discriminating, interfering with, restricting, or hindering users from accessing internet services for any legal application. In April 2014, the Brazilian government passed the Law No 12.95 that governed internet use in the country by providing guarantees, forecasting principles, duties and rights of network stakeholders in addition to stating actions that the country would take in relation to the provisions[75]. Through the law, WhatsApp was at first banned and then later unblocked after it was further reviewed as per the new legal framework.

Canada's Canadian Radio-Television and Telecommunication Commission's decision in 2011 that called for the billing of internet services on the basis of usage was met with criticisms from the government, which claimed that the ruling was discriminatory towards large latency-prone data such as video[76]. In India, the Telecomm Regulatory Authority of India in February 2016 banned price discrimination of data services. Discriminatory tariffs based on content were prohibited and so were contractual agreements that may have discriminatory tariffs. This followed after a consultation period started in 2015 to acquire public opinion on net neutrality. Some cases of net neutrality violation in the country included the provision of free Wikipedia, WhatsApp and Facebook by Aircel and that of free Google access by Airtel. Slovenia in 2012 moreover enacted a law implementing net neutrality in the country's internet access policies. Simobil and Telekom, two major network providers were in 2015 found to be in violation of zero-rating laws[77]. However,

[73] Daeho, L., Dong-Hee S., (2016), The Effects of Network Neutrality on the Incentive to Discriminate, Invest, and Innovate: A Literature Review. -*info*, Vol. 18 Iss. 3, pp 42-57.
[74] Wu (2006), *supra nota* 1.
[75] Gharakheili, H.H., (2017). Perspectives on Net Neutrality and Internet Fast-Lanes. -*The Role of SDN in Broadband Networks*, pp 5-22.
[76] Zelnic, *supra nota* 33.
[77] Hart, *supra nota* 19.

the decisions by the country's Administrative court were annulled in the following year. Netherlands was the first EU country to enact a legislature regarding net neutrality. The law was heavily based on the enforcement of the neutrality element of application agnosticism. Russia implemented a net neutrality legislature in 2016, under the country's antimonopoly service, that was against throttling and blocking of content. Singapore developed policies from 2014 to 2015 that prohibited price discrimination in Over-The-Top (OTT) content such as video[78]. Implementation of neutrality laws has over the years varied in approach across different regions. A comparison between the US and EU approach is however the most important seeing as these two regions have a longer history with network regulation than other regions.

2.2. US approach

2.2.1. History of net neutrality in the US

The United States started giving net neutrality regulation attention in the early 1990s. However, history of net neutrality as a concept in the country could be traced back to 1860 in the telegram age. Then, standard telegrams were rerouted without discrimination of their contents in a concept referred to as end-to-end neutrality. The US Law included telegrams and the public switched telephone network (PTSN) as common carriers. Thereby, preferential treatment of certain content or users was prohibited. The FCC has been protecting such laws since 1934 when the Communication Act of the same year formed it and gave it power to act as an independent oversight of communications networks[79]. In the 1980s, the government made the internet publicly available to all users. It was mainly used for commercial purposes and was rarely used for domestic utilities. This led to a situation where cable companies created high-speed modem and data links that consequently formed the internet core. Since then, the connections were regarded by the government as information services until in 2015 when their definition was revised to term them as telecommunications service. Therefore, for about 30 years, they have not been privy to common carrier privileges and regulations. An example of where this has been noted in US courts is the

[78] Ibid.
[79] Gans, *supra nota* 2.

case of National *Cable and Telecommunication Association v. Brand X Internet Service*[80]*s.* However, since the internet has grown i such a scale as to be used in homes and in the wider society, arguments have been surfacing since the 1990s that cite that the classification if the internet as an information service was not in line with public interest. The first face that this debate took was that of asking whether internet-based companies of the era were community trustees who had obligations to the society or merely market participants who only served their stakeholders. It is during these debates that the internet started to be the center of political interest. For example, Al Gore in 1994 started calling for the demonopolization of the internet provision market citing that any provider who wished to provide internet services was entitled to the opportunity[81]. Lawrence Lessig and Tim Wu in the wake of the 200s became notable legal scholars who discussed neutrality issues and regulations. The rise in these debates ultimately sparked further debates across the Atlantic in the European Union. However, both regions have different legal approaches to these net neutrality issues. However, notable legal issues in the US are described below.

In 2004, Michael Powell, the then chair to the FCC announced the adoption of non-discrimination policies that the commission was set to enforce. Even if the FCC did not regulate the policies, ISPs were encouraged to provide several freedoms to their users. The first freedom was that of accessing the internet. Second, ISPs were urged to provide the freedom of running applications. Next, they were also urged to offer the liberty of attaching devices. Last was the liberty of obtaining information of service plans. The FCC proved that it was willing to enforce its net neutrality principles in the aforementioned 2005 *Madison River* case[82]. The company faced investigations into whether they were guilty of blocking VoIP services. The case, for being the first of its kind was not taken far as the company agreed to pay a fine of $15000 to the Treasury and give a pledge that it would stop discriminating VoIP traffic. Even though the case did not yield a formal precedent that could be cited in future cases, FCC established itself as willing to pursue legal action related to net neutrality enforcement in the future. In 2004, the authority of the FCC in enforcement of rules that required the unbundling of telephone operators' networks at regulatable prices by the

[80] Freedom on the Net 2015, *supra nota* 5.
[81] Knowlton, A.C., (2016). Envisioning Electronic Communication: A Mythic Analysis of the Stop Online Piracy Act and Net Neutrality. (Doctoral dissertation). The University of Nebraska-Lincoln. Lincoln, Nebraska.
[82] Yoo, *supra nota* 11.

USTA v. FCC court case[8384]. Broadband services had been regulated on the basis of different policies in the US. Cable internet was classified as an information service that was not privy to regulation. DSL on the other hand was regulated since it was a telecommunication service. DSL was thus redefined as being an information service in 2005 and thereby did not require regulation and unbundling as cable internet. The National Cable and Telecommunication Association requested the FCC to include four principles into their net neutrality policy. The set of principles were to be voluntary and operators were urged to adopt them. However, they were not compulsory by federal law or the FCC. The first was that users had the right to lawfully access their choice internet content. Secondly, users had the right to run services and applications on the condition that they were lawful. The third principle was that users could connect devices to the internet provided that the devices did not harm other users or the network. Lastly, network providers, content providers, service providers, and application developers all had the right to compete with each other. In 2006, delegates from US networks and the government discussed the country's internet policy in the scope of public interest, free market, infrastructure and emerging technologies. In December, a merger agreement between Bell South and AT&T defined neutrality as the concept of providing internet content while at the same time avoiding degradation, prioritization or discrimination of any data packet being transmitted in their broadband internet wire lines[85].

The US net neutrality policy started taking a more legally aggressive approach from the year 2007. In the year, Comcast was uncovered to be severely delaying or blocking BitTorrent uploads from their users by use of a technique that reset data packets transmitted over the peer-to-peer protocol. A report by the FCC on the issue showed that ISPs were throttling traffic from Bit Torrent for about two years. Comcast was however uncovered to be completely blocking the traffic from the application altogether. BitTorrent and Comcast however agreed to work in unison on the network and Comcast was required to firstly become protocol neutral by the end of the same year and secondly to find other means of controlling their traffic during peak hours. Comcast in 2009 conceded to a $16 million settlement and asserted that they had no wrongdoing. However, in the

[83] Court of Appeals, Dist. of Columbia Circuit, 359 F.3d 554, *United States Telecom Ass'n v. FCC.*
[84] Yoo, *supra nota* 11.
[85] Kourandi, F., Krämer, J., Valletti, T., (2015). Net Neutrality, Exclusivity Contracts, and Internet Fragmentation. -*Information Systems Research*, Vol. 26 No. 2, pp 320-338.

previous year, the FCC had voted that Comcast was in violation of cutting users off from high-speed internet use by virtue of their use of peer-to-peer applications. The company was thereby required by the FCC to make public its network management activities within a month and submit a plan that showed that they were eager to comply with the set FCC rules by the end of 2008. Levin Martin, the then FCC chair reiterated that the order given to Comcast was meant to serve the purpose of showing the network providers could not just cut off some users from their network without reasonable precedents. Julius Genachowski, the succeeding chair to the commission in 2009 continued this streak of enforcement by adding two more rules to the commission's 2005 policy. First, nondiscrimination and application agnosticism was required from all network operators with exceptions of reasonable precedents such as aiding law enforcement. The other rule was that operators were required to submit to the commission and to the public all their network policies. Julius moreover argued that even wireless networks should foster net neutrality as wired networks did. However, the Court of Appeals in the District of Columbia Circuit rejected both rules. In the court case of Comcast v. FCC, the order by the FCC forbidding Comcast from throttling BitTorrent traffic streams was overturned under the judgment that the commission had no power to decide how network providers managed their networks[86]. Moreover, the verdict cited the first Title of the 1934 Communications Act claiming that FCC could not force internet service providers to make their networks available or open while using reasonable management practices to all legal content. Despite the loss however, the FCC vowed to continue fighting for neutrality[87].

Kevin Martin, the 2008 chair to the commission, asserted his eagerness to protect the public from unscrupulous broadband ISPs who irrationally interfere with their access to the internet. The FCC was met with an offer by Google of buying the 700 MHz wireless spectrum that the commission was auctioning in anticipation of the transition to Digital Television (DTV). However, the FCC had to agree to several conditions made by Google[88]. The first condition was the guarantee of open access to applications where consumers could be allowed to download any service or application of their desire. Second was open access to devices where consumers could be allowed to use any handheld device in any wireless network of their desire. Third, third-party resellers were to be allowed to get wireless network services on wholesale bases from any 700 MHz licensee at

[86] Yoo, *supra nota* 11.
[87] Court of Appeals, Dist. of Columbia Circuit, 600 F.3d 642, *Comcast Corp. v. FCC.*
[88] Wu (2007), *supra nota* 30.

reasonably nondiscriminatory prices. Lastly, third-party companies such as ISPs could connect their devices on any point of a 700MHz network that was technically feasible in a fashion that allowed open access to devices. The FCC in reply conceded to only two of Google's conditions. These were the open access to services and to devices. Moreover, the FCC only implemented the conditions to the country's C block part of the 700 MHz band. The Obama Administration invested an additional $7.2 billion in open access broadband infrastructure. The year 2010 saw the approval of the open internet order by the FCC. The order banned telephone service and cable television providers from restricting access to websites like Netflix or to competitor companies. At the end of the year, FCC passed six net neutrality principles[89]. The first was the fostering of transparency in such a way that innovators and consumers could know the performance characteristics, features, and management practices of their internet connections. Second, network operators were prohibited from blocking any lawful content and devices and that users were allowed to send or receive any lawful traffic they desired. A level field was third. In it, consumers were guaranteed a right to a level field where content discrimination was banned. Moreover, contractual agreements from providers citing a faster data transmission lane upon pay were also prohibited. Four, network management was allowed where operators would apply certain methods reasonably without charging their customers on the basis of consumed bandwidth. The fifth principle provided mobile device users with the guarantee that their access to certain services and applications would not be restricted. The sixth principle involved vigilance where the commission vowed to monitor the status of internet openness and their rules. However, even with the development of these rules, operators continued to charge more for higher speeds. Advocates of net neutrality denounced the above rules saying that they just capitulated to ISPs to continue charging more for higher speeds[90]. Advocates of the business world on the other hand complained that the internet was not supposed to be regulated at all. Republican representatives in Congress took advantages of these criticisms to announce that they would reverse the rules via legislation.

In 2014, a case between Verizon and the commission ruled that FCC lacked the authority to enforce neutrality rules in cases where services were not common carriers. However, the court conceded

[89] Freedom on the Net 2016, *supra nota* 5.
[90] Hartman, T. K. (2012). Toll Booths on the Information Superhighway? Policy Metaphors in the Case of Net Neutrality. -*Political Communication*, Vol. 29 Iss. 3, pp 278–298.

that the FCC could craft rules with more specificity to include other service providers as part of the common carrier network[91]. Following this verdict, disputes emerged challenging whether existing laws could in fact guarantee net neutrality enforcement in the country. FCC, for one, challenged that they had the power to regulate internet service providers as per the Section 706 of the 1996 Telecommunications Act. However, others, inclusive of the Obama Administration, thought that reclassification of the ISPs to common carriers was the best way forward to be in line with the Second Title of the 1934 Communications Act. Those criticizing section 706 claimed that it had no mandate in guaranteeing equal open access to the internet while the Second Title of the 1934 Communications Act provided a way to regulate ISPs' price discrimination provided that they were common carriers. Thereby, net neutrality advocates supported the reclassification. The FCC however was in opposition to the reclassification since it would only allow selective enforcement of the Second Title since only broadband services would be regulated. As it would follow, it is evident that the FCC has been deeply inhibited by a lack of a properly defined law regarding net neutrality to enforce its principles[92]. Nevertheless, such continuing debate is to be applauded as it is requisite for the formation of effective net neutrality regulation policies.

2.2.2. Recent developments in US approach

Among the latest significant regulatory stances that the country has taken is that of categorizing broadband communication service to the tier of Title Two where it is now recognized as a common carrier rather than information provider as it previously was termed. However, it is not till 2015 that neutrality was given legal backing by the government. The FCC is at the heart of spearheading net neutrality reforms in the country. Between 2005 and 2006, the FCC received heat from corporations lobbying Congress to support either side of the neutrality approach debate. Moreover, from 205 to 2012, Congress had five attempts at passing bills that had net neutrality bearings. However, all the bills failed. The bills all sought the prohibition of ISPs from price discriminatory schemes that had the basis of QoS[93]. The FCC in April 2014 presented a draft bill with the power to allow ISPs to develop a faster network avenue that could enable content providers to transact at

[91] Yoo, *supra nota* 11.
[92] Nyman-Metcalf, K., Täks, E., (2013). Simplifying the Law—Can ICT Help Us? -*International Journal of Law and Information Technology*, Vol. 21, Iss. 3, pp 239-268.
[93] Networked Publics. (2012) / Eds. K., Varnelis. USA: The MIT Press.

faster speeds. The draft bill however could have been against the FCCs former neutrality position. The bill was later revised to provide two contrasting options that would represent the Administration stand on net neutrality. The first option was in opposition of the former neutrality stance since it could have provided a fast broadband lane and a slower one for data with less latency. The second option sought the reclassification of broadband networks as telecommunication services and thereby preserved net neutrality. The Obama Administration however went with the second option and thereby passed the bill in 2015[94]. The republicans amidst a political debate on net neutrality proposed a human resource draft bill for discussion in 2014. In it, they requested the conceding of neutrality with the catch that the FCC should be stopped from engaging in regulations that would affect ISPs any further. However, the FCC in February 2015 titled broadband networks as common carriers under the second title of the 1934 Communications Act and in the Section 706 of the 1996 Telecommunications Act. These new rules were published by the FCC in April 2015and effected in June on the same year. However, the new FCC chair, Ajit Varadaraj is current in possession of a proposition that could scrap net neutrality[95]. The proposition is at present in discussion in the FCC. The commission waits voting for or against the proposition in December 2017. However, by November 2017, thousands of American citizens had taken part in a petition that sought to out Ajit. This came as a reaction by the public of the FCC chair' strategy that would see the repeal of the 2015 legislation that recognized broadband as a common carrier under the Second Title of the 1934 Communications Act. Although the draft proposal is set to be released on December 14, 2017, FCC has through the media cited that internet providers will have the right to block legal content, provided that they notify their subscribers beforehand[96]. According to Metro News, price discrimination will also be allowed by the Ajit Plan with the provision of higher speeds at premium prices; a strategy that is already at play in the EU[9798].

[94] Ammori, M. (2014) The Case for Net Neutrality: What's Wrong with Obama's Internet Policy. Accessible: http://www.foreignaffairs.com/articles/united-states/2014-06-16/case-net-neutrality , 7 December 2017.
[95] Berghel, *supra nota* 4.
[96] Marvin McAteer, Oliver, 2017. Thousands sign petition to out FCC's Ajit Pai over net neutrality plans. Metro News. Accessible: http://metro.co.uk/2017/11/24/thousands-sign-petition-to-out-fccs-ajit-pai-over-net-neutrality-plans-7106602/ , 2 December 2017.
[97] Altman, E., Bernhard, , Caron, S., Kesidis, G., Rojas-mora, J., Wong, S. (2013). A Model of Network Neutrality with Usage-Based Prices. -*Telecommunication Systems*, Vol. 52 No. 2, pp 601-609.
[98] Yoo, *supra nota* 11.

2.3. EU approach

2.3.1. History of net neutrality in the EU

The EU just like the US has been a host to seemingly intractable debates over regulation of net neutrality. This section will discuss the regulation principles in the region. The first country to impose net neutrality laws on a national level was Netherlands in 2012, Slovenia soon followed[99]. Currently, only the two countries have drafted net neutrality legislature in the entire European Union. This can be cited to the fact that the legal regulation of this concept is currently in debate at a regional level. Some member countries have in fact dismissed the topic altogether. For example, the United Kingdom explicitly dismissed neutrality legislation following advice from the Department of Culture, Media, and Sport[100]. The Department of Business, Enterprise and Regulatory Reform moreover disapproved the regulation of net neutrality. In a 2009 report by the on the state of ICT in the country, the government stated that it had yet to comprehend any case for the legislation of net neutrality[101]. The report stated the position of the government as being in agreement with the current state where consumers are charged higher for higher speeds[102]. According to the report, it is not until monopolistic tendencies crop up in one competing company that the regulatory commission in the country would intervene on grounds of competition. However, though neutrality is not widely discussed in most member states, a look into the state of regulation on a national level is warranted for complete comprehension of the entire region's legal approach. In Norway, for example, legal issues regarding net neutrality have cropped up. In 2006, for instance, a dispute arose between NextGen, a broadband provider, and NRK, the country's state broadcaster. The dispute emanated from the alleged limiting of bandwidth to the company's website. NextGen claimed that the restriction was as a result of the huge traffic caused by the free to air internet TV that NRK had recently provided their viewers. In response, the Norwegian Post and Telecommunication Authority (PTA) drafted certain guidelines on neutrality borrowed from America's FCC policies[103]. The principles stated that all users had a right to internet access with

[99] Gharakheili, *supra nota* 75.
[100] Weisman, D.L., (2015). The Political Economy of Net Neutrality Regulation. -*The Economists' Voice*, Vol. 12, No. 1, pp 13-18.
[101] Zang, Z., Mara, O., Argyraki, K., (2014). Network neutrality inference. -*ACM SIGCOMM Computer Communication Review* - SIGCOMM'14, Vol. 44, Iss. 4, pp 63-74.
[102] Berghel, *supra nota* 4.
[103] Freedom on the Net 2015, *supra nota* 5.

predefined quality and capacity that allowed them to send their choice services, applications, hardware and software, provided that the content and applications were lawful. They moreover offered a guarantee to users on a connection without discrimination of application, content or service. Be that as it may, no legal backing of the principles was done and thereby regulation cannot be enforced via the country's justice system.

At the regional level although few legal provisions of enforcing net neutrality currently exist, existing EU Laws can be used as instruments to gauge the direction of the region's approach. The region's competition law in particular could be instrumental in developing legal frameworks for regulating net neutrality[104]. The Article 82 EC treaty, which states that any abuse by undertakings of a major position in the market is prohibited since it affects inter-state trade[105]. Moreover, since most members have their laws in line with those by the EU, such a provision is applicable in individual member countries. The significant market power regime (SMP) was adopted by the EU in the year 2002 to regulate electronic networks and to make them more competitive[106]. SMP is comprised of Access Directive, the Framework Directive, and the Authorization Directive. The SMP regime provides certain obligations to European network operators. The first category comprises of those that govern relationships between the operators. Articles nine to 12 of the Access Directive list responsibilities that operators are required to fulfill. The responsibilities include non-discrimination, transparency, mandatory access, separate accounting, and a cost-based pricing mechanism. The second category of obligations defines the relationship between provider companies and their users. The responsibilities are enlisted by the 17th to the 19th articles of the Universal Service Directive. In the responsibilities, network operators are required to apply retail price caps measures, individual tariff control measures, and tariff orientation measures that are geared towards cost pricing. The SMP and the competition laws however are ill-equipped to significantly handle net neutrality regulation since their time of drafting had not necessitated much thought of net neutrality, which is relation is a relatively new concept in the European market.

[104] Ma, R. T. B., Misra, V. (2013). The Public Option: A Nonregulatory Alternative to Network Neutrality. - *IEEE/ACM Transactions on Networking*, Vol. 21, No. 6, pp 1866-1879.
[105] Whish, R. and Bailey, D., (2015). *Competition Law*. 8th ed. USA: Oxford University Press.
[106] Policy-making in the European Union. (2015) / Eds. H. Wallace, M.A. Pollack, A.R. Young. USA: Oxford University Press.

The Access Directive however in section five grants power to national regulatory agencies to put forth certain obligations on network providers that restrict internet access to users to extents that unnecessary while also promoting e2e connectivity. The article was designed in response to any operator that may deny access to other operators. However, since the wording of that article, national agencies might legally regulate network connections that do not promote e2e. The universal service directive puts forth in its goals that a defined minimum number of services should be provided to all users at affordable prices. However, since the goal is directed at telephony services, broadband services which require net neutrality legislation are not subject to the directive. It is for this reason that a review of the European Regulatory Framework in 2006 called for a modernization of such articles to include the internet and 21st Century networks. In 2009, the amendment of the Roaming Regulation saw a provision of lower user prices and the development of cross-border telecommunications services in the market. Although discrimination or neutrality was not explicitly included in the amendment, Viviane Reding, the Commissioner to the Information Society, vowed on preventing discrimination and favoritisms of applications in mobile networks. The ePrivacy Directive proposed by the EC and EP has moreover echoed issues of regard to net neutrality such as data privacy. The Directive seeks to buffer the protection of user personal data

Undoubtedly, the EU's bid to legally enforce net neutrality has been a slow process. However, since the reforming the Telecommunication Framework Directive in 2009, national regulating agencies have been urged to promote the concept. Currently, under the directive, national agencies can impose minimum QoS levels where they deem necessary. The European Council (EC) during the same period moreover declared their willingness to pursue net neutrality after which it instigated the European Parliament (EP) to make a similar pledge. In 2011, the council communicated on net neutrality and open internet underlining the concerns it had with the throttling or blocking of internet access. The EC further called for transparency in network traffic management and the freedom of customers to choose their operator of choice. The EP in 2011 made a resolution regarding open internet, albeit non-legislative, where it communicated on the relationship between neutrality and other freedoms. It moreover encouraged relevant national agencies to reiterate on end-user protection. The EP moreover in 2012 called for enforcement of net neutrality legislation in the governing of the digital market. In the next year, it made another

resolution on the creation of an electronic communications regulatory framework that would regulate net neutrality to monitor, avoid and penalize any violation. Perhaps the most significant contribution to the EU net neutrality legislative debate is the current proposal drafted and submitted by the EC[107]. The draft regulation concerns the European Single Market for Electronics Communication where it suggests the harmonization of rules that ensure seamless and unhindered internet connection for all services, content and applications. The proposal is tailored to be in the interests of the public. It moreover provides for the creation of an internet fast lane that can be accessed by the public so long as a premium is paid[108]. It however requires the additional setting aside of a basic version of the internet that is open to the public. The EP in addition adopted a report in 2014 that defined the neutrality guidelines it wished to pursue. The guidelines allow the management of traffic only if technically necessary and if the practices employed do not favor or discriminate among the applications and content providers. QoS services were gained allowed only if they didn't degrade the quality of the open internet. However even with these promising changes, stakeholders in the communications sector still criticize the nature of the definitions as being unclear and that of net neutrality being difficult to enforce.

Moreover, some players feared that the industry will be tilted thereby only favoring providers of big content by specialized services. Be that as it may, the draft proposal by the EC has inspired many member states into considering the possibility of enforcing net neutrality on a national level. The Netherlands, for one, were inspired by the culminating debate on neutrality before enforcing their rules on a state-level. Slovenia was inspired by the proposal and passed laws that ensured the legal enforcement on neutrality laws in the country. Belgium has been considering the adoption of the guidelines since 2011. France in 2012 moreover conceded that the competition law in the EU was not enough to enforce net neutrality and that better legislation had to be drafted[109]. The Ministry for Economic Affairs and Energy in Germany in 2013 announced a draft proposal that called net neutrality a crucial political goal. As discussed above, the European Union is far away from establishing a unifying regulatory legislature concerning net neutrality. However, the draft

[107] Read, D. (2012). Net Neutrality and the EU Electronic Communications Regulatory Framework. - *International Journal of Law and Information Technology*, Vol. 20 Iss. 1, pp 48-72.
[108] Greenstein, S., Peitz, M., Valletti, T. (2016). Net Neutrality: A Fast Lane to Understanding the Trade-offs. - *Journal of Economic Perspectives*, Vol. 30, No. 2, pp 127-150.
[109] Bourreau, M., Kourandi, F., Valletti, T. (2015). Net Neutrality with Competing Internet Platforms. -*Journal of Industrial Economics*, Vol. 63, No. 1, pp 30-73.

regulations proposed by the EC show that the region is on the right path towards implementing such legislature. Moreover, the trend in adoption of the few guidelines by member nations shows that net neutrality is finally being prioritized in the region. Further constructive debate is however warranted if the EU net neutrality regulation is to compete with that of the US.

2.3.2. Recent developments in EU approach

The current net neutrality regulations in the country were drafted by the Body of European Regulators for Electronic Communications (BEREC) and forwarded to the European Union Commission in June 2016[110]. After being passed in August 2016, the guidelines provided the National Regulatory Agencies of every member nation a framework through which they would enforce net neutrality. The guidelines provided four rules to be enforced by member nations. The first rule involved the safeguard of open access to the internet. Article 3(1) of the passed regulation cited the freedoms that end-users were entitled to[111]. These freedoms include the right to access, use, and disseminate information, services, and applications without regard of where they are located or the destination of their information or content. Moreover, end-users were afforded protection from their ISPs from being discriminated on the grounds of the equipment they hooked to their internet. Moreover, Article 3(2) provided that end-users and ISPs were allowed to get into agreements on prices of services rendered provided that the services did not limit the stipulated end-user rights[112]. Article 3(3) catered to content and bandwidth discrimination by providing that network operators were supposed to treat all streams and traffic equally during their service provision without regard to the sender, destination of the traffic or equipment used by the user. However, this article was given the qualification that although content should not be blocked; operators could use network management techniques to ease congestion of networks, albeit in a reasonable manner. However, such quality assurance techniques should not include intrusive mechanisms such as deep packet filtration. Network operators were also required to desist from

[110] Article 3(3) of the Regulation (EC) No 1211/2009 establishing the Body of European Regulators of Electronic Communications and the Office
[111] Regulation (EU) 2015/2120 of the European Parliament and of the Council of 25 November 2015 laying down measures concerning open internet access and amending Directive 2002/22/EC on universal service and users' rights relating to electronic communications networks and services and Regulation (EU) No 531/2012 on roaming on public mobile communications networks within the Union
[112] Freedom on the Net 2015, *supra nota* 5.

blocking, slowing down, restricting, altering, interfering with, discriminating, and degrading content in the stream except when necessary for quality of service measures. Letter (a) of the same Article further stipulated that ISPs could engage in a violation of the article only if national law was against the provision[113]. Letter (b) of the same article finally instructs network providers to enhance end-user security to ensure the protection of their data[114]. Article 4 of the regulation revolved around the protection of transparency in the open access internet scheme. This would be assured by the provision of information regarding the user-provider contract by the ISP[115]. Information was further required by the guidelines to be clear and easily accessible. Moreover, information was supposed to be accurate, free of misleading advertisement, meaningful and unambiguous, and up to date. ISPs were also required to publish information on the management techniques they employed to ensure QoS. In addition to that, ISPs were required to provide information about any service that might be blocked, restricted or throttled in the temporary pursuit of QoS. Article 5 of the regulation involved the enforcement and supervision of the adherence to the former two articles. Therein, NRAs are granted the authority to monitor the compliance to the third and fourth article and promote net neutrality by adopting strategies like setting minimum QoS and price levels[116]. Article 6 of the same regulation moreover granted member states with the authority to stipulate the penalties for the infringement of the former three articles. Member states were further required to forward the rules and penalties to the EC by August 2016[117]. The above summarized regulation became public in November 2015 after being published in the Official Journal of the EU. It was however enforced in April on the following year. Although not strictly referring to net neutrality, a legal provision of interest to its enforcement and network management is addressed by the ePrivacy directive and the Data protection directives. The ePrivacy Directive in Article 5.1 requires the ensuring of confidentiality in traffic and communications data by member states. Countries in the EU are thereby required to prohibit tapping, listening, storing, surveying or intercepting of users without their consent. However, the directive exempts the necessary storing of data in transit across a network. Analysis of data packets from a user using methods like packet shaping is also prohibited by the article since such analysis is not a prerequisite

[113] Regulation (EU) 2015/2120, *supra nota* 111.
[114] Ibid.
[115] Ibid.
[116] Ibid.
[117] Ibid.

of data conveyance. Thereby, deep packet filtration performed by some companies to establish a basis for throttling or blocking may be subject to infringement of the article. The Directive has been gaining national support within the region. Countries in the EU have even created laws that more or less echo the guidelines stipulated in the Directive. For example, Estonia and the UK drafted versions of their data privacy acts. In Estonia for example, the Personal Data Protection Act was enacted to protect user personal data from violating privacy of citizens and the Information Society Services Act was enacted to regulate the former act[118]. In the UK, the Data Protection Act of 1998 has been performing these duties but is, in the fashion of the ePrivacy Directive, set to be replaced by a newer data protection bill in 2018 that caters to advancements in technology between the two decades[119]. The ePrivacy Directive is however still a proposal by the EC and the EP to repeal the current Communications Directive and enforce stricter data protection rules such as the awaiting of user consent by content providers before saving data cookies in browsing sessions[120]. The directive came in the wake of advancements in current technology that includes Internet of Things such as cars and home appliances with network capabilities as opposed to the former directive that only protected computer devices through regulation. The Directive is expected to be enforced from May 25, 2018.

[118] Isikuandmete kaitse seadus. RT I 2007, 24, 127.
[119] The Data Protection Act of 1998 (U.K.).
[120] Luzak, J., (2013). Much Ado about Cookies: The European Debate on the New Provisions of the ePrivacy Directive Regarding Cookies. -*European Review of Private Law*, Vol. 21, Iss. 1, pp 221-245.

3. NET NEUTRALITY CONSIDERATION WITHIN THE PERSPECTIVE OF TURKISH LAW

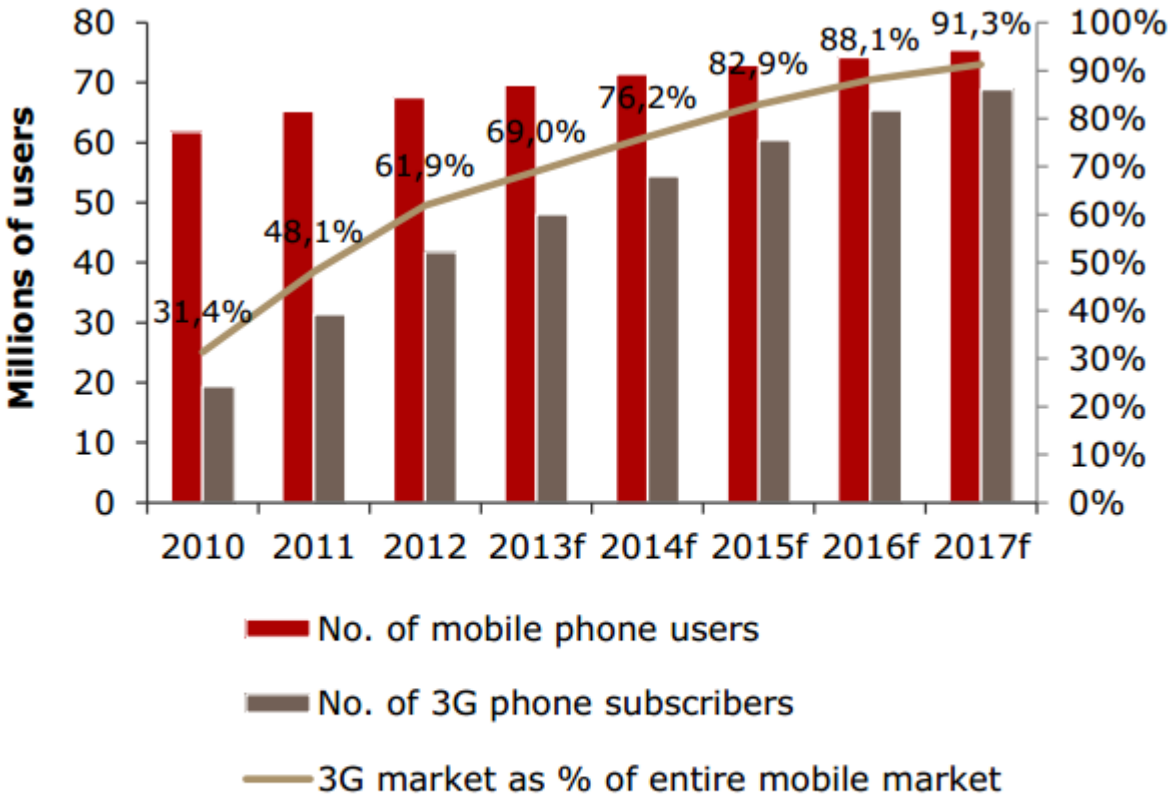
3.1. General overview

The Turkish ICT sector is relatively younger when compared to that of the surrounding European countries. Although it is still developing, the ICT sector is experiencing fast growth according to a 2014 report by Deloitte. Subsectors of the ICT industry in the country such as Communications, IT services, the software and the hardware market are in the middle of this ICT uprising and are changing the country's economic sphere by helping Turkey recover from the economic crisis of 2008[121]. A portion of credit for this rapid growth can be attributed to the country's insistence on developing university academic programs to provide the ICT industry with the much-needed professional workforce. The other portion belongs to the fact that foreign and domestic investment continues to grow. Although investment in the country plummeted following the 2008 global economic crisis, the Turkish ICT sector has made a steady recovery from $8.4 billion in 2009 to $12.4 billion in 2012[122]. Moreover, government loans to the sector have been on a steady increase. For example, from 2010 to 2011, the loans volumes increased by 41%. Expenditure by the sector in 2016 was moreover estimated by the report to be around $25 billion. These trends not only paint a picture of how ICT is at the heart of Turkey's economy but also show how the number of internet users is expected to increase in volume. Deloitte estimated the percentage of users to be around 42% in 2014. This number is however expected to have increased by the end of 2017 to 47% percentage. With such a large portion of Turkish citizen accessing internet services, it is pragmatic that internet usage regulation issues are looked into. Citizens in the country use the internet for commercial, educational, and entertainment purposes. In 2010, for instance, the Turkish economic sector was discovered to acquire 46% of new markets through the internet. Moreover, 40% of Turks in 2013 had Facebook accounts showing the extent of social media proliferation in the

[121] ICT Industry Report, Republic of Turkey Prime Ministry Investment Support and Promotion Agency, January 2014. Accessible: http://www.invest.gov.tr/tr-TR/infocenter/publications/Documents/BILGI.ILETISIM.SEKTORU.pdf, 6 December 2017.
[122] Berghel, *supra nota* 4.

country. In every month an estimated 32.7 hours are spent online by the average user. This growth trend can also be seen in the mobile phone sector. Major phone companies such as Vodafone, Turkcel and Avea were awarded 3G use licenses in 2008[123]. Application development moreover has been receiving funding by the government as well as by private investors. The chart below shows the trend in proliferation of mobile phone usage in the country since 2010.

Appendix 3: Trends in the use of mobile phones in Turkey



Source: BMI (Graph data), Nielsen: The Mobile Consumer: A Global Snapshot, Euromonitor International: Technology, Communications and Media: Turkey
f: forecast

The above ICT growth patterns are also associated with the increasing concern over regulation of the sector by the public, the government and the private sphere as well. Organizations such as the Informatics Foundation, which creates legal infrastructure, guidelines, and regulations, have had

[123] Article 3(3) of the Regulation (EC) No 1211/2009, *supra nota* 110.

increasing pressure in controlling the policies that govern the use of Turkish networks. By the virtue that the country is not a member state of the EU, it has had to find other ways to foster regulation in its ICT sector[124]. The country's E-Commerce Business Association (ETID) has also been on the frontline of providing Turkish firms with legal feedback on regulation of the sector. However, even with the promising growth potential in the country's ICT capability, legal regulations in the country have been increasingly stringent ever since introduction of the internet in the country in 1993.

3.2. ICT regulation in Turkey

The regulation of the ICT sector and in particular the internet, in Turkey is carried out under the Internet Act and the Electronic Communications Law (ECL)[125]. Turkey is regarded as a country with an overly restricted Internet Access. In fact, as many countries in the European Union seek to regulate their networks to provide openness and transparency, Turkey regulates the internet to restrict access to certain applications, sites and services. The Information and Communication Technologies Authority (ICTA) enforces this regulation in the country. As from May 2017, the country had about 42.3 million internet users. The internet transparency watchdog Freedom House categorized the Turkish internet as 'Not Free'. Most of the world's heavy-traffic sites such as Twitter, YouTube, Facebook and Wikipedia are all restricted or blocked. For this reason, the country' connection has earned the title of the world's most restricted internet according to Twitter's report. ECL was enacted into law with the title of Law No 5809 in 2008 with the purpose of providing legislative clarity, increasing the competitiveness of network providers and allocating resources and funds to research and development efforts. ECL was meant to perform certain roles. Among them, it was supposed to create competition of the communications sector, to protect end-users' and subscribers' rights, to resolve disputes among network operators, stimulate developments in the ICT sector, and to allocate numbering, satellite positions and frequencies to network providers. Moreover, the law authorized tariff rates, access to the internet, licenses to

[124] Electronics Sector in Turkey, Republic of Turkey Prime Ministry Investment Support and Promotion Agency, March 2014. Accessible: http://www.invest.gov.tr/tr-TR/infocenter/publications/Documents/ELEKTRONIK.SEKTORU.pdf, 6 December 2017.
[125] Akgul, *supra nota* 6, pp 1-22.

install radio equipment, monitoring of the radio spectrum, standardization of the nation's systems, and ensuring national security by enforcing the communications legislation. The ICTA in particular resolves disputes arising in domain name assignment registers e-mails systems and regulates e-signature. The Internet Act (IA) created under Law No. 5651 was established for two main goals[126]. First, it was supposed to determine the liability of all access, use, content and location providers. Next, the Act would also establish the procedures to be taken in dealing with online crimes committed by citizens and determination of how the crimes would be fought through the location, access, and content providers. Following an analysis of these objectives, it is evident that the Turkish ICT regulatory framework is built upon a framework that encourages government surveillance, intrusiveness and monitoring of their citizens.

Recent developments in the country's regulation have made it that the Turkish government has a stricter hold on the information reaching its citizens. For example, in June 2016, the Regulation to Amend the Regulation in the ECL was published in Turkey's Official Gazette[127]. This change came to be known as the Amendment Regulation and was adopted then by the ICTA. The ICTA through the amendment, therefore, gained more power in the authorization of network operators. In July 2016, moreover, a failed military coup by minority rogue factions in the country's army threw Turkey into a state of emergency[128]. The coup was thwarted by police, loyal military and civilian resistance. The coup, however, had a significant bearing on the country's communications regulation since the government ordered a three-month communications blackout as a result of the state of emergency. Under Article 120 of Turkey's constitution, states of emergency should conventionally run for three months although the parliament has the authority to extend them to another month[129]. The Council of Ministers thereby requested this parliamentarian request, and it was thus extended for another four months. Due to lack of cessation in the country's peace following the aftershock of the failed coup, the parliament further extended the period to finally cease on January 19, 2018. Since states of emergencies provide that fundamental freedoms can be

[126] 5651 sayılı İnternet Ortamında Yapılan Yayınların Düzenlenmesi ve Bu Yaynlar Yoluyla İşlenen Suçlarla Mücadele Edilmesi Hakkında Kanun.
[127] Beceni, Y., Sevim, T., Aslan, E. Communications: regulation and outsourcing in Turkey: overview. Thomson Reuters Practical Law. Accessible: https://ca.practicallaw.thomsonreuters.com/7-620-0891?transitionType=Default&contextData=(sc.Default), 14 December 2017.
[128] Ibid.
[129] Ibid.

temporarily suspended, the country's ICT regulation has been subject to more stringent policies ever since. The temporary suspension of these rights thereby had several implications for the regulation offered by the ICTA. For one; the State of Emergency Decree Law Number 671 came into force[130]. This law first closed the country's Presidency of Telecommunication. Thereby, any reference made to the Presidency was forwarded to the ICTA. By then, the Presidency had several duties. First, it was responsible for identifying, listening, and document all information passing through Turkey's telecommunications networks. The agency moreover transmitted data obtained from the activities and submitted them to the General Directorate of National Police, General Command of Gendarmerie, the National Intelligence Organization, and the judicial system upon request. Thereby, under this law, wiretapping was the ICTA's responsibility rather than the Presidency.

The decree law took several measures relevant to ICT regulation. The first measure was that the country's premiere was given the authority to demand that the ICTA performs certain technical measures on the country's networks without authorization by the judiciary. In such scenarios, the ICTA was supposed to follow the procedure given here. First, the premier is to directly ask the ICTA's president to perform certain measures if the networking issue was relevant to national security, crime prevention, public policy, public morality, or if the issue could help protect the people's rights and freedoms. Next, ICTA's president is required to forward the measures to network operators, data centers, content providers, and access providers. Third, parties involved in the actualization of the measures are required to comply with a two-hour ultimatum. However, the measures have to be approved by a criminal judge within 48 hours, failure to which the measure is automatically revoked. Law no 671 also provided measures on the necessary steps in case of a cyber-attack[131]. The law moreover regulated requests of information by the ICTA for the fulfillment of its duties. The Authority was given the power to collect data and information from any natural person, legal entity or public institution. Moreover, under this provision, no entity can refuse any such request based on their obligations to professional confidentiality. Another development in the country's ICT regulation framework was the requirement of indicating operators' four-digit number portability routing codes in their short and multimedia messages. The

[130] Ibid.
[131] Ibid.

regulation was enforced starting from April 12, 2016. This was a measure meant to identify the operators through which messages were relayed. The Draft Taxation Laws Amendment Bill, expected to be enforced starting April 28, 2018, is another law that may change the ICT regulatory framework if passed. This is since it is among the few regulations that are passed with the interests of the public at heart. The regulations' Article 7(1) and 7(9) discusses the rights that the public has about subscription contracts with their providers[132]. The articles provide that subscription contracts be availed online for the public view. The decree naturally was faced with some resistance and opposition from the public as well as network operators due to its repressive nature. An example is a September 2017 report by the Competitive Telco Operator's Association that sought to present hurdles in Satellite communications brought forth by the law. This was in direct reference to Article 19(1) of the law that required satellite communications operators operating in the country to only route their data traffic through satellite stations in Turkey. In defense of their opposition, the Associated cited that this move would significantly reduce the functionality of their network as it was a gross underutilization of satellite technology.

The Turkish IA has been gaining more power to regulate internet use with every amendment created by the parliament. For example, in 2014, a bill passed that had more regulations on the usage of the internet. One of the newer regulations was in fact the awarding of business licenses to content providers who regulated their publications. For these reasons, content or host providers in Turkey have certain liabilities in the instance that unapproved content is hosted on their network streams. In the event that content linked by other parties is hosted on a provider's stream, the provider is not culpable[133]. However, if the provider is uncovered to have endorsed the posting of the content, he or she can be sentenced under the Fourth Article of Act No 5651[134]. Host providers are however not given the responsibility of supervising content legality. They are nevertheless required to comply with notices about the taking down of flagged content and in addition store the information stream for at most two years. The Fifth Article's amendment however reduced the sentence of guilty host providers to monetary fines as opposed to imprisonment. Following the Internet Act modifications, a board was created to control access provision to the internet. The

[132] Ibid.
[133] A Freedom House Special Report. Democracy in Crisis: Corruption, Media, and Power in Turkey. Freedom House 2014.
[134] Internet Act 5651, *supra nota* 126.

board is made up of select network operators with authorization by the ECL. Its main function is to restrict from or permit users to internet access. Restriction of access is performed if users violate the Turkish internet regulations. However, in the event that users are privy to certain enumerated crimes, they are not only denied further access but also forwarded to the justice department. The crimes include obscenity, prostitution, facilitating drug use, sexual abuse to minors, inducing suicide in other users, provision of detrimental drugs, encouraging of gambling, and any crime against the Turkish president, Mustafa Kemal. However, suspicion engaging in the crimes is enough to render denial of access by the court. Moreover, if the service providers are based outside the country, their services to Turkey are to be terminated.

The Internet Act has been subject to both criticisms and positive appraisals. Proponents of the Act have cited that the law is successful insofar as the protection of users' rights is concerned. Moreover, supporters of the law have also applauded it for providing a legal framework through which violations of the regulations can be prosecuted in a court of law. The Prime Minister to Turkey in fact personally stated that the Act has been instrumental in protecting the privacy of its citizens. The minister cited that the law is in opposition to censorship but is rather just a measure put in place for the prohibition of immorality, blackmail, and any threat towards the citizen's reputations[135]. Although the statement is somewhat inconsistent, the Turkish government maintains that the law is not meant in any way to curtail the public's freedom of expression and right to privacy. Regarding privacy, the government in a memorandum mentioned that in cases where authorities use surveillance techniques such as wiretaps without consent of users, they will be given the privilege of keeping the information from going public. The country's minister of communications moreover defended the law saying that it was put into place to prevent access to sites that could encourage or even facilitate vices such as criminal activity and child pornography[136]. Proponents of the Internet Act legislation support it citing that the law only restricts access to infringing content instead of access to the entire content given on the said website. However, this is counter to evidence showing massive internet blockage with the country famous for blocking access to entire sites such as Wikipedia, Twitter, Facebook and YouTube. The amendment has also elicited support from parties who claim that the regulation is fairer that

[135] Ibid.
[136] Ibid.

it was before since imprisonment has been replaced with monetary fines for crimes lesser in gravity than the ones enumerated. Two arguments are however commonly cited to criticize the Law. The first is the violation of Turkish citizen's freedom of expression[137]. While proponents of the law say that wiretapping is not encouraged, opponents say that it is not altogether regulated. Moreover, the restriction of access to the internet, especially to social media sites limits the Turkish people from communicating with the outside world as is expected of the freedom of speech in other regions of the world. This infringement upon the people's freedom to communicate has in fact elicited reaction from both the EU and the US. During Obama's tenure as the US president, he spoke with Recep Tayyip on the impacts of the Internet Act on the people of Turkey regarding the restriction of the freedom of speech[138]. The other popular criticism is that the law places financial burdens on network providers since the board that provides access sponsors itself. All in all, the Turkish government has defended its ICT regulation policy by citing that its main goal is to provide safe internet to its people.

3.3. Stakeholders and their interest in net neutrality

Net neutrality in Turkey has been the topic of contention to different parties, all of whom have differing interests. Although the term net neutrality is not explicitly used in available material in the Turkish context, articles are rife with issues pertaining to neutrality. For example, cases of restriction on internet access, filtering and blocking, and content discrimination and manipulation populate internet searches on net neutrality in Turkey. Behind these issues are different stakeholders all with different vested interests their performance. The Turkish government is an example of these stakeholders. The government uses the ICTA for regulating the access to internet. However, all policymaking decisions regarding net neutrality are made by the Ministry of Transportation, Maritime Affairs, and Communications. Moreover, the Telecommunication and Communication Presidency (TIB) is in charge of overseeing all aspects of regulation pertaining to staffing of the board and dedicating a budget for ICT regulation. Since all board members to the various boards are appointed by the government and not in any sense independent, the interests of

[137] Ibid.
[138] Freedom on the Net 2015, *supra nota* 5.

the boards can be extended to those of the government. The regulatory framework's interest lies solely in enforcing the rules stipulated by the Internet Act that were previously discussed. The regulatory framework moreover includes the Computer Center of Middle East Technical University, which is tasked with the management of domain names. The framework moreover aids the executive wing of the government in preventing the dissemination of content with material that the government considers unfavorable to the country's political climate. For example, during the attempted coup by Kurdish militants, scores of Twitter accounts and news sites were taken offline by the framework. The framework is also in place to filter and block websites that are not in line with Turkish social or political views. For example, about 111,011 websites have been blocked for providing content ranging from pro-Kurdish content, pro-ethnic minorities, and lesbian, gay, bisexual, transgender, and intersex (LGBTI) issues. Examples of such sites include Rudaw, RojNews, GayLey, Istanbul Gay and BasNews. Anti-Muslim and Atheist sites have also been banned by the framework with reference to the assertion that they were defamatory. The government is also accused of having hired about 6000 internet trolls to provide the citizens with misinformation by manipulating online discussions, driving certain agendas and countering government criticisms.

The private sector makes the other set of stakeholders with interests in net neutrality. The sector makes the bulk of network operators under the subjugation of the ICTA. The most influential among the operators is Turk Telekom, which was formerly state-owned but privatized in 2005 to Oger Telecom. The company provides the bulk of telecommunications services ranging from PSTN to Global System for Mobile Networks[139]. Turk Telekom owns 99% of the shares in the companies Argela, Sebit, AssisTT, and Innova. Moreover, it owns 81% of Avea, one among the only three Global Systems for Mobile Networks operators in the country. The other two operators are Vodafone and Turkcell. As to the ownership of Turk Telekom, the private company Oger Telekomunikasyon controls 55% of its shares while 30% is controlled by the Turkish government through the Undersecretariat of Treasury. The last 15% is finally owned by public shares. Although the country has strict policies against the unregulated flow of information from outside its

[139] Bayraktar, U., Tansug, Ç., (2016). Local service delivery in Turkey. -*Public and Social Services in Europe*. Eds. H., Wollmann, I., Koprić, G., Marcou. Palgrave Macmillan UK, pp 217-231.

boundaries, it has encouraged considerable foreign investment for the provision of less-readily available ICT solutions. For example, trans-multiplexers and fixed-line switches are provided by international companies such as Alcatel, Ericsson, Siemens, and Northern Telecom[140]. GSM switches are furthermore provided by Siemens, Ericsson, Nokia, and Motorola. In addition to that, international electronics retailers have found a suitable investment environment in the country with the likes of the British Electro World and the German MediaMarkt competing over electronics sale in the region.

The other set of stakeholders in the net neutrality debate in Turkey is that of Digital Activists. After the 2013 protests, dubbed Occupy Gezi, more Turkish citizens have become interested in digital activism. The goals of this form of activism are to give the Turkish people a voice to decry the vices in their societies. For example, scores of citizens castigated Turkcell for accepting funds from Ensar Foundation, an organization that was tied to a scandal involving sexual abuse of minors. Vote and Beyond is one of the most successful digital activism organizations in the country. It however uses civic education as its tactic. The organization was the first initiative to monitor elections by using social media to enlist around 60000 volunteers for monitoring at least 130000 election ballot boxes in the November 2015 presidential elections. Another outfit that espoused civic ideals in its digital activism is Share of Truth. The organization developed a website that was used for fact-checking to ensure that the elections were fair. Digital activists in Turkey are crucial to the issue of promoting net neutrality since they castigate the use of government regulations to restrict open access to information and discriminate networks on a content basis. However, not all stakeholders in the net neutrality use legal means to propose or oppose the agenda. Technical attacks orchestrated by hackers have been frequent in Turkey owing to the restricted nature of the country's networks. However, interests of these hackers have ranged from supporting the current political regime to anti-government protests due to its regulatory restrictions on the internet. For example, in 2015, news network such as Cihan, Zaman, and Rotahaber have been hacked in cyber-attacks during the 2015 elections. Hackers used distributed denial of service attacks to temporarily shut down Sanatatak.com which had published a letter from the Fusun Demirel, an actress who had in it claimed to have desired to be a Kurdish guerilla when she was younger. The attack was alleged to have backing in governmental forces. In December 2015

[140] Ibid.

moreover, Turkey suffered a cyber-attack that lasted a fortnight that took down all domain names with the .tr suffix rendering the internet unusable in the country. Government institutions such as schools and e-mail services were also targeted. Anonymous asserted to be responsible for the attack citing that Turkey was under an oppressive regime that supported the Islamic State (ISIS).

3.4. Proposal for a new regulatory framework in Turkey

While it is true that the effectiveness of the Turkish legal enforcement of telecommunications networks rules cannot be questioned, it is also true that the regulatory framework is based on ideals that counter the adoption of net neutrality. The country's executive government applauds the current networks regulatory system claiming that it is based on the goal of protecting its citizens from immorality and crime. However, from an objective perspective, it is clear that the system does not impose the regulations with the said intentions. Rather, the Turkish government adopts the regulatory framework to oppressively control the citizens by the use of surveillance, content blocking and manipulation, and providing them with misinformation. The country thereby needs a more holistic regulatory framework to deal with net neutrality. Therefore, the paper recommends the redefinition of the Turkish regulatory framework. The dissertation further proposes the creation of a new regulatory framework that is based on principles and guidelines of net neutrality as adopted by other regions of the world with open access to networks such as the US, the EU, Chile, Slovenia, and the Netherlands among others[141].

The proposal will adopt the core net neutrality principles as put forth by the United States Federal Communications Commission. This is since the guidelines have been applauded my many nation states as the archetype on which net neutrality is enforced. The first step in modifying the country's framework is to protect users from content discrimination. According to the FCC's guidelines on ensuring net neutrality, content discrimination must be avoided by any framework purporting to promote equality of material on any network. Thereby, Turkey's ICTA should, instead of encouraging blocking of contents by network providers, ensure that operators provide all lawful content that the users desire. The other principle that the ICTA should adopt is that of ensuring

[141] Greenstein, G., (2011). The Open Internet Order. -*IEEE Micro*, Vol. 31, Iss. 3, p 88.

that users are not charged more for some services when they can get the same networking services from other sites. Throttling and blocking of traffic streams which is apparently largely utilized in Turkey for political purposes should also be prohibited by the government. Additionally, while the ICTA's directive of regulating unlawful content is to be applauded, the same instruments and network management techniques used to achieve this should not be used to filter out material that the public posts as they are simply exercising freedom of expression and speech. Furthermore, regulations should also be enforced on the activities of the network providers thereby shifting the focus from the public's opinion to more pragmatic issues such as quality of services. It is the author's opinion that the legal framework of the country in regulating operations of Turkey's networks is efficient in enforcing the communications rules in the Internet Act. However, the adopted framework has its current motives towards mass censorship and surveillance. It is due to this reason that observers from without the country do not believe that the country is entirely democratic. Therefore, it is evident that the issue of net neutrality in the country is as much technical and legal in nature as it is political. It is thusly a matter of little debatable that the lack of freedom of expression in the country is to blame for its inability to foster net neutrality. However, the scope of this dissertation does not extend to recommending the human rights oversight mechanisms that the country needs; rather it merely proposes a regulatory framework to deal with net neutrality. The paper's author thereby suggests that the country should embrace the two basic FCC guidelines of application agnosticism and non-discrimination on basis of service, content or price.

SUMMARY

The dissertation set forth to show how the regulatory framework in Turkey is lacking in the capacity to enforce net neutrality. The country indubitably needs a more holistic regulatory framework if net neutrality is to be achieved. The paper has thereby developed a proposal for such a framework by citing the guidelines and rules must be incorporated into the existing one to assist it in achieving its purposes. To achieve this end, the dissertation has answered two research questions. The first question involves the uncovering of the ways in which net neutrality is enforced in different countries around the world. The paper uncovered that while net neutrality has been a global goal for the past few decades, certain inhibitors impeded that realization of the concept. In the US and the EU, these inhibitors have been the debate of how best legal statements could be made in reference to the already passed laws regarding networking and communications infrastructure. In the US, in particular, the debate took the path of asking whether some networks such as broadband should be considered public infrastructure or common carriers to uncover whether it should be regulated by the 1934 Communications Act or the 1996 Telecommunications Act. Although at the current time net neutrality is embraced proportionately throughout most regions of the world, this was not always the case. The US has been the pioneering forerunner in the enforcement of net neutrality for about two decades. Other regions only joined the way in the wake of the current decade. Therefore, the bulk of the research has concentrated on American interpretations and efforts in curbing net neutrality. In particular, the ideal neutrality guidelines have been taken to be the four rules provided by Michael Powell, the then-FCC chairperson in 2004. In its application to the Turkish legal perspective however, the dissertation believes that the first two rules are of utmost significance. These rules are the guaranteed freedom to access the internet by users and that of the freedom to indiscriminately run choice applications so long as their legality is fulfilled.

In Europe on the other hand, the regulation of net neutrality has been impeded by debate that argued how best to enforce regional laws in member nations without disrupting the already passed laws on competition. Moreover, price discrimination seemed to be a major issue in the US where may people espousing the openist perspective of the internet believed that services provided by network providers should not be bundled into two separate traffic paths, in which the faster one

costs the users more money. The EU however appeared to be in favor of the creation of a faster data lane, in which consumers of bandwidth are required to pay premium prices to access it. The BEREC draft however, has been a positive step in the right direction as it puts the EU approach to net neutrality unarguably at par with that of the United States. The draft is meritorious as it not only provides clear guidelines as to determine the freedoms of users and providers as well but also provides clear and actionable steps of how the rules will be legally enforced. Moreover, the provision of a margin of violation of the articles drafted by BEREC was also ensured in cases where the articles conflicted with individual member country laws. This is a positive provision since it solves the criticism that net neutrality in the EU formerly faced where member states challenged the enforcement of a regional directive as a violation of the country's sovereignty.

The realization of net neutrality in Turkey was found to be impeded by other factors independent of debate or competition laws as was the case in the former regions. The Turkish net neutrality policy suffers from increased regulation from the nation's government. The paper discovered that while it is admirable that the existing laws on telecommunications networks operations are effectively enforced by the country's legal system, the underlying objectives that informed the drafting the laws are entrenched in deeply counter-neutrality ideals such as censorship and surveillance of citizens. Political concerns in the country are thereby to blame for the country's inability to enforce net neutrality. Be that as it may, the dissertation has proposed a new holistic framework for Turkey's neutrality regulation. The framework borrows guidelines from the FCC in the US and the already existing Turkish regulation policies. The two guidelines include the enforcement of application agnosticism and non-discrimination on the basis of service, content and bandwidth. The two guidelines prohibit the blocking, throttling, restricting of content through network management techniques by internet providers, provided that such content does not harm others or the network. The existing Turkish regulation policy of Safe Internet that blocks traffic from immoral sites such as crime and child pornography has been applauded for introducing an ethical take in the management of networks. In the fashion stipulated by the research questions, this dissertation has compared net neutrality approaches in the US and the EU and then contrasted them with those in Turkey. Through the contrast, the political climate in the country has been found to be the main inhibitor of growth in net neutrality policing. Thereby, in addition to the implementation of the recommended net neutrality guidelines in the country, an overhaul of the

regulatory framework in the context of its leadership is suggested. In conclusion, it is crucial to state that the enforcement of net neutrality in Turkey can be successful if the government redirects its efforts and resources from the surveillance and censorship of its citizens to the drafting of regulations that protect network providers from unhealthy competition and monopolization as well as protecting the public from unscrupulous network management activities. Of crucial note too is that the ICTA, Turkeys ICT regulation body, should be made independent to ensure that net neutrality regulation policies are not created as political tools against certain targets within the country's population.

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APPENDICES

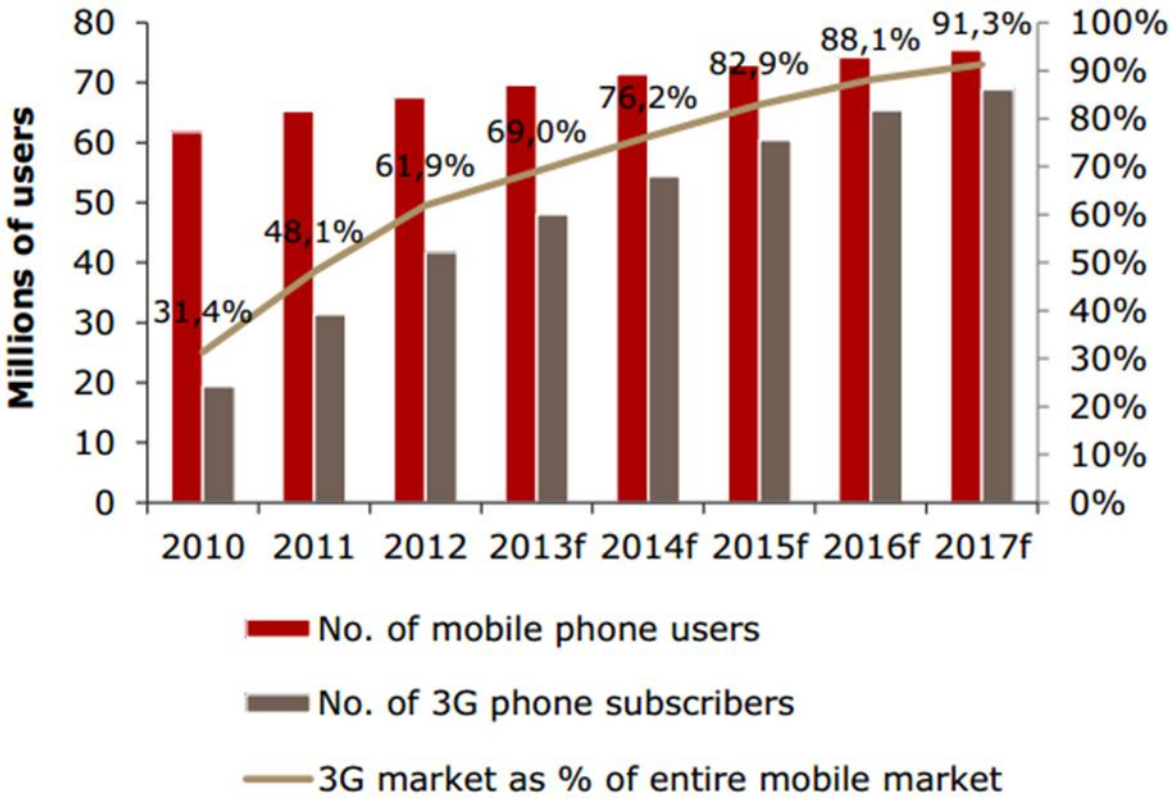
Appendix 1: Conceptual framework

TECHNICAL ASPECTS	LEGAL ASPECTS
End-to-end Dumb pipe Over-provisioning Traffic management Throttling Blocking Deep-packet inspection	Regulation Policy Strategy Guidelines

Appendix 2: Percentage of restrictions in the US in 2002

RESTRICTION	CABLE	DSL
Use of VPNs	10%	0%
Attachment of Wi-Fi equipment	10%	0%
Making connections to be network end-points	10%	0%
Home networking usage	40%	0%
Misuse of IP addresses	60%	0%
Commercial use of networks	100%	33%
Server operation and provision of public information	100%	33%
Overuse of bandwidth	100%	33%
Resell of bandwidth	100%	33%
Conducting consumer fraud or spam	100%	100%
Security breaches and hacking	100%	100%
Unlawful purposes	100%	100%
Immoral and offensive purposes	100%	100%

Appendix 3: Trends in the use of mobile phones in Turkey



Source: BMI (Graph data), Nielsen: The Mobile Consumer: A Global Snapshot, Euromonitor International: Technology, Communications and Media: Turkey
f: forecast