MYKOLAS ROMERIS UNIVERSITY-MIDDLESEX UNIVERSITY

BUSINESS AND MEDIA SCHOOL

ROBERTA MIKALAUSKAITĖ

Electronic Business Management

NET NEUTRALITY: SOCIAL, E- BUSINESS AND LEGAL ASPECTS

Master Thesis

Supervisor

prof. dr. D. Štitilis

VILNIUS, 2016

CONTENT

TABLES

FIGURES

ABBREVIATIONS USED

ISP- Internet Service Providers

US- United States

EU- European Union

IT – Information technology

SME - Small and medium-sized businesses

FCC- Federal Communications Commission

BEREC- European Regulators for Electronic Communications

IP- Internet Protocol

DNS- Domain Name System

E2E – End-to-end

P2P – Peer-to-peer

NPRM - Notice of Proposed Rulemaking

EFF - The Electronic Frontier Foundation

TCP - Transmission Control Protocol

RST - Reset packets

SMS - Short messages

ACM - The Dutch Authority for Competition and Markets

DPI - Deep Packet Inspection

QOS – Quality of services

SMP – Significant market power

LLU - Local loop unbundling

DSL- Digital subscriber line

HTTPS - Hypertext transfer Protocol

WWW - World Wide Web

ICT – Information and communication technology

OTT – Over-the-top

INTRODUCTION

Relevance of the topic: In these days, people are used to access the Internet openly, where the Internet service providers (ISPs) cannot control over how people access websites and services or shape internet traffic so that they can derive extra benefit from it. For that current state and openness of the Internet we should understand the Net neutrality principle, which lets web users access any legal website or web service without any interference from an ISPs. Because ISPs use traffic shaping to optimize the use of their network, sometimes by rationally shaping traffic according to interest, other times by weaning uses of applications by tight means. Meaning, these ISPs have the ability to pick and choose what consumers see online and to then charge content providers. So the Net neutrality is important for small business owners, startups and entrepreneurs, who launch their business on the open Internet and create markets, advertise their products and services.

Without the Net neutrality ISPs like Netflix (who is the leading video provider on the Internet) would have the ability to gain more customers. They pay more to ISPs to provide customers with the content they want, ranging from $75 million to $100 million, while smaller companies and startups are not able to to pay such amounts to ISPs. The open Internet is important tool for competition and innovation because funding is especially important for a startup or small business, and blowing it away just to have an online presence would be recognized as absurd. The Net neutrality basically is the main principle which manages the activities of big or small businesses. It assures that startups are able to compete with larger and more established corporations. Site speed is a key factor in search engine rankings, and sites which pay for faster speeds improves rankings as well.

The Net neutrality principle says that each Internet user can easily access any content or application without limitations and at the same speed. Without the Net neutrality Internet service providers can control user bandwidth treating all websites and applications with different speed for different type of content, depending on how much user is paying for that service because free access of Internet would not exist. The United States (US) ISPs like Verizon, AT&T, and Comcast and European Union (EU) ISPs like Vodafone, T- Mobile and Orange want to charge for use of their networks. In 2011, the EU initiated an investigation into ISPs methods for controlling traffic on their networks. It was found out that some ISPs restricted access to services like Skype, when mobile operator Vodafone blocked VoIP and enforced restrictions against peering, when Internet networks exchange traffic with them peers without any payment).

But there are differences between the Net neutrality situation in the US and the EU. In 2014, Barbara Van Schewick in The Atlantic said that: "Unlike Internet users in Europe, many of whom are on restricted Internet service plans that ban the use of specific applications on mobile networks, the US users have experienced the power of an open Internet and they are not willing to give it up." Despite the fact, that both the US and the EU regulations have provisions including bans on blocking, throttling, and paid prioritization, transparency requirements, and limits on traffic management, security, specialized services and zero rating, the EU are more sustainable politically. The EU Net neutrality supporters are like bottom-up consumer movement, which have support of representatives. While in the US, the Net neutrality is like a top down move from a campaign made by President Obama. Moreover, the EU have stricter Net neutrality regulations than the US, but in the the US courts still have the last word and can repeal this estimation.

Practical and/or theoretical value of the paper: Economic theory involves the two-sided market models (it analyzes the social well-being among two markets and the sides of the platform to communicate) and models of congestion (it analyzes the Internet access prices for the separation of private investment and innovation, lack of bandwidth welfare). Pricing model involves ISP, who charges the content provider a charge, which depends on the content and type or application. Such price discrimination can be done in order to discriminate on the basis of the quality of service.

Novelty of the topic on overview of previous researches: The Net neutrality topic was widely examined in the US by the founder of the Net neutrality concept Tim Wu, Barbara van Schewick and others, but in Lithuania such topic has not been widely examined. But knowing Lithuania's aspirations to lead in information technology (IT) field, the Net neutrality takes relevant place, because lack of information and scientific analysis can have a negative impact for startups and consumers (if the legal regulation is inappropriate).

Object: The Net neutrality impact to the startups in Lithuania to lead in IT field.

Research problem: because of the uncertain Net neutrality regulation and indecisive legislative exceptions startups cannot consolidate in the global digital economy.

Hypothesis: the indefinite Net neutrality legislative exceptions and use of zero rating restrict startups to consolidate in the global digital economy.

Research questions: What is the current situation of the startups in Lithuania and what the Net neutrality challenges may appear in the future? How it can affect transparent e-business?

Goal and objectives:

1. Examine the concept and content of the Net neutrality;

2. Study the requirements of the Net neutrality in the EU and the US;

3. Identify main stakeholders and the Net neutrality affection to Lithuanian startups and integration in global digital economy.

Brief overview of paper structure: The first chapter introduces background of the Net neutrality and the Net neutrality regulation in the EU and the US. The second chapter analyzes case studies of Comcast and KPN and uses comparative analysis between them to identify main differences between the Net neutrality regulation and barriers of making regulation more effective in the EU and the US. The third chapter includes quantitative research about the Net neutrality affection to startups in Lithuania.

Research methods:

1. Literature survey;
2. Comparative analysis;
3. Quantitative research method.

A literature survey studies written academic publications, articles, books and regulations about the Net neutrality. Quantitative research method will help to understand the Net neutrality affection to Lithuanian startups integration in global digital economy.

1. THE CONCEPT OF THE NET NEUTRALITY

1.1.The emergence of the Net neutrality

The term "Net neutrality" was introduced by Tim Wu (Isidor and Seville Sulzbacher Professor of Law at Columbia Law School) in 2003, after Federal Communication Commission (FCC) decision in 2002, to treat cable Internet access and Digital subscriber line (DSL) Internet access differently for regulatory purposes by deregulating cable. Professor's fields of interest are the Internet, media and communications industries. So one of the first of his proposed ideas was that "an Internet service provider should be required to treat all data from all content providers in the same way, much as other communications carriers cannot offer one deal to a potential customer without offering it to all" (Wu, 2003). Net neutrality requirement forbids slowing down delivery of content or even blocking it. Such practices have to be within normal practices of reasonable network management.[1]

Tim Wu began to consider the Net neutrality as Internet service providers (ISPs), applicable network usage restrictions (referenced in consumer contracts). Survey showed that operators implemented significant contractual and architectural limits on certain classes of applications. Operators showed that they want to ban emerging applications or network attachments, like Wi-Fi devices or virtual private networks. Operators were pursuing legitimate goals, like price discrimination or bandwidth management. According Tim Wu the problem was "the use of methods, like bans of applications, which could distort the market and future of application development. It is a good reason to question the efficacy of self-regulation in this area" (Wu, 2003).[2]

Based on this finding it was turned out that the applied excess restrictions may affect both economic and social progress. So Tim Wu was the first, who proposed the Net neutrality legislation to potentially deal with these issues in the United States (US). One of the proposal was open-access, which advocates structural separation between Internet service providers and broadband operators. Another was antidiscrimination principle, which forbids broadband operators from restricting what users do with their Internet connection. This principle works by recognizing a

[1]Net neutrality rules will make winners and losers out of business (2016). Retrieved from https://hbr.org/2016/06/net-neutrality-rules-will-make-winners-and-losers-out-of-businesses [22.11.2016 8:11 PM]

[2] Wu T. (2003). Network neutrality, broadband discrimination // *Journal of Telecommunications and High Technology Law*. – New York, Vol. 2, p. 141. Retrieved from https://poseidon01.ssrn.com/delivery.php?ID=994020123000097108087079030065107010116045067060095028110097084103022123108022021101018063099111026042034109117016092095007121033078015032007006064127110005004002049091067102020028008108084027090123022016127007027080127001030118080106007115073100&EXT=pdf [31.10.2016 11:47 AM]

distinction between local and inter network restrictions and represents development of forbidden grounds for discrimination in broadband usage restrictions.[3]

Talking about European Union (EU) case, there are differences in legal systems and competitive internal market, which does not usually appear on the Net neutrality violations. The Net neutrality in the EU was considered by expert Cristopher Marsden (United Kingdom Essex University Law School lecturer) who claimed that the situation in the EU is not good. The EU has emphasized the economic aspects of the Net neutrality. Although, the consumer choice of the security interest was agreed important. a balance between a high level of consumer protection and information communication technologies in the field of business competitiveness is not readily available and easily defined.

Cristopher Marsden proposed a "middle way" approach to determine the Net neutrality challenges. He demonstrates the effectiveness by comparing the United States and the Europe (by reviewing the history of the Net neutrality from the view of both content holders and network operators). Moreover, it was suggested to adopt "co-regulation". It expressed a form of regulation which was neither state command regulation or National regulatory authority specialized functions. Marsden said about co-regulation that "in the European context it must be proportional to the aims of the legal instrument, as well as conforming to the competition law of the European Union. Enforcement is the ultimate responsibility of the state" (Marsden, 2010).[4]

Expert thought that there is also a need for transparent "reporting requirements". It would require network operators to provide data about their traffic management practices and quality of service to regulators for their internal use. He said that making such reports would demonstrate to regulators and to consumers that they were acting responsibly and could be trusted. The author claimed that this arrangement would reinforce regulatory power but also lighten fundamental burdens that now limits network operators. Marsden categorized the business model of wireless communications in[5]:

1) "walled garden" when the network operator controls everything, but offers a limited number of channels and programs to its subscribers;

2) "open access" when Internet access is allowed over any network;

---

[3] Wu T. (2003). Network neutrality, broadband discrimination // *Journal of Telecommunications and High Technology Law*. – New York, Vol. 2, p. 141. Retrieved from https://poseidon01.ssrn.com/delivery.php?ID=994020123000097108087079030065107010116045067060095028110097084103022123108022021101018063099111026042034109117016092095007121033078015032007006064127110005004002049091067102020028008108084027090123022016127007027080127001030118080106007115073100&EXT=pdf [31.10.2016 11:47 AM]

[4] Marsden T. Ch. (2010). Net neutrality: Towards a co- regulatory solution // *International Journal of Communication.* – Bloomsbury, p. 301. Retrieved from http://ijoc.org/index.php/ijoc/article/viewFile/953/476 [01.11.2016 2:01 PM]

[5] Marsden T. Ch. (2010). Net neutrality: Towards a co- regulatory solution // *International Journal of Communication.* – Bloomsbury, p. 301. Retrieved from http://ijoc.org/index.php/ijoc/article/viewFile/953/476 [01.11.2016 2:01 PM]

3) “semi-open” in which open Internet access is available but “walled garden” content is accessed more easily.

With the growing number of consumers, in any business environment appears consumers with specific needs, which are essentially contrary to network openness. This situation occurs because the total number of user growth and data traffic volumes rise. An important aspect that determines the openness of the web is a special situation of the consumers in decision-making process. In other telecommunication systems users are the lowest link, which may not affect any decision-making. However, in accordance with the principle of end-to-end (E2E), in Internet decision-making users become the apex and the base of the hierarchy. That consumer status means that the data transfer can be limited only by consumer decision.[6]

Major Internet companies such as Facebook, Netflix, and Google, smaller companies, start-ups, and public interest groups largely supported the Net neutrality rules. Suppliers of data-intensive services worried that ISPs would target rules and requirements at their services with the intent to extract fees and revenues from them. For the near term the probability of such action has become quite low. [7]

The EU Council adopted guidelines on freedom of expression, which officially confirmed that freedom of expression must be guaranteed on the Internet and determined to oppose the state tests to block, filter, censor or shut down the Internet networks. In 2011, the EU Court decision found that consumers apply to general Internet filtering violates the fundamental rights of European citizens, it means that the right to freedom to disseminate and receive information online, so do not be copyright protected freedom of expression and the right to privacy protection bill. [8]

Nevertheless, information which was published on the Internet censorship and blocking exist in some countries like China, the pretext the need to protect the state's important interests. Typically, the Internet censorship implemented by the state authorities and ISPs, which monitors Internet content and in certain circumstances is filtered or blocked. Chinese government censors the Internet, which monitors and blocks local and international websites, e-mails and social networking accounts. China also forbids access to Google, Facebook, Twitter, YouTube and other social networks. Officially it is said that all this is done in order to protect state secrets and national

---

[6] Belli L., Filippi D. P. (2016). End-to-end, Net neutrality and human rights // *Net neutrality compendium human rights, free competition and the future of the Internet.* – Springer, p. 13-29. Retrieved from http://webcache.googleusercontent.com/search?q=cache:aBDmGOgPKTIJ:www.springer.com/cda/content/document/cda_downloaddocument/9783319264240-c1.pdf%3FSGWID%3D0-0-45-1533874-p177786462+&cd=4&hl=lt&ct=clnk&gl=lt [22.11.2016 10:23 AM]

[7] Net neutrality rules will make winners and losers out of business (2016). Retrieved from https://hbr.org/2016/06/net-neutrality-rules-will-make-winners-and-losers-out-of-businesses [22.11.2016 8:11 PM]

[8] The European Parliament (2015). Policy overview on the Consumer protection in the EU. Retrieved from http://www.europarl.europa.eu/RegData/etudes/IDAN/2015/565904/EPRS_IDA(2015)565904_EN.pdf [13.11.2016 8:46 PM]

security, because any information published on the Internet, which can lead to criticism of the Chinese government becomes unavailable to users. In 2015 Wikipedia was blocked in China, because Wikipedia started to use Hypertext transfer Protocol (HTTPS), which increases difficulty of the censorship. These are cases which show that the state itself indicates a certain limit traffic derivative of national interest, although this is censorship and human rights restriction.[9]

United Nations Human Rights Council passed a non-binding resolution in 2016, where is noted that Internet access is a human right. Resolution notes that "it is important to increase access to the Internet", also that "all states should address security problems in a way that ensures freedom and security on the Internet". But the United Nations cannot enforce Resolutions legally, because guidelines are for participating nations and not just can put pressure but also could have different views. These are just general guidelines how governments should form laws.[10]

Most of the web site access is limited to the use of Internet Protocol (IP) address blocking or Domain Name System (DNS) filtering and redirection. Interestingly, the lock withdraws only technical access to illegal content, but it does not remove the expanse of the Internet (in one country blocked web site can easily be reached in any other country). In addition, the blocked content can easily be connected by Internet users who access a blocked website using proxy server or virtual private networks.[11]

In Lithuania public relations covering electronic communications are regulated by the Lithuania Telecommunications law and the Lithuania Public Information Act. These two help to ensure the Net neutrality in the Lithuania at the national level. Laws provided electronic communications regulatory framework is appropriate in order to liberalize the telecommunications market. Lithuania Public Information Act provides the possibility of the competent state authorities to go to court, asking to restrict access to the Internet site where this is necessary to protect the public interest, public health, safety and consumer interests. Moreover, this law requires ISPs to supervise user behavior, the web page users visit and send the data and immediately inform

[9]Freedom on the net privatizing censorship, eroding privacy (2015). Retrieved from https://freedomhouse.org/report/freedom-net-2015/freedom-net-2015-privatizing-censorship-eroding-privacy [20.11.2016 11:48 PM]

[10] United Nations General Assembly (2016, June 30). Oral Revisions. Promotion and protection of all human rights, civil, political, economic, social and cultural rights, including the right to development. Retrieved from https://www.article19.org/data/files/Internet_Statement_Adopted.pdf [30.11.2016 3:35 PM]

[11]Interneto laisvė: ar nebus Lietuvoje kaip Kinijoje? (2015). Retrieved from http://www.delfi.lt/mokslas/technologijos/interneto-laisve-ar-lietuvoje-nebus-taip-kaip-kinijoje.d?id=68328528 [20.11.2016 1:29 PM]

the Information Society Development Committee about possible illegal user activity. Public authorities may occur, in order to limit the dissemination of information prohibited in Lithuania.[12]

This law is related to the Net neutrality, because despite that Net neutrality argue that Internet users have the right to access information without ISPs interference, but the Public Information Act refers to a certain specific cases, when the information is recognized as sensitive and such impermissible content information should be restricted or prohibited. Despite this is interference in the functioning of the Net neutrality, but in order to protect Internet users from hatred, discrimination, racism and other harmful, the state have the right to control the information that can access the Internet. Prohibited information shall include line information to encroach on the constitutional order, human health, honor and dignity, private life and morals, which damage the physical, mental or moral development on the disclosure of their personal data, inciting war or hatred, discrimination, violence or physical violence, source or advertise pornography, sexual services, sexual perversions, addictions and narcotic drugs or psychotropic substances contrary to the presumption of innocence and undermining the impartiality of the judiciary and does not meet the reality. These are legislation exceptions when the information cannot be published. But Lithuanian legal regulation is different from the EU legal regulation, because sensitive information over the Internet distribution is much more strictly regulated in Lithuania, moreover is inconsistent and leaves a low self-regulation. This list was fulfilled by infringing information and illegally executed online remote gambling.[13]

In 2001 the first Gaming Act, which legalized gambling organization and procedures in Lithuania was adopted. The Gaming Act did not regulate, how should gambling and betting be carried out in remotely and any control mechanism was not created. After the ban on online gambling in Lithuania, gambling organizers registered companies abroad and Lithuanian consumers continued to use their services. The decision to block betting sites have been taken to protect betting Lithuanians and to protect the business interests of legitimate companies engaged in Lithuania. Court disliked that the betting services providing online companies were registered in other countries and did not pay any taxes to the Lithuanian budget, also did not have a license required for its activities. [14]

For the first time in Lithuania the Internet censorship was introduced in 2016, when the amendments to the Gambling Law told to block Lithuania illegally operating gambling websites.

---

[12] The Public information law of the Republic of Lithuania (2006). No. X-752, State news, No. 82-3254. Retrieved from https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.280580 [11.11.2016 3:50 PM]

[13] The Public information law of the Republic of Lithuania (2006). No. X-752, State news, No. 82-3254. Retrieved from https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.280580 [11.11.2016 3:50 PM]

[14] The Gaming Act of the Republic of Lithuania (2001). No. IX-325, State news, No. 43. Retrieved from http://www.litlex.lt/scripts/sarasas2.dll?Tekstas=1&Id=47218 [30.11.2016 11:15 PM]

Amendments legalized online gambling and how the state and the interests of players predicted that the Gambling Control Commission will acquire the right to demand that Internet service provider to withdraw access to illegal gambling websites. The law makers rejoiced, that system where "black lists" were drawn up and IP addresses from that list were blocked successfully operated in Latvia. But few months later, the social network Reddit, who shared the same IP address with gambling site *www.redbet.com* was blocked by Latvian Gambling Inspection initiative. Although the block has been removed within a few days, it was confirmed that such practice has flaws.[15]

The traffic shaping techniques that are associated with the transmission of data limitations, is important not only to Internet service providers, but also to the copyright and related rights defenders (who seek to control the distribution of protected works in cyberspace), law enforcement, representatives of the intelligence authorities, who control illegal activities on the Internet. The same situation is with gaming in Lithuania. So, it is obviously, that not always the Net neutrality violations are harmful to consumers, because in some cases they are protected from other abusive users of Net neutrality. Although, it would seem that consumer rights and neutrality of the network are violated because consumers are not free to access the online gaming portals (although these illegal), but at the same time consumers are protected against illegal content on these portals, because just official gambling operators have an obligation to register and provide data on gamblers, but the illegal organizers do not. It also protects the Lithuanian market, because under this law the higher income should reach a budget.

Despite that, the Net neutrality principle tries to manage that Internet service provider treat all data from all content providers in the same way, because operators showed that they want to ban emerging applications or network attachments, like Wi-Fi devices or virtual private networks by price discrimination or bandwidth management. But applied excess restrictions affect negatively both economic and social progress, that is why Net neutrality legislation was suggested in the EU and the US, in order to deal with these issues. Still, there are cases, like China example, when the state itself indicates a certain limit traffic derivative of national interest, although it is censorship and human rights restriction, but despite that, the freedom of expression must be guaranteed on the Internet. In some cases, Net neutrality cannot be absolute and has limitations, when some level of prioritization or restriction is needed in order for best interests of consumers or from innovation view if the telecom companies could charge higher fees for the bandwidth, they could afford to develop advanced networks that support all forms of Internet services.

---

[15] The Supplementing law of the Gaming Act of the Republic of Lithuania (2015). No. XII-1734, Legislation register, No. 8980. Retrieved from https://www.e-tar.lt/portal/lt/legalAct/0f7f08200da011e5920c94700bb1958e [13.11.2016 2:20 PM]

1.2. The notion and conception of the Net neutrality

After emergence of data transmission possibilities, the question arose of the data stream transmission speed and quality of Internet connection. The growing technological advances have enabled users to use more and better quality Internet connections, moreover number of users were rapidly growing. As the number of users is growing significantly faster than the ISPs ability to satisfy the needs of consumers, it created preconditions to restrict the flow of data in order to satisfy the growing number of users and increase profits (without changing the cost). After that appears the Net neutrality, which essence is to protect the interests of consumers from ISPs and their potentially unfair profit maximizing action.

The Net neutrality means that Internet service providers should treat equally the Internet moving data and not to discriminate against them or apply different charges to consumers and content creators according to data content and quantity of website platform, the equipment used. According to this principle, all the flow of data on the Internet is ensured equal and users may achieve full legal content online under the same conditions without preference for faster opening of some sites or their blocking.[16]

Over the past decades, the Internet has become an open platform that is easily accessible to users, content and service providers and Internet access providers. The existing regulatory framework is used to increase end-users access to information and the dissemination of information, or use its own custom applications and services, because some techniques of traffic management can limit end-users right to impart and receive information. However, recipients of services are still blocked or slowed down by some applications. For the trends its need common the European Union wide rules in order to ensure the openness of the Internet and to avoid fragmentation of the internal market.[17]

Internet service providers currently does not impose any specific charges for content providers like Spotify, Netflix, Amazon for the transmission of data "fast lane" or slow down the availability of their content in order to compete with them. This means that without exception, all of the data on the Internet - video, audio, television channels, documents and other - are allowed

[16] The European Parliament and the Council (2015, September 23). Regulation 10788/15 on setting out the measures relating to the open Internet access and amending Directive 2002/22/EC on universal service and users' rights relating to electronic communications networks and services and Regulation No.531/2012 on roaming on public mobile networks within the Union. Retrieved from http://data.consilium.europa.eu/doc/document/ST-10788-2015-INIT/lt/pdf [13.11.2016 2:25 PM]

[17] Belli L., Filippi D. P. (2016). End-to-end, Net neutrality and human rights // *Net neutrality compendium human rights, free competition and the future of the Internet.* – Springer, p. 13-29. Retrieved from http://webcache.googleusercontent.com/search?q=cache:aBDmGOgPKTIJ:www.springer.com/cda/content/document/cda_downloaddocument/9783319264240-c1.pdf%3FSGWID%3D0-0-45-1533874-p177786462+&cd=4&hl=lt&ct=clnk&gl=lt [22.11.2016 10:23 AM]

to join on equal terms, and Internet service providers are completely distanced themselves from what is sent over the Internet and to any site or information not given priority.[18]

Net neutrality also touches on the investment priorities for today's Internet. Today, we stream movies, go shopping, and convene on social platforms. In turn, large internet service providers claim that the growing amount of data transferred by content providers to end users had congested and strained their networks, causing service disruptions.[19]

Without net neutrality, small and medium-sized businesses (SMEs) would become Internet also-rans unless they pay more for faster access to their content and services. If they are relegated to the slow-lane in a pay-for-speed Internet system, the experience SMEs could offer potential and existing customers would be inferior to that offered by businesses in the fast lane. In the absence of the Net neutrality, the Internet would look like this:[20]

1. We would pay more for a smaller amount of data online, and online supplier would become a goalkeeper, who would stand between us and our desired Web services and applications.
2. New attractive sites and inventions would not be so quick and easy to reach as large, already established in the United States sites. They even would not survive a long time to become the most popular.
3. Economics and startups would suffer. With the Net neutrality we can invent all the new services, without asking permission, from the beginning to use a global, fair and infrastructure in a way to benefit from it. If users lose this freedom, they would lose the most important success in the digital economy huge part of our consumer's freedom of choice.
4. The Internet becomes slower. If the Internet providers will permit competitive advantages to sell only a few sites, this will stimulate the rest of the Internet to make slower for all other users. Even if there were cheaper rates, in fact, this would mean less choice and slower "real" Internet download limits.

Rights to content on the Internet should be understood not as a state guaranteed access to the global network, but as an effective self-regulatory mechanism. Internet openness and neutrality led to the development and popularity of the network. Possibility to regulate the behavior of the

[18] Interneto neutralumas – ar pavyks jį užtikrinti? (2015). Retrieved from http://manoteises.lt/straipsnis/interneto-neutralumas-ar-pavyks-ji-uztikrinti/ [22.11.2016 2:17 PM]

[19]Net neutrality rules will make winners and losers out of business (2016). Retrieved from https://hbr.org/2016/06/net-neutrality-rules-will-make-winners-and-losers-out-of-businesses [22.11.2016 8:11 PM]

[20]What net neutrality means for small business (2015). Retrieved from https://www.americanexpress.com/us/small-business/openforum/articles/net-neutrality-means/ [22.11.2016 8:13 PM]

Internet by legal means could be unsuccessful, because today information technology is developing much faster than the law. Internet regulation is undesirable in business because business decisions is limited in cyberspace creation and development.[21]

Analytical research agency Pew Research Center survey showed that about 60 per cent of any age Internet users understand that the term "Internet neutrality" means that the service providers are equally appreciate any kind of web content. Currently, the US Federal Communications Commission (FCC) wonders whether the broadband Internet sector should be subject to more stringent regulatory measures to prevent priority content associated with major Internet service providers such as Google, YouTube, Amazon, or Netflix.[22]

The FCC proposed that the Net neutrality rules should prohibit broadband access providers from prioritizing traffic, charging differential prices based on the priority status, and adopting business models that offer exclusive content. This situation can be illustrated like that: users who spend most of their free time on the Internet, year after the Internet service provision contract receives a proposal from its operator with special and exclusive access to the unlimited scope of the Internet for special amount of euros per month. If no proposal is to be presented, the Internet speed will be reduced.[23]

The growing technological advances enabled consumers to use more Internet connections, so number of users were rapidly growing which lead to preconditions to restrict the flow of data. That is how Net neutrality principle appeared, which says that all the flow of data on the Internet is ensured equal and users should achieve legal content online without any preference or blocking. Net neutrality also touches on the investment priorities, because Net neutrality leads to innovation. This principle is a key factor, why competition in market exists, so we need pay less, SMEs and startups have a chance to participate in digital economy and reach users easier. The regulations address the competitive concerns motivating the Net neutrality rules and addresses the potential impact of the proposed rules on consumer welfare. There is significant and growing competition among broadband access providers and significant competitive problems have been observed to date. That interrelationships do not provide a compelling rationale for regulation.

---

[21] Hazlett Th. W. (2013). The fallacy of net neutrality. - Encounter books. Retrieved from https://books.google.lt/books?id=iVXN_9wMSuIC&printsec=frontcover&dq=net+neutrality&hl=lt&sa=X&ved=0ahUKEwiOmd-i4f3PAhUDVhoKHS8QA-sQ6AEIIzAA#v=onepage&q=net%20neutrality&f=false [01.11.2016 9:33 AM]

[22] Pew Research Center (2014). Net Threats report. Retrieved from http://www.pewinternet.org/files/2014/07/Future-of-the-Internet_Net-Threats_070314.pdf [22.11.2016 3:37 PM]

[23] Becker G.S. et al. (2010). Net neutrality and consumer welfare // *Journal of Competition law & economics* - vol. 6, issue 3, 497-519. Retrieved from http://jcle.oxfordjournals.org/content/6/3/497.abstract [16.11.2016 4:26 PM]

1.3. The principles of the Net neutrality in the European Union and the United States

1.3.1. The Net neutrality in the European Union

In 2008, non-governmental organizations supported the Net neutrality. During the debates it was noted that number of violations of the Net neutrality principles was increasing on the Internet. When the United States telecoms regulator The Federal Communications Commission has published online its first directives in order to defend the Internet from some forms of discrimination through a wired network, it was a huge success. While other countries introduced laws and regulations in order to protect the Net neutrality, the European Union debates took place slowly.

The European Parliament adopted a resolution on the open internet and the Net neutrality in 2011. The resolution welcomed the need to ensure that the Internet continues to be an open and neutral. This was a key driver of innovation and consumer demand. As well as to the conditions to provide quality services on the Internet, based on a framework that respects fundamental rights. The resolution also stressed that any solution proposed on the issue of the Net neutrality can be effective if it is coherent European approach.[24]

Therefore, the Commission should carefully monitor the national legislation related to the Net neutrality, according to their impact on the relevant national markets and the internal market. Attention was drawn to the major threats that arise when departing from the Net neutrality like breach of the principles of competition, blockage of innovation, freedom of expression and media pluralism are restrained, the lack of consumer awareness and infringement of privacy which were detrimental to businesses and consumers.[25]

According to the resolution, that is based on data traffic management it was required to ensure that the network congestion is not the end user's connectivity. Also, the competent national authorities were encouraged to ensure that traffic management practices are not related to the infringement of the principle of competition or harmful discrimination. [26]

Another the Net neutrality law project was submitted on 2013. This project was submitted by the European Commission. But there were several loopholes in this proposal that allowed online

---

[24] The European Parliament (2011, November 17). Resolution 2011/0511 on the open internet and net neutrality in Europe. Retrieved from http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//NONSGML+TA+P7-TA-2011-0511+0+DOC+PDF+V0//LT [13.11.2016 2:30 PM]

[25] The European Parliament (2011, November 17). Resolution 2011/0511 on the open internet and net neutrality in Europe. Retrieved from http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//NONSGML+TA+P7-TA-2011-0511+0+DOC+PDF+V0//LT [13.11.2016 2:30 PM]

[26] The European Parliament (2011). Resolution 2011/2866(RSP) on the open internet and the net neutrality in Europe. Retrieved from http://www.europarl.europa.eu/sides/getDoc.do?type=MOTION&reference=B7-2011-0572&language=EN [13.11.2016 2:35 PM]

vendors to bypass the Net neutrality. For example, Internet suppliers provision of "specialized services" allowed to offer special discriminatory access to the network. Also, this proposal had network blocks for the Web sites, applications and various types of content. So it was a threat to freedom of opinion and the rule of law. After a few months Parliament adopted the text which had firmly protect the Net neutrality. In order to speed up the negotiations and undermine the EU Parliament's position, Commission, Council and Parliament began informal conversations. The European Parliament decided that the current national regulatory authority task is to take a decision on the law ambiguities.[27]

The European Commission introduced the "connected continent" package in 2013. This package essentially reinforced the rights of Internet users. Before signing the contract for the provision of Internet services, consumers should be informed of the average Internet service speeds, the volume of data sent and restrictions on the movement of data management practices. Contractual terms could not be changed without consumer consent and authorized state authorities will need to monitor the quality of service and will be able to set minimum quality requirements and the users will be able to terminate the contract if the service quality is lower than promised.[28]

The European Commission maintained that the package will ensure the neutrality of the Internet around the world as determined by rules to ensure that the blocking of Internet sites, access restriction and prepaid giving preference to the websites will be prohibited. Also that legislation exceptions to the Internet service providers to maintain the possibility to limit the open Internet accessibility, Internet service providers may agree with specialized and innovative web services.[29]

It also used the "zero rating" practice. Certain websites like Facebook users could join for free, thus limiting their willingness and the ability to connect to other not in the list of web pages. Another worrying aspect was law exemption that allowed to block a website in which seeks to prevent or stop a crime. Crime concept of the proposed legislation was not defined, so it remained a lot of uncertainty regarding the application of the cases.[30]

These legislative exceptions doubted that the European Commission are not tend to maximize the neutrality of the Internet. However, discussions were ongoing between the EU institutions and the search for consensus within the European Council, it was expected that clear

---

[27] The European Parliament (2013). Resolution 2013/2655(RSP) on the Digital single market completion. Retrieved from http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//TEXT+MOTION+B7-2013-0331+0+DOC+XML+V0//LT [15.11.2016 2:59 PM]

[28] Directorate General Communication (European Commission), (2013, September 11). Press release *Commission adopts regulatory proposals for a Connected Continent*. Reference: MEMO/13/779. Retrieved from http://europa.eu/rapid/press-release_MEMO-13-779_en.htm [15.11.2016 10:35 AM]

[29] Directorate General Communication (European Commission), (2013, September 11). Press release *Propose major step forward for telecoms single market.* Reference: IP/13/828. Retrieved from http://europa.eu/rapid/press-release_IP-13-828_en.htm [15.11.2016 5:47 PM]

[30] Directorate General Communication (European Commission), (2015, October 27). Press release *Roaming charges and open Internet: questions and answers*. Reference: MEMO/15/5275. Retrieved from http://europa.eu/rapid/press-release_MEMO-15-5275_en.htm [15.11.2016 8:53 PM]

rule of law will be approved, which do not need to be interpreted by EU legislators and the courts, and that in fact will protect the open Internet.[31]

So the European Union adopted a regulation on the Net neutrality in 2015. This regulation contained the principles to ensure that the Internet can be reached without discrimination. The regulation, which also included the elimination of roaming charges since 15 of June, 2017 stated that Internet service providers should equal treat different types and sources of data flows and not to discriminate them for commercial purposes. The Regulation does not preclude the application of the zero-rating practice, also known as online Sponsorship, when some Internet service providers, especially mobile operators, provides users with a free flow of data to connect to certain services or web sites like Spotify or Facebook.[32]

Regulation lays down measures relating to open Internet access. Also it is hereby amended Directive on universal service and user rights relating to electronic communications networks and services and the Regulation on roaming on public mobile networks within the Union. The Regulation aims to establish common rules in order to ensure a uniform and non-discriminatory conditions of flow with respect to the provision of Internet access services and providing relevant end-users rights. It aims to protect end-users and to ensure uninterrupted Internet system as a driving force of innovation performance. Roaming reforms should give end-users the confidence to use the connection for traveling within the EU, and eventually lead to uniform pricing and other conditions applicable to the Union.[33]

Moreover, Regulation says that in order to exercise their rights of access to information and content, dissemination and use of selected programs, users should be free to agree with the Internet access service providers on the tariff for a given amount of data and Internet access services to speed. Such agreements, as well as Internet service providers, commercial practices should not restrict the exercise of those rights and thus to circumvent the provisions of this Regulation to ensure open Internet access. It should be required that the national regulators and other competent authorities for the purposes of monitoring and enforcement role, to take action

---

[31] The European Parliament and the Council (2013). Proposal for regulation on laying down measures concerning the European single market for electronic communications and to achieve a Connected Continent, and amending Directives 2002/20/EC, 2002/21/EC and 2002/22/EC and Regulations (EC) No 1211/2009 and (EU) No 531/2012. Retrieved from http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52013PC0627 [15.11.2016 2:57 PM]

[32] The European Parliament and the Council (2015, September 23). Regulation 10788/15 on setting out the measures relating to the open Internet access and amending Directive 2002/22/EC on universal service and users' rights relating to electronic communications networks and services and Regulation No.531/2012 on roaming on public mobile networks within the Union. Retrieved from http://data.consilium.europa.eu/doc/document/ST-10788-2015-INIT/lt/pdf [13.11.2016 2:25 PM]

[33] Directorate General Communication (European Commission), (2015, June 30). Press release *Commission welcomes agreement to end roaming charges and to guarantee an open Internet*. Reference: IP/15/5265. Retrieved from http://europa.eu/rapid/press-release_IP-15-5265_en.htm [15.11.2016 9:35 AM]

when the agreements or commercial practices users rights are violated.[34]

In Regulation rules for blocking and throttling are not provided, but is adopted general rule, which prohibits "any traffic management practices which go beyond reasonable traffic management measures". Reasonable traffic management is needed for efficient use of network resources and to optimize quality of transmission. Reasonable management measures should be transparent, non-discriminatory and should not be based on commercial considerations. This concept does not require special techniques which should monitor specific content of data on Internet. But any clear concept about reasonable traffic management is revealed, so it leads to misunderstandings of the unclear definition, when reasonable management measures could be applied and when could not.[35]

Providing Internet access services, service providers should apply the same conditions to all traffic without discrimination, restrictions or interference, regardless of what the traffic sender or recipient is, what its content, application or service. According to the Regulation, comparable situations must not be treated differently, and different situations should not be treated equally. Traffic management measures may be applied as long as necessary to comply with the provisions laid down in the three justified exceptions:[36]

1. First, there may be cases in which the Union legislative accepted regulations or national laws are applicable to the Internet access service providers (for example, with regard to content, applications or services, the legality or public safety), including the criminal law, for example, to block specific content applications or services;
2. Second, traffic management measures, which exceeded the reasonable traffic management measures may be needed in order to protect the integrity and security of the network (to prevent cyber attacks);
3. Third, measures which exceed the reasonable traffic management measures may also be needed to prevent imminent network congestion, t. y. situations where network congestion appeared, and in order to mitigate the impact the network congestion. In

[34]The European Parliament and the Council (2015, November 25). Regulation 2015/2120 on 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. Retrieved from https://www.scribd.com/document/306350824/Net-Neutrality-REGULATION-EU-2015-2120 [16.11.2016 1:45 PM]

[35] The European Parliament and the Council (2015, September 23). Regulation 10788/15 on setting out the measures relating to the open Internet access and amending Directive 2002/22/EC on universal service and users' rights relating to electronic communications networks and services and Regulation No.531/2012 on roaming on public mobile networks within the Union. Retrieved from http://data.consilium.europa.eu/doc/document/ST-10788-2015-INIT/lt/pdf [13.11.2016 2:25 PM]

[36]The European Parliament and the Council (2013). Proposal for regulation on laying down measures concerning the European single market for electronic communications and to achieve a Connected Continent, and amending Directives 2002/20/EC, 2002/21/EC and 2002/22/EC and Regulations (EC) No 1211/2009 and (EU) No 531/2012. Retrieved from http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52013PC0627 [15.11.2016 2:57 PM]

accordance with the principle of proportionality, it requires that the implementation of traffic management measures, the equivalent traffic categories should be treated equally.

Internet access service providers and end-user agreements for the Internet access services and parameters, such as price, speed or the amount of data should not restrict access to use their rights. National regulatory authorities should ensure that public electronic communication service providers comply with the requirements and should assess the impact on access to Internet services and their overall quality assurance to examine the quality of service parameters, the congestion level of the network, the actual and advertised speed difference and the comparison with the services that are not Internet access services. Also that users would be able to take advantage of the rights set out in the Regulation and that access to the open Internet rules would be effective. [37]

It should be carried out in the monitoring and reporting obligations and should be ensured that public electronic communications services and ISP's comply with its obligations on the open Internet security. This includes a commitment to ensure sufficient network capacity and non-discriminatory terms to provide high-quality Internet access services, whose quality should not be affected by the other services. While this Regulation is too abstract, the Commission required European Regulators for Electronic Communications (BEREC) by the end of 2016 prepare the implementing guidelines to clarify the regulation uncertainties. These directives will be important for further network neutrality in Europe.[38]

After published guidelines BEREC said that: "ISPs are prohibited from blocking or slowing down of Internet traffic, except where necessary. The exceptions are limited to: traffic management to comply with a legal order, to ensure network integrity and security, and to manage congestion, provided that equivalent categories of traffic are treated equally." These guidelines also provide examples, what could be understood as specialized services (it would have to meet certain quality requirements to ensure that they operate on networks not connected to the Internet). It can slow down development of innovative services when attempting include it within regulated sphere. [39]

Moreover, the Guidelines suggested that National Regulatory Authorities should pay attention on network dimensioning, while the traffic management is necessary to ensure quality and performance of the network. Last but not least is that the Guidelines could interfere Europe

[37] The Digital single market (2016). Commitment to net neutrality. Retrieved from https://ec.europa.eu/digital-single-market/en/open-internet-net-neutrality [16.11.2016 10:13 PM]

[38] BEREC (2016). Guidelines on the Implementation by National Regulators of European Net Neutrality Rules. Retrieved from http://berec.europa.eu/eng/netneutrality/ [17.11.2016 3:16 PM]

[39] BEREC (2016). Guidelines on the Implementation by National Regulators of European Net Neutrality Rules. Retrieved from http://berec.europa.eu/eng/netneutrality/ [17.11.2016 3:16 PM]

plans on 5G development and broadband deployment. Because these guidelines leave some uncertainty, BEREC should realign the Guidelines with the Open Internet Regulation, in order to maintain the consumer protection while fostering innovation.[40]

The Internet-based an "over-the-top" (OTT) services are getting more and more important in the ICT industry and for consumers and businesses. OTT term is not clearly defined, some use this term to define a group of member, others to qualify a category of services. In report, which is particular regulation for VoIP services, BEREC defines an OTT service as "content, a service or an application that is provided to the end user over the open Internet." It means that OTT does not refer to a special service, but refer to a method of provision over the open Internet. Report supports Net neutrality principle and says that "legitimate traffic management practices may be allowed, but should be tested against the core principles of the Net neutrality" and that "tariff plans offered by ISPs must conform to the Net neutrality principle". It were distinguished three business models of OTT services:[41]

1. Subscription-based video on demand- based on the order of service, for example, Netflix.com;
2. Advertising-based video on demand- free platform in exchange for advertising, for example, www.hulu.com which is film and wiring platform online where you can not to pay a monthly premium, but then must view advertisements, for example, YouTube or Lithuanian portals video platforms;
3. Transactional video on demand- platform enabling to pay for specific content (movies, shows), for example, iTunes.

But in the EU already appears operators who found that there is no object to oppose the Net neutrality principle and began to seek ways to cooperate with OTT players. One of the first operators who have changed its position is mobile operator Telia's owned Latvian telco Lattelecom, which launched new OTT entertainment platform www.shortcut.lv, which offers series, movies and TV channel content. So other traditional operators should change their thinking too, and from the trying to bypass the legal requirements to turn into the cooperation with the

[40] BEREC (2016). Guidelines on the Implementation by National Regulators of European Net Neutrality Rules. Retrieved from http://berec.europa.eu/eng/netneutrality/ [17.11.2016 3:16 PM]

[41] BEREC (2015, October). Report on OTT services, BoR (15) 142. Retrieved from https://www.google.lt/url?sa=t&rct=j&q=&esrc=s&source=web&cd=2&cad=rja&uact=8&ved=0ahUKEwjcqpuBitnQAhWGKCwKHWKtCDkQFggfMAE&url=http%3A%2F%2Fberec.europa.eu%2Feng%2Fdocument_register%2Fsubject_matter%2Fberec%2Fdownload%2F0%2F5431-draft-berec-report-on-ott-services_0.pdf&usg=AFQjCNHk_6Tj_nRWADrZU6GHyTw-Ru3kuA&sig2=-lnja2Z5qRR3iPfw2i4SQQ&bvm=bv.139782543,d.bGg [02.12.2016 8:15 PM]

startups, because just after that they will face with opportunity to innovate and will remain in demand in the market.[42]

The guidelines are the final step in such long process of adopting Net neutrality legislation in the EU. Net neutrality is a global issue, but the EU has cemented a global trend towards strong Net neutrality protection. Open Internet advocates argue that Net neutrality is very important for creating an online environment that encourages innovation and economic growth, that is why many European venture capitalists and startup entrepreneurs are in favor of such the EU Net neutrality protections.

1.3.2. The Net neutrality in the United States

The regulation in the US should be understood in the overall regulation context of the Internet and of Internet access in general. Regulation in the United States reflected a contrast between telecommunication (subject to numerous regulatory commitment) and information services (subject to few if any apparent commitment). The main Internet services were always handled as information services and mostly unregulated. The FCC arranged Internet access when sold package with Internet service to be an information service.

This evolution had consequences which were related to the progress of the Net neutrality debate in the US. It was reversed a tendency of the US broadband market competition (through the incumbent Digital subscriber line (DSL)) and that made impossible for the FCC to dedicate fines on companies that violated the Net neutrality. The broadband Internet access was assorted as an information service by the FCC, although these obligations were interpreted as ineffective. The FCC removed further non-discrimination commitments that had existed according to series of FCC rulings. This meant that there was no explicit regulatory basis for the FCC to act against anticompetitive discrimination.[43]

In 2005, the FCC made a statement about consumers, that consumers have a right to access the lawful Internet content by their choice use applications and services which they want. Despite that, the FCC had never made this statement of principles officially in specific rules. Statements like that had no legal power, it was just a simple statement, which indicated how FCC

---

[42] Digital TV news (2016). Lattelecom launches OTT Shortcut platform. Retrieved from http://www.digitaltveurope.net/565622/lattelecom-launches-ott-shortcut-platform/ [02.12.2016 11:13 PM]

[43] Wu T. (2006). Network neutrality: competition, innovation and nondiscriminatory access // *SSRN Electronic Journal.* – New York, p. 7. Retrieved from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=903118 [31.10.2016 5:39 PM]

Commissioners should see certain questions.[44] After a Comcast investigation, the FCC estimated that Comcast interfered their users with ability to access applications like Bit Torrent. Though Comcast agreed to stop interference, nevertheless, they disputed the legal basis ordered by FCC, because according to Comcast, the FCC enforced them by rule that was not a real rule, and the FCC had no power to issue such a rule.[45]

The Court ascertained that the FCC did not prove their authority and lifted the FCC order. The FCC is regulatory authority, which is supposed to implement attitudes of US law. In Comcast legal dispute case, the Court ascertained that the FCC unsuccessfully tied their claim with their ancillary authority (the authority has to ensure that its actions in support of a legal mandate are not circumvented). The FCC finally released the Open Internet Order 2010, with Telecommunications Act of 1996 as source of the authority. This Open Internet order could be reviewed as an effort to officially implement an extended version of the Internet Policy Statement:[46]

1. Transparency. ISPs should disclose information about the network management, performance, and commercial conditions about broadband Internet access services;
2. No blocking. ISPs should not block lawful content, applications or services subject to reasonable network control;
3. No unreasonable discrimination. ISPs should not unreasonably discriminate lawful network traffic within users broadband Internet access service.

The Open Internet order defined what means "reasonable network management". Also it has been arguing that mobile broadband environment in the US is at young stage of development and is more competitive than fixed. But there were noticed three main things about the Net neutrality in the US:[47]

1. The principle of the technological neutrality in the US telecommunications law

---

[44] Federal Communications Commission (2005, September 23). Policy Statement FCC05. Retrieved from https://apps.fcc.gov/edocs_public/attachmatch/FCC-05-151A1.pdf [01.11.2016 7:38 PM]

[45]Comcast (2008). Statement on FCC Internet regulation decision. Retrieved from http://corporate.comcast.com/news-information/news-feed/comcast-statement-on-fcc-internet-regulation-decision [17.11.2016 9:19 PM]

[46] Zelnick B., Zelnick E. (2013). The illusion of net neutrality – political alarmism, regulatory creep and the real threat to internet freedom. – Hoover Press. Retrieved from https://books.google.lt/books?id=Q10phY811tUC&pg=PA156&dq=net+neutrality&hl=lt&sa=X&ved=0ahUKEwitwISc3cHQAhVMiywKHQAoA2UQ6AEIPDAF#v=onepage&q=net%20neutrality&f=false [10.11.2016 11:28 AM]

[47] Marcus J. S. (2014). Network Neutrality Revisited: Challenges and Responses in the EU and in the US. – Policy Department. Retrieved from http://www.europarl.europa.eu/RegData/etudes/STUD/2014/518751/IPOL_STU(2014)518751_EN.pdf [10.11.2016 9:38 AM]

was not over-arching;

2. The market force totally played huge role in the the US telecommunications law;
3. The US broadband market was geographically non-overlapping duopolies.

At the same time, the mobile market had four nationwide players. Superiority of the cable network, which was the great broadband provider in the US, and the telecommunications network was not an issue for the mobile network, but it was for the fixed network. The FCC had an unfavorable attitude to Internet access agreements that included tiered charging for various services. It was said that in fixed network it was improbable to satisfy limitations on discrimination. Part of stakeholders carried that the FCC was not solving with interconnection aspects of the Net neutrality.[48]

The FCC Open Internet Order 2010 was just adjusting to the network broadband providers but was not adjusting to the no-blocking or discrimination rules when talking about traffic exchange among networks. The FCC made a new Notice of Proposed Rulemaking (NPRM) where aimed to recreate the FCC Open Internet Order 2010 rules on a firmer basis. It was just unclear if the FCC will use their restricted power according to the Telecommunications Act of 1996, recognized by Courts or will take delicate attitude of reclassifying broadband Internet access. In 2014, President Obama made an official statement that the FCC needs to adopt strict the Net neutrality regulations, despite the fact that the FCC is officially an independent force. [49]

In 2015, the FCC approved the Net neutrality regulations to protect consumers and businesses from ISPs. These rules should restrict ISPs like Comcast from blocking or slowing down traffic to certain websites pay more. The Net neutrality does not address anything that companies are doing and does not help with the number of issues people care about mostly like the price and quality of the services.[50]

The FCC's Open Internet rules appeared in order to protect an innovation on the Internet and promote investments. The rules are justified in the strictest legal foundation which relies on

---

[48] Marcus J. S. (2014). Network Neutrality Revisited: Challenges and Responses in the EU and in the US. – Policy Department. Retrieved from http://www.europarl.europa.eu/RegData/etudes/STUD/2014/518751/IPOL_STU(2014)518751_EN.pdf [10.11.2016 9:38 AM]

[49] Zelnick B., Zelnick E. (2013). The illusion of net neutrality – political alarmism, regulatory creep and the real threat to internet freedom. – Hoover Press. Retrieved from https://books.google.lt/books?id=Q10phY811tUC&pg=PA156&dq=net+neutrality&hl=lt&sa=X&ved=0ahUKEwitwISc3cHQAhVMiywKHQAoA2UQ6AEIPDAF#v=onepage&q=net%20neutrality&f=false [10.11.2016 11:28 AM]

[50] Cave M., Vogelsang I. (2015). Net neutrality: an E.U./U.S. Comparison // *CPI Journal.* - vol. 11, no. 1, p. 14. Retrieved from https://www.competitionpolicyinternational.com/wp-content/uploads/2016/03/Net-Neutrality.pdf [16.11.2016 3:13 PM]

the Telecommunications Act of 1996 and the Title II of the Communications Act. Both acts support competitive choices and freedom to consumers. The Open Internet rules ensures that consumers and businesses need to get access to a fair and open Internet. The rules were applying to both mobile and fixed broadband service and protects users whether they access Internet on a computers or by mobile devices:[51]

1. No Blocking. ISPs cannot block access to applications or services or legal content;
2. No Throttling. ISPs cannot undermine Internet traffic;
3. No Paid Prioritization. ISPs cannot grace one Internet traffic over other traffic- no "fast lanes".

That Open Internet rules also found a legal reference for future ISPs practices to assure that ISPs will not impede users access to the Internet. The legal structure will maintain rules, moreover the FCC will be able to solve problems in the exchange of traffic among networks and mass-market broadband providers.[52]

Comparing the US and the EU Net neutrality regulation we can overview that EU regulation focus on Internet traffic management and examples which describe fairness and non-discrimination elements, while FCC rules address ISPs, non-broadband Internet access services, Internet traffic exchange and reasonable network management rules. Under FCC rules in the US ISPs cannot block lawful content, services or applications, unless they are engaged in reasonable network management. Ban for throttling is separated, and this rule prohibits that single out content compete with service provider business. In the EU regulation stand-alone rules for throttling and blocking are not provided, but is provided general rule, which prohibits: "any traffic management practices which go beyond reasonable traffic management measures, by blocking, slowing down, altering, restricting, interfering with, degrading or discriminating between specific content, applications or services, or specific categories of content, applications or services, should be prohibited, unless a justification or exception applies."[53]But in both regulations rules is similar,

[51] Wu T. (2006). Why have a Telecommunications Law?: Anti-discrimination norms in communications // *Journal on Telecommunications and High Technology Law*. – New York, Vol. 5, p. 15. Retrieved from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=903324 [01.11.2016 1:17 PM]

[52] Ford S. G., Lawrence J. S. (2010). The Broadband credibility gap // *SSRN Electronic Journal.* – Washington, p. 47. Retrieved from *http://ssrn.com/abstract=1626362* [05.11.2016 9:35 PM]

[53] The European Parliament and the Council (2015, September 23). Regulation 10788/15 on setting out the measures relating to the open Internet access and amending Directive 2002/22/EC on universal service and users' rights relating to electronic communications networks and services and Regulation No.531/2012 on roaming on public mobile networks within the Union. Retrieved from http://data.consilium.europa.eu/doc/document/ST-10788-2015-INIT/lt/pdf [13.11.2016 2:25 PM]

because in both network operators are forbidden from throttling and blocking lawful content.

Both FCC and EU regulations prohibited paid traffic prioritization when there are no exceptions from these rules and prohibition on ISPs unreasonable discrimination between different applications or content in network. In the US it is just more broad, where all forms of discrimination beyond blocking, paid prioritization and throttling that ISPs can try to use to favor one content over other. From prospect of regulatory perspective, the EU Net neutrality is ingrained in the concepts of transparency, consumer protection and non-discriminatory access to Internet services while FCC in the US has considered these aspects, but comparatively emphasis is higher on forces of business needs and innovation. The EU regulation is more general and leaves opportunity for the BEREC, Commission and the member states national regulators to exercise discretionary powers, while enforcement of the US rules is more centralized with the FCC.

Since the EU and its partners in the US share common principles of democracy, human rights and economic and political freedom, not less important become foreign policy and security issues. Although the US and EU approaches overlap not at all policy matters, they continue to be the most important ally (the EU is the biggest investor in the US, while the US is the largest investor in the EU).[54] Therefore, one of the country adopted regulation affects the other too. Various online services encourage economic growth and create jobs, increase productivity, moreover digital economy can help the industry to grow and encourage new start-ups growth. The regulatory environment should also be conducive to the whole sector investment in high-speed networks and to encourage businesses offering competition on transition from traditional technology to fiber. Too different regulation may cause disagreements between the EU and the US, when in one of them something is prohibited, but another is still not clearly defined the same aspect of the regulation and as a result it becomes unfavorable for investment and business.

1.4.Common barriers to ensure the Net neutrality

The Net neutrality prevents ISPs from dictating the kinds of content users would be able to access online and also Internet providers are required to treat all traffic sources equally. But ISPs like Verizon and Comcast want to charge for use of their networks. As a result, these providers would have the ability to pick and choose what consumers see online and to then charge content providers. But there are still many loopholes that could impair the essence ideas of the Net neutrality.

---

[54] The Commission (2013, October 24-25) material, the European Council discussions on the digital economy. Retrieved from http://ec.europa.eu/europe2020/pdf/20131010_lt.pdf [30.11.2016 5:15 PM]

Many of ISPs have a set limit like how much data users can use per month. When user reach the limit, its connection might be reduced to a lower speed, or user should pay overage taxes. But other providers dismiss particular applications or websites from such data limits. Such zero rating practice makes it more expensive for subscribers to use video services or photo sharing applications. It is a huge problem for the Net neutrality, because it allows ISPs to manage which sites and apps get preferential processing. The implication of this ruling means, eventually, Internet Service Providers would determine the content shared to users based on the ISP's own interests.[55]

This situation we can illustrate like user received report from the total number of active Internet service providers arguing that he must pay for his own created popular web site, where he publishes a variety of video clips (if he wants to keep things faster and better to consumers). Before that he was not required to reward for his site accessible on the Internet, although he noted that his website was launched much more slowly.

So this is how the Net neutrality changes could impact business[56]:

1. Higher costs;

ISPs are able to create their own payment options for individuals and businesses. Internet companies could charge higher fees for higher speeds. For example, with Netflix being the leading streaming video provider on the Internet, they may have to pay more to ISPs in order to provide customers with fast content. Netflix may face an incremental $75 million to $100 million in annual content delivery costs. For companies that can't afford the more expensive fees (possibly small businesses) they would be subject to a slower website than larger competitors effectively squeezing smaller companies out of the marketplace;

2. No longer an even playing field;

The Net neutrality ensures that small businesses are able to compete with larger companies. Having the same access to the Internet, they are able to have the same opportunities for their businesses. If the Net neutrality is eliminated, small businesses may not be able to afford to share content and unable to compete with their larger competitors;

3. Changes to video marketing;

[55] Net neutrality is in more danger than ever (2016). Retrieved from https://www.wired.com/2016/03/despite-fcc-net-neutrality-danger-ever/ [20.11.2016 3:17 PM]

[56] Ly A., et al. (2012). Understanding the Net neutrality debate: listening to stakeholders // Peer-reviewed journal on the Internet, vol. 17, no. 5. Retrieved from http://firstmonday.org/ojs/index.php/fm/article/view/3857/3205 [20.11.2016 2:16 PM]

Mane efforts were dedicated to create videos that feature and promote productivity solutions. Small businesses that rely on video and YouTube as part of their marketing strategy, could see changes if the Net neutrality would be eliminated. If business cannot afford to pay Internet providers for sharing content, their potential customers may not be able to view as many product videos and may not be enticed to purchase business products. Furthermore, the investment to produce and optimize these videos will be result in a monetary loss.

Companies provided Internet access into the small handful of service providers we know today. As power consolidated into the hands of a very few service providers, they realized that they might have the right to prioritize and diminish certain types of content flow that they controlled. The FCC's decision has catalyzed the forces that contradict government enforced net neutrality. Regulators may be pushing for a more open Internet. But threats were coming from multiple directions. It was proposed a bill that would change the FCC decision. The legislation would not just repeal the FCC's the Net neutrality rules but also would insure the agency from passing similar rules in the future.[57]

However, such Internet model is not acceptable for some Internet service providers, because they want to be able to decide what information is available to consumers by service charges paid fees and wants of the extra income by charging for online content creators, and later for adding to the ambulance zone. Meanwhile, content providers, who do not pay taxes fall into a slow lane, as a result their web pages are opened very slowly or are not opened at all. The internet works like cable TV, for which certain channels viewing user has to pay separately.[58]

The Net neutrality also touches the investment priorities for today's internet. In these days, users stream films, go for shopping, and convene on social platforms. As a result, ISPs claim that with growing amount of data transferred by content providers in the end users had congested and strained their networks and causing service disruptions. ISPs attempt to collect fees from large content providers, arguing that such fees would allow them to upgrade their hardware, control growing amount of data and better serve the end user. Some ISPs proposed to charge content providers for a "fast lane" that would give priority to their content and ensure faster delivery to the end user. Critics claimed that ISPs already got healthy profits and could afford everything by themselves without charging content providers.[59]

---

[57] Ford S. G., Lawrence J. S. (2010). The Broadband credibility gap // *SSRN Electronic Journal.* – Washington, p. 47. Retrieved from *http://ssrn.com/abstract=1626362* [05.11.2016 9:35 PM]

[58] Interneto neutralumas – ar pavyks jį užtikrinti? (2015). Retrieved from http://manoteises.lt/straipsnis/interneto-neutralumas-ar-pavyks-ji-uztikrinti/ [22.11.2016 2:17 PM]

[59] Net neutrality rules will make winners and losers out of business (2016). Retrieved from https://hbr.org/2016/06/net-neutrality-rules-will-make-winners-and-losers-out-of-businesses [22.11.2016 8:11 PM]

Without the Net neutrality, the Internet would become "pay to play". It means that companies should pay for Internet providers like Comcast and Verizon to ensure that their web site runs faster and better than their competitor sites. That would essentially give for large companies and major brands a huge advantage. Some ISPs are already building this "pay to play" idea on Internet. Internet service provider AT&T announced plans to introduce sponsored data, that allows companies to pay to give customers free data time when using their apps and online services. Critics fear that such programs will hurt small companies that can't afford to pay to have their apps sponsored.[60]

ISPs cannot play among content providers and offer some deals to one business without offering it to another. Some industry experts argue that without proper the Net neutrality proposing a priority lane and a non-priority lane may favor by degrading the quality of its non-priority slow lane in order to drive more traffic to a "paid for priority" lane. While easy to say in wide strokes, that the FCC prohibits contracting for a fast lane, in practice many little actions can modify the speed of data. Technology evolves the margins between acceptable action and preclude rules from becoming disused. [61]

Entrepreneurial content providers should pay consideration to the effect of rules on advertising and subscription models for generating revenue. If the cost for delivery data is borne by content providers, then businesses considering the bundling of content and advertising may be less likely to use such a model. While everyone wants the infrastructure to be improved, as a result no one really wishes to pay for it. Under the Net neutrality, ISPs cannot assurance quality of service, and therefore a large content provider interested in high quality will have to invest itself just outside the ISPs network or recur to lines and business data services.[62]

Another barrier to the Net neutrality is that in the US the major of Internet service providers require laws, which would regulate two-lane Internet. Consumers demand to keep the same data flow assessment regardless of which data is encoded. Republicans can try to pass a law that would cancel the FCC decision, because they advocate that competitive environment need to be destroyed and created the world, which is a duopoly of communications and cable television. As a result, providing Internet services are expensive and poor quality in the US what means that broadband

[60]Why small business should care about net neutrality (2014). Retrieved from https://www.americanexpress.com/us/small-business/openforum/articles/why-small-businesses-should-care-about-net-neutrality/ [20.11.2016 9:18 PM]

[61] Net neutrality rules will make winners and losers out of business (2016). Retrieved from https://hbr.org/2016/06/net-neutrality-rules-will-make-winners-and-losers-out-of-businesses [22.11.2016 8:11 PM]

[62] Yoo S. Ch. (2010). Innovations in the Internet's architecture that challenge the status quo // *Journal of Telecommunications and High Technology Law.* – Philadelphia, p. 22. Retrieved from *http://ssrn.com/abstract=1472074* [05.11.2016 10:38 PM]

infrastructure in America is problematic.[63]

Furthermore, the US Government and American telecommunications companies are very powerful telecommunications policy exporter. One of the largest US policy advantages was spurring of the competition in the platform level. Released Telecommunications Act 1996 spread the idea that in order to compete on the Internet it is need to develop telecommunications infrastructure in a strong competitive environment. If the US legislative process would take a two-lane access, then one monopoly would manage the Internet and the monopolist would block all Internet innovation. The Net neutrality is a way to change policies to enhance competition. The emergence of the Net neutrality emerged guarantees that infrastructure owners would not control the content where is lack of competition. If competition will be promoted in the broadband Internet infrastructure level, the Internet would become cheap and fast.[64]

When removing the Net neutrality concept from the Internet infrastructure, owners would be acquired by power, because company as Youtube could offer an alternative way to watch videos, so as a result, cable companies can manipulate that one who pay the most will be able to show videos on the Internet. Internet neutrality is the commitment to give equal rights to innovate and compete.[65] Moreover, if will be decided that the Net neutrality is a bad idea, even in Lithuania users would feel the consequences, because available would be only what is helpful to the owners. When the Internet was given by telephone wires through the modem, Skype began offering VoIP services. If the company, which owns the telephone wires would have been able to block the communication on Skype, the Skype would no longer exist.

Comcast and Netflix made agreement that Netflix will pay for Comcast for the quicker access to Comcast's Internet subscribers. The trouble is that building a two-tiered system will make a monopoly where big cable enterprises have dishonest privilege, while delivering the fastest service to enterprises which pay more, and leaving companies with lower supplies in a slow lane. As a result of such agreement small-sized businesses and consumers will lose the most because of the two-tiered system. Increasing competition by building a fast lane where only the greatest can afford to be, would threaten to create a second-class internet shape when consumers will go out to avoid it.[66]

---

[63] Hsu J. (2014). Net neutrality ruling opens door for 2-tiered internet market. Retrieved from https://www.scientificamerican.com/article/net-neutrality-ruling-opens-door/ [15.11.2016 7:51 PM]

[64] Schewick V. B. (2007). Towards an economic framework for network neutrality regulation // *Journal on Telecommunications and High Technology Law. – Stanford, Vol. 5, p. 329-391*. Retrieved from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=812991 [01.11.2016 1:26 PM]

[65] Ly A., et al. (2012). Understanding the Net neutrality debate: listening to stakeholders // Peer-reviewed journal on the Internet, vol. 17, no. 5. Retrieved from http://firstmonday.org/ojs/index.php/fm/article/view/3857/3205 [20.11.2016 2:16 PM]

[66] Bourreau M., et al. (2015). Net neutrality with competing Internet platforms // *The journal of industrial economics*, vol. 63, issue 1, p. 30-73. Retrieved from http://onlinelibrary.wiley.com/doi/10.1111/joie.12068/full [20.11.2016 4:37 PM]

One more barriers to the Net neutrality existence is Internet service providers like T-Mobile which currently does not impose any specific charges for content providers like Spotify on their data flow on "fast lane" and their content accessibility is not slowed. They exempt online music programs such as Spotify from subscriber monthly data allowances, what makes them less costly for the use of the Netflix or YouTube or any other application. [67] The "fast lane" approaches that all of the data on the Internet- video, audio, television channels, documents and other without exception are allowed to join on equal terms, and Internet service providers are completely distanced themselves from what is sent over the Internet and do not give priority to any site or information. As a result, it contradicts the Net neutrality principle, which guarantees the same Internet service provider handling of all data, regardless of their content and distribute all data in the same traffic flow, without separating to different lanes.[68]

Due to mobile operator Telia "zero-rating", for free social media usage for its mobile subscribers and service users, many Swedish newspapers, radio stations and televisions have signed a statement against it. In Sweden Telia launched unlimited free usage for such a popular social OTT communication services as Facebook, Instagram, WhatsApp and Messenger and by this action Telia made an attack on the Net neutrality principle. Telia's deal with Facebook was a big blow to Sweden media companies which it showed that telecom companies can control content. This situation can be compared to deal with a car brand "X" to be the only one allowed to drive in the forbidden zones and don't pay fees and etc. This Telia action was forbidden by the Net neutrality legislation but it showed us that Net neutrality regulation was ineffective. If open market of the Internet will fall one day, we can get back in the world with a "cable-TV-internet" or even control of few global players – media companies and telecoms.[69]

Such barriers like ISPs zero rating practice, wish to charge for use of their networks and have ability to pick what consumers see online have huge impact for existence of Net neutrality, because of the loopholes in legal regulation ISPs were getting involved in legal disputes when it is need to interpret certain unclear regulatory aspects or deficiencies in regulation, and after all ISPs were acquitted. Moreover, ISPs claim that growing amount of data transferred to the end users congested their networks and are causing service disruptions, so they need to collect fees

---

[67] Mills Ch. (2016). T-Mobile just made its binge on unlimited video streaming even better. Retrieved from http://bgr.com/2016/05/17/t-mobile-binge-on-list-youtube-nbc-netflix/ [20.11.2016 4:00 PM]

[68] Directorate General Communication (European Commission), (2015, October 27). Press release *Roaming charges and open Internet: questions and answers*. Reference: MEMO/15/5275. Retrieved from http://europa.eu/rapid/press-release_MEMO-15-5275_en.htm [15.11.2016 8:53 PM]

[69] Marsden Ch. (2016). Telias's zero rating agreement with Facebook a blow to Swedish media companies // *Journalism 3.0*. Retrieved from http://sverigesradio.se/sida/artikel.aspx?programid=4042&artikel=6424288 [02.12.2016 2:35 PM]

from content providers (such fees would allow them to upgrade their hardware, control growing amount of data). Furthermore, some ISPs are building “pay to play” idea on Internet, when introduced sponsored data, that allows companies to pay to give customers free data time when using their apps or online services, what also violates the Net neutrality principle. in the US the major of Internet service providers require laws, which would regulate two-lane Internet, but if the US legislative process would take a two-lane access, then one monopoly would manage the Internet and the monopolist would block all Internet innovation.

2. LEGAL DISPUTES ON THE VIOLATION OF THE NET NEUTRALITY PRINCIPLES

These below considered legal disputes in the EU and the US are important for my work because the case-law forms a proper application of the law order. Through the prism of these disputes emerges a possibility to review the former legal regulations of the Net neutrality of the EU and the US and to compare them. It is possible to overview the occurred violations of the Net neutrality, problems and loopholes of the legal regulations, occurrence pretext of the legal disputes and compare how both disputes have been resolved. Finally, identify what was the result of the disputes and how it was significant for current legal regulation of the Net neutrality in the EU and the US.

2.1.The Comcast legal dispute in the United States

In 2007, in the US happened an incident that showed the Net neutrality disability, when some users of Comcast company (which provide high-speed Internet connection services) found that company inhibits BitTorrent programs, which operation is based by peer-to-peer (P2P) technology. The Electronic Frontier Foundation (EFF) released a report analysis of Comcast's Internet traffic intervention. This study analyzed that Comcast was using packet-forging to wreck P2P file sharing on Comcast network. [70]

EFF used an open-source program Wireshark to analyze net traffic on BitTorrent with a Comcast broadband connection. Results confirmed that BitTorrent was being degraded by unforeseen Transmission Control Protocol (TCP) reset packets (to make TCP connection IP and port number are needed). Previous research was consistent with the results published by the EFF. The EFF study says that "Initial investigations suggest that Comcast is interfering with some subset of protocols, rather than interfering equally with TCP/IP traffic generally. We have seen definite interference by injection of Reset (RST) packets into certain classes of BitTorrent and TCP sessions."[71]

Even though Comcast confessed that they used traffic controlling technologies, the company insisted that it did not target unique protocols or technologies regardless installation evidence of BitTorrent disruption. Advocacy units filed a complaint to the FCC. They characterized Comcast actions as violation of the Net neutrality principles. Critics of Comcast

[70] Patterson R. M. (2010). Non- network barriers to network neutrality // *Fordham Law Review*. – Fordham, Vol. 78, p. 2843-2872. Retrieved from http://ir.lawnet.fordham.edu/cgi/viewcontent.cgi?article=4545&context=flr [01.11.2016 2:35 PM]

[71] Electronic Frontier Foundation (2007). Packet Forgery By ISPs: A Report On The Comcast Affair, Version 1.0. Retrieved from http://arstechnica.com/uncategorized/2007/11/eff-study-reveals-evidence-of-comcasts-bittorrent-interference/ [18.11.2016 9:14 PM]

were calling for the FCC in order to instate a prohibition on P2P interventions and impose high penalties for the Comcast. Competitors of Comcast, who expressed opposition to the Net neutrality advocated this FCC investigation too.[72]

After FCC investigation David Cohen who is Comcast executive vice president said that Comcast did not block access to Bit Torrent and company traffic control mechanisms were permissible because the FCC standards permitted "reasonable network management" practices.[73] Comcast was closed about field and scope of its traffic operation activity. Comcast created instructions to employees how they should answer to consumer questions about this P2P intervention. Also they were informed that if will discuss anything specific about this P2P blocking with someone from outside they will be fired. The EFF research explained how Comcast actions undermines future Internet innovation. The EFF said that "The Internet has enabled a cascade of innovations precisely because any programmer, whether employed by a huge corporation, a startup, or tinkering at home for fun has been able to create new protocols and applications that operate over TCP/IP, without having to obtain permission from anyone". [74]

Proponents of Net neutrality legislation argued that regulatory system has not sufficient protection from such unfair network handling. The Net neutrality supporters implied that lack of rivalry in broadband market allow for ISPs to misuse their network control in absence of tight adjustment. That is why these actions were appealed to the Federal Communications Commission, stating that it is vulnerable to the Net neutrality. Comcast contested that flow attenuation is necessary to ensure network functionality. Even disputed information services did not belong to the Federal Communications Commission, however they have been disputed and the Commission took advantage of an exclusive right on the competitiveness of the traditional communications providers. [75]

These markets are recognized competing, because are suitable for the implementation of equal services, such as voice transmission. Obviously, the motive to give an opinion in this case hardly be justified, but the Federal Commission allowed himself to settle the dispute and treated Comcast's behavior as discriminatory. It was recognized that Comcast violated the principle of the

---

[72] Patterson R. M. (2010). Non- network barriers to network neutrality // *Fordham Law Review*. – Fordham, Vol. 78, p. 2843-2872. Retrieved from http://ir.lawnet.fordham.edu/cgi/viewcontent.cgi?article=4545&context=flr [01.11.2016 2:35 PM]

[73] BitTorrent, Comcast, EFF antipathetic to FCC regulation of P2P traffic (2008). Retrieved from http://www.sfweekly.com/news/bittorrent-comcast-eff-antipathetic-to-fcc-regulation-of-p2p-traffic/ [01.11.2016 1:19 PM]

[74] Electronic Frontier Foundation (2007). Packet Forgery By ISPs: A Report On The Comcast Affair, Version 1.0. Retrieved from http://arstechnica.com/uncategorized/2007/11/eff-study-reveals-evidence-of-comcasts-bittorrent-interference/ [18.11.2016 9:14 PM]

[75] Daly A. (2011). The legality of deep packet inspection // *International Journal of Communications Law & Policy, No.14* – Brisbane, p. 12. Retrieved from *http://ssrn.com/abstract=1628024* [05.11.2016 7:35 PM]

Net neutrality and obliged to change the network administration. Comcast stopped the service restriction, but appealed the Federal Communications Commission decision.[76]

In 2010 April the US Court of Appeals annulled the FCC decision and said that the information service provider performance monitoring does not belong to the Federal Communications Commission. Applying the exclusive competence of the provisions has not been demonstrated. In the end, Internet service providers right to operate a network in its absolute discretion was recognized (prioritization methods could be applied and principle of the Net neutrality could be override).[77]

In 2010 summer discussions on broadband Internet access grant regulation took place in the US, because Comcast case revealed existing legal regulation failures. Consumer protection depends on the Federal Communications Commission, but they do not have the right to regulate the communication services providing actors. There was a discussion on the Federal Communications Commission's competence:[78]

1. Reclassify broadband Internet access (assign this service to telecommunications services);
2. Try to confine of the Communications Law first section provisions on competition and to ignore the court's decision;
3. Determine the regulation only broadband Internet service, and data transfer element.

It should be noted that the Federal Communications Commission does not pretend to Internet regulation in the broad sense, but only seeks to regulate access. Although rules did not reclassify a broadband service as a communications service, they forbidden cable and DSL ISPs from slowing or blocking online services. Also mobile carriers were prohibited from blocking VoIP apps like Skype and blocking websites, while restrictions are fewer than on DSL or cable. The end of the case asked more questions: uncertain status of the Internet connection service is it just communication, or an information service. It was unclear what legislation is applicable and what authority have to implement it. That is why the Net neutrality was meaningless and consumer

[76] Federal Communications Commission (2008, August 20). Memorandum opinion and order FCC 08-183. Retrieved from https://apps.fcc.gov/edocs_public/attachmatch/FCC-08-183A1.pdf [05.11.2016 4:28 PM]

[77] United States Court of Appeals (2010, April 6). For the district of Columbia circuit, No. 08-1291, Comcast Corporation v. Federal Communications Commission and United States of America on petition for review of an order of the Federal Communications Commission. Retrieved from https://www.eff.org/files/comcast_v_fcc_dc_cir_2010.pdf [05.11.2016 4:59 PM]

[78] Ford S. G., Lawrence J. S. (2010). The Broadband credibility gap // *SSRN Electronic Journal.* – Washington, p. 47. Retrieved from *http://ssrn.com/abstract=1626362* [05.11.2016 9:35 PM]

rights could not be defended.

2.2. The KPN legal dispute in the Netherlands

The first Net neutrality legislation in the EU was implemented in the Netherlands in 2012. The requirements were dedicated only to Internet access. Other services, which were delivered on the Internet were not included. These requirements did not intend to preclude offers of individual services over the Internet (like subscriptions for Voice over IP). The two main requirements of the Dutch Net neutrality law were[79]:

1. Services in the Internet shall not be blocked or delayed by ISPs, unless such measures are obligatory:
    - to reduce traffic congestion (in case of congestion, traffic can be prioritized or may be delayed, but measures should be removed as soon as possible);
    - for the safety of network (it could be traffic from computers which is used for distributed denial of service attack, and measures need to be restricted just to traffic, which affects security);
    - to reduce transmissions (possibility to block unsolicited commercials like spam);
    - to execute court order or legal requirement;
2. ISPs shall not make price reliant on the services and applications, offered over these services.

This Dutch Net neutrality law was a result of the Dutch network operator KPN intentions in 2011, to impose a "chat charge" for users of applications such as WhatsApp (such applications were having on KPN's revenues, not like usual short message services). That blocking of KPN happened in mobiles, because voice minutes and short messages (SMS) had been monetized per minute and per message (since mobile data frequently had not been charged per Mbyte). Services such as WhatsApp was identified as a threat to KPN and was decided to block such applications. KPN also noted in public that WhatsApp was the major reason of decline in text-messaging scope in the Dutch. So, the operator tried to charge WhatsApp users with an extra tax.[80]

In 2014 The Dutch Authority for Competition and Markets (ACM) announced that mobile

[79] Netherlands (2012, May 8). Amended Telecommunications Act prescribes net neutrality, stricter cookie provisions. Retrieved from http://www.loc.gov/law/foreign-news/article/netherlands-amended-telecommunications-act-prescribes-net-neutrality-stricter-cookie-provisions/ [05.11.2016 1:58 PM]

[80] We will not block; we will monetize: KPN's foray into DPI (2011). Retrieved from http://www.internetgovernance.org/2011/05/23/we-will-not-block-we-will-monetize-kpns-foray-into-dpi/ [17.11.2016 11:24 PM]

operator KPN was punished for that infraction of the Dutch Net neutrality law (it was settled to be the first violation of the Net neutrality law in the Netherlands). The ACM imposed 250.000,00 Eur penalty for KPN telecom company for violation of the requirements concerning the Net neutrality. It was reminded that all providers were required to guarantee the Net neutrality what means not to block access to particular content or application and do not charge online services and applications by different tariffs. Despite that fact, KPN blocked diverse services, which included some internet calling services, so consumers could not use that services. That is why Internet providers could not decide what customers can do online.[81]

But despite the fine before, in 2015, KPN slipped again, when proposed Internet access through Wi-Fi hotspots in various locations like an airport. In such hotspots, users could access to the "Free Basic Internet" service. But that services excluded data like Bit Torrent and VoIP, so users had to pay for such service or had to be customers of KPN. KPN exposed that it was used Deep Packet Inspection (DPI) for monitoring usage of particular applications on KPN mobile network. This technology was used by governments and corporations in order to manage flow of information through the network. [82]

The Dutch Department of Economic Affairs had been working on few aspects of the Dutch Net neutrality law, like aspiration to explain the concept of "Internet access service". KPN declared that this Net neutrality law was unclear and that they were waiting for concept of "Internet access service" guidelines, also affirmed that actually they didn't know if they really offered Internet access services. But such statement did not convince ACM because in the debates of the Parliament, it was defined that the concept "Internet access service" should be explained as widely as possible, what means it should include Wi-Fi hotspots as well. The ACM decided that such practice was discriminatory and led to concerns about the Net neutrality violations.[83]

As a result, in 2015 the Dutch Department of Economic Affairs issued guidelines on the Net neutrality for ACM. These Net neutrality guidelines were served as basis of the Dutch Net Neutrality Act. Following this Act, ISPs cannot block or interfere applications and services on the internet and cannot differentiate tariffs between Internet services and services which are provided

---

[81] Netherlands Authority for Consumers and Markets (2014) Decision to impose a fine for a violation of Section 7.4a, paragraph 1 of the Dutch Telecommunications Act with regard to net neutrality, No. 14.0875.31. Retrieved from https://www.acm.nl/en/publications/publication/14311/Fine-on-KPN-for-violation-of-net-neutrality-rules/ [17.11.2016 8:13 PM]

[82] Daly A. (2011). The legality of deep packet inspection // *International Journal of Communications Law & Policy, No.14* – Brisbane, p. 12. Retrieved from *http://ssrn.com/abstract=1628024* [05.11.2016 7:35 PM]

[83] Netherlands (2015). Regulation clarifying the provision on net neutrality, IRIS 2015-6:1/29. Retrieved from http://merlin.obs.coe.int/iris/2015/6/article29.en.html [17.11.2016 2:35 PM]

or used through these services. The Netherlands are the first EU member state with such harsh the Net neutrality rules, because other states just require ISPs to be transparent when talking about Internet access limitations or tariffs.[84]

The Net Neutrality Act is applied if access is suggested to few or more content application and services or if a whole access service of Internet is suggested like single stand-alone-service package. When the Net Neutrality Act is applied, any price discrimination like sponsored data or zero-rating is forbidden. Also is was clarified that Internet content applications and services like Skype and WhatsApp were not included to the Net Neutrality Act. The same was for specialized IP based services with delivered Quality of service (QOS). Services like that were not considered as Internet access services, so in a result such services do not fall within the sphere of the Net Neutrality Act.[85]

That KPN legal dispute was a huge impulse for the Dutch Department of Economic Affairs to finally release the Dutch Net neutrality law with explained concept of "Internet access service". In the same year Net neutrality guidelines were released that no such interference would have a pretext to take place. These guidelines are considered to be the most strictly regulation of the Net neutrality. The Netherlands very hardly monitor and coordinate compliance of the law, and their position in this dispute only proved that they will not allow any violations of the Net neutrality to remain unnoticed and not abolished.

2.3. The comparative analysis of the European Union and the United States through the Comcast and the KPN disputes prism

Differences among the US and the EU in terms of competition law and regulation are significant. While in the US consumers have two independent wires cables - television and telecommunications, in the EU situation is very irregular because number of regions have significant cable coverage, but there are number of member states, which have kind of universal cable accessibility through the entire national territory. But because of effective regulation many European consumers can choose between several providers of broadband network access. It is from the prospect of the Net neutrality preferable to the US broadband market traditional telecommunications and cable, but situation was different between member states of the EU.

---

[84] Sickinghe F. (2015). Net neutrality guidelines in the Netherlands come into force. Retrieved from http://www.twobirds.com/en/news/articles/2015/netherlands/net-neutrality-guidelines-in-the-netherlands-come-into-force [20.11.2016 7:25 PM]

[85] Schewick V. B. (2010). Network neutrality: what a non-discrimination rule should look like // *SSRN Electronic Journal.* – Stanford, p. 11. Retrieved from *http://ssrn.com/abstract=1684677* [05.11.2016 8:45 PM]

The first EU framework which was adopted in 2002 in Universal Service Directive did not concretely appeal to the Net neutrality. But the Net neutrality became a bigger issue in 2006 revisions to the regulatory system. These regulatory were enacted just in 2009 and included transparency provisions, backup power to give a minimum level of QOS on network operator and new language that set the right of consumers to access content, applications and services of their choice. Directive was served to ensure that users realize the traffic controlling practices of the network service providers. That gave for users a power to shift without contractual fine if they are disappointed with changes in the policy. Though, the efficiency of transparency is probable greater in the EU than in the US, because of the most EU consumers who have more alternatives from choosing providers to which they could possibly switch. The FCC thought that rules about prevent of blocking and discrimination suggested that for transparency rule to suffice there was too less confidence.[86]

Switching and transparency measures will suffice for the EU. In 2009 was revised Internet Policy Statement principles that users should have right to access content, use devices or applications that they want. Principles were reflected in Article 8 of the Framework Directive. In 2014 the Parliament approved that Telecoms single market regulation could change the EU Net neutrality arrangements provided that the Council and the Parliament have reached an agreement.[87]

As a remedy to deflection from the Net neutrality competition law might be effective in the EU, but cannot in the US (see Table 1).

Table 1. Comparison between the EU and the US

	European Union	United States
Number of fixed connections available to most homes	1 or 2	2
Majority of fixed broadband lines	DSL	Cable
Number of alternative operators available on most fixed telecommunication (not cable) lines	Many	None

[86] The European Parliament and the Council (2009, November 25). Directive 2009/136/EC amending Directive 2002/22/EC on universal service and users' rights relating to electronic communications networks and services, Directive 2002/58/EC concerning the processing of personal data and the protection of privacy in the electronic communications sector and Regulation (EC) No 2006/2004 on cooperation between national authorities responsible for the enforcement of consumer protection laws. Retrieved from http://eur-lex.europa.eu/legal-content/en/TXT/?uri=CELEX%3A32009L0136 [16.11.2016 7:35 PM]

[87] Cave M., Vogelsang I. (2015). Net neutrality: an E.U./U.S. Comparison // *CPI Journal.* - vol. 11, no. 1, p. 14. Retrieved from https://www.competitionpolicyinternational.com/wp-content/uploads/2016/03/Net-Neutrality.pdf [16.11.2016 3:13 PM]

LLU obligations on access network (SMP) operators	Yes	Copper only
Shared access obligations on access network (SMP) operators	Yes	No
Bit stream obligations on access network (SMP) operators	Yes	No
Nondiscrimination obligations on broadband network (SMP) operators	Yes	No
Transparency obligations for net neutrality	Yes	Yes
Competition law as a net neutrality remedy	Possibly effective	Ineffective

Source: European Parliament, Network neutrality revisited: challenges and responses in the EU and the US, 2014, p. 100.

The table clearly shows that one of the biggest differences between the US and the EU is the fact that most of the Europe's citizen uses a DSL modem technology, which can make a few phone cables into the wire data transmission system (voice transmission, downstream and upstream). With DSL technology, assistance signal splits into two streams: a sound and data, and the proportions of the data which is sent directly to the DSL modem. This allows for more efficient and faster transmission, using a simple modem it would not be possible. But in the US the majority of the customers is forced to use the cable Internet access. Moreover, in the EU users can choose from a variety of ISPs, depending on which of them offer is more attractive to them. However, the same cannot be said about the US, where the users have no choice of selecting ISPs, since the US is suffering from lack of competition in the broadband business.

Despite the fact, that both the EU and the US share the same obligations like nondiscrimination obligation, transparency, bit stream, shared access and Local loop unbundling (LLU) obligations on broadband network Significant market power (SMP) operators, competition law in the US is claimed to be ineffective. In the US more than 10% of the citizen lives in monopolized areas by one ISP and more that 70% lives in area where duopoly is. So regulatory initiatives which could increase competition may work in the EU, are not enough to work in the US.

Both the US and the European Commission still give chance for two-speed Internet. They allowed operators to charge for end-to-end services (applications like videoconferencing). The US went following the Net neutrality rules by the FCC, but the European Commission will collide resistance to own Net neutrality requirements, that are first trying to create a single market for

telecoms. In the US, the FCC regulates with the strict Net neutrality approach, but appeal to the courts is usual thing. In the EU, despite the differences among the Parliament and member states, the European Commission supports the Digital Single Market, which could ensure the Europe position as a world leader in the digital economy. That would help to the EU companies to grow globally and to transform public services[88]

The EU proposed to ban "fast lanes", in other words paid prioritization but exception as "specialized services" could become a loophole, because such services are defined as electronic communication services, that are necessary. It could be high-definition videoconferencing and health care services. So the EU definition is recognized to be too wide.[89] In the US, the FCC rules say that specialized services (VoIP offerings, heart monitors) may not be treated as paid prioritization, despite they are IP services. The FCC clearly prohibited the use of specialized services. FCC states that "The Commission reserves the right to take action if the service is, in fact, providing the functional equivalent of broadband Internet access service, or is used to avoid the open Internet rules".[90]

Both the US and the EU regulations prevent Internet service providers from blocking or throttling traffic, and devote a prohibition for the paid prioritization, but also in both there are blocking and throttling exceptions for reasonable network management. Zero-rating practice is allowed in the EU and the US. Despite the fact that the EU statement that regulatory authorities have to ensure maintenance of the rules are very similar to the FCC's statement that they have to monitor zero-rating and competition in order if it would be harmed. FCC approach is better than the EU, because they reclassify broadband providers. As a result, it enabled more types of claims which customers or companies can take against the ISP.[91] Some member states of the EU like the Netherlands has its own rules, so the EU should allow to the member states to adopt special additional rules like to ban zero-rating in order that state rules would not be preclude by the EU rules.

FCC points that ISPs should not discriminate against classes of applications. The FCC

---

[88] Directorate General Communication (European Commission), (2015, October 27). Press release *Bringing down barriers in the Digital Single Market: no roaming charges as of June 2017*. Reference: IP/15/5927. Retrieved from http://europa.eu/rapid/press-release_IP-15-5927_en.htm [16.11.2016 8:47 AM]

[89] Directorate General Communication (European Commission), (2015, October 27). Press release *Roaming charges and open Internet: questions and answers*. Reference: MEMO/15/5275. Retrieved from http://europa.eu/rapid/press-release_MEMO-15-5275_en.htm [15.11.2016 8:53 PM]

[90] Federal Communications Commission (2015, March 12). Report and order on remand, declaratory ruling, and order FCC15-24. Retrieved from https://apps.fcc.gov/edocs_public/attachmatch/FCC-15-24A1.docx [01.11.2016 6:26 PM]

[91] Federal Communications Commission (2015, March 12). Report and order on remand, declaratory ruling, and order FCC15-24. Retrieved from https://apps.fcc.gov/edocs_public/attachmatch/FCC-15-24A1.docx [01.11.2016 6:26 PM]

says that "the no-blocking rule prohibits network practices that block a specific application or service, or any particular class of applications or services, unless it is found to be reasonable network management". [92] The EU Net neutrality proposal requires ISPs to treat all traffic equally, but though let "reasonable traffic management" when ISPs could handle with one type of application like gaming dissimilar from another application like file sharing. Despite that the EU proposal explains that ISPs must take all decisions transparently the Net neutrality defenders argues that the EU proposal let too much leeway for ISPs how they can manage different types of applications.[93]

The EU's proposal lets ISPs to use network management practices when congestion not really happens but just is about to happen. The US has stricter rules that the FCC do not allow "impending congestion" to count by the reasonable network management. That means that the US ISPs are be able to implement network management just when actual congestion happens. Though some aspects are not clear enough of the EU's Net neutrality proposal, these rules will be applied to the all member states of the European Union for the first time.

Table 2. Comparison between the Comcast and the KPN legal dispute

	Comcast in the US	KPN in the EU
1.The first violation of the Net neutrality	In 2007 ISP Comcast inhibited Bit Torrent programs, which operation was based by P2P technology.	In 2011 Mobile operator KPN tried to impose a "chat charge" for users of applications such as WhatsApp.
2.Response to the violation of the responsible services	In 2008 the FCC characterized Comcast actions as violation of the Net neutrality principles. Critics were calling for the FCC in order to impose high penalties for the Comcast and in 2009 the FCC proposed draft rules for "preserving a free and open Internet"	In 2014 The Dutch Authority for Competition and Markets (ACM) punished mobile operator KPN for infraction of the Dutch Net neutrality law ACM required providers to guarantee the Net neutrality- not to block access to particular content or apps and do not charge online services and apps by different tariffs.
3.Second violation of the Net neutrality	-	In 2015 KPN proposed Internet access through Wi-Fi hotspots in various locations like an airport and used DPI for monitoring usage of particular applications.

[92] Federal Communications Commission (2015, March 12). Report and order on remand, declaratory ruling, and order FCC15-24. Retrieved from https://apps.fcc.gov/edocs_public/attachmatch/FCC-15-24A1.docx [01.11.2016 6:26 PM]
[93] The European Parliament and the Council (2015, November 25). Regulation 2015/2120 on 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. Retrieved from https://www.scribd.com/document/306350824/Net-Neutrality-REGULATION-EU-2015-2120 [16.11.2016 1:45 PM]

4.Response to the violation of the responsible services	-	The ACM decided that such practice was discriminatory and led to concerns about the Net neutrality violations.
5.Excuses of the Net neutrality violators	Comcast said that they did not block access to BitTorrent and company traffic control mechanisms were permissible because the FCC standards permitted "reasonable network management" practices. Comcast stopped the service restriction, but appealed the Federal Communications Commission decision.	KPN declared that this Net neutrality law was unclear and that they were waiting for concept of "Internet access service" guidelines and they did not know if they really offered Internet access services.
6.The result of the legal disputes	In 2010 the US Court of Appeals annulled the FCC decision and said that the ISPs performance monitoring does not belong to the FCC and prioritization methods could be applied and principle of the Net neutrality could be override. Discussions on legal regulation failures began, consumer protection depended on the FCC, but they did not have the right to regulate the communication services providing actors, it was unclear what legislation is applicable and what authority have to implement it.	In 2015 the Dutch Department of Economic Affairs issued guidelines on the Net neutrality for ACM, because the ACM decided that such KPN practice was discriminatory.
7. Consequences of the Net neutrality violation	In 2010 FCC released the Open Internet Order, with Telecommunications Act of 1996 as source of the authority defined what means "reasonable network management". This Order was adjusting to the network broadband providers but was not adjusting to the no-blocking or discrimination rules on traffic exchange among networks. In 2015, the FCC approved the Net neutrality regulations to protect an innovation, consumers and businesses from ISPs.	Net neutrality guidelines were served as basis of the Dutch Net Neutrality Act, which applied that any sponsored data or zero-rating is forbidden. Internet content applications and services like WhatsApp were not included to the Net Neutrality Act. Also The EU adopted the Net neutrality regulation in 2015, which aimed to establish common Net neutrality rules among the member states of the EU.

Comparing Comcast and KPN legal disputes of violation of the Net neutrality, it is obvious that in Netherlands this problem was solved much more quickly and assertively. After the

first violation KPN were sentenced to heavy fines. Also public commitment was made by the ACM to customers that Internet service providers cannot block their Internet access or charge online services and apps by different tariffs. Meanwhile, in the US, despite the efforts of the FCC to punish Comcast for their violation and declared “free and open Internet rules” the final decision was left not for the responsible FCC but for the court. Despite Net neutrality violation, Comcast were acquitted arguing that the FCC had no right to regulate the activities of Internet service providers. So KPN in the Netherlands were punished for their violation, but Comcast in the US was acquitted.

Despite both of these companies, in order not to be punished tried to argue about certain uncertainties in the law and the concepts of "reasonable network management" and "Internet access service" guidelines absence, such excuses did not convince the ACM. This showed that Netherlands approach to such violations are much stricter than the US. However, these legal disputes not just identified that the Net neutrality is a huge problem, but also pushed the FCC to release the Open Internet Order 2010 with defined “reasonable network management” guidelines and release the Net neutrality regulations 2015 for protection of consumers and businesses from ISPs in the US. The Dutch Department of Economic Affairs also released Dutch Net Neutrality Act 2015, with “Internet access service” guidelines and European Union adopted the Net neutrality regulation in 2015, which contained the principles to ensure that the Internet can be reached without discrimination and aimed to establish common rules among the member states of the EU.

3. RESEARCH ON THE NET NEUTRALITY IMPACT TO STARTUPS IN LITHUANIA

3.1. Characteristic of the startups in Lithuania

Startup is innovation-based initiatives, which are more focused on the global market. It is young inventive companies or initiators, who created a business that operates in the market not longer than for three years, with growth potential and outstanding innovations. Small and medium business and corporate entrepreneurship are the basic of the state economy. In order for the foundation to become sustainable in the long term, it must be settled suitable economic, financial, legal, social and cultural conditions for young business, startups to settle, grow and thrive in the country. Lithuania structural changes in many ways, are rapidly changing and moving in the right direction. It should be noted that the number of startups in Lithuania are systematically increasing.

Primary Startup life stage is called "pre-seed", when a team is formed and the first green prototype or service model is created and his first tests on the market is made. It should be separated two larger groups of startups: the one creating IT services companies and technology startups, research results making into products. In pre-seed stage at least 20-50 thousand euro are invested by business angels, who are private individuals who invest their own funds or venture capital funds. If the product or service prototype confirmed predictions about its benefits or market demand, then startup goes into the "seed" stage, when it can turn to a venture capital fund. At this stage, the company usually are getting investment from 100 to 500 thousand euro, which becomes the basis to develop an improved version of the prototype, conduct scientific technology, to investigate the export market or to receive EU structural funds support for all these listed activities to carry out. [94]

In "startup" phase, the company has the theoretical ability to attract funding from venture capital funds, but the greater part of startups cannot use the risk and private capital funds, because do not meet the requirements. In "growth" stage companies are attributable to a lower risk than the "startup" phase, so the availability of funding sources is easier. Companies, in later stages of "growth" have a better position to attract funding. They are interesting to the formal venture capital. In the "growth" and "maturity" stages the formal venture capital funds should take an important role. Lithuania has 4 venture capital funds, which manage JEREMIE money and are

[94] The European Union (2014). Structural support exposure to small and medium business valuation, The Final evaluation report. Retrieved from http://www.esparama.lt/es_parama_pletra/failai/fm/failai/Vertinimas_ESSP_Neringos/Ataskaitos_2011MVP/SVV_Galutine_ataskaita.pdf [01.12.2016 10:14 PM]

administered by the European Investment Fund. These funds are Practica Capital, BaltCap, LitCapital and Business Angels Fund I. Since 2010 JEREMIE funds dedicated 80 million euro for Lithuanian companies. In this period, risk capital has already distributed 40,3 million euro investment for Lithuanian SMBs. Lithuania also has two private venture capital funds: Nextury Ventures and Ltk Capital. Website startup.lt which is managed by Practica Capital and StartupHighway promote the growth of startups. [95]

Best 2014 startup was recognized team that has created a smartphone application "Plague", which acts as a social network. During the first three weeks of its existence, application attracted 50 thousand customers and the application was mentioned more than 200 times in various media from around the world. However, the most investment received other Lithuanian created startup is "Vinted", which helps to swap clothes. Throughout the life of the "Vinted" the team managed to attract 25 million euro investment. Another Lithuanian startup, offering entertainment for those who do not yet have a precise plan for the evening attracted 20 million US dollars. Their application "Yplan" offers a range of leisure ideas, and its creators plan to continue to move forward - their plans are new features creation and social network installation. Moreover, because of a competitive business environment in Lithuania more and more startups and IT businesses from neighboring countries are moving here such as games developers for social network "Game Insight" which moved its headquarters from Moscow to Vilnius.[96]

Startups becomes more and more relevant every year, because both participants and money each year in this area are growing. In 2013 "seed" stage startups in Lithuania received investment 1,8 million euro, and in 2014 first three quarters this number reached 1,6 million euro. To more advanced companies in 2013 was invested 2,87 million euro, while in the first nine months of 2014 was invested 3,27 million euro. Another "growth" type investment in 2013 reached 5,07 million euro, and in 2014 October rose to 9,17 million euro. So in result, to Lithuanian startups in 2013 were invested about 34 million euro and just 200 of people were employed, while in 2014 were invested 46 million euro, and more than 400 people were employed. Such numbers show that Lithuanian startups are moving to the right direction and are ready to integrate into the global

[95] The European Union (2014). Structural support exposure to small and medium business valuation, The Final evaluation report. Retrieved from http://www.esparama.lt/es_parama_pletra/failai/fm/failai/Vertinimas_ESSP_Neringos/Ataskaitos_2011MVP/SVV_Galutine_ataskaita.pdf [01.12.2016 10:14 PM]

[96] Versli Lietuva (2015). Apdovanoti didžiausių pasiekimų 2014-aisiais sulaukę Lietuvos startuoliai. Retrieved from http://www.verslilietuva.lt/lt/naujienos/naujienos/apdovanoti-didziausiu-pasiekimu-2014-aisiais-sulauke-lietuvos-startuoliai/20 [01.12.2016 7:18 PM]

digital economy.[97]

Number of business and ideas are growing which are interesting to international investors. This have a positive impact on the country image and economy and technology development. Startup promotes growth and increases the innovation of other companies which have already developed (bigger information technology companies). One of the most important examples are new, high value-added company establishment is a source of better paid jobs, eventually allowing retain creative people, to reveal their potential and increase the country average salary. That is why it is important for all countries seeking social and economic well-being of their nationals. While big company creates value and focuses on optimizing processes, and therefore do not generate many new jobs, the startups aim to develop both a value and new jobs.

3.2. The barriers of the startups integration analysis

Talking about barriers, the young company has the greatest risk to collapse in a first year of existence. Mostly startup is created by multi-professional team of few people, who are beginning their company in their free time after work or on weekends. It is the most sensitive period, because in most cases is not enough available funds, that team would be able to give up their essential work and concentrate just in a startup. Small and medium business that meets certain criteria can apply for funding to the Ministry of Economy through the implementation of financial instruments. However, the founders will have to look in the third priority support measures, which are designed for small and medium-sized business promotion, and to try to get this support. So the startup faces with strong competition, because all small and medium-sized enterprises could apply to these measures, it is not necessary to develop innovative products.[98]

Moreover, in order to apply to the Structural Fund of the EU it is required to be explored the market. But if the company started a year ago, the final prototype has not created yet, so there is no chance that foreign market will be researched. EU support distributing Lithuanian authorities can decide at what startup stage of development support mechanisms should be applied. On the one hand, if support will be devoted to the later stage, there is more chance that the young company will be checking their innovation and product will be held. But the huge drawback of this strategy is that a lot of startups, which did not get a financial support for the first year of existence will not

[97] Versli Lietuva (2015). Apdovanoti didžiausių pasiekimų 2014-aisiais sulaukę Lietuvos startuoliai. Retrieved from http://www.verslilietuva.lt/lt/naujienos/naujienos/apdovanoti-didziausiu-pasiekimu-2014-aisiais-sulauke-lietuvos-startuoliai/20 [01.12.2016 7:18 PM]

[98] Jovaiša A. (2016). Nepagailėjo kritikos Lietuvos startuoliams: jie slepia nykią realybę. Retrieved from http://www.delfi.lt/mokslas/technologijos/nepagailejo-kritikos-lietuvos-startuoliams-jie-slepia-nykia-realybe.d?id=70531610 [01.12.2016 6:16 PM]

survive and go bankrupt. Lithuanian startups situation is unstable. When the Structural Funds appears it is looking for wanting to create startups, but when the project ends, new startups become unimportant. There are no support measures for startups in their first year, so permanent favorable conditions should be made. Through the venture capital funds, the European Union funded innovation and startups incentives are inefficient. In an early financing funding, private and European funding is not enough but in the development stage the excess of capital appears.[99]

Companies are often registered in other countries like the US but the headquarters remain in Lithuania, because the sales and marketing team can make the most benefit in large cities, where business are concentrated, but IT developers usually stay in Lithuania, because to hire them abroad is too expensive. One of example is Lithuanian startup "Vinted" which headquarters is founded in Vilnius, but the units operate abroad. Also an excessive bureaucracy complicates foothold of startups. For example, accounting costs expensive but while the income is not received yet usually startups engage illegally. Also, there is the lack of business consulting, because despite the public institution "Versli Lietuva" can advise startups with simple questions, but as usually young people work there, who have no business experience and can only give theoretical knowledge, which in practice is too hard to apply.[100]

Furthermore, startups had to face with was a "rule of three" which demanded that the company has to have at least three Lithuanians or foreigners permanently residing in the country. For startups is was difficult to fulfill because they simply could not grow so much from the beginning, so others worked with freelance professionals. However, the Parliament in the 2016 approved the Aliens Act amendments, which legitimized the "startup visa" and made it possible for Lithuanian employers to recruit specialists from non-EU countries. Initiated amendments to the Law will come into force from January of 2017. Amendments to the Law provides that a permit for temporary residence in Lithuania for startups will be issued for 1 year with the possibility of extension of 1 year. Two years later, the alien could apply for a permit of temporary residence in Lithuania as the head of the company or shareholder by legal framework of the activities.[101]

So Lithuanian startups must face not only with the financial resources problem, when

---

[99] Jovaiša A. (2016). Nepagailėjo kritikos Lietuvos startuoliams: jie slepia nykią realybę. Retrieved from http://www.delfi.lt/mokslas/technologijos/nepagailejo-kritikos-lietuvos-startuoliams-jie-slepia-nykia-realybe.d?id=70531610 [01.12.2016 6:16 PM]

[100] Sapetkaitė V. (2014). Startuoliai. Išpūstas burbulas ar kaitą lemiantis proveržis? Retrieved from http://practica.lt/file/Zurnalas_Veidas_Startuoliu_ekosistema_28_2014.pdf [01.12.2016 7:18 PM]

[101] Verseckas D. (2016). Įteisino startuolių vizą. Retrieved from http://vz.lt/verslo-aplinka/politika/2016/06/30/iteisino-startuoliu-viza [01.12.2016 8:34 PM]

financial support obtainment is sometimes simply impossible, but also with other bureaucratic and legislation nuances. By establishing a “startup visa” Lithuania joined the countries such as the Netherlands, Denmark, France and Israel, which enabled such an initiative last year. Lithuania became the first country in Central and Eastern Europe with such legislation. So it can be said, the situation is gradually improving, though there is place for improvement.

3.3. The startups research analysis

3.3.1. Research methodology

The quantitative research method and questionnaire were chosen for the study analysis to gather responses to survey questions and to evaluate Net neutrality affection to Lithuanian startups integration in global digital economy and barriers for the effective Net neutrality. Quantitative descriptive research type and the statistical analysis of the data was selected for survey. Comparative analysis will be used to compare two or more data to identify differences between Lithuanian startups throw Net neutrality prism.

3.3.2. Ethic principles of research

The survey was followed by major ethnic principles:

1. The study participants were aware that they can accept or refuse to participate in the study;

2. Study participants were informed about anonymous their participation in the study;

3. Study participants were informed about the confidentiality;

The quantitative study took into account the respondent privacy and ensured its anonymity, it was also given a clear information about the investigation. It was committed to the trial participants that the information about their startup will not be published.

3.3.3. Quantitative research sample characteristics

Respondents were interviewed by sending them questionnaires online. Lithuanian startups were selected for the research.

3.3.4. Research instrument

Questionnaire survey method was used for survey. The respondents were given a questionnaire. The goal of the survey and the investigator's introduction were specified in questionnaire. The questionnaire was designed by the author. The questionnaire included: 1) Information part (4 closed-ended questions related to the startup characteristics), 2) Questions,

answering the question of what the respondent knows about the Net neutrality and its impact for small-medium business and startups (4 closed questions with the following answers), 3) Questions, answering the question, what are the main barriers for effective Net neutrality and if the Net neutrality is important (2 closed questions with the following answers).

Sample of the study participants - 396 Lithuanian startups.

Profiles reversibility – from sent out 396 questionnaires, with answers came back 163 questionnaires (frequency 41,16%).

The aim - to find out how much startups in Lithuania are aware of the Net neutrality, the Net neutrality affection to Lithuanian startups integration in global digital economy and barriers for the effective Net neutrality.

Timing - This survey was conducted in 2016 November.

Due to the confidentiality agreed with the respondents, information about startups and their names will not be made public.

Research stages:

1. The search and analysis of the scientific literature;

2. Establishment of the questionnaires for survey;

3. Expulsion of the questionnaires for respondents;

4. The analysis of the received data.

3.3.5. Analysis of the quantitative research results

The diagrams below will illustrate the results of analysis.

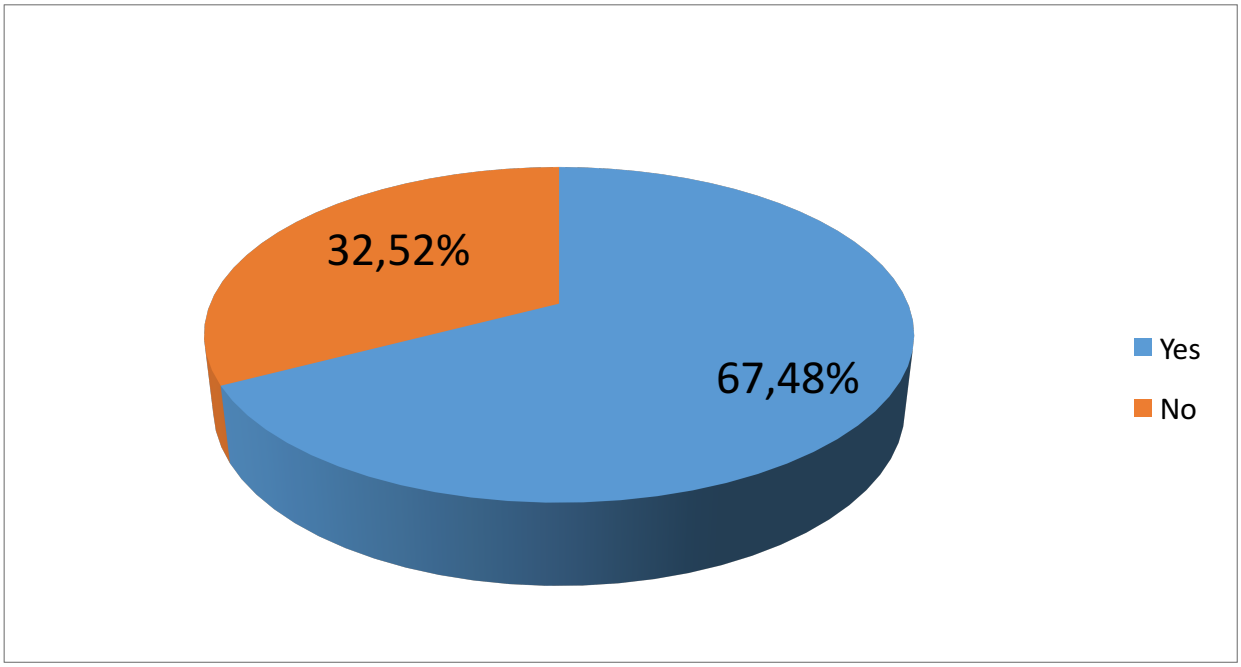

Fig. 1. Shows if respondent work or have ever worked in Information and communications technology industry. (f=41,16)

Most of the respondents, who participated in the research, work or have ever worked in Information and communication technology (ICT) industry 110 (67,48 %), and 53 (32,52 %) do not work or have not ever worked in ICT industry. (Fig. 1).

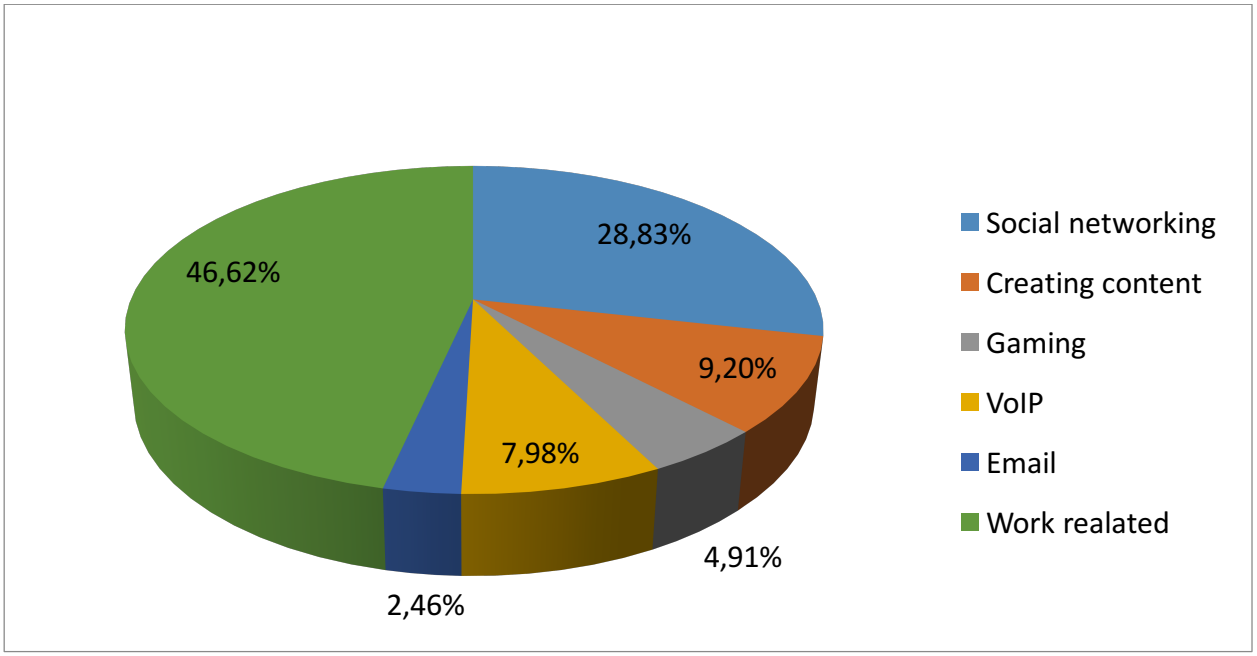

Fig. 2. Shows for what activity respondent spends the most time on Internet. (f=41,16)

The biggest part of the respondents who participated in the research, the most time on Internet spend doing work related exercises 76 (46,62 %), a little less for social networking 47 (28,83 %) respondents, for creating content 15 (9,20 %) respondents, for gaming 8 (4,91 %)

respondents, for VoIP services 13 (7,98 %) respondents and for email 4 (2,46 %) respondents. These results clearly show that the most time respondents spend doing work related exercises. (Fig. 2).

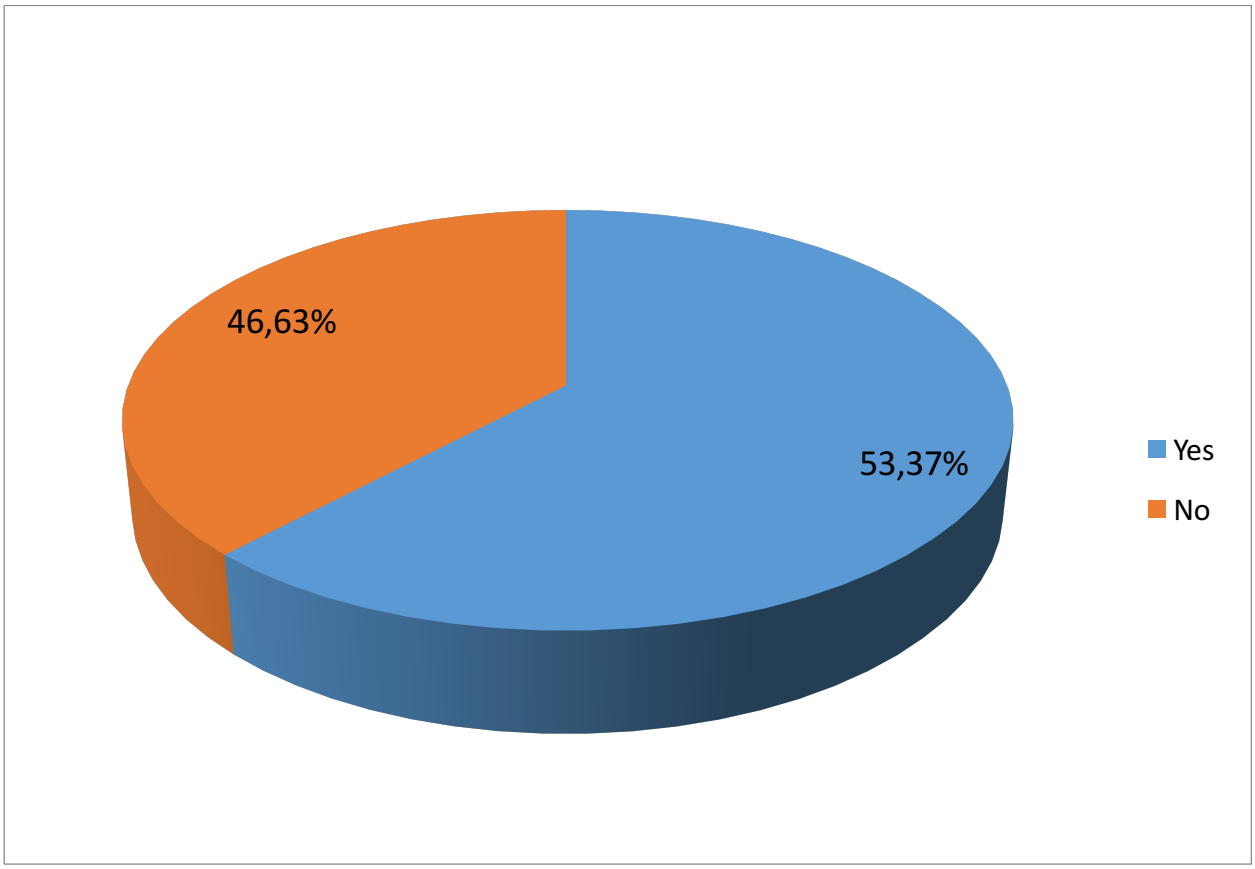

Fig. 3. Shows if respondent has ever heard the term Net neutrality before taking this questionnaire. (f=41,16)

Bigger part of the respondents who participated in the research, have ever heard the term Net neutrality before taking this questionnaire 87 (53,37 %) respondents, a little less 76 (46,63 %) respondents have not heard the term Net neutrality before taking this questionnaire. These results show that though bigger part of respondents know the term Net neutrality. (Fig. 3).

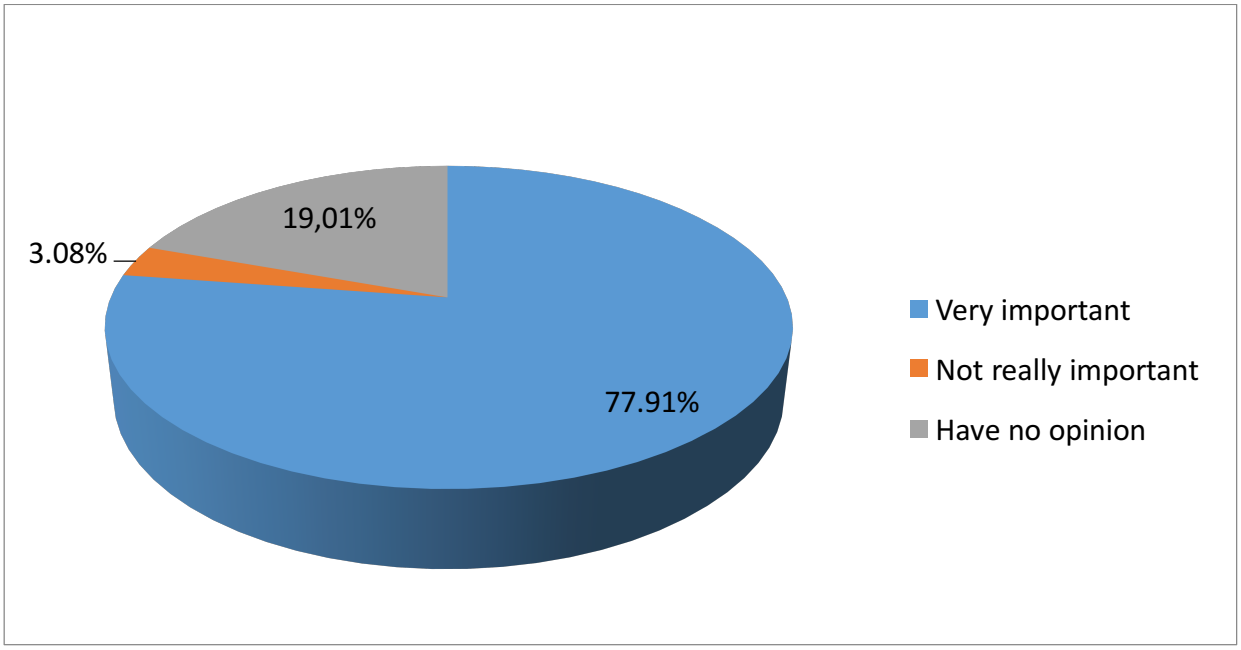

Fig. 4. Shows how much Net neutrality is important for respondent and his startup innovation. (f=41,16)

In questionnaire was denoted what Net neutrality means (that Internet service providers should treat equally the Internet moving data and not to discriminate against them or apply different charges to consumers and content creators). The biggest part of the respondents who participated in the research, think that Net neutrality is important for them and their startup innovation 127 (77,91 %) respondents, a very less part think that Net neutrality in not really important for their startup innovation 31 (19,01 %) respondents and 5 (3,08 %) respondents have no opinion about importance of the Net neutrality to their startups. These results show that the biggest part of respondents are concerned about Net neutrality affection to their startup. (Fig. 4).

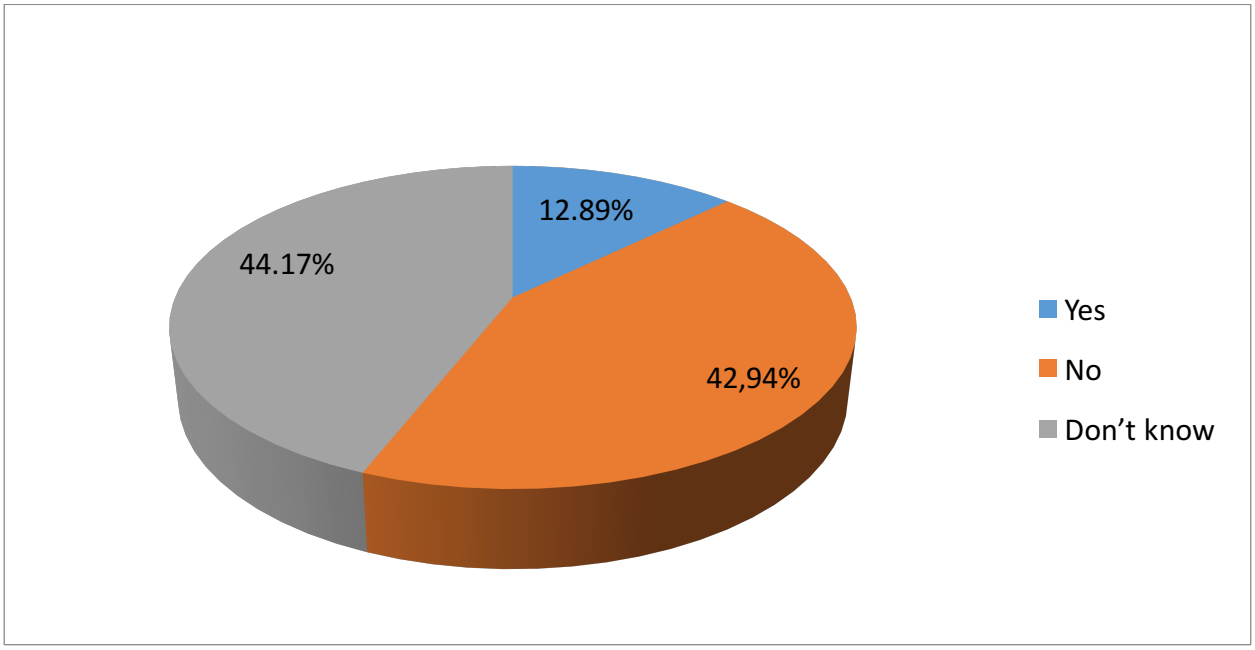

Fig. 5. Shows if Internet Service Provider has ever throttled or blocked respondent connection or any site he personally run. (f=41,16)

If respondent was not sure if he was ever throttled or blocked, he could emulate a test at http://broadband.mpi-sws.org/transparency/bttest-mlab.php, this website was noted in the questionnaire. The biggest part of the respondents who participated in the research, do not know if they were throttled or blocked by Internet service providers 72 (44,17 %) respondents, a little less part said that they were not throttled or blocked by Internet service providers 70 (42,94 %) respondents and 21 (12,89 %) respondents said that they were throttled or blocked by Internet service providers. These results show that the biggest part of respondents do not know if they were throttled or blocked by Internet service providers. (Fig. 5).

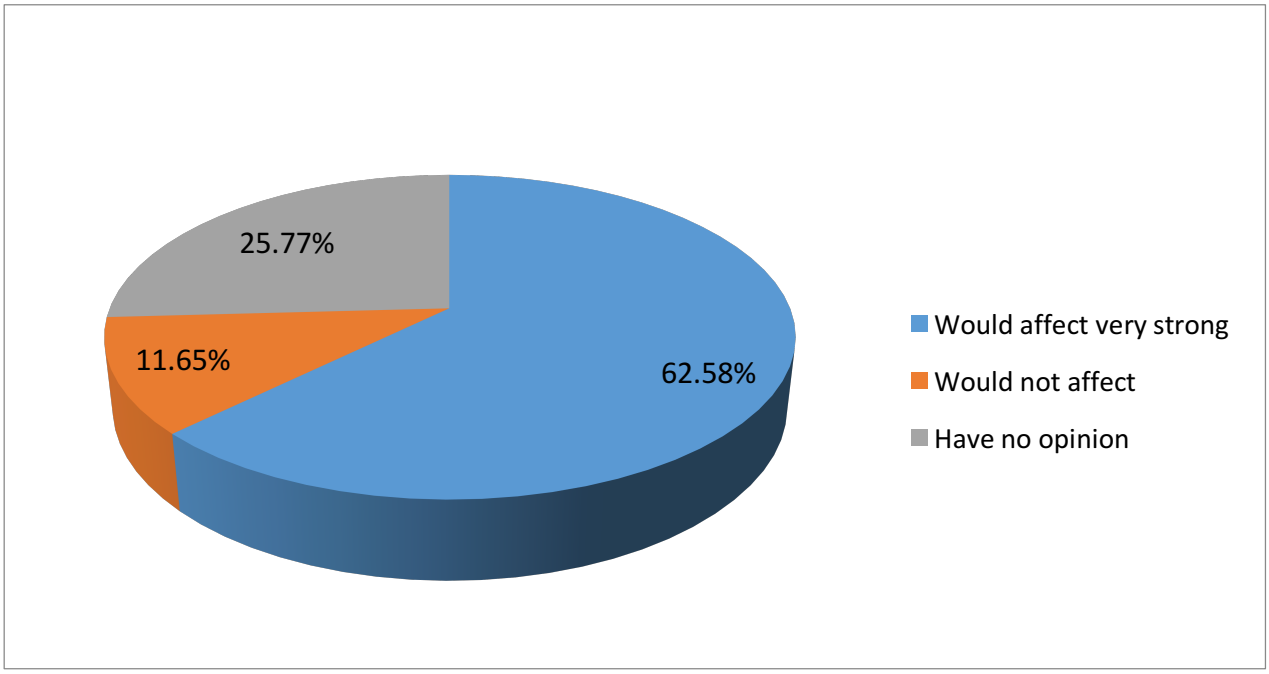

Fig. 6. Shows if respondent think that zero rating practice would affect startup innovation. (f=41,16)

In the questionnaire was denoted what zero rating means (when some ISPs, especially mobile operators, provides to users a free flow of data to connect to certain services or web sites like Spotify or Facebook). The biggest part of the respondents who participated in the research, think that zero rating practice would affect their startup innovation 102 (62,58 %) respondents, a very less part think that zero rating practice would not affect their startup innovation their startup innovation 42 (25,77 %) respondents and 19 (11,65 %) respondents have no opinion about zero rating practice affection to their startup innovation. These results show that the biggest part of respondents think that zero rating practice affect their startup innovation. (Fig. 6).

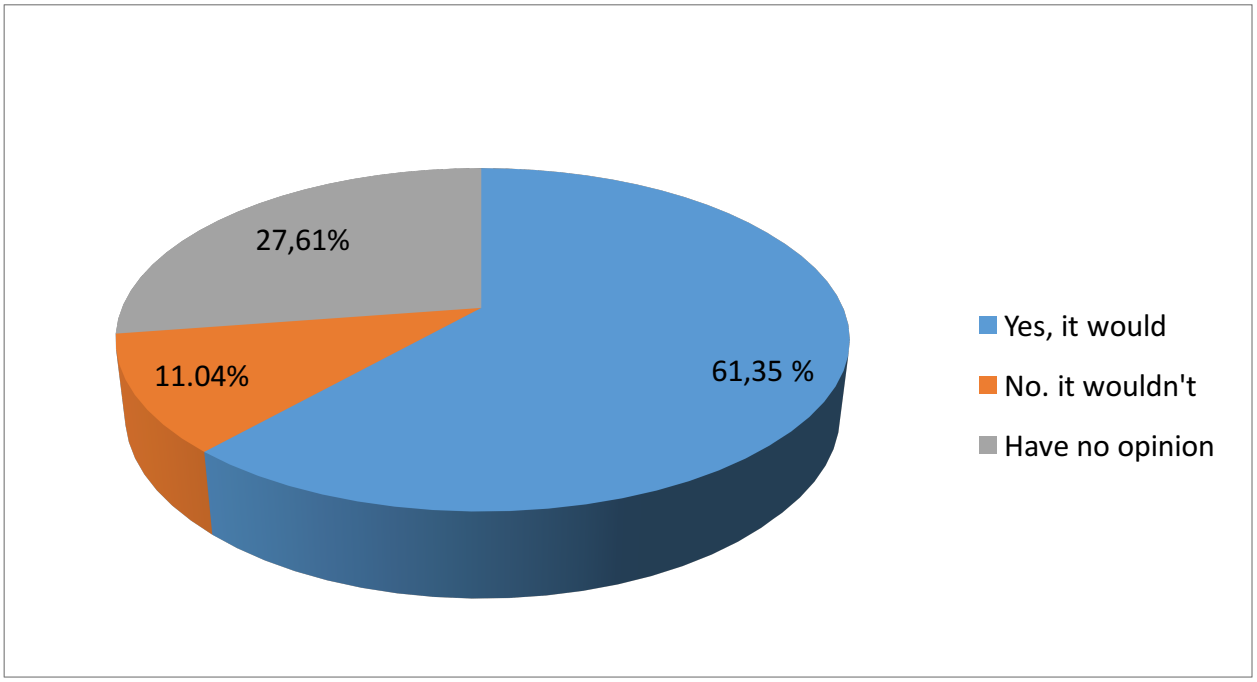

Fig. 7. Shows if respondent think that banded access would hinder startup innovation on the World Wide Web (WWW). (f=41,16)

In the questionnaire was denoted what banded access means (an environment where websites are rank ordered, who pay a premium will have the fastest connection speed, and those who do not pay will be slower). The biggest part of the respondents who participated in the research, think that banded access would hinder their startup innovation on the WWW 100 (61,35 %) respondents, the most less part think that banded access would not hinder their startup innovation on the WWW 18 (11,04 %) respondents and 45 (27,61 %) respondents have no opinion if banded access would hinder their startup innovation on the WWW. These results show that the biggest part of respondents think that banded access would hinder their startup innovation on the WWW. (Fig. 7).

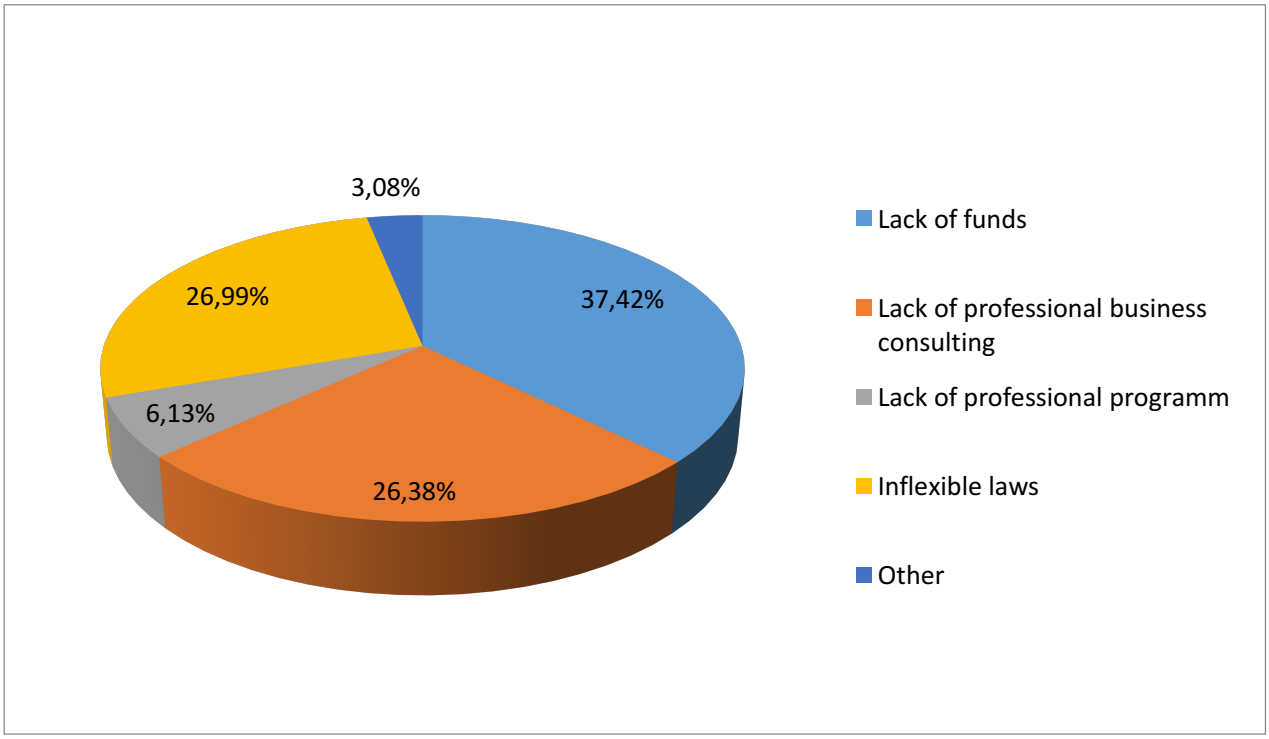

Fig. 8. Shows what respondents think are the main obstacles they face when creating startups. (f=41,16)

The biggest part of the respondents who participated in the research, think that the main obstacle when creating startup is lack of funds 61 (37,42 %) respondents, a little less part think the main obstacle is inflexible laws 44 (26,99 %) respondents, then that the main obstacle is lack of professional business consulting thought 43 (26,38 %) respondents, then that the main obstacle is lack of professional programmers thought 10 (6,13 %) respondents and the smallest part 5 (3,08 %) respondents identified other obstacles when creating startup. These results show that the biggest parts of respondents think that the main obstacles when creating startup are lack of funds and lack of professional business consulting when creating startup. (Fig. 8).

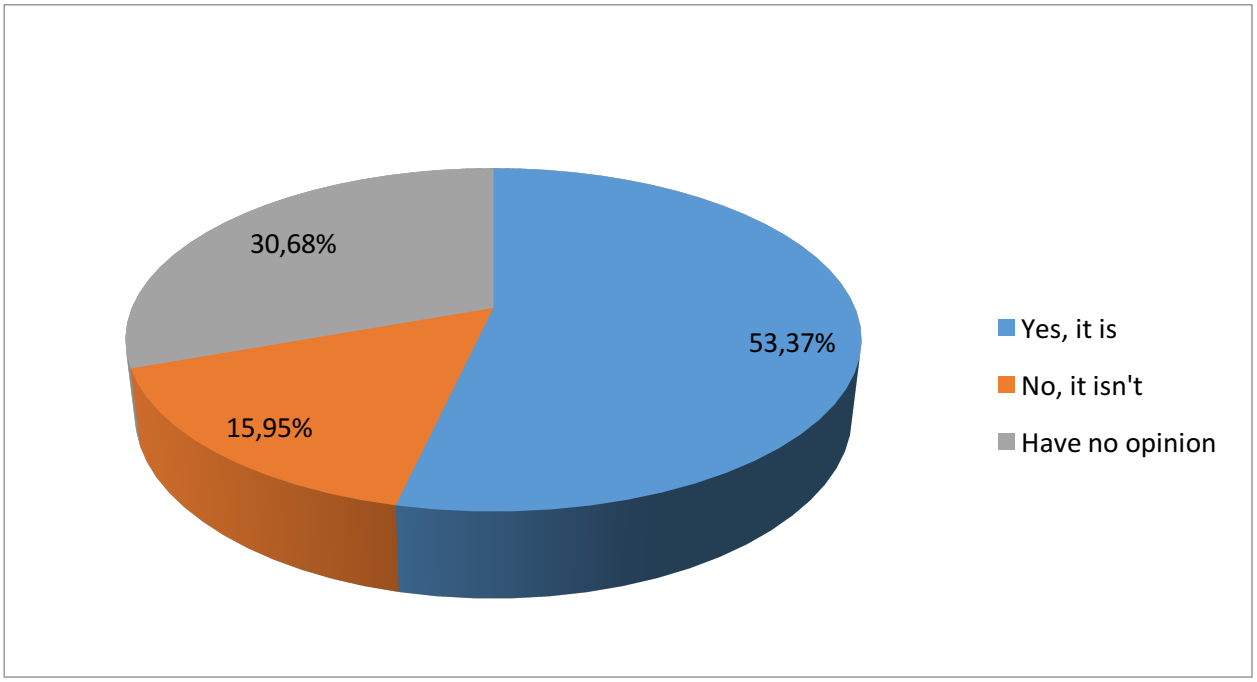

Fig. 9. Shows if respondent believe that indefinite Net neutrality legislative exceptions are real issue today for startups. (f=41,16)

The biggest part of the respondents who participated in the research, think that indefinite Net neutrality legislative exceptions are real issue for startups 87 (53,37 %) respondents, a very less part think that indefinite Net neutrality legislative exceptions are not real issue for startups 26 (15,95 %) respondents and 50 (30,68 %) respondents have no opinion if indefinite Net neutrality legislative exceptions are real issue for startups. These results show that the biggest part of respondents think that indefinite Net neutrality legislative exceptions are real issue for startups. (Fig. 9).

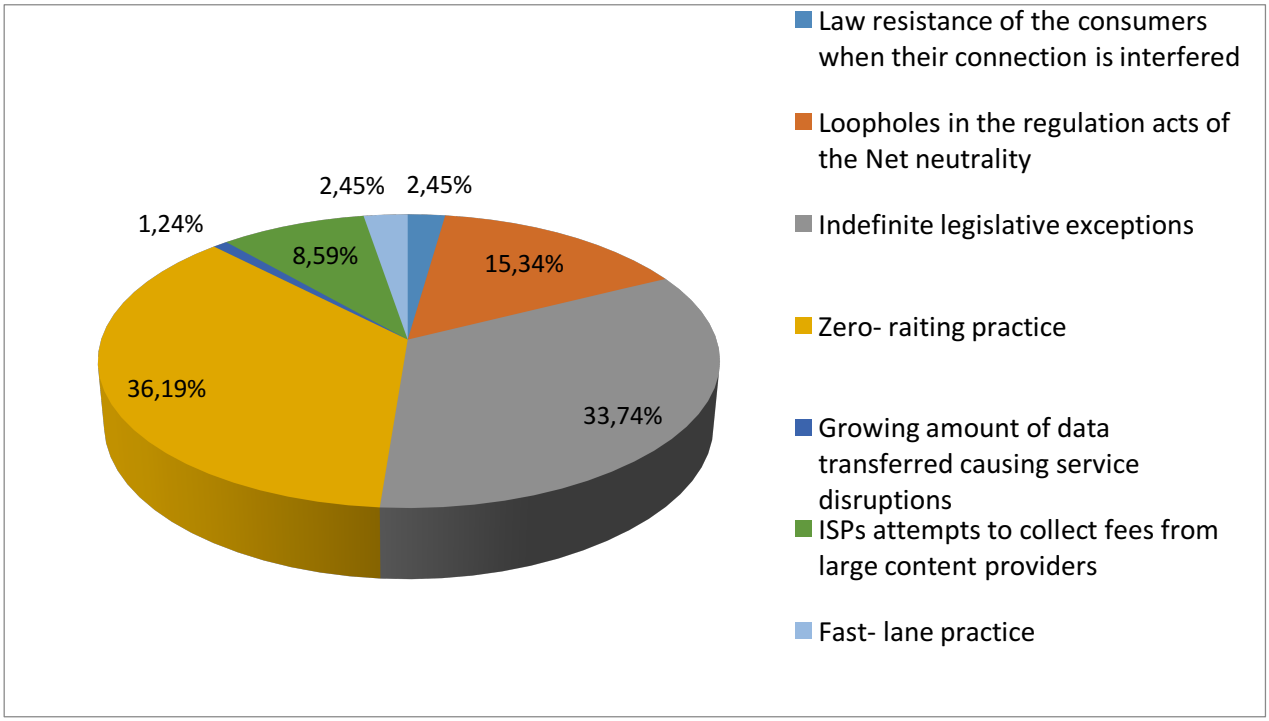

Fig. 10. Shows what respondent thinks are the main barriers for ensuring Net neutrality principle. (f=41,16)

The biggest part of the respondents who participated in the research, think that the main barriers to ensure Net neutrality is zero rating practice 59 (36,19 %) respondents, a little less part think the main barrier is indefinite legislative exceptions 55 (33,74 %) respondents, then that the main barrier is loopholes in the regulation acts of Net neutrality thought 25 (15,34 %) respondents, then that the main barrier is ISPs attempts to collect fees from large content providers thought 14 (8,59 %) respondents, that the main barrier is fast lane practice thought 4 (2,45 %) respondents, that the main barrier is law resistance of the consumers when their connection is interfered thought 4 (2,45 %) respondents and just 2 (1,24 %) respondents thought that the main barrier is growing amount of data transferred which causes service disruptions. These results show that the biggest parts of respondents think that the main barriers to ensure Net neutrality are zero rating practice, indefinite legislative exceptions and loopholes in the regulation acts of Net neutrality. (Fig. 10).

CONCLUSIONS

1. Net neutrality is a concept that states that all data on the Internet should be delivered impartially to consumer despite of their content, source or cost of service, which is regulated by co-continent applicable requirement acts and by countries national requirements. But the Net neutrality principle is not absolute and has limitations, when some level of prioritization or restriction is needed in order for interests of consumers or to protect state secrets and national security;
2. Comparing adopted Net neutrality requirements in the EU and the US, both prohibit paid prioritization, but there is exception as "specialized services" in the EU regulation, that are necessary, while the FCC rules clearly prohibited the use of specialized services. Moreover, both the US and the EU regulations prevent ISPs from blocking or throttling traffic, but also in both there are blocking and throttling exceptions for "reasonable network management". Furthermore, the EU proposal lets ISPs to use network management practices when congestion not really happens but just is about to happen, while the FCC is stricter and do not allow "impending congestion" to count by the reasonable network management and ISPs are able to implement network management just when actual congestion happens.
3. After review of the Net neutrality concept, revealed that the main obstacles to the successful functioning of the principle are ISPs wishes to charge for use of their networks, ISPs building "pay to play" idea on Internet, the loopholes in legal regulation and ISPs requirement to release the two-lane Internet legitimizing law, that would block Internet innovation.
4. The legal disputes of Comcast and KPN pushed the authorities to adopt more effective Net neutrality requirements, but in the EU requirements paid prioritization exception "specialized services" are defined as "electronic communication services, that are necessary" could become a loophole because of too wide definition. Moreover, requirements did not preclude the application of the zero-rating practice, thus the principle of equivalence and competition could be violated. Furthermore, requirements explain that ISPs must take all decisions transparently but the EU proposal let too much leeway for ISPs how they can manage different types of applications, what means that new Net neutrality requirements did not fill the previous gaps fully, and let too much scope for interpretation.
5. After the empirical study on the Net neutrality situation in Lithuania through the prism of startups, it is possible to distinguish the main obstacle to startups to innovate and

consolidate in the global digital economy are: the lack of funds, lack of professional business consulting, the indefinite Net neutrality legislative exceptions, banded Internet access and use of zero rating practice.

6. As the main stakeholders can be identified OTT service players, who without Net neutrality requirements become vulnerable against the great players like ISPs. Because of requirements, OTT players are given the opportunity to remain in the digital economy and to transfer information to end-users without congestion.

RECOMMENDATIONS

1. To release new requirements of the the Net neutrality, which would fill the gaps and loopholes in today laws, because a clear definition and examples are needed in order to enable less interpretation. Moreover, empirical study showed that zero- rating practise is one of the barrier for the startups to consolidate in the digital global market, so application of the zero-rating practice should be precluded that the principle of equivalence and competition would not be violated.
2. To establish a state financial fund for startups that develop innovative products, because huge competition between small-medium business reduces an opportunity to get necessary funding and to provide free professional business consultations for startups (prepare the educational conferences or seminars) because the beginning of startup creation requires not just huge financial amounts but also lack of competence appears, when professional business consultations is needed.

REFERENCES

Legislation:

Legislation of the Republic of Lithuania:

1. The Gaming Act of the Republic of Lithuania (2001). No. IX-325, State news, No. 43. Retrieved from http://www.litlex.lt/scripts/sarasas2.dll?Tekstas=1&Id=47218 [30.11.2016 11:15 PM]
2. The Public information law of the Republic of Lithuania (2006). No. X-752, State news, No. 82-3254. Retrieved from https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.280580 [11.11.2016 3:50 PM]
3. The Supplementing law of the Gaming Act of the Republic of Lithuania (2015). No. XII-1734, Legislation register, No. 8980. Retrieved from https://www.e-tar.lt/portal/lt/legalAct/0f7f08200da011e5920c94700bb1958e [13.11.2016 2:20 PM]

Legislation of the European Union:

4. BEREC (2015, October). Report on OTT services, BoR (15) 142. Retrieved from https://www.google.lt/url?sa=t&rct=j&q=&esrc=s&source=web&cd=2&cad=rja&uact=8&ved=0ahUKEwjcqpuBitnQAhWGKCwKHWKtCDkQFggfMAE&url=http%3A%2F%2Fberec.europa.eu%2Feng%2Fdocument_register%2Fsubject_matter%2Fberec%2Fdownload%2F0%2F5431-draft-berec-report-on-ott-services_0.pdf&usg=AFQjCNHk_6Tj_nRWADrZU6GHyTw-Ru3kuA&sig2=-lnja2Z5qRR3iPfw2i4SQQ&bvm=bv.139782543,d.bGg [02.12.2016 8:15 PM]
5. Netherlands (2012, May 8). Amended Telecommunications Act prescribes net neutrality, stricter cookie provisions. Retrieved from http://www.loc.gov/law/foreign-news/article/netherlands-amended-telecommunications-act-prescribes-net-neutrality-stricter-cookie-provisions/ [05.11.2016 1:58 PM]
6. Netherlands (2015). Regulation clarifying the provision on net neutrality, IRIS 2015-6:1/29. Retrieved from http://merlin.obs.coe.int/iris/2015/6/article29.en.html [17.11.2016 2:35 PM]
7. The European Parliament and the Council (2009, November 25). Directive 2009/136/EC amending Directive 2002/22/EC on universal service and users' rights relating to electronic communications networks and services, Directive 2002/58/EC concerning the processing of personal data and the protection of privacy in the electronic communications sector and

Regulation (EC) No 2006/2004 on cooperation between national authorities responsible for the enforcement of consumer protection laws. Retrieved from http://eur-lex.europa.eu/legal-content/en/TXT/?uri=CELEX%3A32009L0136 [16.11.2016 7:35 PM]

8. The European Parliament and the Council (2013). Proposal for regulation on laying down measures concerning the European single market for electronic communications and to achieve a Connected Continent, and amending Directives 2002/20/EC, 2002/21/EC and 2002/22/EC and Regulations (EC) No 1211/2009 and (EU) No 531/2012. Retrieved from http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52013PC0627 [15.11.2016 2:57 PM]
9. The European Parliament and the Council (2015, November 25). Regulation 2015/2120 on 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. Retrieved from https://www.scribd.com/document/306350824/Net-Neutrality-REGULATION-EU-2015-2120 [16.11.2016 1:45 PM]
10. The European Parliament and the Council (2015, September 23). Regulation 10788/15 on setting out the measures relating to the open Internet access and amending Directive 2002/22/EC on universal service and users' rights relating to electronic communications networks and services and Regulation No.531/2012 on roaming on public mobile networks within the Union. Retrieved from http://data.consilium.europa.eu/doc/document/ST-10788-2015-INIT/lt/pdf [13.11.2016 2:25 PM]
11. The European Parliament (2011, November 17). Resolution 2011/0511 on the open internet and net neutrality in Europe. Retrieved from http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//NONSGML+TA+P7-TA-2011-0511+0+DOC+PDF+V0//LT [13.11.2016 2:30 PM]
12. The European Parliament (2011). Resolution 2011/2866(RSP) on the open internet and the net neutrality in Europe. Retrieved from http://www.europarl.europa.eu/sides/getDoc.do?type=MOTION&reference=B7-2011-0572&language=EN [13.11.2016 2:35 PM]
13. The European Parliament (2013). Resolution 2013/2655(RSP) on the Digital single market completion. Retrieved from http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//TEXT+MOTION+B7-

2013-0331+0+DOC+XML+V0//LT [15.11.2016 2:59 PM]

Legislation of the US:

14. Federal Communications Commission (2005, September 23). Policy Statement FCC05. Retrieved from https://apps.fcc.gov/edocs_public/attachmatch/FCC-05-151A1.pdf [01.11.2016 7:38 PM]
15. Federal Communications Commission (2015, March 12). Report and order on remand, declaratory ruling, and order FCC15-24. Retrieved from https://apps.fcc.gov/edocs_public/attachmatch/FCC-15-24A1.docx [01.11.2016 6:26 PM]

Press releases of the European Union:

16. Directorate General Communication (European Commission), (2015, October 27). Press release *Bringing down barriers in the Digital Single Market: no roaming charges as of June 2017*. Reference: IP/15/5927. Retrieved from http://europa.eu/rapid/press-release_IP-15-5927_en.htm [16.11.2016 8:47 AM]
17. Directorate General Communication (European Commission), (2013, September 11). Press release *Commission adopts regulatory proposals for a Connected Continent*. Reference: MEMO/13/779. Retrieved from http://europa.eu/rapid/press-release_MEMO-13-779_en.htm [15.11.2016 10:35 AM]
18. Directorate General Communication (European Commission), (2015, June 30). Press release *Commission welcomes agreement to end roaming charges and to guarantee an open Internet*. Reference: IP/15/5265. Retrieved from http://europa.eu/rapid/press-release_IP-15-5265_en.htm [15.11.2016 9:35 AM]
19. Directorate General Communication (European Commission), (2013, September 11). Press release *Propose major step forward for telecoms single market.* Reference: IP/13/828. Retrieved from http://europa.eu/rapid/press-release_IP-13-828_en.htm [15.11.2016 5:47 PM]
20. Directorate General Communication (European Commission), (2015, October 27). Press release *Roaming charges and open Internet: questions and answers*. Reference: MEMO/15/5275. Retrieved from http://europa.eu/rapid/press-release_MEMO-15-5275_en.htm [15.11.2016 8:53 PM]

Books:

21. Belli L., Filippi D. P. (2016). End-to-end, Net neutrality and human rights // *Net neutrality compendium human rights, free competition and the future of the Internet. –* Springer, p. 13-29. Retrieved from

http://webcache.googleusercontent.com/search?q=cache:aBDmGOgPKTIJ:www.springer.com/cda/content/document/cda_downloaddocument/9783319264240-c1.pdf%3FSGWID%3D0-0-45-1533874-p177786462+&cd=4&hl=lt&ct=clnk&gl=lt [22.11.2016 10:23 AM]

22. Hazlett Th. W. (2013). The fallacy of net neutrality. - Encounter books. Retrieved from https://books.google.lt/books?id=iVXN_9wMSuIC&printsec=frontcover&dq=net+neutrality&hl=lt&sa=X&ved=0ahUKEwiOmd-i4f3PAhUDVhoKHS8QA-sQ6AEIIzAA#v=onepage&q=net%20neutrality&f=false [01.11.2016 9:33 AM]
23. Marcus J. S. (2014). Network Neutrality Revisited: Challenges and Responses in the EU and in the US. – Policy Department. Retrieved from http://www.europarl.europa.eu/RegData/etudes/STUD/2014/518751/IPOL_STU(2014)518751_EN.pdf [10.11.2016 9:38 AM]
24. Zelnick B., Zelnick E. (2013). The illusion of net neutrality – political alarmism, regulatory creep and the real threat to internet freedom. – Hoover Press. Retrieved from https://books.google.lt/books?id=Q10phY811tUC&pg=PA156&dq=net+neutrality&hl=lt&sa=X&ved=0ahUKEwitwISc3cHQAhVMiywKHQAoA2UQ6AEIPDAF#v=onepage&q=net%20neutrality&f=false [10.11.2016 11:28 AM]

Newspapers, journals:

25. Becker G.S. et al. (2010). Net neutrality and consumer welfare // *Journal of Competition law & economics* - vol. 6, issue 3, 497-519. Retrieved from http://jcle.oxfordjournals.org/content/6/3/497.abstract [16.11.2016 4:26 PM]
26. Bourreau M., et al. (2015). Net neutrality with competing Internet platforms // *The journal of industrial economics*, vol. 63, issue 1, p. 30-73. Retrieved from http://onlinelibrary.wiley.com/doi/10.1111/joie.12068/full [20.11.2016 4:37 PM]
27. Cave M., Vogelsang I. (2015). Net neutrality: an E.U./U.S. Comparison // *CPI Journal.* - vol. 11, no. 1, p. 14. Retrieved from https://www.competitionpolicyinternational.com/wp-content/uploads/2016/03/Net-Neutrality.pdf [16.11.2016 3:13 PM]
28. Daly A. (2011). The legality of deep packet inspection // *International Journal of Communications Law & Policy, No.14* – Brisbane, p. 12. Retrieved from *http://ssrn.com/abstract=1628024* [05.11.2016 7:35 PM]
29. Ford S. G., Lawrence J. S. (2010). The Broadband credibility gap // *SSRN Electronic Journal.* – Washington, p. 47. Retrieved from *http://ssrn.com/abstract=1626362* [05.11.2016 9:35 PM]

30. Ly A., et al. (2012). Understanding the Net neutrality debate: listening to stakeholders // Peer-reviewed journal on the Internet, vol. 17, no. 5. Retrieved from http://firstmonday.org/ojs/index.php/fm/article/view/3857/3205 [20.11.2016 2:16 PM]
31. Marsden T. Ch. (2010). Net neutrality: Towards a co- regulatory solution // *International Journal of Communication.* – Bloomsbury, p. 301. Retrieved from http://ijoc.org/index.php/ijoc/article/viewFile/953/476 [01.11.2016 2:01 PM]
32. Patterson R. M. (2010). Non- network barriers to network neutrality // *Fordham Law Review*. – Fordham, Vol. 78, p. 2843-2872. Retrieved from http://ir.lawnet.fordham.edu/cgi/viewcontent.cgi?article=4545&context=flr [01.11.2016 2:35 PM]
33. Schewick V. B. (2010). Network neutrality: what a non-discrimination rule should look like // *SSRN Electronic Journal.* – Stanford, p. 11. Retrieved from *http://ssrn.com/abstract=1684677* [05.11.2016 8:45 PM]
34. Schewick V. B. (2007). Towards an economic framework for network neutrality regulation // *Journal on Telecommunications and High Technology Law. – Stanford, Vol. 5, p. 329-391.* Retrieved from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=812991 [01.11.2016 1:26 PM]
35. Wu T. (2003). Network neutrality, broadband discrimination // *Journal of Telecommunications and High Technology Law*. – New York, Vol. 2, p. 141. Retrieved from https://poseidon01.ssrn.com/delivery.php?ID=994020123000097108087079030065107010116045067060095028110097084103022123108022021101018063099111026042034109117016092095007121033078015032007006064127110005004002049091067102020028008108084027090123022016127007027080127001030118080106007115073100&EXT=pdf [31.10.2016 11:47 AM]
36. Wu T. (2006). Network neutrality: competition, innovation and nondiscriminatory access // *SSRN Electronic Journal.* – New York, p. 7. Retrieved from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=903118 [31.10.2016 5:39 PM]
37. Wu T. (2006). Why have a Telecommunications Law?: Anti-discrimination norms in communications // *Journal on Telecommunications and High Technology Law*. – New York, Vol. 5, p. 15. Retrieved from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=903324 [01.11.2016 1:17 PM]
38. Yoo S. Ch. (2010). Innovations in the Internet's architecture that challenge the status quo // *Journal of Telecommunications and High Technology Law.* – Philadelphia, p. 22. Retrieved from *http://ssrn.com/abstract=1472074* [05.11.2016 10:38 PM]

Judicial practice:

39. Netherlands Authority for Consumers and Markets (2014) Decision to impose a fine for a violation of Section 7.4a, paragraph 1 of the Dutch Telecommunications Act with regard to net neutrality, No. 14.0875.31. Retrieved from https://www.acm.nl/en/publications/publication/14311/Fine-on-KPN-for-violation-of-net-neutrality-rules/ [17.11.2016 8:13 PM]
40. Electronic Frontier Foundation (2007). Packet Forgery By ISPs: A Report On The Comcast Affair, Version 1.0. Retrieved from http://arstechnica.com/uncategorized/2007/11/eff-study-reveals-evidence-of-comcasts-bittorrent-interference/ [18.11.2016 9:14 PM]
41. Federal Communications Commission (2008, August 20). Memorandum opinion and order FCC 08-183. Retrieved from https://apps.fcc.gov/edocs_public/attachmatch/FCC-08-183A1.pdf [05.11.2016 4:28 PM]
42. United States Court of Appeals (2010, April 6). For the district of Columbia circuit, No. 08-1291, Comcast Corporation v. Federal Communications Commission and United States of America on petition for review of an order of the Federal Communications Commission. Retrieved from https://www.eff.org/files/comcast_v_fcc_dc_cir_2010.pdf [05.11.2016 4:59 PM]

Internet sources:

43. BEREC (2016). Guidelines on the Implementation by National Regulators of European Net Neutrality Rules. Retrieved from http://berec.europa.eu/eng/netneutrality/ [17.11.2016 3:16 PM]
44. BitTorrent, Comcast, EFF antipathetic to FCC regulation of P2P traffic (2008). Retrieved from http://www.sfweekly.com/news/bittorrent-comcast-eff-antipathetic-to-fcc-regulation-of-p2p-traffic/ [01.11.2016 1:19 PM]
45. Comcast (2008). Statement on FCC Internet regulation decision. Retrieved from http://corporate.comcast.com/news-information/news-feed/comcast-statement-on-fcc-internet-regulation-decision [17.11.2016 9:19 PM]
46. Digital TV news (2016). Lattelecom launches OTT Shortcut platform. Retrieved from http://www.digitaltveurope.net/565622/lattelecom-launches-ott-shortcut-platform/ [02.12.2016 11:13 PM]
47. Freedom on the net privatizing censorship, eroding privacy (2015). Retrieved from https://freedomhouse.org/report/freedom-net-2015/freedom-net-2015-privatizing-censorship-eroding-privacy [20.11.2016 11:48 PM]

48. Hsu J. (2014). Net neutrality ruling opens door for 2-tiered internet market. Retrieved from https://www.scientificamerican.com/article/net-neutrality-ruling-opens-door/ [15.11.2016 7:51 PM]
49. Interneto neutralumas – ar pavyks jį užtikrinti? (2015). Retrieved from http://manoteises.lt/straipsnis/interneto-neutralumas-ar-pavyks-ji-uztikrinti/ [22.11.2016 2:17 PM]
50. Interneto laisvė: ar nebus Lietuvoje kaip Kinijoje? (2015). Retrieved from http://www.delfi.lt/mokslas/technologijos/interneto-laisve-ar-lietuvoje-nebus-taip-kaip-kinijoje.d?id=68328528 [20.11.2016 1:29 PM]
51. Jovaiša A. (2016). Nepagailėjo kritikos Lietuvos startuoliams: jie slepia nykią realybę. Retrieved from http://www.delfi.lt/mokslas/technologijos/nepagailejo-kritikos-lietuvos-startuoliams-jie-slepia-nykia-realybe.d?id=70531610 [01.12.2016 6:16 PM]
52. Marsden Ch. (2016). Telias's zero rating agreement with Facebook a blow to Swedish media companies // *Journalism 3.0*. Retrieved from http://sverigesradio.se/sida/artikel.aspx?programid=4042&artikel=6424288 [02.12.2016 2:35 PM]
53. Mills Ch. (2016). T-Mobile just made its binge on unlimited video streaming even better. Retrieved from http://bgr.com/2016/05/17/t-mobile-binge-on-list-youtube-nbc-netflix/ [20.11.2016 4:00 PM]
54. Net neutrality is in more danger than ever (2016). Retrieved from https://www.wired.com/2016/03/despite-fcc-net-neutrality-danger-ever/ [20.11.2016 3:17 PM]
55. Net neutrality rules will make winners and losers out of business (2016). Retrieved from https://hbr.org/2016/06/net-neutrality-rules-will-make-winners-and-losers-out-of-businesses [22.11.2016 8:11 PM]
56. Pew Research Center (2014). Net Threats report. Retrieved from http://www.pewinternet.org/files/2014/07/Future-of-the-Internet_Net-Threats_070314.pdf [22.11.2016 3:37 PM]
57. Sapetkaitė V. (2014). Startuoliai. Išpūstas burbulas ar kaitą lemiantis proveržis? Retrieved from http://practica.lt/file/Zurnalas_Veidas_Startuoliu_ekosistema_28_2014.pdf [01.12.2016 7:18 PM]
58. Sickinghe F. (2015). Net neutrality guidelines in the Netherlands come into force. Retrieved from http://www.twobirds.com/en/news/articles/2015/netherlands/net-neutrality-guidelines-in-the-netherlands-come-into-force [20.11.2016 7:25 PM]
59. The Commission (2013, October 24-25) material, the European Council discussions on the

digital economy. Retrieved from http://ec.europa.eu/europe2020/pdf/20131010_lt.pdf [30.11.2016 5:15 PM]

60. The Digital single market (2016). Commitment to net neutrality. Retrieved from https://ec.europa.eu/digital-single-market/en/open-internet-net-neutrality [16.11.2016 10:13 PM]
61. The European Parliament (2015). Policy overview on the Consumer protection in the EU. Retrieved from http://www.europarl.europa.eu/RegData/etudes/IDAN/2015/565904/EPRS_IDA(2015)565904_EN.pdf [13.11.2016 8:46 PM]
62. The European Union (2014). Structural support exposure to small and medium business valuation, The Final evaluation report. Retrieved from http://www.esparama.lt/es_parama_pletra/failai/fm/failai/Vertinimas_ESSP_Neringos/Ataskaitos_2011MVP/SVV_Galutine_ataskaita.pdf [01.12.2016 10:14 PM]
63. United Nations General Assembly (2016, June 30). Oral Revisions. Promotion and protection of all human rights, civil, political, economic, social and cultural rights, including the right to development. Retrieved from https://www.article19.org/data/files/Internet_Statement_Adopted.pdf [30.11.2016 3:35 PM]
64. Verseckas D. (2016). Įteisino startuolių vizą. Retrieved from http://vz.lt/verslo-aplinka/politika/2016/06/30/iteisino-startuoliu-viza [01.12.2016 8:34 PM]
65. Versli Lietuva (2015). Apdovanoti didžiausių pasiekimų 2014-aisiais sulaukę Lietuvos startuoliai. Retrieved from http://www.verslilietuva.lt/lt/naujienos/naujienos/apdovanoti-didziausiu-pasiekimu-2014-aisiais-sulauke-lietuvos-startuoliai/20 [01.12.2016 7:18 PM]
66. We will not block; we will monetize: KPN's foray into DPI (2011). Retrieved from http://www.internetgovernance.org/2011/05/23/we-will-not-block-we-will-monetize-kpns-foray-into-dpi/ [17.11.2016 11:24 PM]
67. What net neutrality means for small business (2015). Retrieved from https://www.americanexpress.com/us/small-business/openforum/articles/net-neutrality-means/ [22.11.2016 8:13 PM]
68. Why small business should care about net neutrality (2014). Retrieved from https://www.americanexpress.com/us/small-business/openforum/articles/why-small-businesses-should-care-about-net-neutrality/ [20.11.2016 9:18 PM]

Mikalauskaitė R. *Interneto neutralumas: socialiniai, e-verslo ir teisiniai aspektai*/ Elektroninio verslo vadybos magistro baigiamasis darbas. Vadovas prof. dr. Darius Štitilis. - Vilnius: Mykolo Romerio universitetas, Verslo ir medijų mokykla, 2016

ANOTACIJA

Magistro baigiamajame darbe išanalizuota ir įvertintas Interneto neutralumo poveikis Lietuvos startuoliams, siekiantiems tapti lyderiais informacinių technologijų srityje, kuris buvo įvertintas empiriškai. Pirmame skyriuje nagrinėjama Interneto neutralumo koncepcija ir teisinis reguliavimas Europos Sąjungoje bei JAV. Antrame darbo skyriuje yra nagrinėjami įvykę Comcast ir KPN teisiniai ginčai dėl Interneto neutralumo pažeidimų, ir palyginamoji analizė, siekiant identifikuoti skirtumus tarp Interneto neutralumo reglamentavimo principų Europoje ir JAV ir identifikuoti kliūtis, kurios trukdo reguliavimui tapti efektyvesniu. Trečiajame skyriuje yra pateikiami kiekybinio tyrimo dėl Interneto neutralumo įtakos Lietuvos startuoliams rezultatai, patvirtinamos ar atmetamos hipotezės ir daromos išvados. Ketvirtajame skyriuje yra pateikiamos išvados bei siūlymai, kaip skatinti startuolių efektyvumą, įsiliejimą į pasaulinę skaitmeninę ekonomiką ir iškeliamos empirinio tyrimo metu išryškėjusios problemos.

Pagrindiniai žodžiai: Interneto neutralumas, Interneto paslaugų tiekėjai, startuoliai, teisinis reguliavimas, teisiniai ginčai.

Mikalauskaitė R. *Net neutrality: social, e-business and legal aspects*/ Electronic business management master thesis. Supervisor prof. dr. Darius Štitilis. - Vilnius: University of Mykolas Romeris, Business and media school, 2016

ANNOTATION

In the master thesis the Net neutrality impact to the startups in Lithuania to lead in IT field was analyzed and evaluated and has been empirically testes based on expert evaluation. The first chapter introduces background of the Net neutrality and the Net neutrality regulation in the EU and the US. The second chapter analyzes case studies of Comcast and KPN and uses comparative analysis between them to identify main differences between the Net neutrality regulation and barriers of making regulation more effective in the EU and the US. The third chapter includes quantitative research about the Net neutrality affection to startups in Lithuania, hypotheses are confirmed or rejected and conclusions are drawn. The fourth chapter introduces conclusions and recommendations on how to promote startups efficiency and integration into the global digital economy and problems emerged from empirical study are brought.

Key words: Net neutrality, Internet service providers, startups, legal requirement, legal disputes.

Mikalauskaitė R. *Interneto neutralumas: socialiniai, e-verslo ir teisiniai aspektai*/ Elektroninio verslo vadybos magistro baigiamasis darbas. Vadovas prof. dr. Darius Štitilis. - Vilnius: Mykolo Romerio universitetas, Verslo ir medijų mokykla, 2016

SANTRAUKA

Elektroninio verslo vadybos baigiamasis darbas yra svarbus visiems, kurie naudojasi atviru Internetu, kai Interneto paslaugų tiekėjai negali kontroliuoti jų pasirinkimo pasiekti norimas Internetines svetaines ar paslaugas ir formuoti interneto srautą taip, kad gautų papildomos naudos iš to. Todėl, labai svarbią reikšmę įgyja Interneto neutralumo principas, kuris leidžia vartotojams naudotis atviru Internetu be jokio Interneto paslaugų tiekėjo įsikišimo. Interneto neutralumo tema buvo plačiai nagrinėta JAV, tačiau Lietuvoje ši tema nebuvo nagrinėta plačiai. Tačiau žinant Lietuvos siekį įsitvirtinti informacinių technologijų srityje, Interneto neutralumas įgauna svarbią reikšmę, kadangi informacijos ir mokslinės analizės trūkumas gali turėti neigiamą poveikį startuoliams ir kitiems vartotojams, jei teisinis reguliavimas bus netinkamas. Pagrindinė iškelta tyrimo problema yra, jog dėl neaiškaus Interneto neutralumo reglamentavimo ir neaiškiai apibrėžtų teisės aktų išimčių, startuoliams yra sudėtinga įsitvirtinti pasaulinėje skaitmeninėje ekonomikoje. Tyrimo objektas yra Interneto neutralumo poveikis Lietuvos startuoliams, siekiantiems lyderiauti informacinių technologijų srityje. Pagrindinis darbo tikslas ir uždaviniai yra apžvelgti mokslinėje literatūroje pateiktą Interneto neutralumo koncepciją, išanalizuoti Interneto neutralumą reglamentuojančius teisės aktus Europos Sąjungoje ir JAV ir nustatyti Interneto neutralumo įtaką Lietuvos startuoliams ir jų integracijai į pasaulinę skaitmeninę ekonomiką. Tyrimui atlikti buvo naudojami literatūros duomenų analizės metodas, aprašomasis metodas ir kiekybinis tyrimo metodas.

Empirinis tyrimas buvo atliekamas sekant hipotezės: neaiškiai apibrėžtos Interneto neutralumo teisės aktų išimtys ir nulinio vertinimo praktikos naudojimas apsunkina startuoliams galimybę įsitvirtinti pasaulinėje skaitmeninėje ekonomikoje. Po tyrimo rezultatų hipotezė buvo patvirtinta: startuoliai mano, jog įsitvirtinti pasaulinėje skaitmeninėje ekonomikoje jiems apsunkina neaiškiai apibrėžtos Interneto neutralumo teisės aktų išimtys ir nulinio vertinimo praktika. Tyrimas taip pat atskleidė, kad didžioji dalis respondentų nežinojo ar jų veikla kada nors buvo sutrikdyta ar užblokuota Interneto paslaugų tiekėjų, tačiau jie yra susirūpinę dėl Interneto neutralumo poveikio savo startuoliams. Taip pat rezultatai parodė, jog respondentai pagrindines kliūtis kuriant startuolį įvardino finansinių lėšų ir profesionalių verslo konsultacijų stoką.

Magistro darbo pabaigoje buvo pristatytos išvados ir pasiūlymai, kaip skatinti startuolių efektyvumą ir įsiliejimą į pasaulinę skaitmeninę ekonomiką.

Mikalauskaitė R. *Net neutrality: social, e-business and legal aspects*/ Electronic business management master thesis. Supervisor prof. dr. Darius Štitilis. - Vilnius: University of Mykolas Romeris, Business and media school, 2016

SUMMARY

Electronic business management thesis is important for customers that are used to access the Internet openly, where the Internet service providers cannot control over them and shape internet traffic so that they can derive extra benefit from it. For that current state and openness of the Internet we should understand the Net neutrality principle, which lets web users access any legal website or web service without any interference from an ISPs. The Net neutrality topic was widely examined in the US but in Lithuania such topic has not been widely examined. But knowing Lithuania's aspirations to lead in information technology (IT) field, the Net neutrality takes relevant place, because lack of information and scientific analysis can have a negative impact for startups and consumers if the legal regulation is inappropriate. The research problem was raised that because of the uncertain Net neutrality regulation and indecisive legislative exceptions startups cannot consolidate in the global digital economy. The object is the Net neutrality impact to the startups in Lithuania to lead in IT field. The main goal and objectives of this study are to examine the concept and content of the Net neutrality, to study the requirements of the Net neutrality in the EU and the US and to identify main stakeholders and the Net neutrality affection to Lithuanian startups and integration in global digital economy. The methodology of master thesis: analysis of scientific literature, analysis of legal documents, analysis of research data.

Empirical investigation was performed with the main hypothesis: the indefinite Net neutrality legislative exceptions and use of zero rating restrict startups to consolidate in the global digital economy. This hypothesis was confirmed based on the expert valuation, so it means that startups agree that the indefinite Net neutrality legislative exceptions and use of zero rating restrict them to consolidate in the global digital economy. The study also revealed that the biggest part of respondents did not know if they were throttled or blocked by Internet service providers but they are concerned about Net neutrality affection to their startup. Also results showed that respondents identified the main obstacles such as lack of funds and lack of professional business consulting when creating startups.

At the end of the master thesis conclusions and recommendations on how to promote startups efficiency and integration into the global digital economy were presented.