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Bachelor of Science Thesis in European Studies

# Public values and Net Neutrality in a European Context

A comparative legal study on the impact of public values on the  
European Net Neutrality legislation

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20.10.2014, Enschede

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## Abstract

The topic of the bachelor thesis deals with public values and Net Neutrality in a European context. As research has illustrated that public values can contribute to policy-making it is also shown that different public values in different countries have influence on the final policy-outcome. Concerning the Net Neutrality debate literature possesses not only a difference between the United States of America (USA) and the European Union (EU) but also between the EU member states (MSs). As a result it may be expected that the issue of Net Neutrality is handled differently within European national law. The thesis therefore focuses on the differences of public values contributing to Net Neutrality legislation in the Netherlands (NL) and Germany (GER). The Netherlands was the first country in the EU, which implemented clear rules on Net Neutrality. On the contrary Germany made a draft for a regulation concerning Net Neutrality rules, but did not implement the regulation yet. In more detail, with the help of a coding scheme, the different public values, which contributed to legal documents establishing Net Neutrality as a legally binding concept, will be analyzed. The analysis shows six public values: *Equality, ensuring a certain level of Quality of Service (QoS), free flow of information, technological innovation, privacy and freedom of choice*. Since a qualitative good regulation means to safeguard public interests and values the outcome of the analysis that the differences in public values largely correspond the differences in legislation can be seen as a sign for high qualitative regulations.

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## 1. Introduction

The Internet as it was constructed in the 1980s is based on a structure, which delivers data packages from any computer to any other computer without inspections by the Internet providers. This means all data is transmitted equally, independent of its source, ownership, destination or content. (Colombier, M'Chirgui, & Pénard, 2011) As such, the Internet was born as a neutral communication medium, also called “Net Neutrality”. (Ly, MacDonald, & Toze, 2012)

The debate of Net Neutrality and the demand for regulations increased during the last decades enormously. This rapid development of the Internet evoked the need for regulations. (Valcke, Hou, Stevens, & Kosta, 2008) The emergence of bandwidth demanding services challenged the existing principle of transporting data packages. No matter how important such a data packet is, it would always be transported or processed according to the first come first serve principle. (Krämer, Wiewiorra, & Weinhardt, 2013) Due to the increasing amount of data that needs to be transported this fundamental principle leads nowadays to congestions. Internet Service Providers (ISPs) try to prevent congestions by prioritizing certain data. As opposed to this, Net Neutrality seeks to treat data packages equal and maintain the first come first serve principle.

With the rise of smartphones an rising number of consumers is provided with the access to Internet service. Therefore the use of Internet services on mobile phones increased substantially. (Hahn, Litan, & Singer, 2007)

Especially “free” Internet services as for example “Skype” and “Whatsapp” distort the traditional telecommunication market, which is characterized by charging customers for using Short Message Services (SMS) and telephone call services. In order to avoid a loss in revenue telecommunication providers as the German Telekom and KPN blocked special data, which are important to use free Internet services as “Skype”. (Spies & Ufer, 2010) Unreasonable restrictions, degrading, traffic prioritization and blocking are the core violations against Net Neutrality.

The USA was the first country debating about the importance of Net Neutrality. (Valcke, et al., 2008) It did not take long for the EU to start its own discussion whether the EU needs regulations concerning Net neutrality. The EU defines the principle of Net Neutrality within the Electronic Communications Framework as “the ability for consumers to access and distribute information or run applications and services of their choice”. In 2009 the Regulatory Framework for Electronic Communications in the EU has been revised and now supports four aspects of Net Neutrality: The aspect of *Choice* within the

Framework Directive<sup>1</sup>, the aspects of *Transparency*<sup>2</sup> and *QoS*<sup>3</sup> within the Universal Service Directive and the aspect of *Privacy* within the ePrivacy Directive<sup>4</sup>.

On September 11, 2012, a legislative package for a "Connected Continent: Building a Telecoms Single Market" aiming at building a connected, competitive continent and enabling sustainable digital jobs and industries had been adopted by the European Commission. This "Single Telecom Market" seeks to implement Net Neutrality as a legally binding concept. The proposal targets to end discriminatory blocking and throttling while setting out clear rules for traffic management. Traffic management should be non-discriminatory, proportionate and transparent. Nevertheless, differentiation of offers by e.g. speed and competition on enhanced QoS are allowed. QoS should be reached by allowing content providers making deals with ISPs. "*Such offers will enable telecom operators to generate additional revenue streams from OTT actors, content providers as well as from consumers who are willing to pay for better or faster services. These revenues in turn, will enable operators to finance investments into network upgrades and expansion.*" (Commission, 2014b, p. 1) Furthermore, the EU assumes that specialized services do not need to lead to quality degradation of the Internet, constructed after the best-effort principle.<sup>5</sup> (Commission, 2014b)

Because of the fact that the legislative package for a "Connected Continent: Building a Telecoms Single Market" of the EU did not enter into force yet, the thesis will focus on the national legislation of Net Neutrality in the MSs of the EU. The justification for this will be analyzed by investigating public values, which shape the Net Neutrality debate and lead to the implementation into national law.

Despite the lack of the EU regulation, the Netherlands already included Net Neutrality into national law in 2012. (Krämer, et al., 2013) Other MSs, e.g. Germany, finished a proposal for such an implementation in 2013. Since the EU does not provide specific rules for implementation yet, the legal status of Net Neutrality in two representative MSs, Germany and the Netherlands, will be analyzed.

The goal of this bachelor thesis is to evaluate which *public values* are relevant in the *Net Neutrality debate*. As soon as it is clear which public values play a significant role in the specific countries, third countries within the EU could profit from this. On the basis of the existence of certain public values it is possible to make a conclusion which way of including Net Neutrality into a legal system might

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<sup>1</sup> cf. Art. 8(4) of Directive 2002/21/EC (Framework Directive)

<sup>2</sup> cf. Art 20 & 21 of Directive 2002/22/EC (Universal Service Directive)

<sup>3</sup> cf. Art 22(3) of Directive 2002/22/EC (Universal Service Directive)

<sup>4</sup> cf. Art 5 of Directive 2009/136/EC (ePrivacy Directive)

<sup>5</sup> see Appendix A

succeed. If the same public values as the German ones matter for a third country, this country could be guided by the German proposal of Net Neutrality into law, preconditioned the comparability between the legal systems. The same principle applies to the Dutch implementation and third countries. Vice versa, the existence of different public values and a different legal system in a third country could be of evidence as well for implementing Net Neutrality in a different way than Germany or the Netherlands. Since the EU is now working on a proposal for a European Single Market for electronic communications, which also includes measures of Net Neutrality, it can be of high importance for MSs, which did not include any measures of Net Neutrality yet, to orientate themselves towards MSs, which already did.

Therefore the research question *“To what extent is it possible to explain differences in policy-outcome relating to Net Neutrality in terms of public values?”* will be answered throughout this thesis. In order to structure the process of the thesis the following sub-questions are going to be elaborated: *Which public values lead to the establishment of Net Neutrality law?; What is the legal status of Net Neutrality within the Netherlands and Germany?; What public values are the driving forces to implement Net Neutrality into Dutch national law?; What public values are the driving forces to implement Net Neutrality into German national law?; Which differences exist between the Dutch and the German legislation?; Which differences exist between the public values, which led to the policy-outcomes in Germany and the Netherlands?*

The thesis will solely focus on the contribution of public values to actual policy-outcomes. Since there exist more influences to policy-outcomes than public values, other aspects, e.g. economic conditions and stakeholders' influence, which might shape the differences in policy-outcomes, cannot be ruled out. Therefore the answer will solely focus on the contribution of public values to policy-outcomes and leave the correlation with other aspects aside.

The **second section** of the thesis will give an overview of the structural composition of the Internet in order to understand the fundamentals of Net Neutrality. Furthermore, it is argued that public values are able to shape policy-outcomes. The specific public values shaping Net Neutrality rules will be explained as well. **Section three** analyses the German proposal for a regulation concerning Net Neutrality<sup>6</sup> and the Dutch Regulation of Net Neutrality.<sup>7</sup> With the result of section three **section four**

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<sup>6</sup> c.f. Entwurf einer Netzneutralitätsverordnung nach § 41a Abs. 1 TKG

<sup>7</sup> c.f. Art. 7.4a TA

compares the differences in legislation with the differences in public values, which led to the proposals and the regulation. Lastly, **section five** gives a conclusion and will answer the research question.

## **2. Theoretical Framework**

The main concept, important for this thesis, is the concept of Net Neutrality. In order to understand the meaning of Net Neutrality and its various interpretations, the overall structure of the Internet needs to be understood initially. The question of how the Internet and its connected devices functions can be found in the Appendix. This section will explain the concept of Net Neutrality. Additionally, the sub question “*Which public values lead to the establishment of Net Neutrality law?*” will be answered.

### **2.1 The Fundamentals of Net Neutrality**

A strict definition of Net Neutrality does not exist. According to Lessig & McChesney (2006) “Net Neutrality means simply that all like Internet content must be treated alike and move at the same speed over the network.” (p. 1) Other scholars like Wu & Yoo (2007) interpret Net Neutrality as a requirement for an Internet that does not favor any application. In this sense the heart of the debate stands the question if the Internet should be open, neutral and accessible to all on neutral conditions. Valcke, Hou, Stevens and Kosta (2008) see Net Neutrality as a policy principle that regards access for online content and service providers to broadband networks. (Valcke, et al., 2008) A much more detailed definition of Net Neutrality would be the one of Ganley (2006), who defines Net Neutrality as a prohibition of “access tiering”. Access tiering is also called traffic shaping or traffic prioritisation. It refers to the prioritisation or de-prioritisation of data packages. Access tiering can also refer to blocking of specific data packages. (Ganley & Allgrove, 2006) Another definition by Cave and Coccione (2007) sees Net Neutrality as a restriction on price differentiation or price discrimination by firms involved in the communications service value chain and particular those providing transport. According to them access providers should not charge more for priority delivery or even more strict - any kind of prioritisation should not be allowed. This implies that without Net Neutrality, ISPs are able to provide a “fast lane” to favored content. Favored content means websites that pay for their priority access. ISPs allow then loading these websites more quickly. In turn, ISPs could also downgrade the speed of other websites that cannot pay. Furthermore, Net Neutrality forbids any form of denial access to specific websites or Internet applications by end-users. Sometimes Net Neutrality proponents even restrict access providers to integrate backwards into the production of content or applications. This would

mean that ISPs would not be allowed to produce and sell content or applications by themselves. (Cave & Crocioni, 2007)

The debate arose because of technical changes over the last decades. (Valcke, et al., 2008) The actual goal of the Internet was to connect different computer networks with each other. With the emergence of broadband services, which need a high amount of data packages to be delivered by Internet service providers over multiple of nodes, ISPs now face the problem of congestions. Furthermore the current end-to-end principle, explained above, is not able to deal with delay-sensitive applications, e.g. Voice over Internet Protocol services, streaming video, online video gaming etc. In order to meet the demand of end-users to guarantee the performance of data transmission to a certain level, also called QoS, ISPs invented traffic prioritisation techniques.

For most IP-based services QoS is at least expressed by four parameters. The first parameter is the delay, which is experienced by packets while passing through the Internet network. The second parameter, the bit rate or bandwidth, considers the bit rate, which transfers user data available for the service or target throughput that may be achieved. Jitter is another parameter, which describes the variations in the IP packet transfer. The last parameter is the packet loss rate, which is usually explained as the ratio of the number of undelivered packets to sent ones. (Gozdecki, Jajszczyk, & Stankiewicz, 2003)

Access tiering allows network operators some flexibility to the way data packages are delivered. This determines to what extent QoS can be secured. These techniques counteract the problem of congestion. Nevertheless, access tiering can also lead to potential discrimination of different Content and Application Providers (CAPs) by ISPs. (Valcke, et al., 2008) A strict Net Neutrality model implies that ISPs are prohibited to speed up, slow down or block any Internet traffic based on its source, ownership, content or destination. It also hinders the possibility of traffic management techniques. Applying the strict model would imply that a certain level of QoS cannot be guaranteed. This also implies problems of delivering delay sensitive-data such as audio and video streams.

Delay-sensitive applications are the least tolerant applications for interruptions or delays, as the name already suggests. In order to safeguard a high quality of experience with these applications for end-users, the ISPs need to deliver data packages without any kind of delay or interruptions. (Cave & Crocioni, 2007). Congestions can only be foreclosed if delay-sensitive data packages have priority over delay-insensitive data packages. Therefore it is questionable if the strict Net Neutrality model, which a lot of scholars propose, is convertible to the existing network structure at this point of time. Since an

expansion of the existing network structure is very costly and need to be paid by the network operators, the costs need to be covered in the first place.

For the purpose of satisfying the existing demand of end-users this thesis focuses on a Net Neutrality model, which allows the usage of specific traffic management techniques as to prevent congestions or maintain a certain level of QoS. This means that data packages cannot be delivered with regards to content but with regards to their type of data (e.g. delay-sensitive and not delay-sensitive data).

Since a good QoS is the key to a high-quality experience for consumers when using broadband services with delay-sensitive data, it is important to keep a certain standard of QoS. ISPs argue that limitations on accessing content and fair usage policies are needed to prevent overloading by one user. Instead it should be ensured, that every end-user is able to experience the same QoS. Fair usage policies are therefore used to limit the transfer of a specific amount of data over a period of time. In some cases even over-dimensioning the network is a QoS strategy for the network operator. It allows bandwidth to be allocated to different traffic types and to be safeguarded.

Another aspects of the Net Neutrality debate deals with the guarantee of information without any ban on the content of information. (Spies & Ufer, 2010) For this thesis free flow of information is defined as the ability to deliver information by the means of data packages through the existing Internet network structure, which implies the freedom of speech and listening by any Internet users, who wish to use the Internet in order to spread and collect information. This is also referred as information sharing. (Flanagin & Metzger, 2000)

## **2.2 Public values contributing to Net Neutrality**

This section deals with the public values, which contribute to Net Neutrality by using different meanings of scholars. Furthermore, the used sources also show the overall complexity of the debate, which is used to determine all items and indicators, contributing to Net Neutrality. The outcome will be used to build a coding scheme<sup>8</sup> in order to analyze the public values that matter within Germany and the Netherlands.

Different scholars describe “public value” as a concept in various ways. This means that there is a very broad literature about public values. To name only a few, different scholars refer to “services of general

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<sup>8</sup> see Appendix B

interest” (Commission, 2004), “public values” (Moore, 1995), “public objectives” (Noam & Níshúilleabháin, 1996), “public interests” (Blumstein & Wiel, 1999) and “externalities” (Ostrom, Burger, Field, Norgaard, & Policansky, 1999). Nevertheless such an amount of literature also generates different meanings of the same or similar concept. Especially important for the understanding of the concept is the distinction between public and private values.

Public values are defined as values, benefiting to a collectivity. Private values on the other hand deals with particular, individual interests. (Charles, Dicke, Koppenjan, & Ryan, 2007) The discourse of public values within this thesis distinguishes procedural public values from substantive public values. Procedural public values concern the way governments should act and the overall standard the government’s actions should meet. Honesty, probity and impartiality are only a few examples of procedural public values. (Bruijn & Dicke, 2006) In the case of Net Neutrality, substantive public values refer to public values ranging from QoS and free flow of information to privacy. This thesis focuses on substantive public values.

The *institutional perspective* on public values combines aspects from the universalistic approach, which is on an abstract level and does not involve trade-offs and the stakeholder approach, which defines public values as a political process and involves trade-offs. It assumes that public values are not universal, but neither do they emerge through interactions of stakeholders. According to Charles (et al, 2007) public values already exist before the policy process and therefore affect citizens. As soon as public values cannot be safeguarded anymore within their “environment”, they need to be laid down by the government as a lawful rule. (Charles, et al., 2007, p. 5) Thus, individuals can make recourse to legal procedures, if these rights are infringed upon them. Therefore, the main idea is that governments are responsible for safeguarding substantive public values.

Moreover, perceptions on public values distinguish themselves by sector, culture and time because public values are shaped by structural and cultural characteristics of an institutional environment. These institutional environments differ from each other, which explains the differences in public value perspectives. (Charles, et al., 2007)

While setting out laws and regulations usually a vast array of public values have to be attended to at the same time. Time and resources of policy making are mostly very rare, so that there has to be made a trade-off between the realization of public values and the costs needed to realize them. Furthermore, trade-offs have to be made between different public values. The implementation of public values depends on the structure of the institutional environment. It can occur that public values are considered

to be too costly to implement. Moreover, the outcome of the trade-off between two public values also depends on the institutional environment. According to Bruijn & Dicke (2006) public values are never static; instead they always are in motion. (Bruijn & Dicke, 2006, p. 721) They are influenced by different aspects, which are again determined by the shape of their environment. In this context the example of a terror act as “September 11” shows that security standards have changed drastically after such a disaster has occurred. This disaster changed the shape of the environment by means of physical and non-physical aspects and so resulted in a change of policies.

Concerning Net Neutrality the uninspected event of blocking VoIP data from specific ISP in order to prevent the telecommunication provider from losses e.g. raised among others the awareness for non-discriminatory behavior via the Internet. Since then, governments do not see the neutral transportation of data packages via the Internet, as it was intended by the end-to-end principle, guaranteed anymore. Therefore, lawful rules were initialized to protect the neutral transportation of data packages.

Going into further details of the Net Neutrality debate, it becomes clear which public values contribute to the establishment of Net Neutrality rules. As stated above, rules to safeguard public values are usually implemented in a bundle of public values. (Broos, 2014) This is also the case for Net Neutrality.

On the basis of Net Neutrality referring to a non-discrimination rule, the question of whether the existing non-discrimination rules are already enough to prevent any kind of discrimination concerning the CAPs raises the concern to implement additional sector specific competition rules. At the center of the European discussion is the question whether the existing EU Competition Law could be enough to prevent any kind of discrimination or not. Although the main purpose of EU Competition Law is the prevention of discrimination, it applies an ex post approach, whereas the Net Neutrality rules, as sector specific rules, would lead to an ex ante approach. A sector specific non-discrimination rule would imply that competition between all undertakings of the telecommunication sector CAP, ISP and network operators should be safeguarded. Also the non-discrimination of consumers would be secured. In order to safeguard competition between undertakings, the EU competition law provides equal treatment of these undertakings on the relevant market (Nazzini, 2011). Furthermore, EU competition law provides for non-discrimination of consumers, which implies safeguarding equal treatment of Internet end-users.

The first public value is therefore **equality**. The prevention of discrimination is also linked with the possibility to *access the Internet network*. This is the case because the discrimination of Internet users

could lead to access the Internet network, which implies restriction to access any kind information, other content and services, which are provided via the Internet.

Besides the *prevention of discrimination*, **technological innovation** is one of the main arguments for Net Neutrality. Net Neutrality proponents argue sector specific non-discrimination rules help companies to be able to innovate at the edge of the network. These innovations refer to the creations of new applications as well as methods of content distribution and the distribution and modification of applications. The possibility to innovate at the edge under a Net Neutrality model is explained by the separation of the network layer from the application/service layer. Companies, which “produce” applications or services, are able to innovate without any approval from the network owner, which makes them more competitive. Therefore it is argued that a departure from Net Neutrality is likely to hamper innovation at the edge. (Economides, 2008) Net Neutrality opponents argue that avoiding net neutrality could actually encourage competition and innovation at the core of the network. This includes innovation of distributed content delivery as well as the innovation of advanced QoS. Without Net Neutrality, ISPs could innovate and differentiate themselves. This means that Net Neutrality might lead to innovation of the CAP’s offers but might hinder the innovation of ISPs and the infrastructure. (Ly, et al., 2012) Technological innovation is here meant as product or service innovation, since applications are services produced by CAP.

Concerning competition, it is possible that technological innovation can result in competition between CAPs. This is the case because innovating CAPs give the incentive to other CAPs to keep up with their products compared to the already innovating CAPs. (Dobbs & Richards, 2004) On the other hand, without high competition, companies with a high market share can sell their products for a higher price, which means that they would have more money to spend for technological innovation. This contradiction leads to the conclusion that either way is able to lead to technological innovation.

Broos (2004) states in his book “Publieksvriendelijk versnellen van innovatie in netwerksectoren“ several public values, which are considered to be of importance in the sector of technological innovation within the telecommunication sector. Some of them also apply to the Net Neutrality debate. The one, which was not mentioned before in this thesis is the *integrity and safety of the [Internet] network* itself. (Broos, 2014, p. 164) Integrity and safety of the Internet network is the necessity for **privacy**.

Therefore privacy is seen as the overall public value in this case. The debate about privacy also emerged because of deep packet inspection (DPI) done by KPN. KPN announces in 2011 to use DPI to

determine the Internet data traffic of its customers to check whether customers are using instant messaging or applications. This has been done in order to charge their customers for using specific applications, e.g. Skype. Such a behavior by ISPs is a major infringement of privacy of the end-users and Net Neutrality. (Hildebrandt, 2011)

Another public value, which is shown in the Net Neutrality debate, is the so-called “**free flow of information**”. The public interest is to share their information without unreasonable restrictions. As Flanagin (2002) asserted that everyone became an author through the invention of the Internet as an information distribution system. (Flanagin & Metzger, 2000) Free flow of information in the context of Net Neutrality within the EU can be linked to the European Charter of Fundamental Rights, which indicates in Art. 11 the “*freedom of expression and information*”.<sup>9</sup> Freedom of expression indicates the *freedom speech* and *freedom of listening* whereas freedom of information ties on the *access to information*. Furthermore freedom of information indicates the public value **freedom of choice**. Without the access to information, which is given through the *access to the whole Internet* content in the case of Net Neutrality, the end-user cannot choose with content the end-user wants to access.

The EU supports four aspects of Net Neutrality: “Choice (cf. Art. 8(4) of the Framework Directive), Transparency (cf. Art. 20 & 21 of the Universal Service Directive), Quality of Service (cf. Art. 22(3) of the Universal Service Directive) and E-privacy (cf. Art. 5 of the ePrivacy Directive). (Commission, 2014a)

Ensuring of a certain level of QoS as mentioned above is another public value considered in the context of Net Neutrality rules. Transparency is meant on the one hand with regard to which level of QoS is provided to end-users and on the other hand with regards to the traffic management used by the ISPs. Discrimination can also be prevented through the transparency of the network operators’ as well as ISPs’ and CAPs’ actions.

For the purpose of the thesis, six main public values are used: Equality, ensuring a certain level of QoS, free flow of information, technological innovation, privacy and freedom of choice.<sup>10</sup> Overviews of all attributes, which indicate and contribute to the six public values are shown in Appendix B as a coding scheme. They are also further explained in the next section for every public value.

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<sup>9</sup> cf. Art. 11 (CHFR): „Everyone has the right to freedom of expression. This right shall include freedom to hold opinions and to receive and impart information and ideas without interference by public authority and regardless of frontiers. The freedom and pluralism of the media shall be respected.”

<sup>10</sup> For further information about connections between public values, items and indicators see Appendix B

## **3. Methods and Procedures**

### **3.1 Research Design**

The research question will be answered by conducting a qualitative and quantitative research. The intended research design can be described as a comparative case study or more detailed a cross-national comparative analysis. Cross-national comparative analysis intend to observe ‘social phenomena across nations, to develop robust explanations of similarities or differences, and to attempt to assess their consequences, whether it be for the purposes of testing theories, drawing lessons about best practice or, more straightforwardly, gaining a better understanding of how social processes operate’. (Hantrais, 1999) This fits the intended research of the bachelor thesis, which seeks to evaluate the differences in public values contributing to Net Neutrality rules between two different EU MSs.

### **3.2 Case Selection**

The cases are selected on the basis of the purpose of the study and knowledge of population in question. The selection of cases is in this instance limited to some extent because the relevant information on differences between the public values needs to be accessible. The small number of EU MSs, which implemented or proposed to implement any Net Neutrality rules, provides a pre-selection. The EU MS’s position towards Net Neutrality is therefore pivotal for the selection. Since the Netherlands was the first country implementing Net Neutrality into national law, they had specific reasons, e.g. the DPI from KPN, for this action. Furthermore, the topicality of the debate of Net Neutrality in Germany played an important role for choosing this country as a comparison to the Netherlands. Due to newspaper articles it seems that the Netherlands have a different approach to use the concept of Net Neutrality to integrate it into their national law. Therefore it occurs to be of high interest to elaborate the reasons for such a difference. The difference in legislation itself makes it plausible to consider a difference in public values too.

In order to measure the differences a content analysis within unobtrusive research will be conducted. According to Babbie (2013) a content analysis is “The study of recorded human communications, such

as book, websites, paintings and laws.” (Babbie, 2013) This fits to the intended research questions, since it aims at studying the differences in policy-outcomes.

### **3.3 Data Collection**

For the measurement legal documents will be used, which is in accordance with the definition of a content analysis, mentioned above. “Entwurf einer Netzneutralitätsverordnung nach § 41a Abs. 1 TKG” and Article 7.4a of the Dutch Telecommunications Act will be used for the measurement of the specific public values, which lead to the legislation. In order to find out which public values contributed to these rules it is necessary to analyze the parts of the legal document, which clarify the reasons and goals to implement such rules. These parts reflect the public values standing behind the rules because according to Charles, et al (2007), public values are considered to be one part of the reasons to establish legal norms. (Charles, et al., 2007, p. 5) This assumption refers to the earlier section, which considers the necessity of safeguarding public values through legal norms. In this case the goal of the legal rule also reflect public values.

The explanation and reasons for the actual rules within the proposal for a Net Neutrality regulation in Germany are included in the document of the proposal. The explanations to Art. 7.4a TA are included in several extra documents, which can be found under the file number 32549: Vergaderjaar 2011-2012 Kamerstuk nr. 3, nr. 29 and nr. E. The main explanation from the Minister to Art 7.4a TA is included in the document Kamerstuk nr 3. Kamerstuk nr. 3 and Kamerstuk nr. 29 supply additional amendments, which contribute to the main explanation.

### **3.4 Measurement**

In order to analyze these legal documents a coding scheme is used. The coding scheme lists the different public values, their items and indicators.<sup>11</sup> The frequency of the codes will be used to illustrate the amount of appearance of the public values. The frequency will be illustrated in proportion to the amount of sentences. The recording units are the explanations to the Net Neutrality rules within the Netherlands and Germany.

The unit of analysis is sentence as opposed to word, phrase or document. Only sentences, which reveal

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<sup>11</sup> see Annex B

an explanation for the German or the Dutch legislation concerning Net Neutrality are going to be analyzed. All sentences will be analyzed within the context of the document of which they are contained. Each sentence will be coded as containing the specific public values, multiple values, or as being free of any public value based on the public values mentioned above. The amount of sentences will be subtracted from the sentences, which are free of public values. The remaining amount of sentences will be used to analyze the proportion of the mentioned public values and the amount of sentences. The proportion will be showed in percentages. According to the coding scheme, some indicators indicate more than one public value. Because of this and the possibility that the sentences can contain more than one public value, the public values can be mentioned more often than sentences are available. Since the sentences can include the actual word of the public value or an indicator, the indicators and the actual public values, which were mentioned will be added up. This way, the overall frequency of the public value can be illustrated.

The legislation will be compared beforehand. Afterwards, the differences within the legal basis and the differences of public values will be compared to each other in order to see if the differences of the legal basis reflect the differences of public values.

## 4. Analysis of the legal basis concerning Net Neutrality

This section deals with the legal basis of Net Neutrality in the Netherlands and Germany. It directly compares to two legislations and therefore answers following the sub-questions: “*What is the legal status of Net Neutrality within the Netherlands and Germany?*” and “*Which differences exist between the Dutch and the German legislation?*”.

### 4.1 Comparison between legal basis in the Netherlands and Germany

The Dutch legislation, Telecommunications Act (TA), defines the rules of Net Neutrality in Art 7.4a. It entered into force on January 1<sup>st</sup> 2013 whereas the German Net Neutrality regulation did not entered into force yet. The proposal seeks to specify rules on Net Neutrality referring to § 41a Abs. 1 TKG (Telekommunikationsgesetz). § 41a Abs. 1 TKG, which authorizes the German government to implement a regulation, seeks to prevent discriminatory data transfer and discriminatory access to content and services in order to hinder arbitrary downgrading of services and unjustified hindrance or slowing down of traffic within the Internet network. The German government did stop the legislature procedure in order to wait for the EU’s proposal to be implemented. Otherwise the German government apprehends having to renew the proposal once the EU’s legislation is implemented. Nevertheless, it will be analyzed since it still reflects the current German position towards Net Neutrality. Additionally, Art. 41a Abs 1 TKG, Art. 43a Abs 2 Nr. 2; 3 and 4 TKG lays down rules, which are important for Net Neutrality.

While comparing the two legal documents the similarities and differences can be easily identified.

Art 7.4a (1) from the Dutch TA seeks to generally prohibit hindering or slowing down of applications or services on the Internet by the providers of public electronic communications network via which Internet access services are delivered and providers of Internet access services. Despite this, Art 7.4a (1) shows four exceptions, which allow slowing down or hindering applications or services on the Internet:

1. *“Providers of public electronic communications networks via which Internet access services are delivered and providers of Internet access services shall not hinder or slow down applications or services on the Internet, unless and to the extent that the measure in question with which applications or services are being hindered or slowed down is necessary:*

- a. *to minimize the effects of congestions, whereby equal types of traffic must be treated equally;*
- b. *to preserve the integrity and security of the network and service of the provider in question or the end-user's terminal;*
- c. *to restrict the transmission to an end-user of unsolicited communication within the meaning of Article 11.7 (1), provided that the end-user has given it prior consent for this to be done, or*
- d. *to implement a legislative provision or court order.*<sup>12</sup>

Article 11.7 (1) relates to *“the use of automated calling and communication systems without human intervention, facsimile machines, or electronic mail for the transmission of unsolicited communications for commercial, idealistic, or charitable purposes to subscribers or users [, which] shall be submitted solely if the sender can demonstrate that the subscriber or user concerned has given prior consent for such to be done, without prejudice to the provisions of paragraphs 2 and 3.”*

The German regulation concerning Net Neutrality contains general provisions in § 1 and specific rules in § 2 to 6. § 1 Abs. 2 rules out that telecommunication providers are obliged to ensure an anti-discriminatory data transfer and access to content and services. Furthermore, arbitrary degradation of services or unjustified hindrance or slowing down of data traffic within the telecommunication network is prohibited. Compared to Art. 7.4a (1) TA, the German regulation makes a more general approach to safeguard the best-effort principle within § 1 Abs. 1 Nr. 1:

*“Within the open Internet, data packages are to be transmitted so that all data packages are treated equally, independent of its content, service, application, origin or destination, with a transmission capacity, which generally enables the usage of all services, content or application via the Internet (best-effort).”*

A detailed provision for the ISPs is laid down in §1 Abs. 2 NetzNeutrV according to which ISPs are obliged to ensure anti-discriminatory data transfer and anti-discriminatory access to content and services. Furthermore, it is prohibited to downgrade services arbitrarily or hinder or slow down data traffic of the telecommunication networks unjustified. According to this exemptions to deliver data packages in an anti-discriminatory way are not ruled out, but also not specified within the rules. The reasons to the general part explains that prioritization of different classes concerning services and content are only allowed in order to safeguard the integrity of the Internet network, the safety and efficiency enhancement of services and networks and for delay-sensitive services. These exemptions are in accordance with Art. 7.4a (1) a), b) and Art. 7.4a (2). Art. 7.4a (2) refers to the infraction of the

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<sup>12</sup> cf. Art. 7.4a TA

integrity or security of the network or service or a terminal of an end-user as it was referred to in (b) of the first paragraph. It makes the provider accountable to inform the end-user if the infraction mentioned above is being caused by traffic coming from the terminal of the end-user. The provider has to inform the end-user before taking any measures, which hinders or slows down the traffic in order to allow the end-user to terminate the infraction. If it is not possible to give notice to the end-user before taking the measures because of the required urgency, the provider has to give notice to the end-user as soon as possible. This shall only apply if this concerns an end-user of a different provider.<sup>13</sup> Although § 1 Abs. 2 allows ISPs to transfer data in a discriminatory way in order to safeguard the integrity of the Internet network, the provision for ISPs to inform the end-user are not included within the German Net Neutrality rules. Despite this, transparency rules are included within the German legislation.

In addition to the Net Neutrality regulation, Art. 43a Abs 2 Nr. 2, 3 and 4 (TKG) provides transparency obligations. In particular § 43a Abs 1 Satz 1 Nr 2 TKG laid down that providers of public telecommunications networks need to provide information to the consumer about the way and the most important technical performance data of the offered telecommunication services within the contract in a clear, comprehensive and easily accessible form. Explicitly, providers of public telecommunications networks need to provide information about all restrictions to the access and usage of services and applications<sup>14</sup>, about the offered minimum level of QoS and possibly other fixed parameter concerning the QoS<sup>15</sup>, about all proceedings necessary to measure and control data traffic in order to prevent capacity utilization or congestions. Additionally, information had to be provided about the impact on the QoS of such proceedings.<sup>16</sup>

Despite this, the general provisions of the German regulation include the division of the “open Internet” and “managed services”. Managed services are detached to the open Internet and controlled from end-to-end. Furthermore they are offered and charged separately. According to § 1 Abs. 1 Nr. 2, access to the open Internet and managed services should be organized anti-discriminatory, transparent and open. Furthermore § 1 Abs. 1 Nr. 3 explains that transport classes within the open Internet and managed services are not allowed to hinder the development of the best-effort principle. Transport classes are meant to be the same as classes with different QoS. Additional to the general provisions, the specific provisions specify the rules to classes concerning QoS. Thus, different classes concerning QoS, which

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<sup>13</sup> cf. Art 7.4a (2) TA

<sup>14</sup> cf. § 43a Abs. 2 Nr. 2 TKG

<sup>15</sup> cf. § 43a Abs. 2 Nr. 3 TKG

<sup>16</sup> cf. § 43a Abs. 2 Nr. 4 TKG

are neutral to content and oriented towards technical requirements, are not seen as an arbitrary degradation of services as long as the end-user has the choice. Since it is not laid down what “technical requirements” mean in detail, it is possible that the problem of congestions can be seen as technical requirements. Besides, the differentiation of fees concerning transport classes is not seen as an unjustified hindrance or degradation of data traffic.<sup>17</sup> Transport classes are argued to divide the Internet into a two-class system, which is not in accordance with the idea of a neutral Internet. Art 7.4a TA leaves such a distinction out.

Opposed to Art 7.4a (2), Art 7.4a (3) was covered by the German regulation within § 2 (1) and § 2 (2). It contains the provision for ISPs to not charge for Internet access services dependent on the services and applications, which are offered or used via said services. § 2 (1) of the German proposal distinguishes between the provision for ISPs not to offer their own content and services to more favorable conditions or with a better quality than content and services from other ISPs or CAP and the provision for ISPs not to make agreements with CAPs, which intend to facilitate end-users with privileged access to certain services/contents and applications. These two provisions solely refer to the open Internet and not to managed-services. Furthermore the German proposal for a Net Neutrality regulation allows for a content neutral classification of transport classes, as soon as it is oriented on technical requirements and gives end-users the choice. According to § 2 (3) different transport classes can to be charged differently. Art 7.4a TA does not include the allowance to differentiate transport classes. Another provision, which is not included in the Dutch regulation, is the so-called “terminal device - Net Neutrality”. Net Neutrality in terms of terminal devices means that ISP are not allowed to restrain the principle of Net Neutrality by enabling access to the Internet to a specific telecommunications terminal equipment.

Comparing the two provisions already showed the differences between the Dutch regulation and the German proposal. The legal consequences of a breach of the provisions by the ISP are more or less similar. § 4 of the German proposal rules out how much power the Federal Network Agency has. Thus, the Federal Network Agency is enabled to exercise its power in pursuance of part 8, section 2 of the TKG in order to enforce the regulation’s provisions. In addition, the Federal Network Agency is able to impose obligations on ISPs if this is necessary to ensure the end-to-end principle of services.<sup>18</sup> Besides, the Federal Network Agency observes the development of the market to safeguard the

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<sup>17</sup> cf. § 2 Abs. 3 NetzNeutV

<sup>18</sup> see § 4(2) NetzNeutV

compliance with the provisions according to § 1 of the Net Neutrality regulation. The Ministry for Economy or Technology should receive a report if the market development leads to the hindrance of the best-effort principle or of a further development.

Compared to this, the Dutch legislation allows specific rules with regard to the provisions in paragraph 1 to 3 to provide by way of a general administrative order.

Aside from that, the principles of prevention of degradation or service delivery and the hindering or slowing down of traffic via public electronic communications network, which should be safeguard through minimum requirements of QoS of publicly available electronic communications services, may be imposed by or pursuant to a general administrative order on providers of public electronic communications networks.

## **4.2 Comparison between public values**

This section deals with the two sub-questions „*What public values are the driving forces to implement Net Neutrality into Dutch national law?*” and “*What public values are the driving forces to implement Net Neutrality into German national law?*”.

It will show the outcome of the analysis done with the help of the before mentioned coding scheme.

The analysis of qualitative data reveals that specific values are embedded in the Net neutrality policies and that these values vary according to countries. The German explanation to the “Entwurf einer Netzneutralitätsverordnung gemäß § 41a TKG” includes 98 sentences, which contain relevant information. The Dutch explanation to Art 7.4a TA includes 100 sentences.

Table 1<sup>19</sup> provides a detailed summary of all public values, total number of times raised by the German government and the percentages, which show the relation to the amount of sentences coded. Table 2<sup>20</sup> shows the same results for the Dutch legislation. Since many sentences contained more than one public value or indicator, the sentences used to illustrate specific values in each section below may also contain other indicators not discussed in the theory section. These indicators are explained in this section and add up to the theory section of the thesis.

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<sup>19</sup> see Appendix C.1

<sup>20</sup> see Appendix C.2

### **4.2.1 Equality**

The analysis shows that equality is the public value, which is raised the most within the coded documents. Therefore it has the first rank in both countries. It shows that equality has a high rate in both countries, whereas the German government mentioned equality more often (52,03%) than the Dutch government (33%). Since the prevention of discrimination is the precondition in order to reach equality of any kind, the difference between the weights of equality of both countries can be explained through the relative importance of the prevention of discrimination of different actors within the Net Neutrality debate. Whereas the explanations of the German legislation include the prevention of discrimination of all actors (ISP, CAP, network operators and end-users), the Dutch explanations only include the prevention of discrimination of CAP and end-users. This conforms with Art 7.4a TW, which only provides provisions to ISPs and CAPs not to discriminate end-users, whereas the German Net Neutrality regulation also deals with the discrimination of CAPs.

### **4.2.2 Quality of Service**

Ensuring a minimum level of QoS is always linked with the satisfaction of end-users. If all end-users experience a minimum level of QoS it is more likely to satisfy a high range of end-users. In order to be able to provide a minimum level of QoS the requirements need to be given. The precondition for QoS is a workable network structure, which allows sending data packages without interruptions. Since the existing network structure results in congestions, ISPs developed traffic management structures in order to use the network structure in an efficient way. These traffic management structures do not treat every data packages equally, which leads to a trade-off between a minimum QoS and the equality of data packages. Both governments solved this problem in the same way. Whereas the Dutch government clearly included that data packages are allowed to be treated unequal to “minimise the effects of congestions, whereby equal types of traffic must be treated equally”, in Art 7.4a (1) a) TA, does the German government declare in § 1 Abs. 2 that only an arbitrary degradation of services and unjustified hindrance or slowing down of data traffic is not in accordance with the law. The reasons therefore explain that the unequal treatment of data packages is allowed in order to prevent congestions. Nevertheless, ensuring a minimum level of QoS for end-users as a public value is represented differently within the two analyzed documents. QoS is raised in 13,27 % of the sentences of the

German document and 19 % of the sentences of the Dutch document. The differences between the rates of the public equality reflect the fact that the Dutch government directly included measures to safeguard a minimum QoS within the legal rules, whereas Germany makes a more general approach to give ISP the possibility to treat data packages unequal. Furthermore transparency for end-users also contributed to ensure minimum level of QoS. Ensuring transparency to end-users within the legislation had a major impact for the rate of the public value QoS. A transparent overview for customers of ISPs, which QoS the ISPs offer and which QoS the end-user received is as important as the transparent overview of traffic management services used by the ISPs in order to satisfy end-users.

#### **4.2.3 Free Flow of Information**

Free flow of information means that information of any kind can be sent from every accessor to another without restrictions. In order to spread any kind of information, access to the Internet network is a necessity. The precondition to have access to the Internet network for an end-user gives him the possibility to express himself. The freedom of expression indicates the freedom of speech. Furthermore, with the access to the Internet network and its content, which contains all kind of information, end-users are free to listen to the information on the Internet. The public value free flow of information occurred differently in the two explanations. The wording free flow of information was never mentioned within the legislation or the explanations, which indicates that the meaning of this public value for the policy-outcome could only be measured by its indicators. The result shows that the indicators were mentioned only within 17,35% of the sentences in the German document and within 19% of the sentences in the Dutch document. The overall rank of the public value is therefore four in Germany and in the Netherlands.

#### **4.2.4 Privacy**

Another major aspect, which is important to secure a neutral and open Internet, is the privacy of the end-user. A necessity for privacy of the end-user is integrity and safety of the Internet. It was once one of the major contributions to the Internet network. Therefore the free access to content of the Internet is not meant by free access to communication data from end-users, which is not distributed by the end-user itself within the concept of Net Neutrality. Integrity and safety of the Internet network by means of

Net Neutrality prohibits the listening, tapping, storage of other kinds of interceptions or surveillance of communications and related traffic data by persons other than users, without the consent of the users concerned. According to Art. 11.2a TA this should not prevent ISPs to manage their network and services in a “normal” fashion. A normal fashion refers to the possibility to make an overview of the overall dimension of its network as to assess if expansions are required. The integrity and safety of the Internet network also refers to the possible constraint of the integrity and safety by data traffic of end-users. This problem is only mentioned within the Dutch legislation of Net Neutrality, the German legislation does not deal with this problem within the Net Neutrality regulation. This is also shown by the counts of the public value of privacy. Privacy is only represented within 2 % of the sentences within the German document, but at least 4 % of all sentences within the Dutch document. Thus, privacy is the least mentioned public value contributing to the German and Dutch Net Neutrality regulation, which indicates the last rank in both countries.

#### **4.2.5 Freedom of Choice**

Freedom of Choice for end-users is very much linked to the public value free flow of information. If information is able to flow freely through the Internet, the accessor to the Internet, so the end-user in this case, had the possibility to choose from this information freely. The end-user needs access to the Internet network again in order to access the content of the Internet. Content is again meant by any kind of services, which include applications and information. A transparent overview of the ISP’s QoS and traffic management services also contributes for end-users to have a choice. Having a free choice from what the end-user wants to access to, also means that information should not be sent to the end-user without their permission. Therefore the prevention of Spam, which is meant by unsolicited communication, also contributes to have a free choice on accessing Internet content. The frequency of indicators of Freedom of Choice is similar in the German and the Dutch document. Freedom of Choice is indicated in 19,39 % of the sentences in the German document, and 20 % in the Dutch document. This very close outcome reflects the overall rank of Freedom of Choice as a public value. Freedom of Choice has the third rank by means of the German and the Dutch explanations.

#### **4.2.6 Technological Innovation**

The ability for technological innovation by ISPs and CAPs is linked with the ability to competition between IPSs and between CAPs. As mentioned before, competition can lead to innovation, which means that competition needs to be ensured. Competition between undertakings as ISPs and CAPs requires anti-discriminatory behavior of both types of undertakings. Furthermore, CAPs need access to the Internet network to develop new technology. Therefore CAPs also needs anti-discriminatory treatment from ISPs. Another aspect, which contributes to technological innovation, is the efficiency of the QoS the developer of technology receives. Without efficient Internet access or QoS, innovation can be withheld. The frequency of technological innovation and its indicators is different within the two documents. Technological innovation is raised 25 times within the German document, which results in 34,69 % of all sentences and the second rank. Compared to this technological innovation was only mentioned within 29 % of all sentences, which results in rank two of all six public values.

#### **4.3 Preliminary Conclusion**

Although the ranking of the occurrence of the public values within the explanations only differ in one case, the public value Free Flow of Information, the allocating quotas in proportion shows that the public values within the Dutch explanation are distributed more equal compared to the public values within the German explanation. The difference between Equality and Technological Innovation is only 4 %, whereas the difference between QoS, Free Flow of Information and Freedom of Choice only reveals 1 %. In contrast to this counts the difference between the public value Equality and Technological Innovation 17,35 % within the German explanations. Also the differences between QoS, Free Flow of Information and Freedom of Choice reveal a 4% and 2% difference. This is not significant different to the difference within the Dutch explanations, but it shows that also the rankings are almost similar, shows the distribution an important distinction.

#### 4.4 Comparison between differences in legal basis and public values

In order to answer the research questions *“To what extent is it possible to explain differences in policy-outcome relating to Net Neutrality in terms of public values?”* it is now important to see if the differences in public values match the differences in legislation of the two countries.

The differences in frequency of 19,04% of the public value equality can be explained through §1 Abs. 1 of the German Net Neutrality regulation. The general provision to treat data packages equally independent of its content, service, application, origin or destination, with a transmission capacity, which generally enables the usage of all services, content or application via the Internet does not literally exist in the Dutch legislation. The Dutch legislation matches with §1 Abs. 2, which lays down provisions for ISPs. Nevertheless equal treatment of data packages is the main provision in both legislations. This explains the overall first rank as a public value for both legislations.

The differences of scores for the public value “ensuring a minimum level of QoS” is also reflected within the legislation. Whereas the Dutch government clearly included that data packages are allowed to be treated unequal to “minimise the effects of congestions, whereby equal types of traffic must be treated equally”, in Art. 7.4a (1) a) TA, does the German government declares in § 1 Abs. 2 that only an arbitrary degradation of services and unjustified hindrance or slowing down of data traffic is not in accordance with the law. It is shown that the Dutch government makes a more concrete approach within the legislation to ensure a minimum level of QoS, whereas the German government explains what it meant by “arbitrary degradation” and “unjustified hindrance or slowing down” in the explanation and not the legislative rules. This declares the small difference of 1,65 % occurrence within the explanations.

The almost similar frequency of free flow of information within the explanations also matches with the legislation. Art. 7.4a does not provide any clear provisions to safeguard the free flow of information except of Art. 7.4a (3). It provides that the ISPs and CAPs should equally provide access to services and applications to end-users. The German Net Neutrality rules include within the general provisions §1 Abs.1 Nr 2 that access to the open Internet, its content, services and applications [...] should be designed in an anti-discriminatory, transparent and open way. This is not a clear provision to safeguard “free flow of information either” but both legislations seeks to safeguard access to the Internet Network for end-users and CAPs. Ensuring freedom of expression is also not explicitly mentioned within the legislation, which might explain a lower frequency than the public value equality shows. Since access

to the Internet Network and freedom of expression are the main indicators for a free flow of information it can be said that both countries put emphasizes on an open and accessible information flow via the Internet. It shows that the similar outcome of this specific public value also reflect the legislative provisions.

Free flow of information is closely linked to freedom of choice. As it is explained above, the frequency was almost the same in both explanations, also it slightly higher than free flow of information. The minimal difference between the two countries might be explained by the fact that the Dutch legislation does include explicit provisions to the prevention of spam compared to the German legislation.

Privacy measures are taken almost equally within the two countries, whereas the difference in public value rates 2,04 %. This is not a big difference, but at such a small frequency the Dutch explanations show a double of the frequency of the German explanation after all. Art. 7.4a (2) might be the reason for this, since it addresses the problem concerning the integrity or security of the network or the service of a terminal of an end-user, which might even be caused by the end-user. This scenario is not dealt with within the German legislation.

Almost the same counts for the public value technological innovation. Technological innovation is merely provided through ensuring competition between CAPs. A higher rank in Germany than in the Netherlands actually fits the construction of the legislation. As explained above, CAPs need access to the Internet network to develop new technology. Furthermore, discrimination might lead to less competition. Art. 7.4a (3) TA aims for equal treatment of end-users and CAPs, which laying down provisions for ISPs to not charge differently for Internet access services dependent of the services and applications which are offered or used via said services. § 2 (1) NetzNeutV provides the same provisions but extents them with § 2 (2) NetzNeutV.

Comparing the overall outcome of the differences in public values with the differences in legislation shows that all differences reflect the legislative construction. Especially differences in equality, QoS, free flow of information and freedom of choice, which are close related to each other because of their similar indicators seem to explicitly relate to the differences in the two policy-outcomes.

## 5. Conclusion

The research question *“To what extent is it possible to explain differences in policy-outcome relating to Net Neutrality in terms of public values?”* can be generally answered to the extent that this study illustrates that differences in policy-outcome might be a result of a different importance of public values between two countries.

In detail the study illustrates that specific substantive public values were translated into delineated standards and rules for the protection of these standards. For the analysis above, specific public values were expressed more frequently by the Dutch government than the German government and the other way around. Some public values are even directly stressed within the legislation. This is helpful to understand the motivations that drive the governments to establish Net Neutrality rules. As the value conflict increase, so does the trade-off between the values. It is shown that some public values conflicts with other (e.g. QoS and Free Flow of Information) and some public values are related to each other (e.g. Freedom of Choice and Free Flow of Information) and that the Dutch government deals differently with these conflicts and relations than the German government. This means that both governments trade-off conflicting or competing public values in the case of Net Neutrality. The analysis showed that all six public values, equality, free flow of information, QoS, freedom of choice, privacy and technological innovation, have an impact on the policy-outcomes of both countries.

Since the differences in public values in Germany and the Netherlands overall match the differences between the two legislations a correlation between the importance of public values within a country and the resulting policy-outcome is very likely. Nevertheless, the difference in technological innovation and privacy did not conform the differences in legislation entirely. Therefore other factors, which have an impact on policy-outcomes, cannot be ruled out. If policy-outcomes reflect public values it can be concluded that policy makers have considered and regarded public values within the policy making process. Because of the fact that public values also reflect the public interest to a certain extent, including public values into the policy process might be a sign for the quality of the policy outcome or even the policy making process. In the case of the Netherlands and Germany, the reflection of the difference in public values within the differences of the legislations might be a sign for a good quality of the policy outcome.

The exemption of the public values privacy and technological innovation, which did not conform the differences in legislation entirely, might be a sign for other factors, which have an impact on the policy

outcomes. Therefore only a correlation between public values and the policy outcome can be concluded. A direct relationship can only be proven with a broader study that can eliminate other factors, distorting a direct relationship.

This leads to the suggestion to further research on the overall impacts on policy-outcomes. Furthermore it would be interesting to widen the research on the existing public values and possible other public values and indicators, which might contribute to the policy-outcome. As a possible enlargement of the study a stakeholder analysis could be made in order to figure out which public values play an important role during the policy-making process.

## 6. Abbreviations

EU	–	European Union
MS(s)	–	Member State(s)
QoS	–	Quality of Service
TA	–	Telecommunications Act
NetzNeutV	–	Netzneutralitätsverordnung
ISP	–	Internet Service Provider
CAP	–	Content and Application Provider
BMWI	–	Bundesministerium für Wirtschaft und Energie
IP	–	Intellectual Property

## 7. Literature

- Babbie, E. R. (2013). *The practice of social research*. Belmont: Cengage Learning.
- Blumstein, C., & Wiel, S. (1999). Public-interest research and development in the electric and gas utility industries. *Utilities Policy*, 7(4), 191-199.
- Briscoe, N. (2000). Understanding the OSI 7-layer model. *PC Network Advisor*, 120(2).
- Broos, L. C. P. (2014). 'Publieksvriendelijk' versnellen van innovatie in netwerksectoren: een exploratie van wetstechnische mogelijkheden ter bevordering van innovatie in de telecomsector, met behoud van de bescherming van publieke belangen.
- Bruijn, H. D., & Dicke, W. (2006). Strategies for safeguarding public values in liberalized utility sectors. *Public Administration*, 84(3), 717-735.
- Cave, M., & Crocioni, P. (2007). [Special Section on Net Neutrality] Does Europe Need Network Neutrality Rules? *International Journal of Communication*, 1(1), 11.
- Charles, M. B., Dicke, W., Koppenjan, J., & Ryan, N. F. (2007). *Public values and safeguarding mechanisms in infrastructure policies: A conceptual and theoretical exploration*. Paper presented at the International Research Symposium on Public Management, Potsdam.
- Colombier, N., M'Chirgui, Z., & Pénard, T. (2011). An empirical analysis of Internet providers' interconnection strategies. *ERIEP*, 2.
- Commission, E. (2004). *White Paper on Services of General Interest*. Brussels: European Commission Retrieved from <http://eur-lex.europa.eu/legal-content/ES/TXT/PDF/?uri=CELEX:52004DC0374&from=EN>.
- Commission, E. (2014a). About the open Internet Retrieved 25.05.2014, from <http://ec.europa.eu/digital-agenda/en/about-open-internet>
- Commission, E. (2014b). Connected Continent legislative package Retrieved 27.05.2014, 2014, from <http://ec.europa.eu/digital-agenda/en/connected-continent-legislative-package>
- Dobbs, I., & Richards, P. (2004). Innovation and the new regulatory framework for electronic communications in the EU. *European Competition Law Review*, 25, 716-730.
- Economides, N. (2008). Net neutrality, non-discrimination and digital distribution of content through the internet. *ISJLP*, 4, 209.
- Flanagin, A. J., & Metzger, M. J. (2000). Perceptions of Internet information credibility. *Journalism & Mass Communication Quarterly*, 77(3), 515-540.

- Ganley, P., & Allgrove, B. (2006). Net neutrality: A user's guide. *Computer Law & Security Review*, 22(6), 454-463.
- Gozdecki, J., Jajszczyk, A., & Stankiewicz, R. (2003). Quality of service terminology in IP networks. *Communications Magazine, IEEE*, 41(3), 153-159.
- Hahn, R. W., Litan, R. E., & Singer, H. J. (2007). The economics of 'wireless net neutrality'. *Journal of competition law and economics*, 3(3), 399-451.
- Hantrais, L. (1999). Contextualization in cross-national comparative research. *International Journal of Social Research Methodology*, 2(2), 93-108.
- Hildebrandt, M. (2011). Who Needs Stories if You Can Get the Data? ISPs in the Era of Big Number Crunching. *Philosophy & Technology*, 24(4), 371-390.
- Krämer, J., Wiewiorra, L., & Weinhardt, C. (2013). Net neutrality: A progress report. *Telecommunications Policy*, 37(9), 794-813.
- Lessig, L., & McChesney, R. W. (2006, June 8 ). No tolls on the Internet, *Washington Post*, p. 23. Retrieved from <http://www.washingtonpost.com/wp-dyn/content/article/2006/06/07/AR2006060702108.html>
- Ly, A., MacDonald, B. H., & Toze, S. (2012). Understanding the net neutrality debate: Listening to stakeholders. *First Monday*, 17(5).
- Moore, M. H. (1995). Creating public value: Strategic management in government. Cambridge: *Harvard University Press*.
- Nazzini, R. (2011). The foundations of European Union competition law: the objective and principles of Article 102: *Oxford University Press*.
- Noam, E., & Nishúilleabháin, A. (1996). Private Networks Public Objectives. Amsterdam: *Elsevier*
- Ostrom, E., Burger, J., Field, C. B., Norgaard, R. B., & Policansky, D. (1999). Revisiting the commons: local lessons, global challenges. *Science*, 284(5412), 278-282.
- Solum, L. B., & Chung, M. (2003). Layers Principle: Internet Architecture and the Law, The. *Notre Dame L. Rev.*, 79, 815.
- Spies, A., & Ufer, F. (2010). Netzneutralität: Stichwort oder Unwort des Jahres? Neues US-Regulierungsverfahren mit Auswirkungen auf Deutschland. *MMR*, 1/2010, 13-17.
- Thierer, A. (2006). Are "Dumb Pipe" Mandates Smart Public Policy? Vertical Integration, Net Neutrality, and the Network Layers Model *Net Neutrality or Net Neutering: Should Broadband Internet Services be Regulated* (pp. 73-108): Springer.

- Valcke, P., Hou, L., Stevens, D., & Kosta, E. (2008). Legal Analysis of Network Neutrality under EU Competition Rules and the Regulatory Framework for Electronic Communications. Retrieved from <http://ssrn.com/abstract=1246642>
- Wu, T., & Yoo, C. (2007). Keeping the internet neutral?: Tim Wu and Christopher Yoo debate. *Federal Communications Law Journal*, 59, 575-615.

## 8. Appendix

### Appendix A: The Internet in the course of time

The actual purpose of the Internet was to connect different computer networks with each other in order to exchange information. (Ganley & Allgrove, 2006) The exchange of information operates by “sending data packages via “pipes” along a chain of “nodes” until they reach their destination” (Ganley & Allgrove, 2006, p. 456) by using Internet Protocol (IP) systems. The standard IP system used nowadays is the Internet Protocol Suite known as TCP/IP. It contains the Transmission Control Protocol (TCP) and the Internet Protocol (IP). It specifies how data should be transported from destination “A” to destination “B”. It routes any kind of traffic on a “first-come, first-served basis”, which does not give any guarantee for a specific time period in which the data packet will be transmitted. (Wu & Yoo, 2007) Furthermore it routes traffic on a best-effort basis. This is a decentralized way of routing data packets driven by the choice of the best router to deliver. This principle leads to no guarantee of any service quality or priority, not even the guarantee for the data packet to be delivered at all. (Krämer, et al., 2013) (Wu & Yoo, 2007)

Nodes are the receiver of the data packets and at the same time the transmitter. They receive the data packets, analyze the address information and then pass them on to the next node. (Ganley & Allgrove, 2006) These data packages were historically meant to send due to the end-to-end design. The end-to-end design provides that all data packages are treated equally. This means that the nodes do not question about the sender, the recipient or the content. Because of the first-come first-served principle the first data packet, which arrives at the node, will be directly transmitted. (Ganley & Allgrove, 2006) Most commonly the OSI seven layers stack model is used to explain computer networks. The seven layers stack model divides computer networks into seven layers: the physical layer, the data link layer, the network layer, the transport layer, the session layer, the presentation layer and the application layer. (Briscoe, 2000)

The first layer, the physical layer, includes all tangible objects, e.g. computers, wireless devices, wires and routers. These devices connect all individuals to the Internet and to one another. Moreover they are needed to transmit the data to the Internet users (IUs).

The Data Link Layer is the second layer and defines the “access strategy for sharing the physical medium, including data link and media access issues” (Briscoe, 2000, p. 1). This layer includes Protocols such as PPP, SLIP and HDLC.

The Network Layer, Layer three, contains switching and routing technologies. It creates logical paths, which transmits data from one node to the other node. This Layer includes Protocols such as the IP Protocol. Functions of this layer are routing and forwarding, which means that all routers within a network are operating in this layer.

Layer four ensures that data transfers completely. It is called the Transport Layer because it is the link between the transport-oriented and the application-oriented layers. Data Packets get assigned to their application at this layer. It is also responsible for the end-to-end error recovery and the flow control. This layer includes the TCP for example.

The next layer, the Session Layer, manages and terminates the connections between the applications. For that reason mechanisms for control and steering are established at this layer.

At Layer six, the Presentation Layer, application data is either packed or unpacked. This means it transforms data into the form the Application Layer, layer seven, can accept. Therefore it formats and encrypts data.

The Application Layer contains the end-user and end-application protocols such as telnet, ftp and mail in order to identify communication partners, QoS and to consider authentication and privacy. It also identifies any constraints on data syntax, which is why it is sometimes called Syntax Layer. (Briscoe, 2000)

Despite the Seven Layer Stack Model the MCI’s white paper defines a new Internet protocol-based layering concept. It distinguishes the Internet into at least four layers. (Thierer, 2006)

The first layer is the content layer, which includes the content, information and other meaningful statements, which individuals want to share throughout the Internet.

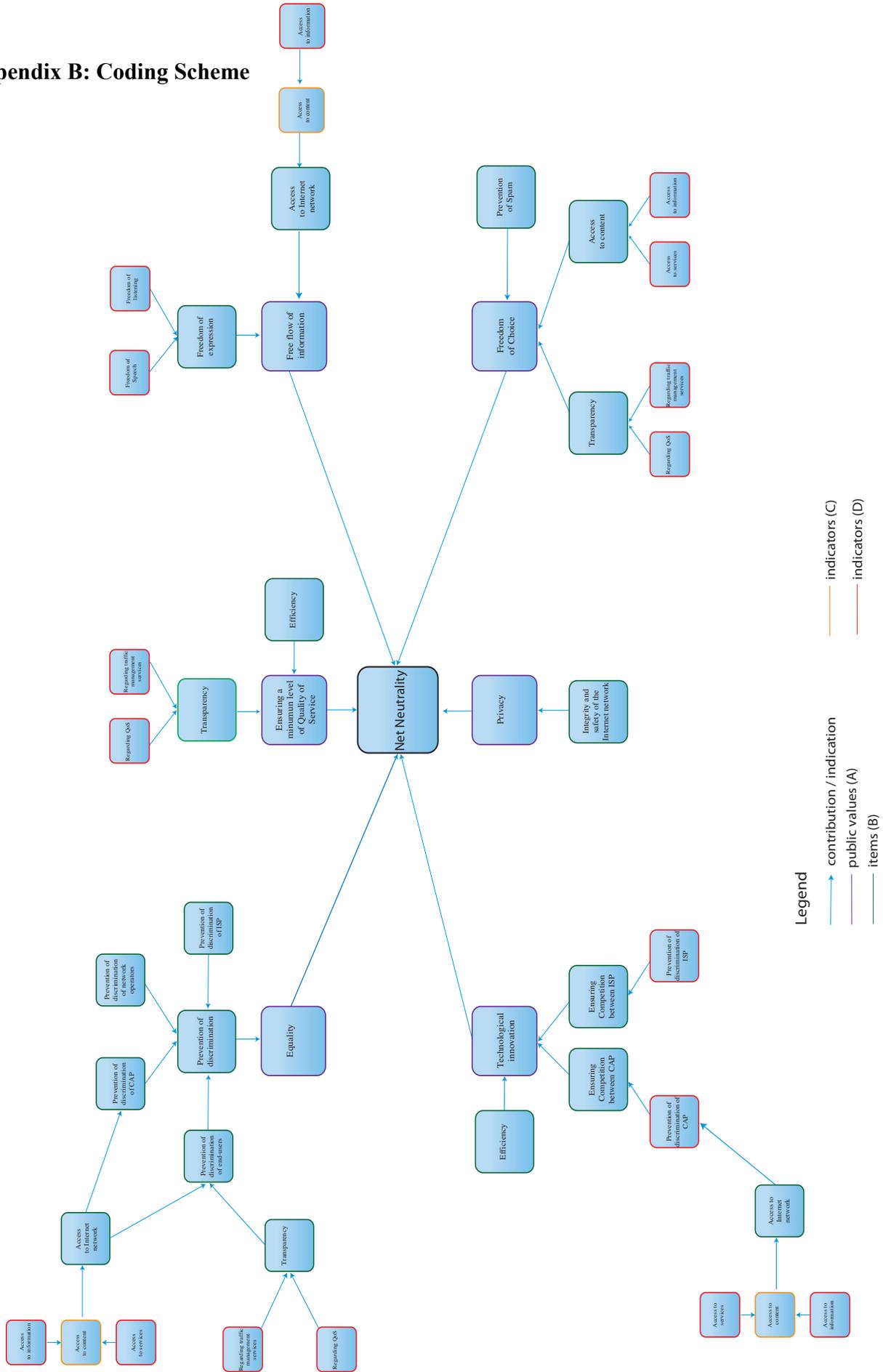
The Application Layer is comparable with the Application Layer of the OSI seven layer stack model. The logical level contains the series of algorithms and standards as the TCP/IP mentioned above, the HyperText Transfer Protocol (HTTP) and the HyperText Markup Language (HTML). This part of the machinery of the Internet allows the materials of the content layer to be understood and transmitted. (Ganley & Allgrove, 2006) The other part of the machinery of the Internet is the physical layer. This layer includes all tangible objects, e.g. computers, wireless devices, wires and routers. These devices

connect all individuals to the Internet and to one another. Moreover they are needed to transmit the data to the Internet users (IUs). (Solum & Chung, 2003)

Internet Service providers (ISP) combine all four layers, while using protocols and devices to transmit data packages, which contain the content. They occur in a hierarchy, starting with the backbone provider at the top of the hierarchical structure. They are global operators, which supply access to high-speed transmission lines. These lines are the backbone to the Internet due to their function of connecting users to the Internet.

Internet Service providers (ISP) are located on a regional and on a local level. They provide access to the Internet to the end-users. Nevertheless, they are also connected to each other, mainly the smaller ISP to the bigger ISP. Content and Application providers (CAPs) provide applications for Internet Users. In order to reach the end-users, CAPs depend on ISP to transmit their data to the end-users. In some cases the ISPs are CAPs at the same time, which gives these companies an advantage compared to the ones, which provide only internet service or content and application services.

# Appendix B: Coding Scheme



## Appendix C: Tables

### C.1 Table 1 Frequencies according to public values (Germany)

Public Values (A)	Counts	Percentages	Rank
A1 Equality	51	52,04 %	1
A2 QoS	13	13,27 %	5
A3 Free Flow of Information	17	17,35 %	4
A4 Freedom of Choice	19	19,39 %	3
A5 Privacy	2	2,04 %	6
A6 Technological Innovation	34	34,69 %	2

### C.2 Table 2 Frequencies according to public values (The Netherlands)

Public Values (A)	Counts	Percentages	Rank
A1 Equality	33	33 %	1
A2 QoS	19	19 %	4
A3 Free Flow of Information	19	19 %	4
A4 Freedom of Choice	20	20 %	3
A5 Privacy	4	4 %	6
A6 Technological Innovation	29	29 %	2

## Appendix D: Legal Documents

Appendix Nr.	Institution	Type	Date	URL
D.1	Tweede Kamer, NL	Kamerstuk Nr. 3 File number: 32549	08.11.2010	<a href="https://zoek.officielebekendmaking-en.nl/kst-32549-3.html">https://zoek.officielebekendmaking-en.nl/kst-32549-3.html</a>
D.2	Tweede Kamer, NL	Kamerstuk Nr. E File number 32549	13.12.2011	<a href="https://zoek.officielebekendmaking-en.nl/dossier/32549/kst-32549-E?resultIndex=47&amp;sorttype=1&amp;so-rtorder=4">https://zoek.officielebekendmaking-en.nl/dossier/32549/kst-32549-E?resultIndex=47&amp;sorttype=1&amp;so-rtorder=4</a>
D.3	Tweede Kamer, NL	Kamerstuk Nr 29 File number: 32549	15.06.2011	<a href="https://zoek.officielebekendmaking-en.nl/kst-32549-29.html">https://zoek.officielebekendmaking-en.nl/kst-32549-29.html</a>
D.4	BMWI, DE	Information paper	17.06.2013	<a href="http://www.cronline.de/Informationspapier_des_Wirtschaftsausschusses_17.6.2013(1).pdf">http://www.cronline.de/Informationspapier_des_Wirtschaftsausschusses_17.6.2013(1).pdf</a>
D.4	BMWI, DE	Draft regulation	31.07.2013	<a href="http://www.computerundrecht.de/netzneutralitaet-zweiter-entwurf(1).pdf">http://www.computerundrecht.de/netzneutralitaet-zweiter-entwurf(1).pdf</a>