ABSTRACT

Title of Document: VALUES IN THE NET NEUTRALITY DEBATE: APPLYING CONTENT ANALYSIS TO TESTIMONIES FROM PUBLIC HEARINGS

An-Shou Cheng, Doctor of Philosophy, 2012

Directed By: Associate Professor Kenneth R. Fleischmann, College of Information Studies

The Net neutrality debate is closely tied to technological innovation, economic development, and information access. Existing studies on Net neutrality have focused primarily on technological requirements, economic analysis, and regulatory justifications. Since values, technology, and policy are interrelated, it is important to consider the role of human values in the design and regulation of telecommunications infrastructure. To analyze the role of human values in shaping the Net neutrality debate, this dissertation attempts to answer the following research questions: (1) Are there any differences in the values expressed by proponents and opponents of Net neutrality? (2) Are there any differences in the values expressed among stakeholders of Net neutrality? (3) Are there any differences in the values expressed in relation to Net neutrality in different venues? (4) Are there any changes across time in the differences expressed in the Net neutrality debate?

To answer these questions, this dissertation focuses on a corpus of public hearings related to Net neutrality that provide useful data points that help to expose the values of various stakeholders in the Net neutrality debate. Content analysis of testimonies from Congressional and FCC hearings on Net neutrality is employed to study values expressed

by stakeholders. Using both qualitative and quantitative content analysis, this dissertation aims to achieve two goals:

1. Develop a unified theory-grounded value typology through literature and qualitative analysis of public hearings.
2. Conduct an in-depth quantitative analysis of public hearings to get insights into the role of values in Net neutrality debate.

This dissertation advances the understanding of values expressed by stakeholders in the Net neutrality debate, informs the process of agenda setting and decision-making related to Net neutrality policy-making, and fills the gap in the connection between telecommunications policy and values research. The future research directions include using the value typology developed in this dissertation to serve as an explanatory framework for understanding values in telecommunications policy issues, applying this value typology to predict and explain individual and societal choices related to ongoing policy debates, and using the value typology as a tool for automating analysis of values in texts.

VALUES IN THE NET NEUTRALITY DEBATE: APPLYING CONTENT ANALYSIS TO TESTIMONIES FROM PUBLIC HEARINGS

By

An-Shou Cheng

Dissertation submitted to the Faculty of the Graduate School of the
University of Maryland, College Park, in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy
2012

Advisory Committee:
Professor Kenneth R. Fleischmann, Chair
Professor John Carlo Bertot
Professor Paul T. Jaeger
Professor Ping Wang
Professor Amy Weinberg

Acknowledgements

I would like to gratefully and sincerely thank my advisor Dr. Kenneth R. Fleischmann for his guidance and endless support throughout my doctoral studies. He has guided me in every aspect of my doctoral studies professionally and personally and has prepared me for my future career. His dedication, support, and mentorship have been invaluable to me. I would like to thank members of my dissertation committee, Dr. John Carlo Bertot, Dr. Paul T. Jaeger, Dr. Ping Wang, and Dr. Amy Weinberg, for the time they spent reviewing my dissertation and their valuable suggestions and feedback throughout this research. I would also like to thank Dr. Doug Oard, Dr. Emi Ishita, and many other members in the Scalable Computational Analysis of the Diffusion of Information Technology Concepts (PopIT) project. They have helped greatly in providing insights about computational analysis and shaping the ideas of this work. This work was supported in part by the PopIT project under NSF Grant IIS-0729459 and graduate assistantships at the University of Maryland. I wish to express my appreciation to both NSF and the University of Maryland. I would like to thank my fellow doctoral students for their support, feedback, and friendship. I would like to thank all the faculty members and administrative staff members in the College of Information Studies for supporting and helping me advance through this process. I would like to thank my wife Ju-Hui Su. Without her support, encouragement, patience, and unwavering love, I could not have achieved this accomplishment. I also thank my parents for their faith in me and their endless love and support to me. Finally, I acknowledge God for the many blessings He has bestowed upon me, all things are possible with Christ.

Table of Contents

List of Tables

List of Figures

Chapter 1: Introduction

1.1 Introduction

Recent innovations in information technology (IT) have radically transformed our access to and use of information. Ethical and policy challenges related to privacy, access, control, and internationalization face new meanings and challenges as a result of rapid technological developments in telecommunications. Given this situation, it is increasingly important to consider the role of human values in the design and regulation of our telecommunications infrastructure.

Net neutrality has recently emerged as an important information policy issue, drawing the attention of service providers, content providers, the academic community, and policy makers. The Net neutrality debate arose in response to fears that service providers would begin to restrict and/or tier access, which was perceived as a threat both to the free and open Internet and to equal access to information. Net neutrality is a complex issue that requires a depth of knowledge in telecommunications, information economics, and information policy. Existing studies on Net neutrality have focused mostly on the technological requirements, economic analysis, and regulatory justifications. Nevertheless, when analyzing this heatedly debated issue, one cannot ignore that the use of telecommunications and the implementation of policy can never be completely value free. As a result, values, technology, and policy are interrelated. Values such as power, wealth, equality, social justice, and freedom are embedded in Net neutrality discussions on issues such as oligopoly pricing, the incentive on investment, the availability of certain services, the reduction of telecommunications innovation, and

impediments to free speech. The analysis of value orientations toward Net neutrality is critically important for informing the process of agenda setting and decision-making.

1.2 Research Questions and Goals

To analyze the role of human values in shaping the Net neutrality debate, this study attempts to answer the following research questions:

1. Are there any differences in the values expressed by proponents and opponents of Net neutrality?
2. Are there any differences in the values expressed among stakeholders of Net neutrality?
3. Are there any differences in the values expressed in relation to Net neutrality in different venues?
4. Are there any changes across time in the differences in the values expressed in the Net neutrality debate?

Through the application of content analysis to public hearings about Net neutrality, this study aims to achieve two goals:

1. Develop a unified theory-grounded value typology through literature and qualitative analysis of public hearings.
2. Conduct an in-depth quantitative analysis of public hearings to get insights into the role of values in Net neutrality debate.

In sum, this study seeks to further understanding of the Net neutrality debate by exploring the values that lie at the core of this hotly contested debate and thus bridging telecommunications policy and values research.

1.3 Definition of Key Terms

Values: In social science research, "the term 'values' has been used variously to refer to interests, pleasures, likes, preferences, duties, moral obligations, desires, wants, goals, needs, aversions and attractions, and many other kinds of selective orientations" (Williams, 1979, p. 16). In this sense, values are often conflated with other social science constructs such as attitudes, traits, norms, and needs (Hitlin & Piliavin, 2004). It is important to distinguish values from these psychological constructs:

Values vs. Attitudes: Values are different from attitudes. Values are abstract, focus on ideals, and generalized guides of conduct, whereas attitudes are very specific judgments, focused on concrete social objects (Hitlin & Piliavin, 2004). Specifically, values hold a higher place in one's internal evaluative hierarchy and are more durable than attitudes (Hitlin & Piliavin, 2004).

Values vs. Traits: "Traits describe what people like; values refer to what people consider important" (Caprara, Schwartz, Cabaña, Vaccine, & Barbaranelli, 2006, p. 3). Traits are often used by people in a descriptive manner, while values are often presented as intentions behind behavior (Caprara et al., 2006). In addition, "Traits may be positive or negative; values are considered primarily positive" (Hitlin & Piliavin, 2004, p. 361).

Values vs. Norms: "Norms are situation based; values are trans-situational" (Hitlin & Piliavin, 2004, p. 361). Rokeach (1973) points out that there are three ways to distinguish values from social norms:

> *"First, a value may refer to a mode of behavior or end-state of existence whereas a social norm refers only to a mode of behavior. Second, a value transcends specific situations; in contrast, a social norm is a prescription or proscription to*

behavior in a specific way in a specific situation…Third, a value is more personal and internal, whereas a norm is consensual and external to the person" (p. 19).

Values vs. Needs: The way needs influence human behavior is different from values. As Hitlin & Piliavin (2004) stated, "Needs connote biological influences. Values capture a distinguishing feature of social life; we can reflexively examine our needs. Values serves as socially acceptable, culturally defined ways of articulating needs…The expression and satisfaction of more biological needs can be reflected through culturally prescribed values, but these values are not the needs" (pp. 361-362).

Many definitions of values found in literature hold that values are conceptions of the desirable (Kluckhohn, 1951). To operationally define values, this study builds on the existing literature (Friedman, Kahn, & Borning, 2006; Rokeach, 1973; Schwartz, 1994; Braithwaite & Blamey, 1998) and adopts a broad definition: "values serve as guiding principles of what people consider important in life." Specifically to the research context, this study centers on the value expressions stakeholders invoked in testimonies relevant to Net neutrality.

Net Neutrality: Net neutrality has been described in many ways that emphasize different goals. The debate focuses on the question whether or not the Internet should be open, neutral and accessible to all at equal conditions (Peha, Leha, & Wilkie, 2007). More specifically, a large part of the Net neutrality debate focuses on network service providers' potential for discriminating against particular content or application providers or certain types of legitimate data flow. As defined by the coalition SaveTheInternet.com, "Net Neutrality means that Internet service providers may not discriminate between different kinds of content and applications online. It guarantees a level playing field for

all Web sites and Internet technologies" (n.d.). Discrimination, however, means different things for engineers, economists, and lawyers (Peha, 2006). This study is not focused on the discussion of types of discrimination. In this study, discrimination occurs whenever a network treats some network traffic or some network users differently from others.

Although there is no single accepted definition of Net neutrality (Cherry, 2008), most agree that any such definition should include the principles that "owners of the networks that compose and provide access to the Internet should not control how consumers lawfully use that network; and should not be able to discriminate against content provider access to that network" (Gilroy, 2007, pp. 1-2). As the scope of this study is to analyze testimonies from public hearings relevant to Net neutrality, the definition adopted by this study is primarily based on the Federal Communications Commission's (2005) principles on network management and existing literature (Gilroy, 2007; Wu, 2003; Peha et al., 2007; Jordan, 2009): " Net neutrality represents the general principles that Internet users are entitled to lawful content and service that does not discriminate on the basis of source, destination, or ownership of Internet traffic."

Content Analysis: content analysis is "a generic name for a variety of means of *textual analysis* that involve comparing, contrasting, and categorizing a corpus of data in order to test hypotheses" (Schwandt, 2007, p. 41). Among various definitions of content analysis proposed by researchers, Riffe, Lacy, and Fico (1998) provide a definition that is most relevant to the procedure employed by this study. They define content analysis as "the systematic assignment of communication content to categories according to rules, and the analysis of relationships involving those categories using statistical methods" (Riffe et al., 1998, p. 18). As such, content analysis for this study is defined as "a reliable

research technique that involves specialized procedures assigning communication content to categories according to rules, and the analysis of relationships involving those categories using statistical methods." Although traditional content analysis emphasizes systematic, objective, quantitative description of content derived from researcher-developed categories, the content analysis applied in this study includes both descriptive and interpretive means of analyzing data.

Policy: Public policy can be defined in a variety of ways. Some assert that public policy can be simply understood as "whatever governments choose to do or not to do" (Dye, 1984, p. 1); others have provided more elaborative definitions that seek to illustrate the exact characteristics of a public policy. Generally speaking, public policy has been defined as "a set of interrelated decisions taken by a political actor or group of actors concerning the selection of goals and the means of achieving them within a specified situation where these decisions should, in principle, be within the power of these actors to achieve" (Jenkins, 1978, p. 15). In this study, a public policy can be viewed as "a course of action (or inaction)." It can take the form of "a law, a rule, a statute, an edict, a regulation or an order" (Fischer, 2003, p. 2).

Telecommunications Policy: Telecommunications policy can be defined as decisions made by the government in consultation with various stakeholders including business, academic, interest group, and civil society about how telecommunications systems will be operated and regulated in a country (Bauer, 1994). In addition to rules, Bauer (1994) also asserted that "telecommunications policy consists of a complex set of discretionary public policy actions which affect the evolution of the telecommunications sector" (p. 19). As a result, telecommunications policy not only consists of the design of

an overall set of rules, but also comprises a complex set of discretionary public policy actions to influence the course and operation of the telecommunications industries.

1.4 Significance of the Study

This study has both theoretical contributions and practical implications:

First, this study attempts to fill the gap in the connection between telecommunications policy and values research. Existing studies on telecommunications policy, especially Net neutrality, have focused mostly on the technological requirements, economic analysis, and regulatory justifications. Values research provides an explanatory framework for understanding human and social dynamics in telecommunications development and regulation.

Second, this study will develop a unified theory-grounded value typology that can be applied to telecommunications policy research, especially Net neutrality. This value typology may serve as an explanatory framework for understanding values in telecommunications policy issues. It may also be possible to apply this value typology to other ongoing policy debates. Finally, it may also be possible to use the value typology as a tool for automating analysis of values in texts.

Third, this research illustrates that it is critical to identify the values held by stakeholders and to understand the value differences among stakeholder groups, especially how values are invoked in shaping the Net neutrality debate. The preliminary results show that specific values were expressed more frequently by people who were either for or against Net neutrality and certain values can be embedded in the statements with the intent of persuasion (Cheng, Fleischmann, Wang, Ishita, & Oard, 2010, in press).

The findings of this study may help stakeholders to develop more persuasive arguments for their positions on the Net neutrality debate by appealing to stakeholders' values.

Fourth, this research demonstrates that content analysis of testimonies at public hearings can serve an important role in understanding ongoing telecommunications policy debates such as Net neutrality. Since these hearings constitute a major dimension of the public forum for discussion of Net neutrality issues, including a diverse range of stakeholders, they are ideal for studying the relationship among values, policy, and telecommunications.

1.5 Summary and Outline of the Study

This chapter explains the purpose of the study and provides an overview of the research goals and research questions. A set of key concepts used in the study are defined and discussed and the expected contributions of the study are described.

Chapter 2 provides a review of the relevant literature. This chapter consists of two major parts. First, this chapter discusses the Net neutrality debate including the proposed legislation and the arguments made by different positions. Second, this chapter discusses the literature on values including the definition of values, the measurement of values, the classification of values, an overview of value inventories, and the role of values in policy research. Some key terms defined in Chapter 1 are also revisited in much richer detail at the outset of each stream of literature.

Chapter 3 describes the rationale of content analysis as research method for this study and its application to policy and values research. This chapter also lays out the research framework and describes the research procedures of qualitative coding scheme

development and statistical methods for quantitative analysis of values in public hearings about Net neutrality.

Chapter 4 focuses on the qualitative coding scheme modification and quantitative analysis of reliability for the coding scheme. Specifically, it describes how the unified theory-grounded value typology is refined and developed through the iterative processes combining both top-down processing based on a priori value classifications through literature and "data driven" processing through the analysis of testimonies from public hearings.

Chapter 5 provides quantitative analysis of testimonies from public hearings with an emphasis on statistical data analyses. Specifically, this chapter describes the characteristics of the corpus, identifies value differences among positions, stakeholder groups, venues, and time periods, and illustrates value shifts between proponents and opponents across time periods in the Net neutrality debate.

Chapter 6 provides analyses and discussions of the empirical findings in light of the theory-grounded value typology and the main research questions.

Chapter 7 discusses the conclusions of the study as well as the implications for theory and practice. Limitations of this study and future research directions are also discussed.

Chapter 2: Literature Review

This chapter begins with a review of the Net neutrality debate and followed by a review of the literature on values, including the conceptualization, operationalization, and measurement of values as a key socio-psychological construct. Next, this chapter will discuss value classifications and review twelve value inventories. Finally, this chapter will discuss the role of values in policy research.

2.1 The Net Neutrality Debate

In the era of the convergence of telecommunications and the expansion of network services, it is important to study the social impact of policies related to telecommunications (McClure & Jaeger, 2008). Issues such as universal access to network services, freedom to communicate, diversity of content market, competitiveness of marketplace, and the promotion of economic benefits are main concerns underlying the debate in the new technological environment. Net neutrality has recently emerged as an important and timely telecommunications policy issue that is closely tied to technological innovation, economic development, and information access.

2.1.1 Definitions of Net Neutrality

Net neutrality has various definitions, ranging from absolute non-discrimination (Wu, 2003) to limited discrimination without quality of service tiering (Dorgan, 2007). Hahn and Wallsten (2006) interpret that Net neutrality is actually "a friendly-sounding name for price regulation." They find "Net neutrality usually means that broadband service providers charge consumers only once for Internet access, do not favor one

content provider over another, and do not charge content providers for sending information over broadband lines to end users" (p. 1).

Although there is no single accepted definition of Net neutrality (Cherry, 2008), most agree that any such definition should include the general principles that "owners of the networks that compose and provide access to the Internet should not control how consumers lawfully use that network; and should not be able to discriminate against content provider access to that network" (Gilroy, 2007, pp. 1-2).

The Federal Communications Commission (2005) adopted a policy statement and established four consumer-based principles to ensure that broadband networks are widely deployed, open, affordable, and accessible to all consumers: (1) Consumers are entitled to access the lawful Internet content of their choice; (2) Consumers are entitled to run applications and use services of their choice, subject to the needs of law enforcement; (3) Consumers are entitled to connect their choice of legal devices that do not harm the network; and (4) Consumers are entitled to competition among network providers, application and service providers, and content providers.

In adopting these principles, the FCC sought to protect consumers' unrestricted access to the Internet – fostering the creation, adoption, and use of broadband Internet content, applications, and services, and ensuring that consumers benefit from that innovation (Martin, 2008a). These consumer-centric rights set forth by the FCC can be found in most Net neutrality discussions.

Recently, the FCC (2010a) voted to regulate the network management practices of broadband Internet service providers. The FCC's Open Internet Order contains three basic rules for maintaining Net neutrality. The first is "transparency," which would

ensure that Internet service providers are transparent about the network management practices they implement. The second is "no blocking," which would prevent Internet service providers from blocking any lawful Internet content, applications, services, or non-harmful devices. The third is "no unreasonable discrimination," which would prevent Internet service providers from unreasonably discriminating in transmitting lawful network traffic. The proponents of Net neutrality praised the FCC for developing new regulations that will keep the Internet open, while the opponents argued that Internet self-regulation has worked well and that the FCC does not need to become involved.

2.1.2 FCC Activities and Court Cases related to Net Neutrality

In addition to the FCC's policy statement in 2005 and the Open Internet Order in 2010, Gilroy (2007, 2011) demonstrated that several FCC activities also have significant influences on the discussions of Net neutrality, such as the FCC's August 2008 Comcast decision, the FCC's notice of inquiry (NOI) on Broadband Industry Practices, and the FCC's National Broadband Plan, etc (see table 2-1). Specifically, the case of the Madison River Telephone Company attracted a lot of attention. It is the first case in which the FCC deals with the blockage of the access to certain Internet services.

Madison River Communications, which offers telephone and Internet services, manipulated their consumers' Internet accesses so that their consumers could not use voice-over-IP (VOIP) services provided by Vonage. The case caught the FCC's attention since it breaches the Net neutrality principle. The FCC intervened and resolved the issue through a consent decree. The Madison River Communication agreed to no longer block traffic going to VOIP providers.

Table 2-1 The FCC's Activities related to Net Neutrality

Date	FCC Activity	Description
2/8/2004	Powell's Four Internet Freedom	FCC Chairman Michael Powell delivered an address in which he articulated his ideas for four "Internet Freedoms": (1) freedom to access content; (2) freedom to use applications; (3) freedom to attach personal devices; and (4) freedom to obtain service plan information.
3/3/2005	Madison River Decree	The FCC entered into a Consent Decree with Madison River, a telephone company, who blocking the Vonage's VOIP services. Madison River Communication agreed to no longer blocking the traffic going to VOIP providers.
9/23/2005	FCC's Internet Policy Statement	FCC adopted Policy Statement FCC 05-151 which asserted that (1) consumers are entitled to access the lawful Internet content of their choice; (2) consumers are entitled to run applications and use services of their choice, subject to the needs of law enforcement; (3) consumers are entitled to connect their choice of legal devices that do not harm the network; and (4) consumers are entitled to competition among network providers, application and service providers, and content providers.
6/13/2007	The FCC's notice of inquiry (NOI) on Broadband Industry Practices	FCC released a notice of inquiry (NOI) on broadband industry practices seeking comment on a wide range of issues including whether the 2005 Internet policy statement should be amended to incorporate a new principle of nondiscrimination and if so, what form it should take.
8/1/2008	The FCC's Comcast Decision	FCC ruled that Comcast, a provider of Internet access over cable lines, violated the FCC's Internet policy statement when it selectively blocked peer-to-peer connections in an attempt to manage its traffic. Comcast was ordered to reform its network management practices and to stop unduly interference with Internet users' right to access the lawful Internet content and to use the applications of their choice.
2/17/2009	The American Recovery and Reinvestment Act of 2009	The Recovery Act requires the National Telecommunications and Information Administration (NTIA), in consultation with the FCC, to establish "nondiscrimination and network interconnection obligations" as a requirement for grant participants in the Broadband Technology Opportunities Program (BTOP).
3/16/2010	The FCC National Broadband Plan	The plan referred to the FCC's then-ongoing notice of proposed rule making on Preserving the Open Internet and stated that "broadband's ability to derive the many benefits discussed in this plan depends on its continued openness."
12/21/2010	The FCC Open Internet Order	FCC adopted an Open Internet Order establishing rules to govern the network management practices of broadband Internet access providers. The order intends to maintain Net neutrality by establishing three rules covering "transparency," "no blocking," and "no unreasonable discrimination."

Source: Gilroy (2007, 2011)

Court cases also place significant influences on the Net neutrality regulation. In 2005, the National Cable & Telecommunications Association v. Brand X Internet Services (NCTA v. Brand X) dramatically changed the regulatory landscape as it applied to broadband services (Gilroy, 2011).

In the NCTA v. Brand X case, Brand X, an Internet Service Provider, wanted private cable companies to be classified as "telecommunication service" so that the "common carrier" obligations of the Telecommunication Act of 1996 could be applied. If this occurred, Brand X would be allowed to utilize the cable companies' high speed Internet access network. However, the FCC refused Brand X's request, stating that the cable companies were "information services" and thus not subject to the "common carrier" obligations. The Supreme Court upheld the FCC's decision to categorize cable companies as "information service" and not a "telecommunication service" under the Communication Act. The Supreme Court's decision permits broadband service providers to discriminate against competing content, applications and other service providers.

The second court case, Comcast v. FCC, also has far-reaching implications for Net neutrality. In this case, Comcast claimed that the FCC did not have the authority to enforce its Internet policy statement. The FCC argued that while it did not have express statutory over such practice, it derived such authority based on its ancillary authority contained in Title I of the 1934 Communications Act. In April 6, 2010, the United States Court of Appeals for District of Columbia Circuit ruled in a 3-0 decision that the FCC lacks the authority to require broadband providers to give equal treatment to all Internet traffic being sent over their network. This ruling invalidates the FCC's authority to regulate. By extension, the ruling allows ISPs to limit consumers' ability to access certain

kinds of Internet content, or, in the alternative, charge certain users more money for access to their particular network. The court was not ruling that the FCC had no power over ISPs, but that it had not justified using ancillary authority rather than directly delegated authority from Congress. In other words, "the court ruled that the exercise of ancillary authority must be linked to statutory authority and that the FCC did not in its arguments prove that connection; it cannot exercise ancillary authority based on policy alone" (Gilroy, 2011, p. 3).

2.1.3 Proposed Legislation related to Net Neutrality

There are a number of bills in the House and Senate that contain proposals about Net neutrality (see table 2-2), however to date none have been successfully signed into law. In 2006, the 109th Congress, six bills in relation to Net neutrality were introduced. Three of them were introduced in the Senate Committee on Commerce, Science, and Transportation, including (1) Internet Non-Discrimination Act of 2006 (S. 2360); (2) Communications, Consumer's Choice and Broadband Development Act of 2006 (S.2686); and (3) Internet Freedom Preservation Act (S.2917). Two of them were introduce in the House Committee on Energy and Commerce, including (4) Communications Opportunity, Promotion and Enhancement Act of 2006 (H.R. 5252); and (5) Network Neutrality Act of 2006 (H.R. 5273). (6) Internet Freedom and Nondescrimination Act of 2006 (H.R. 5417) was introduced in the House committee on Judiciary.

From 2007 to 2008, the 110th Congress, the debate over Net neutrality is still at the forefront of issues of telecommunications reform. Internet Freedom Preservation Act (S.215) sponsored by Senator Byron Dorgan and Internet Freedom and Nondescrimination Act of 2008 sponsored by Representative John Conyers were both

reintroduced. Internet Freedom Preservation Act of 2008 was introduced in the House Committee on Energy and Commerce and referred to Subcommittee on Telecommunications and the Internet.

In 2009, the 111th Congress, Representative Edward Markey reintroduced Internet Freedom Preservation Act of 2009 (H.R. 3458) which has been referred to the House Committee on Energy and Commerce where it awaits consideration.

The bill H.R. 5252 gives the FCC authority to enforce the FCC's four principles (as discussed in Section 2.1.1), but do not allow the FCC to issue additional rulemaking to further define or extend these principles (Jordan, 2009). S.2360 is a pro-Net neutrality bill that proposes restrictions on discriminatory behaviors such as blocking Web pages and applications. This bill, however, preserves authority of network operators to protect subscribers from spam, malware, and inappropriate content. H.R.5273, H.R.5417, and S.2917 take similar approach as S.2360 allow service providers to take reasonable and nondiscriminatory measures to manage its network and protect network security.

According to NetCompetition.org (2009), an online forum promoting competitive Internet choices for consumers, H.R.3458 presents the most extreme pro-Net neutrality position among the bills. The bill absolute prohibits prioritization of data traffic, eliminating service providers' network management flexibility to protect networks from attack or malware, ensure quality of service, and manage congestion.

Table 2-2 Proposed Legislations related to Net Neutrality

Title	Bill Number	Congress Term	Date Introduced	Sponsors	Provisions	Status/ Last Action
Internet Non-Discrimination Act of 2006	S.2360	109th	3/2/2006	Sen. Ron Wyden (D-OR)	Prohibits a network operator interfering data, application, or service transmitted over the operator's network. While preserves authority of network operators to protect subscribers from spam, malware, and inappropriate content.	Read twice and referred to the Committee on Commerce, Science, and Transportation/ Jun 8, 2006: Sponsor introductory remarks on measure. (CR S5642-5643)
Communications, Consumer's Choice, and Broadband Deployment Act of 2006	S.2686	109th	5/1/2006	Sen. Ted Stevens (R-AK)	Aims to amend the Communications Act of 1934 and for other purposes. Outlines requirements for: (1) the protection of children with respect to the video transmission of child pornography; and (2) the free flow of information over the Internet.	Referred to the Committee on Commerce, Science, and Transportation/ Jun 13, 2006: Committee on Commerce, Science, and Transportation. Hearings held.
Internet Freedom Preservation Act	S.2917	109th	5/19/2006	Sen. Olympia Snowe (R-ME)	Amends the Communications Act of 1934 to establish certain Internet neutrality duties for broadband service providers, including not interfering with, or discriminating against, the ability of any person to use broadband service in a lawful manner. Allows broadband service providers to engage in activities in furtherance of certain management and business-related practices, such as protecting network security and offering consumer protection services such as parental controls.	Read twice and referred to the Committee on Commerce, Science, and Transportation (May 19, 2006).

Title	Bill Number	Congress Term	Date Introduced	Sponsors	Provisions	Status/ Last Action
Advanced Telecommunications and Opportunities Reform Act	H.R.5252	109th	5/1/2006	Rep. Joe Barton (R-TX6)	Creates of national cable franchises, provides the FCC with authority to ensure Net Neutrality, set rules for emergency 911 services on Internet telephone (VoIP) services and govern municipal broadband networks.	Passed in the House of Representatives by roll call vote/ Sep 29, 2006: Placed on Senate Legislative Calendar under General Orders, Calendar No. 652.
Network Neutrality Act of 2006	H.R.5273	109th	5/2/2006	Rep. Edward Markey (D-MA7)	Outlines specified duties of broadband network providers to ensure broadband network neutrality, including the duty to: (1) enable users to access lawful content, applications, and services available on broadband networks; and (2) not block, impair, degrade, or discriminate against the ability of any person to utilize their broadband service for lawful purposes. Provides exceptions for providers, including implementing reasonable measures to manage its networks and protect network security.	May 15, 2006: Referred to the Subcommittee on Telecommunications and the Internet.
Internet Freedom and Nondiscrimination Act of 2006	H.R.5417	109th	5/18/2006	Rep. James Sensenbrenner (R-WI5)	Amends the Clayton Act for broadband network providers to discriminate against any web traffic, refuse the access or offer lawful content, applications, or services over the Internet. Permits a provider to take reasonable and nondiscriminatory measures to manage the functioning of its network and services.	Referred to the House Committee on the Judiciary/ Jun 29, 2006: Placed on the Union Calendar, Calendar No. 303.

Title	Bill Number	Congress Term	Date Introduced	Sponsors	Provisions	Status/ Last Action
Internet Freedom Preservation Act	S.215	110th	1/9/2007	Sen. Byron Dorgan (D-ND)	Reintroduced	Read twice and referred to the Committee on Commerce, Science, and Transportation (Jan 9, 2007).
Internet Freedom Preservation Act of 2008	H.R. 5353	110th	2/12/2008	Rep. Edward Markey (D-MA7)	Create a four part national broadband policy: (1) to maintain the freedom to use for lawful purposes broadband telecommunications networks; (2) to ensure that the Internet remains a vital force in the United States economy; (3) promote the open and interconnected nature of broadband networks that enable consumers to reach, and service providers to offer, content, applications, and services of their choosing; and (4) guard against unreasonable discriminatory favoritism for, or degradation of, content by network operators based upon its source, ownership, or destination on the Internet.	Referred to the House Committee on Energy and Commerce/ May 6, 2008: Subcommittee on Telecommunications and the Internet. Hearings Held.
Internet Freedom and Nondiscrimination Act of 2008	H.R. 5994	110th	5/8/2008	Rep. John Conyers (D-MI14)	Reintroduced	May 8, 2008: Referred to the House Committee on the Judiciary.
Internet Freedom Preservation Act of 2009	H.R. 3458	111th	7/31/2009	Rep. Edward Markey (D-MA7)	Requires the FCC to: (1) promulgate rules to ensure that an Internet access service provider does not require a consumer, as a condition on the purchase of any Internet access service, to purchase any other service or offering; and (2) take certain actions, including regarding private transmission capacity services.	July 31, 2009: Referred to the House Committee on Energy and Commerce.

Source: THOMAS, the Library of Congress (Retrieved from http://thomas.loc.gov/home/bills_res.html)

2.1.4 Positions on Net Neutrality

Net neutrality is a telecommunications policy domain that has been reshaped by technological and societal change (Mueller, Pagé, & Kuerbis, 2004). Net neutrality is a complex issue, not only because different stakeholders possess different points of view, but also because the complex nature of the technology makes it difficult to define and frame the debate. Proponents argue in favor of Net neutrality based on technological innovation and free speech online, noting that Net neutrality protects consumers' rights to use any content, application, or service on a non-discriminatory basis without interference from Internet service providers. Proponents believe that Internet service providers should not be allowed to prioritize as a way of tiering their service offerings, describing such practices as "anti-democratic" (Best & Wade, 2007). Opponents argue against Net neutrality based on property rights and the efficiency of resource allocation. They claim that there is no clear harm to customers since competition is sufficient to ensure the welfare of network users, while regulation of network management would reduce the incentive for investing in network infrastructure. In addition, the technology itself has been evolving and changing, giving network operators extensive abilities to treat some classes of traffic traveling over their network differently from others; while it is still not clear how network operators should be allowed to use emerging technology to manage their networks. In short, the debate reflects many conflicts about the definition of what constitutes a neutral network, the interests of the involved parties, and the technological approach for the future of the Internet (Schwartz, Shetty, & Walrand, 2008). Policymakers need to sort through these varied claims of stakeholder groups; consider the probable winners, losers, and other consequences of the proposed changes;

and determine which policy prescription can be expected to advance the interests of consumers and overall economic welfare.

From the various viewpoints discussed above, the Net neutrality issue can be framed in a variety of ways (see table 2-3) and various stakeholders are involved in shaping the debate. Generally speaking, the pro-Net neutrality lobby falls large into content providers, application providers, and consumer groups, while the anti-Net neutrality lobby consists mostly of service providers and the interest groups represent the interests of service providers (stakeholder groups for and against Net neutrality, see Appendix A).

Table 2-3 Debate on Net neutrality between Proponents and Opponents

	Proponents	Opponents
Price discrimination	Service providers will discriminate between content providers without Net neutrality.	Discrimination does not exist in the reality of competition between content providers.
Allocation of resources	Service providers should not discriminate in allocating bandwidth and should treat all data traveling over the Internet equally.	The common resource would be allocated inefficiently if service providers do not differentiate different types of users.
Property rights and return on investment	Net neutrality protects freedom and openness of the Internet.	Network providers have a right to recover costs from heavy bandwidth users.
Incentives of innovation and investment	Service providers can prohibit their rival services by blocking applications they do not favor and hinder the open and competitive foundation for innovation.	Innovations inside networks are as important as those that take place at the edges (i.e. content consumers and content disseminators). Net neutrality would damage competition and investment incentives.

1. Price Discrimination

Discrimination is one of the most discussed concepts to approach the Net neutrality issue. The debate has focused primary on a type of discrimination know as

"access tiering" (Gilroy, 2007). Different from "consumer tiering", which is the charging of different rates to subscribers based on access speed, "access tiering" is the major debate on Net neutrality which means the charging of different fees, or the establishment of different terms and conditions to content, services, or applications providers for access to the broadband infrastructure (Gilroy, 2007). In the sense of "accessing tiering", the proponents of Net neutrality claim that network providers will discriminate between content providers without net neutrality. However, the opponents claim that discrimination does not exist in the reality of competition between content providers. They argue that in a competitive market, network providers implementing price discriminate are likely to lose customers to their competitors who do not adopt price discrimination. Network providers, therefore, have a competitive interest maintaining a "neutral" policy even without Net neutrality regulation (Hahn & Wallsten, 2006). In this sense, the market power of network providers to discriminate can be addressed by removing existing barriers to entry, by the reform of franchising and spectrum regulation, and by the promotion of competition (Hahn & Wallsten, 2006).

2. Allocation of Resources

The concept of management of scarce and common resources is very common in business. In a competitive market, management of resources will be varied by the demands of customers, costs, and other factors. Without considering the necessity of allocation of resources, the proponents to Net neutrality claim that network providers should not discriminate in allocating bandwidth and should treat all data traveling over the Internet equally (Wyden, 2006). With Net neutrality regulation, consumers could experience consistent speed from different content providers. In contrast, opponents to

Net neutrality argue that many industries have users that make intensive use of resources, and those users pay for the privilege. Broadband should be no difference. Without the differentiation among different types of users, the common resource would be allocated inefficiently (Rosston, 2008).

3. Property Rights and Return on Investment

Companies that provide high-speed Internet connections to consumers such as Verizon, Comcast, and AT&T claim that Internet content providers and application providers should not be allowed to use their property for free. They reason that bandwidth is not public infrastructure. Internet content providers and application providers that take up a significant amount of the provided bandwidth are costing network providers a significant amount of money in expanding their infrastructure (McCormick, 2006a). Therefore, network providers have the right to seek return on their investment and demand that those who cause the costs should be charged for their use.

In contrast to opponents' claim to property rights, proponents to Net neutrality argue the necessity of protecting freedom and openness of the Internet. Former FCC chairman Michael Powell (2004) announced a set of non-discrimination principles including freedom to access content, freedom to run applications, freedom to attach devices, and freedom to obtain service plan information. These so called principles of "Network Freedom" are viewed by proponents as an endorsement of Net neutrality regulation.

4. Incentives of Innovation and Investment

The proponents claim that the Internet's "end-to-end" architecture is a key to the growth of innovation in Internet applications (Lessig, 2006). Net neutrality maintains an

open and dynamic Internet that will allow it to continue to be an engine of productivity and innovation that benefits all persons. Without neutrality regulation, network providers can simply prohibit their rival services in their user agreements and block the traffic, resulting in the impediment of innovation.

Opponents of Net neutrality have also argued that Net neutrality regulation would have adverse consequences for innovation and competition in the market for broadband access by making it more difficult for Internet service providers (ISPs) and other network operators to seek return on their investments in broadband networks. They argue that innovations inside networks are as important as those that take place at the edges (i.e. content consumers and content disseminators). Besides, the regulation may reduce network providers' incentive on investment and hinder the competition and niche market suppliers. Because some consumers want to pay more to secure certain premium services, and some network providers can exist to supply this market. However, these niche market players will lose market share of consumers if the neutrality regulation is implemented (Hahn & Wallsten, 2006).

2.1.5 Research on Net Neutrality

The conflicts in the Net neutrality debate attract scholarly attention in various fields. Examining the existing literature on Net neutrality, three strands can be identified in scholarly works: The first strand focuses on a technological perspective that provides a technical background for understanding of the technical motivations for discrimination, how they would actually be put into practice, and what countermeasures would then be available to users and regulators (Crowcroft, 2007; Felten, 2006); the second strand focuses on a legal perspective that examines the potential costs and benefits of Net

neutrality regulation (Owen & Rosston, 2003), articulates the underlying issues, and proposes effective solutions to the debate (Atkinson & Weiser, 2006); and the third strand focuses on an economic analysis of Net neutrality regulation that emphasizes consumer welfare (Sidak, 2006a) and the economic merits of the regulation (van Schewick, 2007) and provides economic models in specific contexts such as pricing strategies and investment incentives (Cañón, 2009; Cheng, Bandyopadhyay, & Guo, 2008; Choi & Kim, 2008; Economides & Tåg, 2007).

In addition to the technological, regulatory and economic perspectives on Net neutrality, values also play important roles in the arguments for and against Net neutrality that might shape the policy outcomes. Values such as power and wealth are embedded in vertical integration (Yoo, 2005); equality and human welfare are embedded in non-discrimination of network access and the availability of certain services (Wu, 2003); and wealth and innovation are embedded incentive on investment (Sidak, 2006a) and technology innovation (Bauer, 2007; Lessig, 2002). Much attention has been paid to the intricacies of policy questions while less effort has been made to the underlying forces that shaping the policy outcomes (Galperin, 2004). It is, therefore, important to analyze the role of values expressed by the relevant stakeholder groups, by policy analysts, by policy makers, and by society at large.

2.2 Values

Historically, human values have been important factors for social scientists exploring various sociological, psychological, economic, and political phenomena (Hitlin, 2003). In social science research, "the term 'values' has been used variously to refer to interests, pleasures, likes, preferences, duties, moral obligations, desires, wants,

goals, needs, aversions and attractions, and many other kinds of selective orientations" (Williams, 1979, p. 16). However, the abstraction and lack of sophisticated empirical support caused values to receive limited attention in social science research (Spates, 1983). This section will discuss definitions of values, value measurement, value classifications, and values in policy research.

2.2.1 Definitions of Values

As discussed in Chapter 1, values are often conflated with other socio-psychological constructs. Rokeach (1973) noted the confusion of terminology, that values were often emerging in other disciplines under different terms, causing the dilemma to the field. He tries to distinguish values from other socio-psychological constructs and defines values as "an enduring belief that a specific mode of conduct or end-state of existence is personally or socially preferable to an opposite or converse mode of conduct or end-state of existence" (Rokeach 1973, p. 5). By introducing a conceptualization of values as abstract fundamental coordinators of behavior, Rokeach (1973) established the theoretical connection between values and behavior and brought consensus to the field. He also operationalized his conceptual definition of values and captured the hierarchical organization of values through the rank-ordering of values by respondents in Rokeach's Value Survey (Rokeach, 1973). He further conceptualized a value as (1) a single belief, (2) not object or situation specific, (3) representative of a standard, (4) more central than an attitude to cognition and personality, (5) representative of both individual needs and societal demands, and (6) as being changeable (Rokeach, 1973).

Schwartz (1994) defined a value as "a belief pertaining to desirable end states or modes of conduct that transcends specific situations; guides selection or evaluation of

behavior, people, and events; and is ordered by the importance relative to other values to form a system of value priorities" (p. 20). He summarized five features of values that are common to all values discussions (Schwartz, 2006: n.p.).

1. *Values are beliefs. But they are beliefs tied inextricably to emotion, not objective, cold ideas.*
2. *Values are a motivational construct. They refer to the desirable goals people strive to attain.*
3. *Values transcend specific actions and situations. They are abstract goals. The abstract nature of values distinguishes them from concepts like norms and attitudes, which usually refer to specific actions, objects, or situations.*
4. *Values guide the selection or evaluation of actions, policies, people, and events. That is, values serve as standards or criteria.*
5. *Values are ordered by importance relative to one another. People's values form an ordered system of value priorities that characterize them as individuals. This hierarchical feature of values also distinguishes them from norms and attitudes.*

Researchers have different ways to conceptualize values (see table 2-4). In addition to Rokeach (1973) and Schwartz (1994), anthropologist Kluckhohn (1951) defines values as "a conception, explicit or implicit, distinctive of an individual, or characteristic of a group, of the desirable which influences the selection from available modes, means, and ends of action" (p. 395). This definition is almost repeated identically by Guth and Tagiuri (1965). Whatever values are considered as "what a person or group of people consider important in life" (Friedman, Kahn, & Borning, 2006), "a belief…guides selection or evaluation of behavior, people, and events" (Schwartz, 1994),

"a conception…influences the selection from available modes, means, and ends of action" (Kluckhohn, 1951; Guth & Tagiuri, 1965), "an enduring belief…personally or socially preferable to an opposite or converse mode of conduct or end-state of existence" (Rokeach, 1973), "principles…an individual or a collective considers preferable across contexts and situations" (Braithwaite & Blamey, 1998), or "operating criteria for action" (Hutcheon, 1972), my summation of these definitions is that "values serves as guiding principles of what people consider important in life".

Table 2-4 The Selection of Definitions for "*Values*"

Source	Definition
Rokeach (1973)	"A *value* is an enduring belief that a specific mode of conduct or end-state of existence is personally or socially preferable to an opposite or converse mode of conduct or end-state of existence" (p. 5).
Schwartz (1994)	A *value* is "a belief pertaining to desirable end states or modes of conduct that transcends specific situations; guides selection or evaluation of behavior, people, and events; and is ordered by the importance relative to other values to form a system of value priorities" (p. 20).
Kluckhohn (1951)	A *value* is "a conception, explicit or implicit, distinctive of an individual, or characteristic of a group, of the desirable which influences the selection from available modes, means, and ends of action" (p. 395).
Guth & Tagiuri (1965)	"A *value* can be viewed as a conception, explicit or implicit, of what an individual or a group regards as desirable, and in terms of which he or they select, from among alternative available modes, the means and ends of action" (pp. 124-125).
Hutcheon (1972)	"…*values* are not the same as ideals, norms, desired objects, or espoused beliefs about the 'good', but are, instead, operating criteria for action…" (p. 184).
Braithwaite & Blamey (1998)	"Values…are principles for action encompassing abstract goals in life and modes of conduct that an individual or a collective considers preferable across contexts and situations" (p. 364).
Friedman, Kahn, & Borning (2006)	"A *value* refers to what a person or group of people consider important in life" (p. 349).

2.2.2 Values as Key Socio-Psychological Construct

Values have been an important socio-psychological construct in social science research which can be understood as "what a person or group of people consider important in life" (Friedman et al., 2006, p. 349). As such, values play a vital role in understanding human decision making. The view that values motivate and explain individual decision making has been widely accepted and values have been acknowledged as a key predictive and explanatory factor in investigating human and social dynamics (Schwartz, 2007). Literature from psychology, sociology, organizational behavior, and political science has suggested that values may underlie and explain a variety of individual and organizational behaviors. Psychologists have found that values are related to personality type (Allport, Vernon, & Lindzey, 1960). In sociology, values have been thought to be useful for describing society's collective consciousness (Durkheim, 1960). In organizational behavior, values influence corporate decisions on strategy (England, 1967) and organizational commitment (Ponser & Schmidt, 1993). In political science, values serve as significant predictors of attitudes toward governmental policies, political parties, and institutions (Schwartz, 2007). To sum up, the importance of values in human and social dynamics is best illustrated by the following statements:

> *Values are determinants of virtually all kinds of behavior that could be called social behavior or social action, attitudes and ideology, evaluations, moral judgments and justifications of self to others, and attempts to influence others* (Rokeach, 1973, p. 5).

2.2.3 Value Measurement

A currently popular approach to measure values is to survey individuals regarding how they would rank or rate the relative importance of items in a given lists of values (Braithwaite & Scott, 1991). The original empirical work was the development of Rokeach Value Survey (RVS), which influenced the Schwartz Value Survey (SVS). In RVS, Rokeach (1973) operationalized his conceptual definition of values as preferred "modes of conduct" and "end-states of existence" using two sets of items. He distinguishes two different types of values: means (instrumental values) and ends (terminal values) through a rank-ordering approach. In his study, respondents were presented with a list of values and their brief definition, and asked to arrange them "in order of importance to you, as a guiding principle in your life" (Rokeach, 1973, p. 27). Schwartz, however, questions the distinction between means and ends and use of ranks in the survey.

Schwartz (1992) proposed a new conceptual framework that is culturally universal in its content and structure. His conceptualization of values helps researchers to distinguish between single values based on the type of motivational goal that they express. In contrast to the rank-ordering approach used in the RVS, Schwartz asks respondents to rate items. He offers justifications for rating as follows:

> "*It [Rating] allows researchers to use longer lists of values and to add alternative values without affecting the ratings of the core values. Rating does not force respondents to discriminate among equally important values or to compare directly values they may experience as incommensurable because one expresses personal, and the other social goals…Rating also enables us to measure*

'negative' values—those people wish not to express or promote in their choices and behavior" (Schwartz, 1994, p. 26).

Although ranking and rating are widely used in values research, values are not always presented in terms of relative importance but often in terms of their specific roles in particular contexts. Ranking and rating in survey can only address a limited range of values and relate them to each other in a limited way. There are methodological issues regarding the problems of accessibility (i.e. people may not know what their values are) and self-report biases (Hitlin & Piliavin, 2004). With these limitations, it is problematic to rely entirely on surveys to understand human values. Content analysis provides an alternative approach to study human values. It provides an unobtrusive analysis of recorded communication such as speeches and testimonies that researchers might detect values an individual was consciously or subconsciously expressed in textual materials while might not want to express in a survey (Fleischmann, Oard, Cheng, Wang, & Ishita, 2009).

Rokeach (1973) conducted a content analysis to analyze samples of writings of key representatives of four ideological positions – socialism, communism, fascism, and capitalism. He counted positive and negative mentions of all terminal and instrumental values including freedom and equality in the documents written by Lenin, Hitler, Barry Goldwater, and several widely-known socialists. In the study, he found support of his two-dimensional model that socialism is located in the high-equality, high-freedom cell while fascism is in the low-equality, low-freedom cell; communism located in the high-equality, low-freedom cell and capitalism is in the low-equality, high-freedom cell.

2.2.4 Value Classifications

Many research efforts on values have been devoted to understanding the structure and classification of values. Rokeach (1973) identified 36 values, which he organized into terminal and instrumental values. Schwartz (1994) specified 56 basic human values that can be grouped into 10 value types arranged in a grid defined by two value dimensions. In this sense, the ways used to characterize values include "efforts toward enumerating the theoretically limited number of values that exist in the world and efforts toward categorizing those values into particular types" (Henry & Reyna, 2007, p. 274).

Value classifications can be approached from various perspectives. As Rescher (1969) argued, consideration of different aspects of classifications can shed further light on understanding the concept of values. He proposed six principles as criteria for classifying values. These principles show that value classifications can be approached from many directions. He differentiated values by (1) the subscribership to the value, in which values can be grouped as *personal values*, *professional or work values*, *national values*, etc.; (2) the objects at issue, in which values can be classified with respect to their appropriate group of objects such as *thing values*, *environmental values*, *individual or personal values*, *group values*, and *societal values*; (3) the sort of benefits at issue, in which values can be projected into a corresponding classification such as *material and physical*, *economic*, *moral*, *social*, *political*, *aesthetic*, *religious (spiritual)*, *intellectual*, *professional*, and *sentimental*; (4) the sort of purposes at issue, in which values can be classified according to the specific type of purpose served by realization of the valued context, such as the *bargaining value* of a certain resource, or the *persuasive value* of an argument; (5) the relationship between subscriber and beneficiary, in which values can be

classified as *self-oriented (or egocentric) values* and *other-oriented (or disinterested) values*; (6) the relationship of the value to other values. In this approach certain values are viewed as subordinate to other values. The subordinate values may be classified as *instrumental* or *mean values*. Self-sufficient values, which are not viewed as subordinate, can be classified as *intrinsic* or *end values*.

Since our definition stipulates that values "serve as guiding principles of what people consider important in life," this study focuses on "the sort of benefits at issue," in which values are classified according to human wants, needs, and interests that are served by their realization.

2.2.5 Overview of Value Inventories

Researchers from various domains have aimed to analyze the structure and classification of values by proposing and developing value inventories that can be adopted in values research. The study reviewed existing value inventories to propose a unified theory-grounded value typology that can be utilized and serve the need for content analysis of human values. By value inventories, the study means that they are lists of items that provide explicit categories for the analysis of human values. These inventories vary in terms of their origins, purposes, the principles of organizing values, the items of values proposed, and their applications. A value inventory not only displays what values categories are available for analysis but also provides a descriptive tool for researchers to locate their discussions of values.

As this study is interested in precise basic human values rather than general value dimensions, only value inventories with distinct categories will be considered. The level of abstraction is an important criterion for selection of value inventories. As such, some

prominent values research that did not provide sufficiently explicit and specific value categories were not selected for this study. For example, Allport et al. (1960) classified six types of values: (1) *theoretical*, (2) *economic*, (3) *aesthetic*, (4) *social*, (5) *political*, and (6) *religious*; Inglehart's (2008) World Values Survey identified two major dimensions of cross-cultural variation: (1) *Traditional/Secular-rational values* and (2) *Survival/Self-expression values*; and Hofstede's (1980) work on organizational cultures identified four dimensions of work values: (1) *power distance*, (2) *uncertainty avoidance*, (3) *individualism versus collectivism*, and (4) *masculinity versus femininity*.

Based on the above criteria, the value inventories reviewed in this study include: (1) Value hierarchy for management decisions (Bernthal, 1962), (2) Personal Value Scale (Scott, 1965), (3) Personal Values Questionnaire (England, 1967), (4) Rokeach Value Survey (Rokeach, 1973), (5) Comparative Emphasis Scale (Ravlin & Meglino, 1987), (6) Managerial moral standards (Bird & Waters, 1987), (7) List of Values (Kahle, Poulos, & Sukhdial, 1988), (8) Shared values in organizations (McDonald & Gandz, 1991), (9) Schwartz Value Survey (Schwartz, 1994), (10) Life Values Inventory (Crace & Brown, 1995), (11) Workplace spirituality values (Jurkiewicz & Giacalone, 2004), and (12) Value Sensitive Design (Friedman et al., 2006). The value inventories presented in this study are by no means exhaustive, but represent a broad range of value inventories from diverse intellectual traditions.

1. Value Hierarchy for Management Decisions (VMD) (Bernthal, 1962)

Bernthal (1962) proposed a model of a hierarchy of values for management decisions that was based on purely rational reasoning. Based on the value hierarchy he

proposed, a manager should be aware of not only the economic consequences of his decision, but also the consequences in terms of different levels of values.

The model includes four levels of values that account for decision criteria that should be applied:

- The business firm level: decision makers seek *profits*, *survival*, and *growth* to ensure ownership welfare.
- The economic system level: decision makers value *allocation of resources*, *production and distribution of goods and services* to pursue consumer welfare.
- The society level: decision makers seek "*the good life*", *culture*, *civilization*, *order*, and *justice* to preserve social welfare.
- The individual level: decision makers emphasize *freedom*, *opportunity*, *self-realization*, and *human dignity* to pursue individual welfare.

2. Personal Value Scale (PVS) (Scott, 1965)

The Personal Value Scale (PVS) is an instrument Scott (1965) designed for examining an individual's concept of ideal relations among people or ideal personal traits. Twelve values were identified through an open-ended survey of college students by asking what traits they admire in others. A multi-question instrument was then constructed to measure students' values.

The PVS was used to analyze the values of individuals as expressed in interpersonal relations. Each value item has a short definition followed by several example questions.

Twelve value items in the PVS are: (1) *intellectualism*, (2) *kindness*, (3) *social skills*, (4) *loyalty*, (5) *academic achievement*, (6) *physical development*, (7) *status*, (8) *honesty*, (9) *religiousness*, (10) *self-control*, (11) *creativity*, and (12) *independence*.

3. Personal Values Questionnaire (PVQ) (England, 1967)

The Personal Values Questionnaire (PVS) is an instrument England (1967) designed for use in a business context to study the value systems of business managers. It was designed from an item pool of 200 concepts selected from the literature dealing with organizations and with individual and group behavior, then the list was refined down to 66 concepts through expert judges and a pilot study of managers.

In the PVS, 66 value concepts were organized into five categories to distinguish values of individuals, organizational goals, and personal goals. However, some concepts do not in and of themselves constitute values. For example, employees, customers, and government are concepts specified as groups of people that are not value-laden.

The PVS contains the following 66 value items organized by five categories:

- Goals of business organizations: *high productivity*, *industry leadership*, *employee welfare*, *organizational stability*, *profit maximization*, *organizational efficiency*, *social welfare*, and *organizational growth*.
- Personal goals and individuals: *leisure*, *dignity*, *achievement*, *autonomy*, *money*, *individuality*, *job satisfaction*, *influence*, *security*, *power*, *creativity*, *success*, and *prestige*.
- Groups of people: *employees*, *customers*, *my co-workers*, *craftsman*, *my boss*, *managers*, *owners*, *my subordinates*, *laborers*, *my company*, *blue collar*

workers, *government*, *stockholders*, *technical employees*, *me*, *labor unions*, and *white collar employees*.

- Ideas associated with people: *ambition*, *ability*, *obedience*, *trust*, *aggressiveness*, *loyalty*, *prejudice*, *compassion*, *skill*, *cooperation*, *tolerance*, *conformity*, and *honor*.
- Ideas about general topics: *authority*, *caution*, *change*, *competition*, *compromise*, *conflict*, *conservatism*, *emotions*, *equality*, *force*, *liberalism*, *property*, *rational*, *religion*, and *risk*.

4. Rokeach Value Survey (RVS) (Rokeach, 1973)

The Rokeach Value Survey (RVS) is a value system Rokeach (1973) established as part of his development of a theoretical connection between values and behavior. Through the RVS, Rokeach operationalized the conceptual definition of values and established a hierarchical organization of values. Values proposed in the RVS were selected largely on an intuitive basis after reviewing literature on values and personality traits (Rokeach, 1973). The RVS has been widely used in psychology and has since become the basis for other value instruments.

The RVS was constructed to distinguish between terminal and instrumental values. In the proposed value system, terminal values are ultimate goals that may be self-centered or society-centered, intrapersonal or interpersonal, while instrumental values are standards that guide conduct of behavior and consist of moral values and competence values (Rokeach, 1973).

The RVS contains the following 36 value items organized into terminal and instrumental values:

- Terminal values: *an exciting life*, *pleasure*, *mature love*, *true friendship*, *inner harmony*, *social recognition*, *a sense of accomplishment*, *family security*, *national security*, *self-respect*, *health*, *a comfortable life*, *freedom*, *salvation*, *equality*, *wisdom*, *a world at peace*, and *a world of beauty*.
- Instrumental values: *ambitious*, *broad-minded*, *capable*, *clean*, *cheerful*, *courageous*, *forgiving*, *helpful*, *honest*, *imaginative*, *independent*, *intellectual*, *logical*, *loving*, *obedient*, *polite*, *responsible*, and *self-controlled*.

5. Comparative Emphasis Scale (CES) (Ravlin & Meglino, 1987)

The Comparative Emphasis Scale (CES) is designed to examine the impact of work values on perception and decision-making tasks. It was designed through surveys of 966 employees at different levels in a variety of organizations and the results of the surveys were sorted into separate value categorized by six independent expert judges (Ravlin & Meglino, 1987). The CES assesses individual preferences and organizational values along the same dimension, enabling examinations of congruence between individual and organization. Four work values identified in the CES are: (1) *achievement*, (2) *helping* (*concern for others*), (3) *honesty*, and (4) *fairness*.

6. Managerial Moral Standards (MMS) (Bird & Waters, 1987)

Bird and Waters (1987) identified and analyzed the moral standards held by managers in their work life. They first interviewed managers to discuss moral issues that have arisen in their daily work and then identified predominant features of these discussions to synthesize normative morale standards invoked by managers. These

managerial moral standards have been applied to managerial ethical decisions and business ethics research.

In comparison to Bernthal's (1962) values for management decisions that distinguishes four levels of values, the managerial morale standards proposed by Bird and Waters is focused on moral standards in everyday decision-making at the individual level.

The values for managerial moral standards are: (1) honesty in communication, (2) *fair treatment*, (3) *special consideration*, (4) *fair competition*, (5) *organizational responsibility*, (6) *corporate social responsibility*, and (7) *respect for law*.

7. List of Values (LOV) (Kahle et al., 1988)

Kahle et al. (1988) designed the List of Values (LOV) to measure consumer attitudes and behavior. It is focused on personal values that apply to people's daily lives. The LOV contains nine values that were derived from Rokeach's list of 18 terminal values, Maslow's (1954) hierarchy of needs, and other values research literature. It has been widely used in advertising and marketing research as well as other fields.

The LOV is based on the importance of people in value fulfillment (Kahle et al., 1988). For example, values can be fulfilled through interpersonal relationships (warm relationships, sense of belonging), personal factors (self-fulfillment, being-well respected), or other needs (security, excitement, fun and enjoyment).

Nine values make up the LOV: (1) *fun and enjoyment*, (2) *warm relationships*, (3) *self-fulfillment*, (4) *being well-respected*, (5) *sense of accomplishment*, (6) *security*, (7) *self-respect*, (8) *sense of belonging*, and (9) *excitement*.

8. Shared Values in Organizations (SVO) (McDonald & Gandz, 1991)

McDonald and Gandz (1991) developed a comprehensive list of organizational values that can account for individual values in relation to organization needs. They first conducted 45 in-depth interviews with people from within and outside of organizations and then used content analysis to generate a pool of value items from the qualitative data. The 358 items generated form the interviews were then selected and aggregated into 24 shared values applicable to business context according to authors' judgments using root concepts from the thesaurus. McDonald and Gandz's list of values has been applied to organizational values and human resources research.

McDonald and Gandz (1991) identified a three-level classification structure linking stakeholder needs, organizational goals, and shared values. They suggested further empirical studies to examine the relationships across these three levels and indicated that individual-organizational value congruence can be assessed through the proposed list of shared values.

The 24 shared values in organizations proposed by McDonald and Gandz (1991) are: (1) *adaptability*, (2) *aggressiveness*, (3) *autonomy*, (4) *broad-mindedness*, (5) *cautiousness*, (6) *consideration*, (7) *cooperation*, (8) *courtesy*, (9) *creativity*, (10) *development*, (11) *diligence*, (12) *economy*, (13) *experimentation*, (14) *fairness*, (15) *forgiveness*, (16) *formality*, (17) *humor*, (18) *initiative*, (19) *logic*, (20) *moral integrity*, (21) *obedience*, (22) *openness*, (23) *orderliness*, and (24) *social equality*.

9. Schwartz Value Survey (SVS) (Schwartz, 1994)

The Schwartz Values Survey (SVS) is an instrument that Schwartz (1994) created as a result of value surveys conducted in 44 countries as well as a thorough study of

social psychological value theories. The SVS specifies the dynamic relations among the motivational value types leading to a three-level hierarchy containing 56 basic human values. It provides a conceptual framework that is culturally universal in its context and structure. The SVS has both theoretical and empirical grounding and has been applied to various domains such as social psychology and political science (Schwartz, 2007).

The SVS is organized in a three-level hierarchy, including 4 1st-level "value dimensions," 10 2nd-level "value types," and 56 3rd-level "basic human values." These value types can be visualized in a two-dimensional space where one dimension is defined by the spectrum from conservation to openness to change and the other dimension is defined by the spectrum from self-enhancement to self-transcendence (Schwartz, 1994).

The SVS contains the following 56 basic human values categorized into 10 value types (Schwartz, 1994):

- *Power*: *social power*, *authority*, *wealth*, *preserving my public image*, and *social recognition*.
- *Achievement*: *successful*, *capable*, *ambitious*, *influential*, *intelligent*, and *self-respect*.
- *Hedonism*: *pleasure*, and *enjoying life*.
- *Stimulation*: *daring*, *a varied life*, and *an exciting life*.
- *Self-direction*: *creativity*, *curious*, *freedom*, *choosing own goals*, and *independent*.
- *Universalism*: *protecting the environment*, *a world of beauty*, *unity with nature*, *broad-minded*, *social justice*, *wisdom*, *equality*, *a world at peace*, and *inner harmony*.

- *Benevolence*: *helpful*, *honest*, *forgiving*, *loyal*, *responsible*, *true friendship*, *a spiritual life*, *mature love*, and *meaning in life*.
- *Tradition*: *devout*, *accepting portion in life*, *humble*, *moderate*, *respect for tradition*, and *detachment*.
- *Conformity*: *politeness*, *honoring of parents and elders*, *obedient*, and *self-discipline*.
- *Security*: *clean*, *national security*, *social order*, *family security*, *reciprocation of favors*, *healthy*, and *sense of belonging*.

10. Life Values Inventory (LVI) (Crace & Brown, 1995)

The Life Values Inventory (LVI) was developed by Crace and Brown (1995) to assess values that guide behavior and decision-making. It contains 14 values that were generated from an initial pool of 190 items selected from the values literature and has been validated through pilot studies and evaluated by domain experts. The LVI has been used in counseling, therapy, and team development (Brown & Crace, 2002).

The LVI explains values in the decision-making process and the satisfaction that results from roles related decisions. It tries to identify the congruence between an individual's values and the roles of the individual in a society and attempts to bridge the gap between work values inventories and general values inventories (Brown & Crace, 2002).

The 14 value items in the LVI are: (1) *achievement*, (2) *belonging*, (3) *concern for the environment*, (4) *concern for others*, (5) *creativity*, (6) *financial prosperity*, (7) *health and activity*, (8) *humility*, (9) *independence*, (10) *interdependence*, (11) *objective analysis*, (12) *privacy*, (13) *responsibility*, and (14) *spirituality*.

11. The Value Framework of Workplace Spirituality (VWS) (Jurkiewicz & Giacalone, 2004)

Jurkiewicz and Giacalone (2004) proposed a framework of organizational values that promote employees' experience of transcendence through the work process. The values selected in the framework are largely based on an intuitive basis culled from the theoretical work on workplace spirituality and have a positive impact on employee and organizational performance. Jurkiewicz and Giacalone (2004) argued that varying degrees of values of workplace spirituality can be recognized in an organization through its work process, policies, and practices.

The values proposed by Jurkiewicz and Giacalone (2004) are: (1) *benevolence*, (2) *generativity*, (3) *humanism*, (4) *integrity*, (5) *justice*, (6) *mutuality*, (7) *receptivity*, (8) *respect*, (9) *responsibility*, and (10) *trust*.

12. Value Sensitive Design (VSD) (Friedman et al., 2006)

Value Sensitive Design (VSD) was created by Friedman et al. (2006) for examining human values implicated in technology design. It was derived from an integrative and iterative tripartite methodology consisting of conceptual, empirical, and technical investigations and has been applied to human-computer interaction and information science.

VSD not only focuses on the usability principles that underpin the design of technology but also accounts for ethical values in a principled and comprehensive manner throughout the design process. In contrast to traditional criteria of system design, which is focused on usability, reliability, and correctness, the VSD emphasized the needs for human values with ethical import as a central design criterion (Friedman et al., 2006).

Key values the VSD identified for design and use of technology are: (1) *human welfare*, (2) *ownership and property*, (3) *privacy*, (4) *freedom from bias*, (5) *universal usability*, (6) *trust*, (7) *autonomy*, (8) *informed consent*, (9) *accountability*, (10) *courtesy*, (11) *identity*, (12) *calmness*, and (13) *environmental sustainability*.

2.2.6 Meta-Analysis of Value Inventories

Examining the 12 value inventories presented in previous section, three approaches of designing value inventories can be identified: (1) rational-theoretical inventories, (2) empirically-based inventories, and (3) theoretical-empirical inventories (see table 2-5).

- Rational-theoretical inventories could be conceptualized based on purely rational or a priori inventories. For example, the VMD (Bernthal, 1962), the PVQ (England, 1967), the RVS (Rokeach, 1973), and the VWS (Jurkiewicz & Giacalone, 2004) are rational-theoretical inventories.
- Empirically-based inventories imply that value items are directly derived from empirical data based on survey, interview, or content analysis. For example, the PVS (Scott, 1965), the CES (Ravlin & Meglino, 1987), the MMS (Bird & Waters, 1987), and the SVO (McDonald & Gandz, 1991) are empirically-based inventories.
- Theoretical-empirical inventories are developed through an initial rational or theoretical selection of items that can be put into an empirical test to get results. For example, the LOV (Kahle et al., 1988), the SVS (Schwartz, 1994), the LVI (Crace & Brown, 1995), and the VSD (Friedman et al., 2006) are theoretical-empirical inventories.

Table 2-5 Comparison of Value Inventories

Instrument	Items	Source	Method	Origin/Sample	Purpose
VMD	14	Bernthal (1962)	Theory	Derive from literature	use a hierarchy of values to explain management decisions
PVS	12	Scott (1965)	Survey	open-question survey of 130 college students	examine an individual's concept of ideal relations among people or ideal personal traits
PVQ	66	England (1967)	Theory	refine from an item pool of 200 concepts selected from literature	study the value system of business managers
RVS	36	Rokeach (1973)	Theory	intuitive; review literature on values and personality traits; interview individuals	build a theoretical connection between values and behavior
CES	4	Ravlin & Meglino (1987)	Survey	the survey results were sorted into separate value categories by six independent expert judges	examine the impact of work values on perception and decision-making
MMS	7	Bird & Waters (1987)	Interview/ Content Analysis	interview 193 managers	examine the moral standards held by managers in their work life
LOV	9	Kahle, Poulos, & Sukhdial (1988)	Theory/ Interview/ Survey	derive from Rokeach list of 18 terminal values and Maslow's hierarchy of needs; interview and survey 997 respondents	measure consumer attitudes and behavior based on personal values
SVO	24	McDonald & Gandz (1991)	Interview/ Content analysis	interview 45 business managers, consultants, recruiters, and employees; content analysis was used to generate a pool of value items	develop a list of organizational values that can account for individual values in relation to organization needs
SVS	56	Schwartz (1992)	Theory/ Survey	derive from literature; 9,140 respondents of 40 samples in 20 countries	identify a universal set of values which would not only operate on the cultural level but also at the individual level
LVI	14	Crace & Brown (1995)	Theory/ Survey	derive from literature; 4 stages of development (item development-testing-revision-validation)	assess values that guide behavior and decision-making
VWS	10	Jurkiewicz & Giacalone (2004)	Theory	derive from literature	identify the values of workers in relation to organizational performance
VSD	13	Friedman, Kahn, & Borning (2006)	Theory/ Investigation	derive from conceptual, empirical, and technical investigations	examine how human values can and should be implicated in technology design

Among these three approaches to value inventory design, scholars expressed concern about the subjectivity that a rational-theoretical inventory could have in identifying the value items and the number of values to be included in the inventory. Hofstede (1980) noted that "inspection of a number of instruments designed to measure human values makes it clear that the universe of all human values is not defined and that each author has made his or her own subjective selection from this unknown universe, with little consensus among authors" (p. 22).

In addition to inventory designing approaches, these 12 value inventories can be compared on the basis of their underlying structures and level of analysis. Generally speaking, the PVS (Scott, 1965), the RVS (Rokeach, 1973), the SVS (Schwartz, 1992), and the LVI (Crace & Brown, 1995) were designed to measure general individual values; The PVQ (England, 1967), the VMD (Bernthal, 1962), the SVO (McDonald and Gandz, 1991), and the MMS (Bird & Waters, 1987) were designed to measure managerial values; The CES (Ravlin & Meglino, 1987), and the VWS (Jurkiewicz & Giacalone, 2004) were designed to measure work values; The LOV (Kahle et al., 1988) was designed to measure consumer values, and the VSD (Friedman et al., 2006) was designed for technology design. Specifically, Bernthal's (1962) value hierarchy for management decisions, and McDonald and Gandz's (1991) shared values in organizations provide hierarchical structure to address different levels of values. Unlike Bernthal's (1962) four distinct levels of values, McDonald and Gandz (1991) tried to measure individual-organizational value congruence in the same dimension. Involving this wide range of inventories within the meta-inventory ensures that the values of various relevant stakeholder groups are

represented, forming a bridge between the individual and organizational levels of analysis while also incorporating other factors.

The majority of these value instruments were designed for survey research, while the VMD (Bernthal, 1962) was used to explain management decisions, the MMS was developed to identify normative moral standard, and the VSD (Friedman et al., 2006) was designed to inform technology and system design. Although some of these value instruments were widely used, they are not one-size-fits-all lists applicable under all circumstances. It is, therefore, important to synthesize these inventories to develop a meta-inventory that can be tailored by researchers to measure human values in an integrative and comprehensive manner. The approach used to synthesize these inventories and developed a meta-inventory of human values for content analysis is discussed and detailed in section 4.3.1.

2.2.7 Values in Policy Analysis

The development of telecommunication technologies has significant impact on political processes and often compels governments to alter policies to fit such evolution (McClure & Jaeger, 2008). Specific values such as accountability, accessibility, security, and privacy are therefore critical to be allocated and realized in policy analysis in this new technological environment (Relyea, 2008). As such, values and policy are interrelated. Values influence policy goals, decisions, and implementation. At the same time, policy analysis also influences the values of participants in the policy-making process and of people affected by this process.

Values can shape telecommunications policy. Bauer (1994) asserted that the design of telecommunications policy is "based on reference concepts and policy

objectives that, in turn, inevitably incorporate some value elements" (p. 20). These values can be based on general, presumably widely accepted concepts such as efficiency, justice, and equity (Bauer, 2004). Just (2009) also argued that telecommunications policy "conveys values and ideas and contribute to fulfilling several public functions (e.g. socialization, orientation, recreation, articulation, education, critique and control)" (p. 98).

Values of stakeholder groups are also integral parts of policy analysis. As claimed by Fischer (1980), "the validity of a political argument is determined by its ability to withstand the widest possible range of objections and criticism in an open, clear and candid exchange between the relevant participants (p. 206)." Thus, policy analysts cannot avoid the importance of stakeholders' values in their work. Policy analysts should bring up discussions about policy problems and consequences so that all stakeholders who can affect the policy or whom the policy can affect can express their values through public discussion (Forester, 1985). As such, value differences among each stakeholder group affect the nature of policy analysis. Analysis of values of stakeholders can strengthen policy arguments and alter the state of ongoing policy debates (Schwartz, 2007).

Several empirical studies have established a connection between values and political attitudes and behavior. Caprara et al. (2006) examined the relationship between voters' value priorities and choices of party in national elections in Italy and found motivational compatibility of value types with choice of political party. In the study, they found the choice of party from the left–center coalition was positively correlated with "universalism" and "benevolence", and negatively correlated with "power," "security," and "achievement". Devos, Spini, and Schwartz (2002) investigated how value priorities

are related to trust in social institutions. The results indicated that trust in social institutions was positively correlated with "power," "tradition," "conformity," and "security." Spini and Doise (1998) investigated the relationships between the ten value types from the SVI and involvement in human rights. The results indicated that involvement in human rights was positively correlated with "universalism" and negatively correlated with "hedonism."

These empirical studies illustrate that values are significant predictors of attitudes toward governmental policies, political parties, and institutions. Values influence both individual choices and societal policy directions. Analysis of values within ongoing policy debates can help predict and explain individual and societal choices (Schwartz, 2007). Values also play an important role in decision-making in information management (Fallis & Whitcomb, 2009), especially within ongoing telecommunications policy debates such as Net neutrality. This study examines the role that values can serve in understanding the motivations of stakeholders in the Net neutrality debate.

Chapter 3: Methodology

As discussed in Chapter 1, the purpose of this study is to (1) develop a unified theory-grounded value typology through literature and qualitative analysis of public hearings; and (2) conduct an in-depth quantitative analysis of public hearings to get insights into the role of values in Net neutrality debate. To achieve these goals, this study employs both qualitative and quantitative content analysis to identify and analyze people's values toward Net neutrality regulation. This Chapter describes the purpose and rationale of research methods, outlines the framework of the study, and describes the procedures of qualitative coding scheme development and statistical methods for quantitative analysis of public hearings.

3.1 Content Analysis

Content analysis is an established research method for systematic examination of textual materials that has been adopted by a wide range of academic disciplines, including communications, psychology, sociology, organizational research, and political science, and which incorporates a wide range of theoretical frameworks, methods, and analytical techniques (Denzin & Lincoln, 2000). Berelson (1952) defined content analysis as "a research technique for the objective, systematic and quantitative description of the manifest content of communication" (p. 18). It limited the scope of content analysis to quantitative studies of the manifest characteristics of messages. Holsti (1969), however, provided no restriction on the quantitative description of manifest content. He defined content analysis as "any technique for making inferences by objectively and systematically identifying specified characteristics of messages" (Holsti, 1969, p. 2). Woodrum (1984) also contended that content analysis provides methods for measuring

the characteristics of both manifest and latent communications. As Abrahamson (1983) suggested, "content analysis can be fruitfully employed to examine virtually any type of communication" (p. 286). In this regard, content analysis may focus on either quantitative or qualitative analysis of communication messages.

Krippendorff (1980) provided a broad definition: "content analysis is a research technique for making replicable and valid inferences from data to their context" (p. 21). He argued that content analysis is a reliable and replicable research technique and emphasizes the relationship between the content of texts and their institutional, societal, or cultural context (Krippendorff, 1980). Shapiro and Markoff (1997), however, found Krippendorff's definition does not specify the kind of data and the meaning of the context. They reviewed six major definitions from various sources in the social sciences and later proposed a minimal definition of content analysis as "any methodical measurement applied to text for social sciences purposes" (Shapiro & Markoff 1997, p. 14). They argued that content analysis refers to not only the measurement of subjective phenomena but the measurement of objective facts as well. Riffe et al. (1998) defined content analysis as "the systematic assignment of communication content to categories according to rules, and the analysis of relationships involving those categories using statistical methods" (p. 18). In their definition, the process of analysis and the use of statistical methods are emphasized.

Integrating definitions delineated previously for the purpose of this study, content analysis is adapted as "a reliable research technique that involves specialized procedures assigning communication content to categories according to rules, and the analysis of relationships involving those categories using statistical methods."

3.1.1 Content Analysis as an Effective Approach to Understand Human and Social Dynamics

Social scientists have been paying increasing attention to the importance of language for studying human and social dynamics. Content analyses are most successful when they focus on facts that constituted in language (Krippendorff, 2004). Language serves as the primary vehicle by which people communicate and record information. It has the potential for expressing an enormous range of ideas, and for conveying complex thoughts succinctly. It is used to convey knowledge and to understand the knowledge conveyed by others. Researchers are, therefore, trying to explore some aspects of social science research from a linguistic point of view (Alvesson & Karreman, 2000). As claimed by Duriau, Reger, and Pfarrer (2007) "the value of content analysis as a research methodology is the recognition of the importance of language in human cognition" (p. 6). Through the analysis of texts, researchers can understand other people's cognitive schemas in human and social dynamics. In this sense, people's values, intentions, attitudes, and cognitions can be access and analyzed by using content analysis (Duriau et al., 2007).

The ability for content analysis to understand human and social dynamics from language is based on the fact that content analysis involves systematically interpreting explicit and implicit characteristics of recorded messages. Interpreting the content of human language is one useful way (among many) to inform the process of making sense of the world. Written transcripts of speeches and interviews, written documents (e.g., newspapers, popular magazines, trade press, and journal articles), and electronic documents (e.g., e-mail, Web sites, blogs, and online forums) can all be the subject of

such analysis. The methodology is based on the assumption that the analysis of text is a way for researchers to understand how people make sense of the world around them (McKee, 2003). Scholarly treatises, corporate reports, and political documents all use language to represent a part of reality. Social scientists, especially political scientists and communication researchers, have a tradition of analyzing text in various media to understand the different purpose, focus, and techniques employed.

3.1.2 Strengths and Weaknesses of Content Analysis

The greatest advantage of content analysis is its economy in terms of both time and money (Babbie, 2004). Generally, the materials necessary for conducting content analysis are easily and inexpensively accessible. As long as one has access to the material to be analyzed, one can undertake content analysis as a research method. Thus, content analysis has broad applicability and can be employed by a large and diverse set of researchers.

Content analysis is also convenient in that it is unobtrusive (Webb, Campbell, Schwartz, Sechrest, & Grove, 1981). The data used in content analysis typically already exists in the world, and thus no major effort needs to be made to obtain this data from human subjects. Content analysis also typically involves public available data, reducing or eliminating the risk to human subjects that needs to be addressed through an IRB process. Through the use of pre-existing, publicly available content, content analysis has little or no effect on the textual materials studied or their authors, reducing the risks to human subjects and the need to undergo review by an Institutional Review Board as is often the case for other social science research methods.

A third advantage of content analysis is that it permits the study of processes occurring over a long time (Babbie, 2004). Typically, longitudinal studies in social science research would be highly problematic, requiring large amounts of time and resources as well as continued contact with and participation of human subjects. Further, there is often a limited window in which data can be collected, as memories tend to fade over time and only individuals who are still living can be surveyed or interviewed. However, texts to be coded through content analysis typically tend to be less ephemeral, especially in the information age. Libraries and archives store large collections of texts to be analyzed. Thus, content analysis can explore a wide range of time periods and perspectives.

Finally, another advantage of content analysis is that it allows for the correction of errors (Woodrum, 1984). For researchers conducting a survey or an experiment, they may be forced to repeat the whole research process. In content analysis, it is easier to repeat a portion of the study than it is in other research methods. Researchers can code and recode to make certain that coding is consistent. Also, repeatability of research is enhanced, allowing other researchers with access to the same data to repeat the research design to attempt to achieve the same results. Due to the observer effect and the need for anonymity typically found in survey, interview, and experimental studies, such repeatability is less precise and potentially problematic. Thus, content analysis is highly correctable and repeatable.

Although content analysis has several advantages, it has challenges as well. First, content analysis is painstaking work, requiring significant time and effort to code data. Large-scale studies are thus problematic or impractical due to the time and effort required

to complete the analysis (Riffe et al., 1998). Second, human coders are subject to various degrees of bias and inconsistency. Content analysis always raises questions related to reliability. To solve the challenge of achieving good inter-coder reliability, content analysis requires significant training on the part of the analysts. Researchers must be highly trained to use this approach. This limitation limits the applicability of this method.

3.1.3 Content Analysis in Research on Policy and Values

Policy research utilizing content analysis to study values is widely used in the field of natural resources management (Bengston, Webb, & Fan, 2004; Bengston, 1994) and health policy (Giacomini, Hurley, Gold, Smith, & Abelson, 2004). Through the review of relevant literature, the study provides insight of how content analysis can be applied to values research in policy domain.

Giacomini et al. (2004) conducted a qualitative content analysis of values in health policy. They investigated the following two questions: (1) what sorts of entities do Canadian health reformers typically call 'values'? and; (2) how do Canadian health reformers use the idea of values in health reform rhetoric? They analyzed 36 Canadian health reform documents published during the period 1990–1999. They found values raised in Canadian health reform rhetoric vary widely not only in topic (e.g. health states, health services, equity, economic viability, concerning relationships, pride, dignity, identity, and quality.) but also in substance (e.g. goodness, physical entities, goals, principles, attitudes, specific goals and attitude and feelings). They adopted inductive method to create coding scheme and coded documents followed by grounded theory procedures, i.e.:

"initial reading for emergent themes; organization of themes into conceptual relationships and higher order categories; refining and developing dominant categories and relationships amongst categories; and finally arranging categories into frameworks that include dynamics (e.g. influences on definitions, connotations, etc.) within and between categories. At each stage of analysis, the data were revisited for critical comparison with the emerging conceptual findings" (Giacomini et al., 2004, p. 18).

They found the concept of "values" has become a fundamental element of policy analysis, but still need more empirical and conceptual insight into the structure of prospective values reasoning.

Bengston et al. (2004) conducted research examining three forest value orientations in the public discourse about forest planning, management, and policy in the United States. The value orientations include anthropocentric, biocentric, and moral/spiritual/aesthetic orientations toward forests. Computer coded content analysis was used to identify shifts in the relative importance of value orientations over the period 1980 through 2002. Data for analysis consisted of 8,379 news stories are retrieved from LexisNexis online commercial database. They developed computer instructions to score paragraphs in the database for expressions related to forest value orientations, and assessing the validity of the computer coding.

They found the share of expressions of anthropocentric forest value orientations declined over the study period, while the share of biocentric value expressions increased. Moral/spiritual/aesthetic value expressions remained constant over time. The observed shifts in forest value orientations have implications for identifying appropriate goals for

public forest management and policy, developing socially acceptable means for accomplishing those goals, and dealing with inevitable conflict over forest management.

Although content analysis is an important research method for its great potential for studying human values and has been applied to some policy domain, it is still an underexplored technique for understanding human values in the realm of telecommunications policy.

3.1.4 Qualitative and Quantitative Content Analysis

This study uses both qualitative and quantitative content analysis of testimonies from public hearings to explore the values expressed by various stakeholders in different venues over periods of time. By assigning numeric values to categories in a given content, quantitative content analysis strives for a different perspective than comparing content based on the impressions of some specific audience might provide. The content analysis employed in this study does not involve counting words or other objective features of the text, but rather that coding subjective phenomena of communication content, what might be called qualitative content analysis (Shapiro & Markoff, 1997). Qualitative content analysis examines themes and patterns that appear or are latent in the manifest content (Berg, 2001). Qualitative data analysis facilitates capturing both manifest and latent meanings dealing with judgments, evaluations, and interpretations of the content. Thus, this study employs qualitative approaches to identify and analyze values in Net neutrality testimonies and then subject the results of that qualitative coding to quantitative analysis.

3.2 Research Design

Content analysis is a systematic method that relies on several procedures for handling texts in order to answer research questions and test hypotheses (Weber, 1990). According to Neuendorf (2002), the procedures of content analysis include identifying the problem, conceptualizing and operationalizing decisions, developing coding schemes, sampling, coding (applying statistical procedures), and interpreting and reporting results. Bos and Tarnai (1999) also introduced a procedure for analyzing content, which include theoretical level, establishment of categories, pretest, data collection and evaluation, and interpretation of the results.

Adapting the content analysis procedure proposed by Bos and Tarnai (1999), this study is conducted firstly by operationalization based on the theoretical level including forming the research outline, identifying the research questions and deciding the material to investigate (the corpus); second, developing a unified theory-grounded value typology through intensive literature review and qualitative analysis of public hearings; third, creating coding instructions, conducting coder training, and implementing one or more pretests to evaluate the reliability of the value typology; fourth, coding the entire corpus based on the value typology and coding instructions; fifth, using appropriate statistical analysis to evaluate; and finally, giving an adequate interpretation and discussion of the results in terms of how well they answer the research questions and fulfills the study's purpose. The research procedure of this study is demonstrated in figure 3-1.

Along the research procedure, this section discusses the corpus, the unit of analysis, the qualitative methods for coding scheme development, the quantitative method for analyzing public hearings, and the inter-coder reliability assessment.

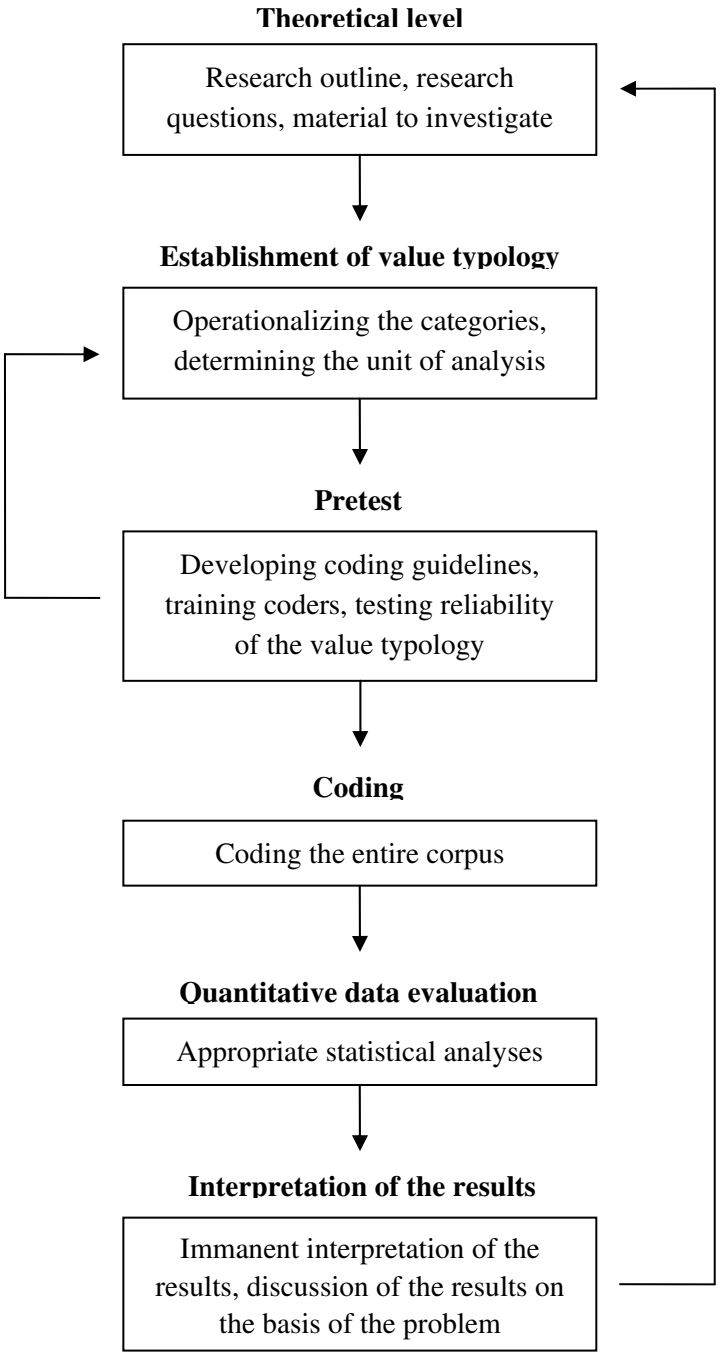

Figure 3-1 Research Procedure of Content Analysis

3.2.1 The Corpus

The corpus for this study includes testimonies from public hearings in which various stakeholder groups express values and positions on Net neutrality. The selection of public hearings as the discourse for analysis is because public hearings serve as forums to gain insights and information about the consequences of various policy proposals. They provide useful data points that help to expose the values of various stakeholders, although it is important to note that such testimonies are often carefully crafted and polished statements that may reflect values that the authors intend to convey as well as values held deeply by the authors themselves. As such, this analysis, like all aspects of public hearings, must be viewed critically, not as absolute reality, but rather as one useful perspective on reality. This study focuses on testimonies by individuals from different stakeholder groups at public hearings.

Data collected for this study included written opening statements and testimonies prepared for and delivered at public hearings held by the U.S. Congress and the FCC. Lexis-Nexis Congressional was used to query the Congressional testimonies. The congressional documents contained opening statements and prepared testimonies (referred to henceforth as "testimonies") by representatives were selected. The text of bills, records of congressional transactions, or supporting documents presented by representatives are not included in this study. These testimonies can be retrieved either from Lexis-Nexis Congressional or the Congress websites. Public hearings held by the FCC were queried and downloaded from the FCC website. The testimonies retrieved from Lexis-Nexis Congressional or Congress and the FCC websites were then reviewed.

Documents without full-text content or only with slides representations were eliminated. A final set of 102 documents was selected for study, as detailed in Appendix B.

3.2.2 Unit of Analysis

The unit of analysis refers to the basic unit of text to be classified during content analysis. Holsti (1969) defines a recording unit as "the specific segment of content that is characterized by placing it in a given category" (p.116). For social science researchers, defining the unit of analysis is one of the most fundamental and important decisions for content analysis. In traditional quantitative content analysis, there are six commonly used coding units: word, word sense (concept), sentence, paragraph, whole text, and theme (Weber, 1990). These units can be used in combination in one study. In qualitative content analysis, themes were most widely used meaningful units for analysis rather than physical linguistic units (Berg, 2001). The themes can be expressed in single words, phrases, sentences, paragraphs, or entire documents.

The unit of analysis for this study is the sentence (as opposed to word, phrase, paragraph, or document), although all sentences are analyzed within the context of the document in which they were contained. The adoption of sentence as the analysis unit was because individual words or phrases cannot provide meaningful basis for values that someone espouses without a sentence or sentences within the context. Paragraphs or documents cannot distinguish the amount of value disclosure that stakeholders invoked in their testimonies. Sentences are the basis of what stakeholders produce to convey their ideas in the testimonies and are what testimonies consist of. As every sentence is viewed as having a coherent syntactic structure, a sentence is an elementary discourse unit forms

the basis coding decisions. As such, each sentence is coded as a specific value or multiple values expressed explicitly or reflected implicitly, or as being free of values.

Coding was performed on a total of 9,513 sentences. Among the 9,513 sentences, 1,640 sentences were coded as being free of values. Therefore, the analysis included a total of 7,873 sentences, or approximately 82.8 percent, were coded with at least one of the six value categories (see the final coding scheme in table 4-8). After coding the entire corpus, the position of each speaker toward Net neutrality (pro, con, or other) was identified based on the arguments made in the testimonies. Table 3-1 shows the number of sentences that were coded as reflecting zero or more specific values based on the positions. Among the 102 speakers testified in the public hearings related to Net neutrality, 55 were coded as pro, 40 were coded as con, and seven were coded as other (including not taking a stand on Net neutrality and advocating both pro and con). Although the total number of sentences coded for pro and con are nearly balanced, the average sentences coded for con (Mean=106.37) were larger than pro (Mean=88.93).

Table 3-1 Number of Sentences

	N	Minimum	Maximum	Sum	Mean	SD
Pro	55	10	254	4891	88.93	62.49
Con	40	10	658	4255	106.37	118.47
Other	7	13	144	367	52.43	44.89
Total	102	10	658	9513	93.26	88.44

3.2.3 Coding Scheme Development

One major objective of this study was to develop a typology serves as a coding scheme for locating values for telecommunications policy research. Coding schemes can be developed both inductively and deductively (Mayring, 2000). In studies where no theories are available, researchers need to generate categories inductively from the data.

When developing categories inductively from raw data, researchers are suggested to use constant comparison method in that it is not only able to stimulate thoughts but also able to make differences between categories apparent (Glaser & Strauss, 1967). When there is a rough category system derived from theory or previous related research, researchers may use it as an initial list for a coding scheme that could be tested and modified. A coding scheme is therefore generated deductively. As Mayring (2000) stated, the main idea of deductive category development is to give explicit definitions, examples and coding rules for each deductive category, determining exactly under what circumstances a text can be coded into a category.

This study incorporates both inductive and deductive methods in developing a coding scheme to analyze values about the Net neutrality debate. The coding scheme was developed through iterative processes combining both top-down processing based on a priori value classifications through literature and "data driven" processing through the analysis of testimonies from public hearings. The process of coding scheme development is detailed in chapter 4.

3.2.4 Inter-Coder Reliability Assessment

To provide meaningful conclusion about values in the Net neutrality debate, it is important to establish reliability in the coding process. Inter-coder reliability can be defined as the extent to which different coders, each coding the same content, come to the same coding decisions. After coding the text, coding consistency needs to be checked. Human coders are subject to fatigue and are likely to make more mistakes as the coding proceeds. Also, their understanding of the categories and coding rules may change subtly

over time, which may lead to greater inconsistency (Miles & Huberman, 1994; Weber, 1990).

There are a number of indexes used to report inter-coder reliability such as percent agreement, Holsti's method (Holsti, 1969), Scott's pi (Scott, 1955), Cohen's kappa (Cohen, 1960), and Krippendorff's alpha (Krippendorff, 2004). Although there is no general consensus on what index should be used (Rust & Cooil, 1994), Cohen's kappa, which takes into account the agreement occurring by chance, was used in this study to calculate inter-coder reliability. A free online tool called ReCal was used to compute the kappa score for each value category (Freelon, 2010).

Landis and Koch's (1977) benchmarks were used to interpret the Kappa values. Table 3-2 describes the benchmark scale that Landis and Koch proposed: $\kappa<0.00$ – no agreement beyond that which would be expected by chance; $\kappa=0.00$-0.20 – slight agreement; $\kappa=0.21$-0.40 – fair agreement; $\kappa=0.41$-0.60 – moderate agreement; $\kappa=0.61$-0.80 – substantial agreement; and $\kappa=0.81$-1.00 – almost perfect agreement. Landis and Koch's benchmarks were recommended as a useful guideline for practitioners, although the specific endpoints of the benchmarks are somewhat arbitrary (Everitt, 1992).

Table 3-2 Landis and Koch Kappa's Benchmark Scale

Kappa Statistic	Strength of Agreement
< 0.00	No/Poor
0.00 to 0.20	Slight
0.21 to 0.40	Fair
0.41 to 0.60	Moderate
0.61 to 0.80	Substantial
0.81 to 1.00	Almost Perfect

To test inter-coder reliability, Wimmer and Dominick (1991) suggested researchers to conduct a pilot on a sample of the "content universe" and assuming satisfactory results, then to code the entire corpus. The researcher was the primary coder who conducted the entire coding of this study. Two undergraduate students were recruited and trained to code sample documents to test the inter-coder reliability during the iterative processes of coding scheme modification. The stability of the coding scheme was compared among three coders and the results revealed that the researcher and one of the undergraduate students achieved consistent agreement in the coding process. The inter-coder reliability reported in this study was then compared based on the coding of the researcher and the undergraduate student who achieved better coding consistency.

3.2.5 Quantitative Data Analysis

After the coding scheme has been developed and the coding rules have been revised through the iterative processes, coding can be applied to the complete corpus and quantitative analysis approach can be performed to understand the role of values in the Net neutrality debate.

The purpose of quantitative analysis is to answer the research questions. Several quantitative methods can be used to analyze the data collected. Once data have been collected, one of the simplest summarizing techniques is to display the results in terms of frequencies with which the values of a variable occurred. Mean and median also provide a reference point for what is most common or typical in a group. The significance of differences can also be tested. Kriskal-Wallis and Mann-Whitney U tests will be used in this study to compare the distributions of values included in testimonies coded based on different positions, stakeholders, venues, and time.

Kruskal-Wallis test is a non-parametric method for testing equality of population means. Since it is a non-parametric method, the Kruskal-Wallis test does not assume a normal distribution (Kruskal & Wallis, 1952). Mann-Whitney U is the non-parametric counterpart of a two-sample t-test for independent means (Hinkle, Wiersma, & Jus, 2003). It provides identical results with the Kruskal-Wallis test for two independent samples. It is robust and requires fewer assumptions than a t-test, and thus the use of the Mann-Whitney U test is more likely to yield false-negative results than false-positive results (i.e. values not found to be statistically significantly different within this sample might be found to be statistically significant given a larger sample, but values that were found to be statistically significant are strong and reliable results). In preliminary analyses, the assumptions of normal distribution and homogeneity of variances were not met for all comparisons. Therefore, to maintain consistency, all tests were performed using non-parametric tests. Boxplots are used to compare positions, stakeholders, venues, and time in Net neutrality debate for depicting the entire distribution of results wherever the Mann-Whitney U test revealed statistically significant differences.

Chapter 4: Developing a Meta-Inventory of Human Values

This chapter describes how a unified theory-grounded value typology was developed and refined through the iterative processes combining both top-down processing based on a priori value classifications through literature and "data driven" processing through the analysis of testimonies from public hearings, and how the coding schemes are tested for reliability.

4.1 Iteration One: The Schwartz Value Inventory

The Schwartz Value Inventory (SVI), which contains 56 value items with short descriptions, is the initial coding scheme of this study (see table 4-1). Rationale for using the SVI as the initial coding scheme was because the SVI was developed and validated through cross-cultural survey research that could provide a theoretical foundation for the analysis of values of stakeholders in the Net neutrality debate and the universality of the SVI also makes data under study capable of being places into a category.

Schwartz's value theory has received wide recognition among researchers across various disciplines and the generality of the SVI has been tested with diverse cultural, linguistic, geographic, religious, and racial groups and can be applied to various domains. In psychology, the SVI has been used to explore the relationship between behavior and value conflicts (Schwartz & Bilsky, 1987; Schwartz, 1992; Schwartz, 2007). In marketing research, the SVI has been used to explain specific aspects of consumer behavior (Grunert & Juhl, 1995). In political science, the SVI has been used to examine the relations between values and party affiliation (Schwartz, 1996; Caprara et al., 2006), the relations of people's trust in institutions to their value priorities (Devos et al., 2002),

and the relations between organizing principles of involvement in human rights and their anchoring in value priorities (Spini & Doise, 1998).

Table 4-1 Schwartz Value Inventory (Schwartz, 1994)

Items from Schwartz's Value Survey	
Power	**Benevolence**
1. Social power (control over others, dominance)	31. Helpful (working for the welfare of others)
2. Authority (the right to lead or command)	32. Honest (genuine, sincere)
3. Wealth (material possessions, money)	33. Forgiving (willing to pardon others)
4. Preserving my public image (protecting my "face")	34. Loyal (faithful to my friends, group)
5. Social recognition (respect, approval by others)	35. Responsible (dependable, reliable)
Achievement	36. True friendship (close, supportive friends)
6. Successful (achieving goals)	37. A spiritual life (emphasis on spiritual not material matters)
7. Capable (competent, effective, efficient)	
8. Ambitious (hard-working, aspiring)	38. Mature love (deep emotional and spiritual intimacy)
9. Influential (having an impact on people and events)	39. Meaning in life (a purpose in life)
10. Intelligent (logical, thinking)	**Tradition**
11. Self-respect (belief in one's own worth)	40. Devout (holding to religious faith and belief)
Hedonism	41. Accepting portion in life (submitting to life's circumstances)
12. Pleasure (gratification of desires)	
13. Enjoying life (enjoying food, sex, leisure)	42. Humble (modest, self-effacing)
Stimulation	43. Moderate (avoiding extremes of feeling and action)
14. Daring (seeking adventure, risk)	44. Respect for tradition (preservation of time-honored customs)
15. A varied life (filled with challenge, novelty, and change)	
	45. Detachment (from worldly concerns)
16. An exciting life (stimulating experiences)	**Conformity**
Self-direction	46. Politeness (courtesy, good manners)
17. Creativity (uniqueness, imagination)	47. Honoring of parents and elders (showing respect)
18. Curious (interested in everything, exploring)	48. Obedient (dutiful, meeting obligations)
19. Freedom (freedom of action and thought)	49. Self-discipline (self-restraint, resistance to temptation)
20. Choosing own goals (selecting own purposes)	
21. Independent (self-reliant, self-sufficient)	**Security**
Universalism	50. Clean (neat, tidy)
22. Protecting the environment (preserving nature)	51. National security (protection of my nation from enemies)
23. A world of beauty (beauty of nature and the arts)	
24. Unity with nature (fitting into nature)	52. Social order (stability of society)
25. Broad-minded (tolerant of different ideas and beliefs)	53. Family security (safety for loved ones)
26. Social justice (correcting injustice, care for the weak)	54. Reciprocation of favors (avoidance of indebtedness)
27. Wisdom (a mature understanding of life)	55. Healthy (not being sick physically or mentally)
28. Equality (equal opportunity for all)	56. Sense of belonging (feeling that others care about me)
29. A world at peace (free of war and conflict)	
30. Inner harmony (at peace with myself)	

4.1.1 Inter-Coder Reliability for the SVI

To use the SVI as a coding scheme, coders received individual one-hour training on the use of the SVI and how to identify values in the Net neutrality testimonies. Coding instruction about the use of the SVI and coding samples were provided for coders (see Appendix C). Four testimonies, containing 226 sentences, were randomly selected from the corpus for coding by two independent coders. Among the 56 value categories, only 18 categories were coded multiple times by both coders. Cohen's kappa was calculated to determine inter-coder reliability for each of the 18 value categories.

Table 4-2 shows the results of Cohen's kappa of the 18 value categories in the SVI. The agreement between two coders indicated "substantial" (κ=0.61-0.80) for two value categories, "moderate" (κ=0.41-0.60) for five value categories, "fair" (κ=0.21-0.40) for five value categories, "slight" (κ=0.01-0.20) for two value categories, and "poor" (κ<0.00) for four value categories (see table 4-2).

Table 4-2 Inter-Coder Reliability for the SVI

			N Values Coded	
	Kappa	Sentences	Coder A	Coder B
creativity	0.761	226	7	6
honest	0.659	226	4	5
equality	0.543	226	17	14
freedom	0.474	226	41	15
wealth	0.462	226	11	17
politeness	0.432	226	3	6
influential	0.432	226	27	14
social justice	0.392	226	2	3
independent	0.348	226	3	8
a varied life	0.290	226	10	3
successful	0.272	226	3	4
social order	0.234	226	3	5
capable	0.181	226	7	3
social power	0.151	226	15	13
responsible	-0.007	226	2	1
social recognition	-0.007	226	2	1
family security	-0.008	226	3	1
broad-minded	-0.010	226	12	1

4.2 Iteration Two: Modified Schwartz Value Inventory

In the first iteration, only 18 out of 56 value categories were coded multiple times by both coders, and only seven value categories achieved "substantial" (κ=0.61-0.80) or "moderate" (κ=0.41-0.60) agreement between two coders. It is probably because the SVI is an a priori value instrument that is a not content-specific scheme and the SVI was not originally constructed for content analysis. The SVI may have validity as a survey instrument, but it appears to have limited validity as a content analysis instrument. The ambiguity and complexity of the definitions for the 56 value categories makes it difficult for human coders to code consistently. When using the SVI coding the Net neutrality corpus, differences in classification did not fall neatly along Schwartz's divisions between value types or even value dimensions. This leads to concerns about reliability when different coders perform content analysis using the SVI as the coding scheme.

In the second iteration, A modified coding scheme was developed based on the evaluation of the SVI. The goal of the modified coding scheme was to code value categories that are important in the domain of Net neutrality in a way that independent coders could reach the same conclusion. For this purpose, it may be useful to use a coding scheme that is at least somewhat tailored to the salient values of Net neutrality, rather than a general coding scheme. As such, some value categories were dropped from the SVI if they did not occur in the corpus, some value categories were combined if coders found them difficult to distinguish, and some value categories were rephrased if coders found them difficult to understand. This process involved working back and forth between the Net neutrality corpus and the codes to refine the meaning of each value category. The modified SVI preserved the most frequently invoked values in the SVI

(such as *wealth*, *freedom*, *capable*, *equality*, *influential*, *social power*, *authority*, *social justice*, and *creativity*), and dropped values that less frequently or never assigned to a sentence (such as *inner harmony*, *detachment*, *clean*, *forgiving*, *honoring parents and elders*, and *loyal*). To improve inter-coder agreement, values were aggregated based on the similarity of concepts by trying to preserve the definition of the SVI while reducing the ambiguity that led to uncertainty and disagreement in classifying values. For example, the modified SVI combined *creativity* (defined by Schwartz as uniqueness and imagination) and *a varied life* (defined by Schwartz as filled with challenges, novelty, and change) in the SVI by defining *innovation* as "the capacity to create or discover new things and new ideas; contributing to the advancement of knowledge and technology; and curiosity." Ten value categories were proposed (see table 4-3) and then applied to code the same four testimonies in the first iteration to test inter-coder reliability.

4.2.1 Inter-Coder Reliability for the Modified SVI

Again, Cohen's (1960) Kappa was used to determine inter-coder reliability. Landis and Koch's (1977) benchmarks was used to interpret the Kappa score. Table 4-4 shows that by using the modified SVI, two coders achieved substantial agreement (κ=0.61 to 0.80) for *wealth* (κ=0.77), *independence* (κ=0.69), *power* (κ=0.66), *human welfare* (κ=0.65), and *importance* (κ=0.61); moderate agreement (κ=0.41 to 0.60) for *innovation* (κ=0.60) and *law and order* (κ=0.49); and fair agreement (κ=0.21 to 0.40) for *effectiveness* (κ=0.32). For the two least frequently coded values, *personal welfare* and *nature*, two coders achieved slight agreement or no agreement (κ<0.20). Based on the evaluation, overall the modified SVI serves as a promising advance for producing reliable data for content analysis of human values in the Net neutrality debate.

Table 4-3 Modified Schwartz Value Inventory with Definitions

Value	Schwartz Value Categories	Definition
Effectiveness	Capable (competent, effective, efficient); Successful (achieving goals)	Capability and success in producing desired results; efficiency of time and labor; appropriateness for completing specific tasks.
Human Welfare	Helpful (working for the welfare of others); Social justice (correcting injustice, care for the weak); Equality (equal opportunity for all); Family security (safety for loved ones); National security (protection of my nation from enemies); A world at peace (free of war and conflict); Responsible (dependable, reliable)	Helping others; doing things that are beneficial to society at large; considering the public good; motivated to treat everyone fairly and equally; having a sense of social responsibility.
Importance	Influential (having an impact on people and events)	The potential to make a significant impact on someone or something; being an essential precondition for other actions or events.
Independence	Choosing own goals (selecting own purposes); Independent (self-reliant, self-sufficient); Freedom (freedom of action and thought)	Protecting freedom and the right to allow individuals to have their own beliefs and to make their own choices; freedom from interference; promoting liberty and autonomy.
Innovation	Creativity (uniqueness, imagination); A varied life (filled with challenge, novelty, and change); Curious (interested in everything, exploring)	The capacity to create or discover new things and new ideas; contributing to the advancement of knowledge and technology; curiosity.
Law and Order	Social order (stability of society); Obedient (dutiful, meeting obligations); Respect for tradition (preservation of time-honored customs)	Obeying laws, regulations, protocols, and social norms; protecting the stability of society; enforcing standards.
Nature	Unity with nature (fitting into nature); Protecting the environment (preserving nature); A world of beauty (beauty of nature and art)	Having a sense of unity with nature; caring about the environment; appreciating natural beauty.
Personal Welfare	Social recognition (respect, approval by others); Preserving my public image (protecting my “face”); Self-respect (believe in one’s own worth); Pleasure (gratification of desires); Enjoying life (enjoying food, sex, leisure)	Working towards one’s own personal needs, growth, and self-actualization; an explicitly stated concern for the well being and/or success of oneself; putting the needs of oneself over the needs of others.
Power	Social power (control over others, dominance); Authority (the right to lead or command)	Possessing the ability or opportunity to lead, command, control, or dominate individuals, groups, and/or events.
Wealth	Wealth (material possessions, money)	An explicitly stated concern with or interest in pursuing money, material possessions, profit, and finances.

Table 4-4 Inter-Coder Reliability for the Modified SVI

			N Values Coded	
	Kappa	Sentences	Coder A	Coder B
wealth	0.767	226	23	25
independence	0.693	226	49	63
power	0.657	226	49	42
human welfare	0.654	226	51	60
importance	0.607	226	67	54
innovation	0.601	226	16	31
law and order	0.492	226	24	47
effectiveness	0.315	226	24	27
personal welfare	0.000	226	0	4
nature	undefined	226	0	0

4.3 Iteration Three: Meta-Inventory of Human Values (MIHV)

In the second iteration, seven out of 10 value categories achieved "substantial" (κ=0.61-0.80) or "moderate" (κ=0.41-0.60) agreement, only two value categories were counted as "fair" or "no" agreement, and one value category was never used by either coder. It seems that the modified SVI is a promising advance for producing reliable data for content analysis of human values in the Net neutrality debate. The coding scheme might be constructed by keeping the value categories that achieved "substantial" and "moderate" agreement (such as *wealth*, *independence*, *power*, *human welfare*, *importance*, *innovation*, and *law and order*) and dropping the values that were counted as "fair" or "no" agreement (such as *effectiveness*, *personal welfare*, and *nature*). However, some nuanced value concepts such as *equality*, *social justice*, and *responsibility* that might be important in the domain of Net neutrality cannot be identified by using the modified coding scheme, since *human welfare* encompasses the value concepts of treating people fairly and equally, helping others, doing things that are beneficial to society at large, and having a sense of social responsibility.

In order to preserved the nuanced value concepts that might be important in the domain of Net neutrality while produce reliable data that independent coders can reach in content analysis, the study further analyzed 12 value inventories that account for different levels of analysis derived from various domains. The goal for the third iteration is to develop a meta-inventory of human values that can be tailored to serve the needs for conducting content analysis of human values in the Net neutrality debate.

4.3.1 Developing a Meta-Inventory of Human Values (MIHV)

In the third iteration, the study tried to synthesize the 12 value inventories listed in section 2.3 to develop a meta-inventory of human values (MIHV). The MIHV served as a unified theory-grounded value typology for the analysis of the Net neutrality testimonies. In order to maximize mutual exclusivity as well as minimize the ambiguity and complexity of the value categories, some value categories were dropped, some were combined, and some were rephrased based on the following principles:

First, the selected value items have to be consistent with the value definition that "values serve as guiding principles of what people consider important in life." As such, concepts such as employees, customers, and my co-workers in the PVQ (England, 1967) were not selected.

Second, the selected value items were aggregated into a value category based on the similarities of concepts. For example, concepts such as *freedom*, *liberalism*, *autonomy*, *independent*, *liberty*, and *choosing own goals* found in different inventories are grouped under the root concept *freedom* proposed in this study (see table 4-5). And concepts such as *capable*, *efficiency*, *ability*, *skill*, and *industry leadership* are grouped and rephrased as *competence* because it implies a range of skill, knowledge, or ability that encompasses

concepts related to various capabilities. In aggregating these concepts, some could be misled by the terms. For example, people may think *organizational responsibility* should be associated with the value *responsibility*. However, according to Bird and Waters's (1987) definition, "organizational responsibility is associated with making decisions that reduce waste, increase efficiency, and enhance the interest of the organization as a whole" (p. 9). As a result, *organizational responsibility* is more closely related to *competence*.

Third, as a rule of thumb, only values that were found in at least five value inventories were considered. For example, the concept *freedom*, which was found in nine of the 12 value inventories, was selected as a value category; while the concept *aggressiveness*, which was found fewer than five value inventories, was not selected.

The comparison of the 12 value inventories led to a total of 44 value concepts. Of these, 16 value concepts were found in at least five different existing value inventories. Table 4-5 lists these 16 value concepts: (1) *helpfulness*, (2) *freedom*, (3) *achievement*, (4) *honesty*, (5) *identity*, (6) *wealth*, (7) *innovation*, (8) *equality*, (9) *intelligence*, (10) *responsibility*, (11) *social order*, (12) *broad-mindedness*, (13) *competence*, (14) *justice*, (15) *security*, and (16) *spirituality*.

Value concepts used in fewer than five instruments include: aggressiveness, development, loving, pleasure, politeness, self-discipline, social relationship, health, influence, loyalty, nature, respect for tradition, sense of belonging, aesthetic, authority, calmness, caution, cooperation, forgiveness, humility, power, privacy, competition, compromise, courageous, horning, humor, and initiative.

Table 4-5 A Meta-Inventory of Human Values through a Comparison of 12 Value Inventories

Proposed List	**Helpfulness**	**Freedom**	**Achievement**	**Honesty**	**Identity**	**Wealth**	**Innovation**	**Equality**
Number of Corresponding Inventories	10	9	8	8	8	7	6	6
Inventory	**Corresponding Value Items**							
PVQ	Employee Welfare/ Social Welfare	Liberalism/ Autonomy	Achievement/ Success	-	Dignity/ Prestige/ Honor/ Individuality	Profit Maximization/ Money/ Property	Creativity/ Change	Equality
RVS	Helpful	Freedom/ Independent	A Sense of Accomplishment	Honest	Self-respect/ Social Recognition	A comfortable life	Imaginative	Equality
SVS	Helpful	Freedom/ Independent/ Choosing Own Goals	Successful/ Meaning in Life	Honest	Self-respect/ Social Recognition/ Preserving my Public Image	Wealth	A Varied Life/ Creativity/ Curious	Equality
PVS	Kindness	Independence	Academic Achievement	Honesty	Status	-	Creativity	-
LOV	-	Autonomy	Sense of Accomplishment/ Self-fulfillment	-	Self-respect/ Being Well-respect	-	-	-
LVI	Concern for Others	Independence	Achievement	-	-	Financial Prosperity	Creativity	-
CES	Helping	-	Achievement	Honesty	-	-	-	-
VSD	Human Welfare/ Universal Usability	Autonomy	-	Informed Consent	Identity	Ownership and Property	-	Freedom from Bias
VMD	The Good Life	Freedom	Self-realization	-	Human Dignity	Profits	-	-
SVO	Consideration	Autonomy	-	Moral Integrity/ Openness	-	Economy	Creativity/ Experimentation	Social Equality
MMS	-	-	-	Honesty in Communication	-		-	Fair Treatment/ Fair Competition
VWS	Benevolence/ Humanism	-	-	Integrity	Respect		-	-

Table 4-5 A Meta-Inventory of Human Values through a Comparison of 12 Value Inventories (Cont.)

Proposed List	**Intelligence**	**Responsibility**	**Social Order**	**Broad-mindedness**	**Competence**	**Justice**	**Security**	**Spirituality**
Number of Corresponding Inventories	6	6	6	5	5	5	5	5
Inventory	**Corresponding Value Items**							
PVQ	Rational	-	Organizational Stability	Tolerance	High Productivity/ Organizational Efficiency/Ability/ Skill/Industry Leadership	-	Security	Religion
RVS	Logical/ Intellectual/ Wisdom	Responsible	A World at Peace	Broad-minded	Capable	-	Family Security/ National Security	Inner Harmony
SVS	Intelligent/ Wisdom	Responsible	Social Order/ A World at Peace	Broad-minded	Capable	Social Justice	Family Security/ National Security	A Spiritual Life/ Inner Harmony/ Devout
PVS	Intellectualism	-	-	-	-	-	-	Religiousness
LOV	-	-	-	-	-		Security	-
LVI	Objective Analysis	Responsibility	-	-	-	-	-	Spirituality
CES	-	-	-	-	-	Fairness	-	-
VSD	-	Accountability	-	-	-	-	-	-
VMD	-	-	Order	-	Allocation of Resources/ Production and Distribution of Goods and Services	Justice	Survival	-
SVO	Logic	-	Orderliness	Broad-mindedness/ Adaptability	-	Fairness	-	-
MMS	-	Corporate Social Responsibility	Respect for Law	-	Organizational Responsibility	-		-
VWS	-	Responsibility	-	Receptivity	-	Justice		-

4.3.2 Inter-Coder Reliability for the MIHV

In the third iteration, coders went through a more thorough training and used revised, more rigidly specified coding instructions (see Appendix D). To modify and refine the value categories and their meanings, the Net neutrality corpus and the codes were reviewed by coders. Four rounds of inter-coder reliability tests were conducted as the study went through the process of modifying the MIHV for conducting content analysis of human values in the Net neutrality debate (see table 4-6 and table 4-7). For each round of coding, four testimonies were randomly selected from the corpus for coding by two independent coders.

Table 4-6 Comparison of Four Rounds of Inter-Coder Reliability for the MIHV

	Kappa			
	1st Round	2nd Round	3rd Round	4th Round
wealth	0.637	0.743	0.700	0.775
freedom	0.723	0.709	0.730	0.728
social order	0.611	0.716	0.740	0.689
innovation	0.624	0.732	0.707	0.670
justice	0.485	0.690	0.508	0.586
honor (identity)*	0.681	0.531	0.861	0.493
responsibility	0.657	0.528	0.345	
equality	0.139	0.431	0.125	
achievement*	0.434			
helpfulness	0.394			
security	0.280			
competence	0.052			
broad-mindedness	0.000			
honesty	-0.008			
intelligence	-0.018			
spirituality	undefined			

**identity* and *achievement* were combined as *honor* in the second round; *effectiveness* is not presented

Table 4-7 Inter-Coder Reliability for the MIHV

			N Values Coded	
	Kappa	Sentences	Coder A	Coder B
1st Round				
freedom	0.723	356	79	79
identity	0.681	356	16	10
responsibility	0.657	356	13	8
wealth	0.637	356	63	39
innovation	0.624	356	68	75
social order	0.611	356	57	56
justice	0.485	356	18	21
achievement	0.434	356	26	13
helpfulness	0.394	356	21	8
security	0.280	356	10	10
equality	0.139	356	22	12
competence	0.052	356	63	7
broad-mindedness	0.000	356	11	0
honesty	-0.008	356	5	2
intelligence	-0.018	356	7	6
spirituality	undefined	356	0	0
2nd Round				
wealth	0.743	521	96	94
innovation	0.732	521	102	114
social order	0.716	521	84	84
freedom	0.709	521	117	99
justice	0.690	521	106	104
honor	0.531	521	16	17
responsibility	0.528	521	46	65
equality	0.431	521	24	20
3rd Round				
honor	0.861	397	15	15
social order	0.740	397	97	104
freedom	0.730	397	104	108
innovation	0.707	397	28	27
wealth	0.700	397	173	159
effectiveness*	0.514	397	66	89
justice	0.508	397	34	35
responsibility	0.345	397	21	26
equality	0.125	397	20	7
4th Round				
wealth	0.775	361	139	148
freedom	0.728	361	89	78
social order	0.689	361	58	66
innovation	0.670	361	33	30
justice	0.586	361	115	76
honor	0.493	361	24	11

**effectiveness* is not one of the 16 categories in the MIHV

1. First Round Inter-Coder Reliability for the MIHV

In the first round, substantial agreement (κ=0.61 to 0.80) was achieved for *freedom* (κ=0.73), *identity* (κ=0.68), *responsibility* (κ=0.66), *wealth* (κ=0.64), *innovation* (κ=0.62), and *social order* (κ=0.61). Moderate agreement (κ=0.41 to 0.60) was achieved for *justice* (κ=0.49) and *achievement* (κ=0.43). Fair agreement (κ=0.21 to 0.40) was achieved for *helpfulness* (κ=0.39) and *security* (κ=0.28). Slight agreement (κ=0.00 to 0.20) was achieved for *equality* (κ=0.14), *competence* (κ=0.05), and *broad-mindedness* (κ=0.00). No agreement (κ<0.00) was found for *honesty* (κ=-0.01) and *intelligence* (κ=-0.02). Neither of the two coders coded *spirituality* in the four testimonies.

Value categories that achieved substantial or moderate agreement were preserved in the coding scheme for the second round of coding. *Equality* was kept because it is an important value category in the Net neutrality domain although slight agreement was achieved for *equality*; while *identity* and *achievement* were combined as *honor* by referring a feeling of pride in oneself and belief in one's own worth, the accomplishment that is being honored or well regarded by others, and something that is successfully completed.

2. Second Round Inter-Coder Reliability for the MIHV

In the second round, substantial agreement (κ=0.61 to 0.80) was achieved for *wealth* (κ=0.74), *innovation* (κ=0.73), *social order* (κ=0.72), *freedom* (κ=0.71), and *justice* (κ=0.69). Moderate agreement (κ=0.41 to 0.60) was achieved for *honor* (κ=0.53), *responsibility* (κ=0.53), and *equality* (κ=0.43).

Although the inter-coder reliability in the second round presented a considerable advance in *equality*, the study found inconsistency in the reliability data for *equality* and

coders were usually confused about the differences between *equality* and *justice* when coding. To ensure the agreement is reliable and all value categories would be equally represented within the subset of testimonies, it was decided to conduct a third round of coding and added *effectiveness* to the coding scheme as it is relevant to Net neutrality debate.

3. Third Round Inter-Coder Reliability for the MIHV

In the third round, almost perfect agreement (κ=0.81 to 1.00) was achieved for *honor* (κ=0.86). Substantial agreement (κ=0.61 to 0.80) was achieved for *social order* (κ=0.74), *freedom* (κ=0.73), *innovation* (κ=0.71), and *wealth* (κ=0.70). Moderate agreement (κ=0.41 to 0.60) was achieved for *effectiveness* (κ=0.51) and *justice* (κ=0.51). Fair agreement (κ=0.21 to 0.40) was achieved for *responsibility* (κ=0.35). Slight agreement (κ=0.00 to 0.20) was achieved for *equality* (κ=0.13).

Again, *equality* achieved slight agreement between which was the same as in the first round of coding. In addition, the agreement of *responsibility* was continuingly declining along the three rounds of analysis. Although *effectiveness* achieved moderate agreement, it was not tested in the previous two rounds of coding and it achieved fair agreement in the second iteration of testing the modified SVI (see table 4-4). As such, the fourth round of analysis preserved *wealth*, *freedom*, *social order*, *innovation*, *justice*, and *honor* as the six values (of the original sixteen) that consistently achieved substantial or moderate agreement throughout the coding processes, and dropped *equality*, *responsibility*, and *effectiveness* since they did not provide consistent inter-coder reliability in coding Net neutrality testimonies.

4. Fourth Round Inter-Coder Reliability for the MIHV

In the fourth round, substantial agreement (κ=0.61 to 0.80) was achieved for *wealth* (κ=0.78), *freedom* (κ=0.73), *social order* (κ=0.69), and *innovation* (κ=0.67). Moderate agreement (κ=0.41 to 0.60) was achieved for *justice* (κ=0.59) and *honor* (κ=0.49). All six of the value categories tested in the fourth round consistently achieved substantial or moderate agreement throughout the coding processes.

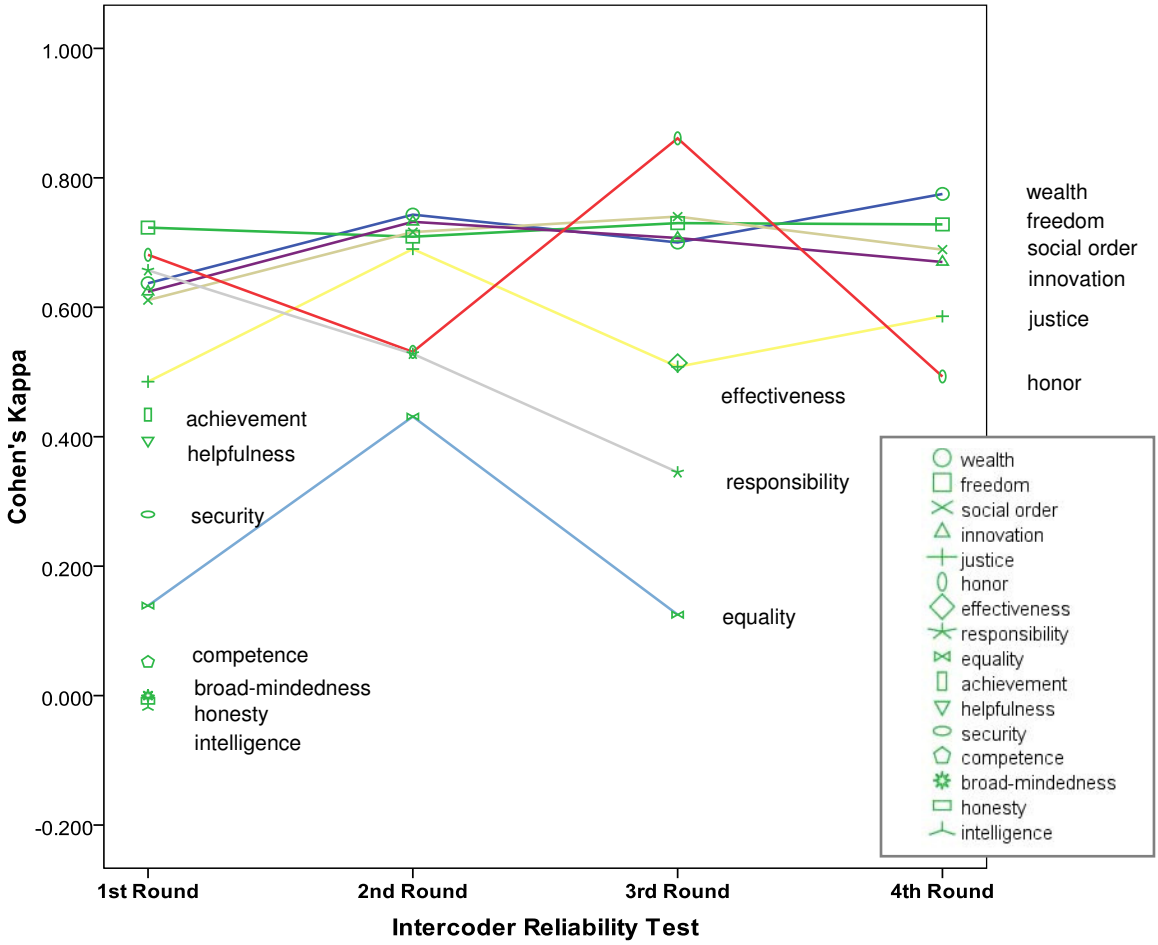

Figure 4-1 Inter-Coder Reliability Test of the MIHV

Figure 4-1 demonstrates the four rounds of inter-coder reliability test for the MIHV. Most notably, four categories received consistent scores at the substantial level of agreement for four rounds of testing: *wealth*, *freedom*, *social order*, and *innovation*. Two categories fluctuated between substantial and moderate agreement for four rounds of analysis: *justice* and *honor*. Seven value categories that did not achieved substantial or moderate agreement were either combined with other value categories or dropped in the second round of coding: *achievement*, *helpfulness*, *security*, *competence*, *broad-mindedness*, *honesty*, and *intelligence*. Three value categories were dropped after the third round of testing: *responsibility* was continuingly declining from substantial agreement to fair agreement for the first three rounds of testing; *equality* fluctuated between substantial and slight agreement for the first three rounds of testing; and *effectiveness* did not have consistent reliability scores across two iterations.

These results demonstrate the challenges of consistently identifying values in the Net neutrality debate using the MIHV. However, overall the four rounds of testing indicated that *wealth*, *freedom*, *social order*, *innovation*, *justice*, and *honor* share consistent results at the substantial and moderate level of agreement in coding values in the Net neutrality debate. As such, this study uses these six values as the final coding scheme to code the entire corpus of Net neutrality testimonies (see table 4-8).

Table 4-8 The Final Coding Scheme

Value	Definition
Freedom	The condition of being free of restraints and encouraging competition; allowing individuals to have their own beliefs and to make their own choices; freedom from interference or influence of another or others; the quality of being autonomous and independent.
Honor	Understanding of who you are and how you are perceived by others; a feeling of pride in oneself or one's organization, group, or nation and belief in one's own worth; accomplishment that is honored, esteemed, respected or well regarded by yourself or others.
Innovation	The capacity to create or discover new things and new ideas that contribute to the advancement of knowledge and/or technology.
Justice	The state of being treated equally and fairly, especially having the same rights, status, and opportunities; the process of settling a matter properly and fairly for all parties according to their capabilities and needs, especially protecting the weak and correcting any injustice; need for equal or fair distribution of resources, information, benefits, burdens, and power among the members of a society.
Social Order	Using the power of the government, military and/or legal system to protect the stability of society and/or to protect people from possible harms mentally or physically; acting in accordance with laws, regulations, and social norms.
Wealth	An explicitly stated concern with or interest in pursuing economic goals such as money, material possessions, resources, and profit; focusing on the market value of a change, decision, or action; allocating resources appropriately and/or efficiently.

4.3.3 Inter-Coder Reliability for the Corpus

As *wealth*, *freedom*, *social order*, *innovation*, *justice*, and *honor* were used to code the Net neutrality testimonies, the researcher then coded the complete corpus that contains 9,513 sentences in 102 testimonies based on these six value categories. Wimmer and Dominick (2011) suggested a subsample, "probably between 10% and 25%," should

be reanalyzed by independent coders to calculate overall inter-coder reliability. As such, a second coder coded a random selected subset of 20 testimonies that contain 2,815 sentences (approximately 30% of the corpus) to test the overall inter-coder reliability.

Table 4-9 demonstrates the overall inter-coder reliability of the corpus between two independent coders. Substantial agreement (κ=0.61 to 0.80) was achieved for *innovation* (κ=0.72), *social order* (κ=0.68), *wealth* (κ=0.63), and *freedom* (κ=0.62). Moderate agreement (κ=0.41 to 0.60) was achieved for *honor* (κ=0.43) and *justice* (κ=0.42). All six value categories consistently achieved substantial or moderate agreement.

This study also tested the inter-coder reliability about the position (pro, con, and other) presented in each testimony coded by two independent coders. Among the 20 testimonies, only one testimony did not reach agreement between two coders. Almost perfect agreement (κ=0.81 to 1.00) was achieved for speaker's position (κ=0.90) presented in testimonies identified by two coders.

Table 4-9 Inter-Coder Reliability for the Corpus

			N Values Coded	
	Kappa	Sentences	Coder A	Coder B
innovation	0.715	2815	271	252
social order	0.683	2815	708	699
wealth	0.629	2815	1161	1384
freedom	0.620	2815	653	740
honor	0.431	2815	91	130
justice	0.420	2815	696	472

Chapter 5: The Role of Human Values in the Net Neutrality Debate

This chapter presents detailed data analysis of the role of human values in the Net neutrality debate. Content analysis was used to analyze 102 testimonies about Net neutrality from public hearings. Data was analyzed using the Statistical Package for the Social Sciences (SPSS) version 17. Descriptive and inferential statistics such as frequency counts and test of significance were used for analysis. Counts of testimonies were cross-tabulated among variables and Kruskal-Wallis test and Mann-Whitney U test were used to test the statistical significance of values differences among positions, stakeholder groups, venues, and time periods.

The first section of this chapter describes the general characteristics of the corpus. The next section analyzes the value differences among positions about Net neutrality. Specifically, this study focuses on the value differences between proponents and opponents of Net neutrality across time periods and within each year. The third section analyzes value differences among stakeholder groups, venues, and time periods.

5.1 Corpus Characteristics

As described in section 3.2.1, the corpus for this study includes testimonies from public hearings in which various stakeholder groups express values and positions on Net neutrality in different venues across various time periods. A total of 102 testimonies were retrieved from Lexis-Nexis Congressional, Congress and the FCC websites for analysis. They were considered as the entire corpus of Net neutrality testimonies. An overview of the characteristics of the corpus is shown in table 5-1.

Table 5-1 The Characteristics of Corpus

		Number of Testimonies	Percentage (%)
Year	2006	42	41.2
	2008	42	41.2
	2011	18	17.6
	Total	102	100
Venue	Senate	32	31.4
	House	42	41.2
	FCC	28	27.5
	Total	102	100
Actor	Government Representatives	38	37.3
	Service Providers	8	7.8
	Content Providers	7	6.9
	Interest Groups	34	33.3
	Academics	12	11.8
	Individuals	3	2.9
	Total	102	100
Position	Pro	55	53.9
	Con	40	39.2
	Other	7	6.9
	Total	102	100

Among the 102 testimonies, 42 testimonies (41.2%) were presented in 2006, 42 testimonies (41.2%) were presented in 2008, and 18 testimonies (17.6%) were presented in 2011. The number of testimonies presented in 2006 and 2008 were balanced while the number of testimonies presented in 2011 is smaller than 2006 and 2008. In terms of venue, the corpus had solid representation for each group with 42 testimonies from House hearings (41.2%), 32 testimonies from Senate hearings (31.4%), and 28 testimonies from FCC hearings (27.5%). Five stakeholder groups were identified within the corpus, government representatives (N=38) and interest groups (N=34) accounted for about 37.3% and 33.3% of the entire corpus. The remaining stakeholder groups were relatively

distributed across service providers (N=8), content providers (N=7), and academics (N=12). Three other individuals (a singer, a software engineer, and an independent consultant) were also identified in the corpus. As for the position, 55 testimonies (53.9%) were coded as proponents for Net neutrality, 40 testimonies (39.2%) were coded as opponents for Net neutrality, and seven testimonies (6.9%) were coded as others.

Table 5-2 Number of Testimonies among Years, Venues, and Positions by Actors

	Government Representatives	Service Providers	Content Providers	Interest Groups	Academics	Individuals	Total
Year							
2006	13	4	5	17	3	0	42
2008	12	3	2	13	9	3	42
2011	13	1	0	4	0	0	18
Total	38	8	7	34	12	3	102
Venue							
Senate	9	1	4	15	3	0	32
House	19	4	2	13	3	1	42
FCC	10	3	1	6	6	2	28
Total	38	8	7	34	12	3	102
Position							
Pro	22	1	7	16	7	2	55
Con	14	6	0	15	4	1	40
Other	2	1	0	3	1	0	7
Total	38	8	7	34	12	3	102

A crosstab comparison was conducted to see the number of testimonies among year, venue, and position across different actors. Table 5-2 shows that the government representatives distributed more evenly than the other stakeholder groups across different time periods. Thirteen government representatives were presented in 2006, 12 were presented in 2008, and 13 were presented in 2011. In 2011 hearings, the stakeholder groups were skewed with government representatives made up 13 out of 18 testimonies.

While only one service provider, four interest groups, and no content provider and academic presented in 2011 hearings. In terms of venue, table 5-2 shows that government representative and interest groups accounted for the majority of testimonies in both Senate hearings and House hearings. Senate hearings (N=15) and House hearings (N=13) had more interest groups than FCC hearings (N=6); while FCC hearings had more academics (N=6) than House hearings (N=3) and Senate hearings (N=3). In terms of position, table 5-2 shows that the interest groups were balanced between proponents (N=16) and opponents (N=15) of Net neutrality. For government representatives and academics, the proponents of Net neutrality were slightly larger than the opponents; while all seven content providers argued for Net neutrality, six out of seven service providers argued against Net neutrality.

5.2 Value Differences among Positions on Net neutrality

Table 5-3 shows the descriptive statistics about the number of sentences that proponents, opponents, and others expressed for each value. The higher the score, the more frequently the speaker invoked the values. For example, the average number of sentences the proponents (M=28.51; SD=24.40) expressed about *freedom* is larger than the opponents (M=19.98; SD=22.13); while the average number of sentences the proponents (M=29.00; SD=25.13) expressed about *wealth* is smaller than the opponents (M=44.75; SD=43.80).

Table 5-3 Mean, Median and Value Counts among Different Positions

		Mean	Median	Std. Deviation	Sum
Freedom	Pro (N=55)	28.51	20.00	24.40	1568
	Con (N=40)	19.98	14.00	22.13	799
	Other (N=7)	8.57	6.00	7.96	60
Honor	Pro (N=55)	3.00	2.00	4.31	165
	Con (N=40)	4.35	2.00	4.55	174
	Other (N=7)	1.86	1.00	1.46	13
Innovation	Pro (N=55)	10.58	8.00	9.92	582
	Con (N=40)	12.67	10.50	11.27	507
	Other (N=7)	7.71	4.00	7.54	54
Justice	Pro (N=55)	28.84	19.00	26.38	1586
	Con (N=40)	24.85	18.00	33.43	994
	Other (N=7)	7.43	4.00	7.55	52
Social Order	Pro (N=55)	25.29	16.00	23.41	1391
	Con (N=40)	34.40	20.50	53.16	1376
	Other (N=7)	11.71	6.00	17.04	82
Wealth	Pro (N=55)	29.00	22.00	25.13	1595
	Con (N=40)	44.75	33.00	43.80	1790
	Other (N=7)	22.57	7.00	30.85	158

Kruskal-Wallis test was conducted to evaluate the statistical significant relationships of the value differences among different positions (pro, con, and other) on Net neutrality. The result shows that three groups of positions on Net neutrality differed significantly in the proportion of expression of the values on *freedom*, *justice*, and *wealth*. Table 5-4 shows that there was a statistically significant differences among three groups of positions about Net neutrality in the proportion of expression of the values on *freedom* ($H(2)=15.918$, $p=0.000$) with a mean rank of 62.29 for proponents, 39.24 for opponents, and 36.79 for others, on *justice* ($H(2)=14.698$, $p=0.001$) with a mean rank of 61.79 for proponents, 40.38 for opponents, and 34.21 for others, and on *wealth* ($H(2)=8.694$, $p=0.013$) with a mean rank of 44.16 for proponents, 62.19 for opponents, and 48.07 for others.

Table 5-4 Kruskal-Wallis Test for Values Differences among Positions

	Mean Rank			Chi-Square	df	Asymp. Sig.
	Pro	Con	Other			
Freedom	62.29	39.24	36.79	15.918	2	.000***
Honor	46.63	56.68	60.21	3.356	2	.187
Innovation	46.55	56.58	61.36	3.492	2	.174
Justice	61.79	40.38	34.21	14.698	2	.001***
Social Order	49.99	57.19	30.86	5.028	2	.081
Wealth	44.16	62.19	48.07	8.694	2	.013*

* $p < .05$; ** $p < .01$; *** $p < .001$

Table 5-5 Mann-Whitney U Test of Significance for Values among Positions

		Pro	Con	Other
Freedom	Pro	-	.000***	.083
	Con		-	.455
	Other			-
Honor	Pro	-	.105	.226
	Con		-	.834
	Other			-
Innovation	Pro	-	.097	.247
	Con		-	.611
	Other			-
Justice	Pro	-	.001***	.014*
	Con		-	.765
	Other			-
Social Order	Pro	-	.235	.097
	Con		-	.036
	Other			-
Wealth	Pro	-	.003**	.841
	Con		-	.324
	Other			-

* $p < .05$; ** $p < .01$; *** $p < .001$

Because the Kruskal-Wallis test is significant in the proportion of expression of the values on *freedom*, *justice*, and *wealth*, pairwise comparisons among the three positions were conducted using Mann-Whitney U test, which provide identical results with the Kruskal-Wallis test for two independent samples. Table 5-5 summarizes the

results of the test of significance for pairwise comparisons among the three positions. It shows that there was a statistically significant difference between proponents and opponents in the proportion of expression of the values on *freedom* (p=0.000), *justice* (p=0.001), and *wealth* (p=0.003). There was a statistically significant differences between proponents and others in the proportion of expression of the values on *justice* (p=0.001).

5.2.1 Value Differences between Proponents and Opponents across Time Periods

As this study is more interested in the value differences between proponents and opponents of Net neutrality, the Mann-Whitney U test found significant differences in the values expressed by proponents and opponents on *freedom* (U=584.5, Z=-3.89, p=0.000) with a mean rank of 57.37 for proponents, 35.11 for opponents; *justice* (U=645, Z=-3.43, p=0.001) with a mean rank of 52.67 for proponents, 36.63 for opponents; and *wealth* (U=705.5, Z=-2.94, p=0.003) with a mean rank of 40.83 for proponents, 57.86 for opponents (see table 5-6). The results indicated that the proponents of Net neutrality invoked *freedom* and *justice* more frequently than the opponents, while the opponents of Net neutrality invoked *wealth* more frequently than the proponents.

Table 5-6 Mann-Whitney U Test for Values Differences between Proponents and Opponents

	Mean Rank		Z	Mann-Whitney U	Asymp. Sig.
	Pro	Con			
Freedom	57.37	35.11	-3.89	584.50	.000***
Honor	44.11	53.35	-1.62	886.00	.105
Innovation	44.00	53.50	-1.66	880.00	.097
Justice	56.27	36.63	-3.43	645.00	.001***
Social Order	45.14	51.94	-1.19	942.50	.235
Wealth	40.83	57.86	-2.94	705.50	.003**

* $p < .05$; ** $p < .01$; *** $p < .001$

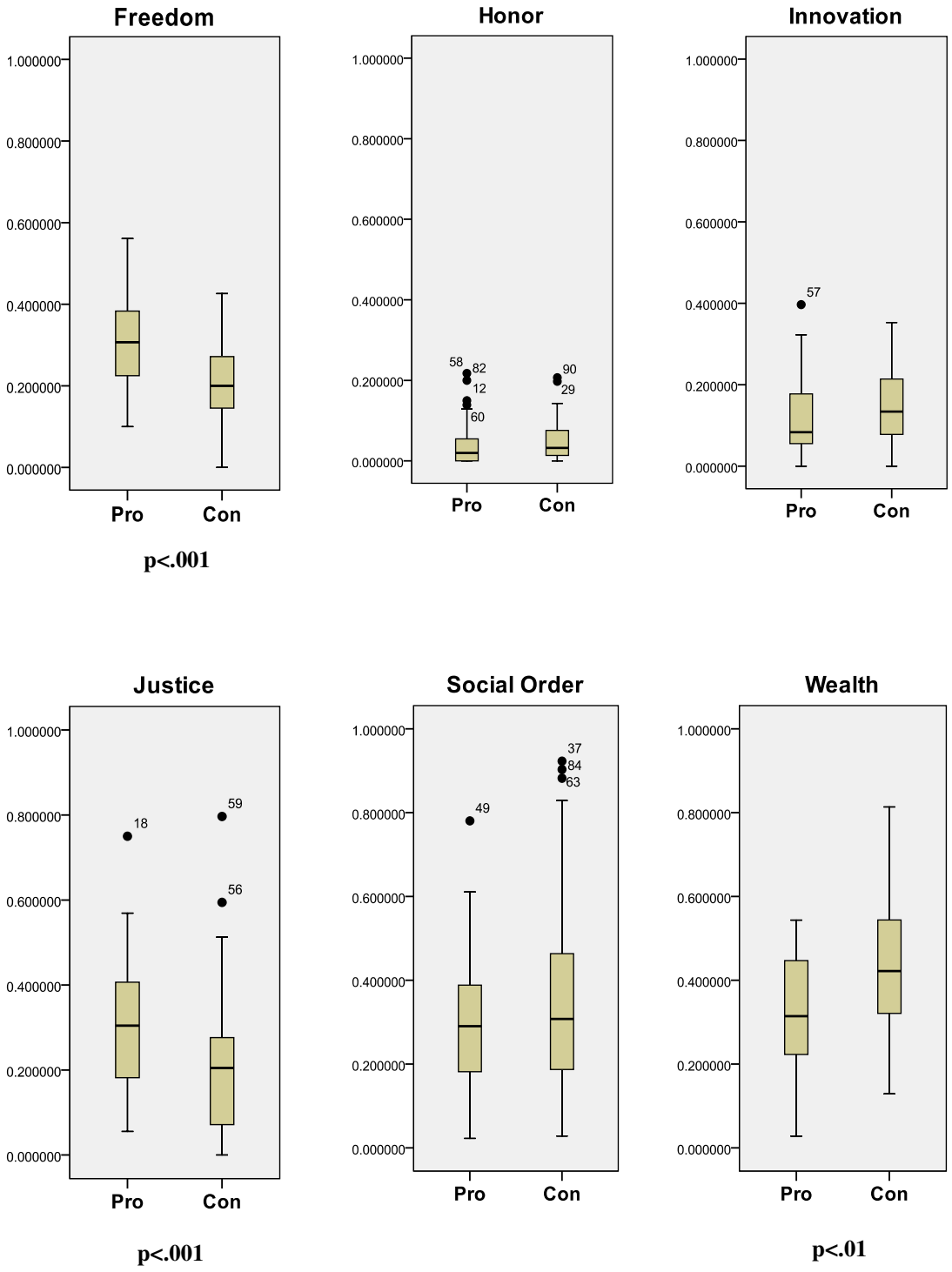

Figure 5-1 Boxplots for Values Differences between Proponents and Opponents

Figure 5-1 provides a graphical summary of both the central tendency and variation of a distribution of proportions within specific values. The solid horizontal bars within the boxes represent the medians of proportions of expression of the values, the ends of the boxes represent the 75th and 25th quartiles, the ends of the whiskers represent the maximums and minimums, and the solid circles are outliers. Inspecting the plots reveals that the median scores for proponents on *freedom* and *justice* were higher than the opponents, and the median score for opponents on *wealth* was higher than the proponents. Although there were some overlap of the boxplots between proponents and opponents on *freedom*, *justice*, and *wealth*, Mann-Whitney U test revealed statistically significant differences between proponents and opponents on these three values.

5.2.2 Value Differences between Proponents and Opponents in 2006, 2008, and 2011

As the overall analysis revealed statistically significant differences between proponents and opponents for the values of *freedom*, *justice*, and *wealth*, it is important to see if there are value differences between proponents and opponents for specific time periods, namely in the years of 2006, 2008, and 2011, respectively.

1. Value Differences between Proponents and Opponents in 2006

Table 5-7 shows that in the 2006 testimonies there were statistically significant differences in the values expressed by proponents and opponents on *justice* (U=59.5, Z=-3.38, p=0.000) with a mean rank of 24.41 for proponents, 11.97 for opponents; and *wealth* (U=99.5, Z=-2.18, p=0.028) with a mean rank of 16.33 for proponents, 24.37 for opponents. The results indicated that in the 2006 testimonies the proponents of Net

neutrality invoked *justice* more frequently than the opponents, while the opponents of Net neutrality invoked *wealth* more frequently than the proponents.

Table 5-7 Mann-Whitney U Test for Values Differences between Proponents and Opponents in 2006

	Mean Rank		Z	Mann-Whitney U	Asymp. Sig.
	Pro	Con			
Freedom	21.04	17.13	-1.06	137.00	.289
Honor	17.13	23.13	-1.64	118.00	.102
Innovation	18.59	20.90	-0.63	151.50	.530
Justice	24.41	11.97	-3.38	59.50	.001**
Social Order	18.28	21.37	-0.84	144.50	.403
Wealth	16.33	24.37	-2.18	99.50	.029*

* $p < .05$; ** $p < .01$; *** $p < .001$

Figure 5-2 illustrates that in the 2006 testimonies, the median scores for proponents on *freedom* and *justice* was higher than the opponents, and the median score for opponents on *honor*, *innovation*, *social order*, and *wealth* were higher than the proponents. While the Mann-Whitney U test revealed statistically significant differences between proponents and opponents only on *justice* and *wealth* in the 2006 testimonies.

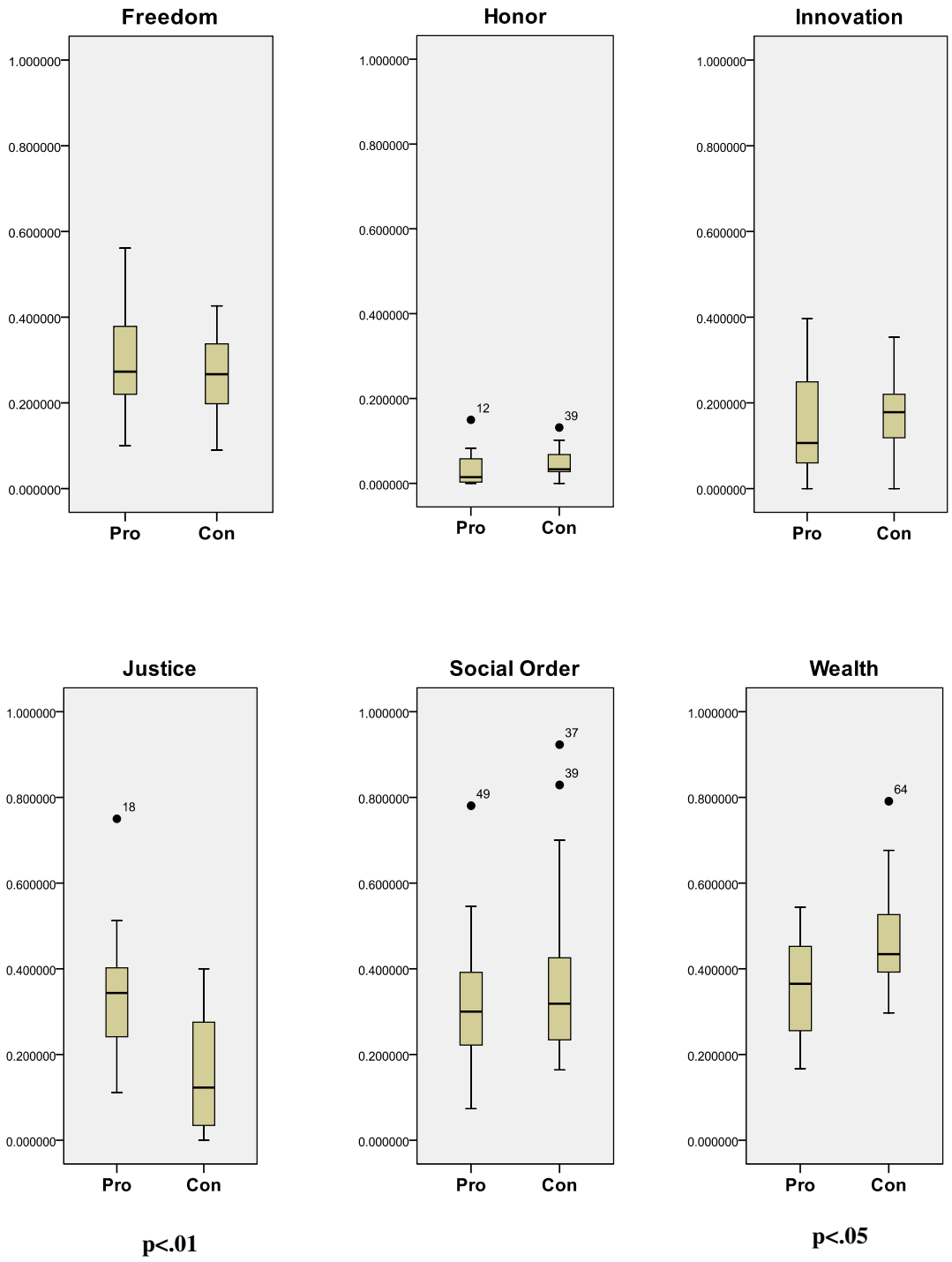

Figure 5-2 Boxplots for Values Differences between Proponents and Opponents in 2006

2. Value Differences between Proponents and Opponents in 2008

Table 5-8 shows that in 2008 testimonies there were statistically significant differences in the values expressed by proponents and opponents on *freedom* (U=68, Z= -3.31, p=0.001) with a mean rank of 25.04 for proponents, 12.75 for opponents; *innovation* (U=109, Z=-2.14, p=0.032) with a mean rank of 16.74 for proponents, 24.69 for opponents; and *wealth* (U=58, Z=-3.6, p=0.000) with a mean rank of 14.52 for proponents, 27.88 for opponents. The results indicated that in the 2008 testimonies the proponents of Net neutrality invoked *freedom* more frequently than the opponents, while the opponents of Net neutrality invoked *innovation* and *wealth* more frequently than the proponents.

Table 5-8 Mann-Whitney U Test for Values Differences between Proponents and Opponents in 2008

	Mean Rank		Z	Mann-Whitney U	Asymp. Sig.
	Pro	Con			
Freedom	25.04	12.75	-3.31	68.00	.001***
Honor	19.26	21.06	-0.49	167.00	.627
Innovation	16.74	24.69	-2.14	109.00	.032*
Justice	21.26	18.19	-0.83	155.00	.408
Social Order	19.70	20.44	-0.20	177.00	.842
Wealth	14.52	27.88	-3.60	58.00	.000***

* $p < .05$; ** $p < .01$; *** $p < .001$

Figure 5-3 illustrates that in the 2008 testimonies the median scores for proponents on *freedom* and *justice* were higher than the opponents, and the median scores for opponents on *honor*, *innovation*, *social order* and *wealth* were higher than the proponents. While the Mann-Whitney U test revealed statistically significant differences between proponents and opponents only on *freedom*, *innovation*, and *wealth* in the 2008 testimonies.

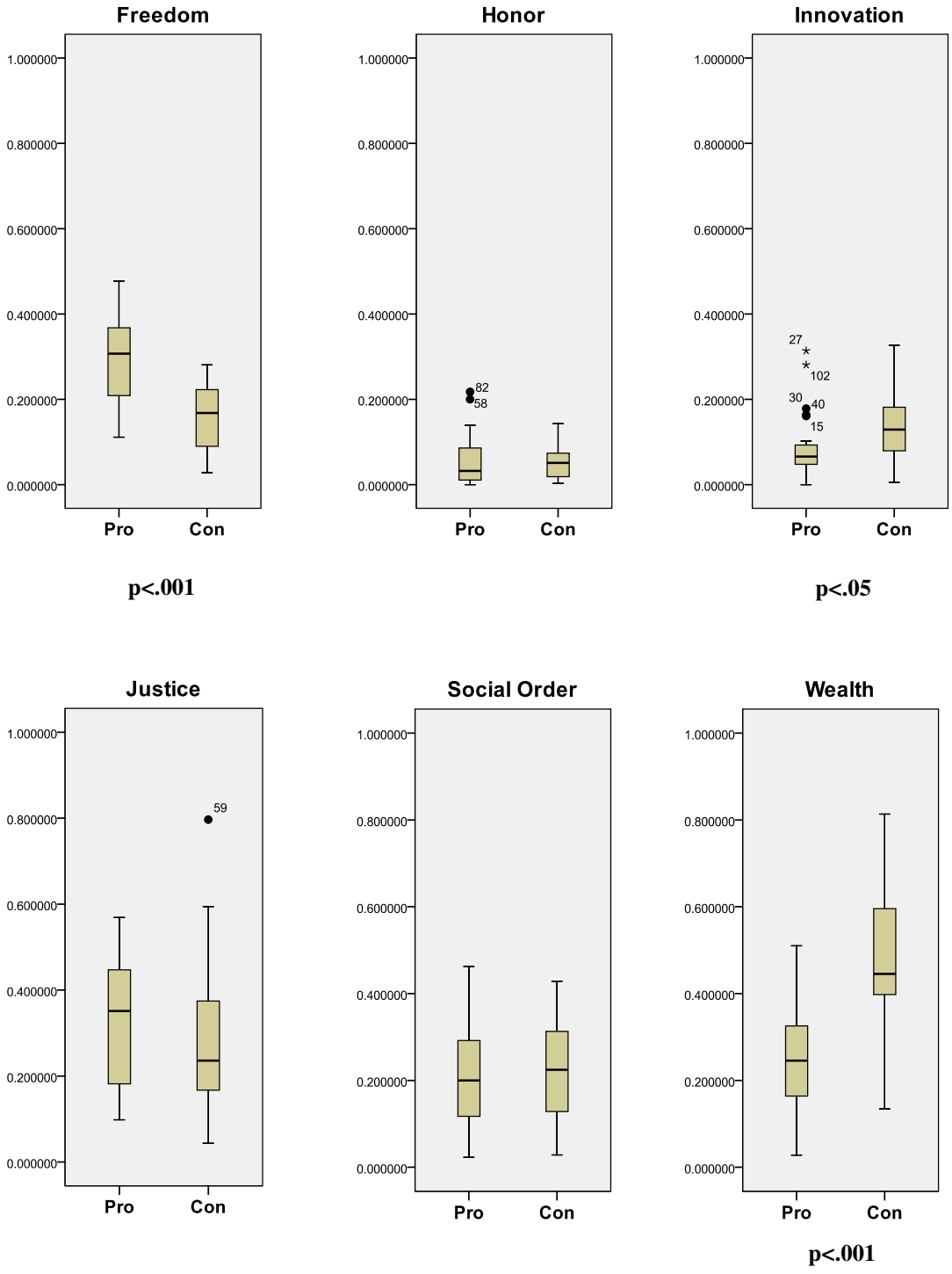

Figure 5-3 Boxplots for Values Differences between Proponents and Opponents in 2008

3. Value Differences between Proponents and Opponents in 2011

Table 5-9 shows that in the 2011 testimonies there were statistically significant differences in the values expressed by proponents and opponents on *freedom* (U=14.5, Z= -3.31, p=0.019) with a mean rank of 12.39 for proponents, 6.61 for opponents; The results indicated that in the 2011 testimonies the proponents of Net neutrality invoked *freedom* more frequently than the opponents.

Table 5-9 Mann-Whitney U Test for Values Differences between Proponents and Opponents in 2011

	Mean Rank		Z	Mann-Whitney U	Asymp. Sig.
	Pro	Con			
Freedom	12.39	6.61	-2.30	14.50	.022*
Honor	9.00	10.00	-0.42	36.00	.678
Innovation	10.78	8.22	-1.02	29.00	.310
Justice	11.11	7.89	-1.28	26.00	.200
Social Order	7.67	11.33	-1.46	24.00	.145
Wealth	11.67	7.33	-1.72	21.00	.085

* $p < .05$; ** $p < .01$; *** $p < .001$

Figure 5-4 illustrates that in the 2011 testimonies the median scores for proponents on *freedom, innovation, justice,* and *wealth* were higher than the opponents, and the median score for opponents on *honor* and *social order* were higher than the proponents. However, the Mann-Whitney U test revealed statistically significant differences between proponents and opponents only on *freedom* in the 2011 testimonies.

4. Shifts of Each Value between Proponents and Opponents across 2006, 2008, and 2011

This study also examined the shifts of values between proponents and opponents across different time periods. Based on the Mann-Whitney U test demonstrated in table 5-

7, table 5-8, and table 5-9, the study compared the shifts of each value between proponents and opponents across different time periods as shown in table 5-10.

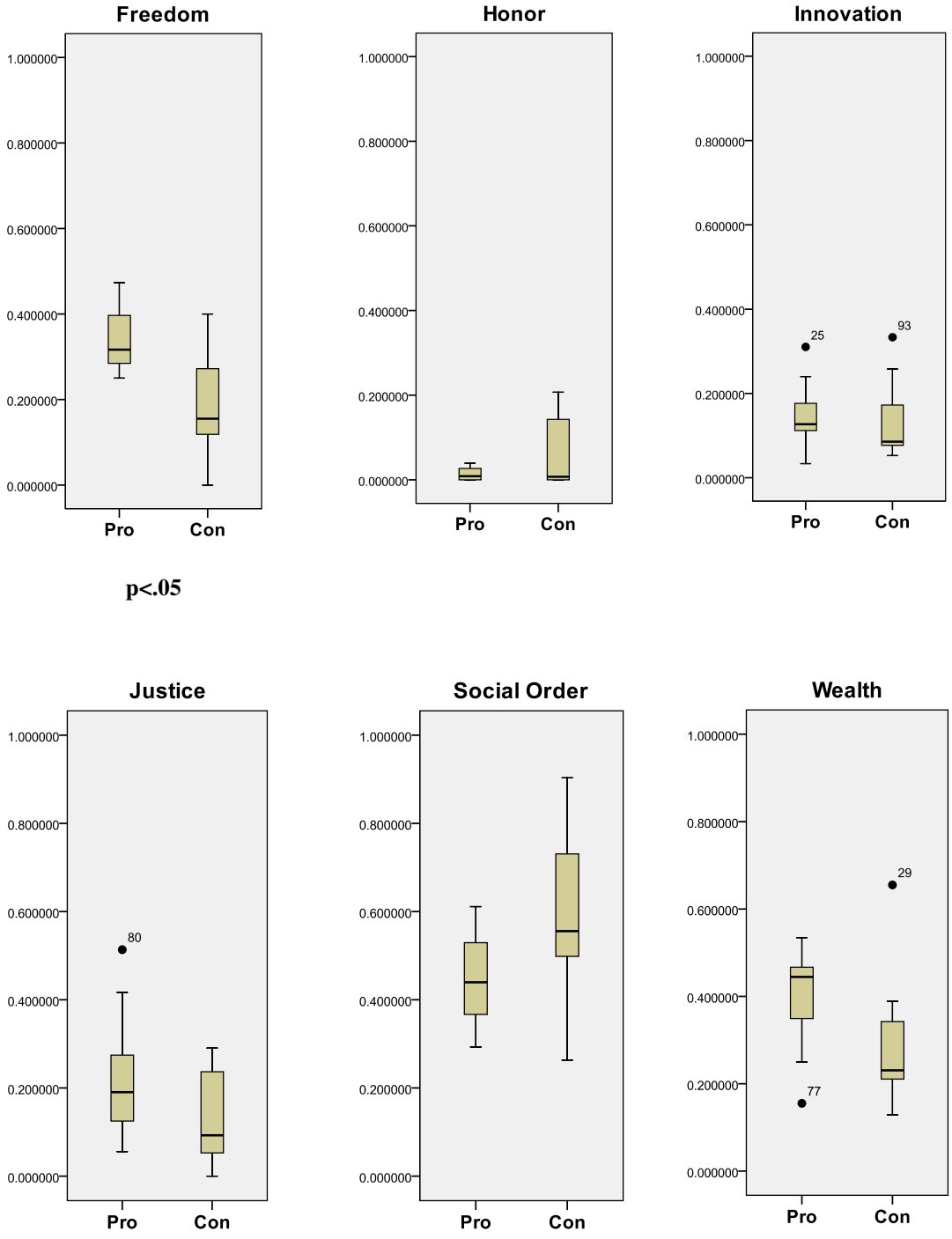

Figure 5-4 Boxplots for Values Differences between Proponents and Opponents in 2011

Table 5-10 Mann-Whitney U Test of Value Differences between Proponents and Opponents across Time Periods

	Year	Mean Rank		Z	Mann-Whitney U	Asymp. Sig.
		Pro	Con			
Freedom	2006	21.04	17.13	-1.06	137.00	.289
	2008	25.04	12.75	-3.31	68.00	.001***
	2011	12.39	6.61	-2.30	14.50	.022*
Honor	2006	17.13	23.13	-1.64	118.00	.102
	2008	19.26	21.06	-0.49	167.00	.627
	2011	9.00	10.00	-0.42	36.00	.678
Innovation	2006	18.59	20.90	-0.63	151.50	.530
	2008	16.74	24.69	-2.14	109.00	.032*
	2011	10.78	8.22	-1.02	29.00	.310
Justice	2006	24.41	11.97	-3.38	59.50	.001**
	2008	21.26	18.19	-0.83	155.00	.408
	2011	11.11	7.89	-1.28	26.00	.200
Social Order	2006	18.28	21.37	-0.84	144.50	.403
	2008	19.70	20.44	-0.20	177.00	.842
	2011	7.67	11.33	-1.46	24.00	.145
Wealth	2006	16.33	24.37	-2.18	99.50	.029*
	2008	14.52	27.88	-3.60	58.00	.000***
	2011	11.67	7.33	-1.72	21.00	.085

* $p < .05$; ** $p < .01$; *** $p < .001$

The graphical summary of the shifts of values between proponents and opponents across different time periods were shown in figure 5-5 and described as follows:

For *freedom*, there was no statistically significant difference between proponents and opponents of Net neutrality in 2006 testimonies. In 2008, however, the differences of median scores between proponents and opponents of Net neutrality increased in 2008 and 2011 testimonies. The study found statistically significant differences between proponents and opponents of Net neutrality in 2008 testimonies and 2011 testimonies. Specifically, no overlap of the boxplots between proponents and opponents was found on *freedom* in 2011 testimonies.

For *honor*, there were no statistically significant differences between proponents and opponents of Net neutrality in 2006, 2008, and 2011 testimonies.

For *innovation*, there were no statistically significant differences between proponents and opponents of Net neutrality in 2006 testimonies and 2011 testimonies; while the study found statistically significant differences between proponents and opponents of Net neutrality in 2008 testimonies as opponents invoked *innovation* more frequently than proponents.

For *justice*, there was a statistically significant difference between proponents and opponents of Net neutrality in 2006 testimonies as proponents invoked *justice* more frequently than opponents. Although there were no statistically significant differences between proponents and opponents of Net neutrality in 2008 and 2011 testimonies, the median scores between proponents and opponents of Net neutrality decreased in 2008 and 2011 testimonies.

For *social order*, although there were no statistically significant differences between proponents and opponents of Net neutrality in 2006, 2008, and 2011 testimonies, the median scores between proponents and opponents of Net neutrality in 2011 increased significantly as the opponents invoked *social order* more frequently than the proponents.

The shift of values in *wealth* between proponents and opponents of Net neutrality was an unique one. The study found statistically significant differences between proponents and opponents of Net neutrality in 2006, 2008, and 2011 testimonies; while the opponents invoked *wealth* more frequently than the proponents in 2006 and 2008 testimonies, the proponents invoked *wealth* more frequently than the opponents in 2011 testimonies.

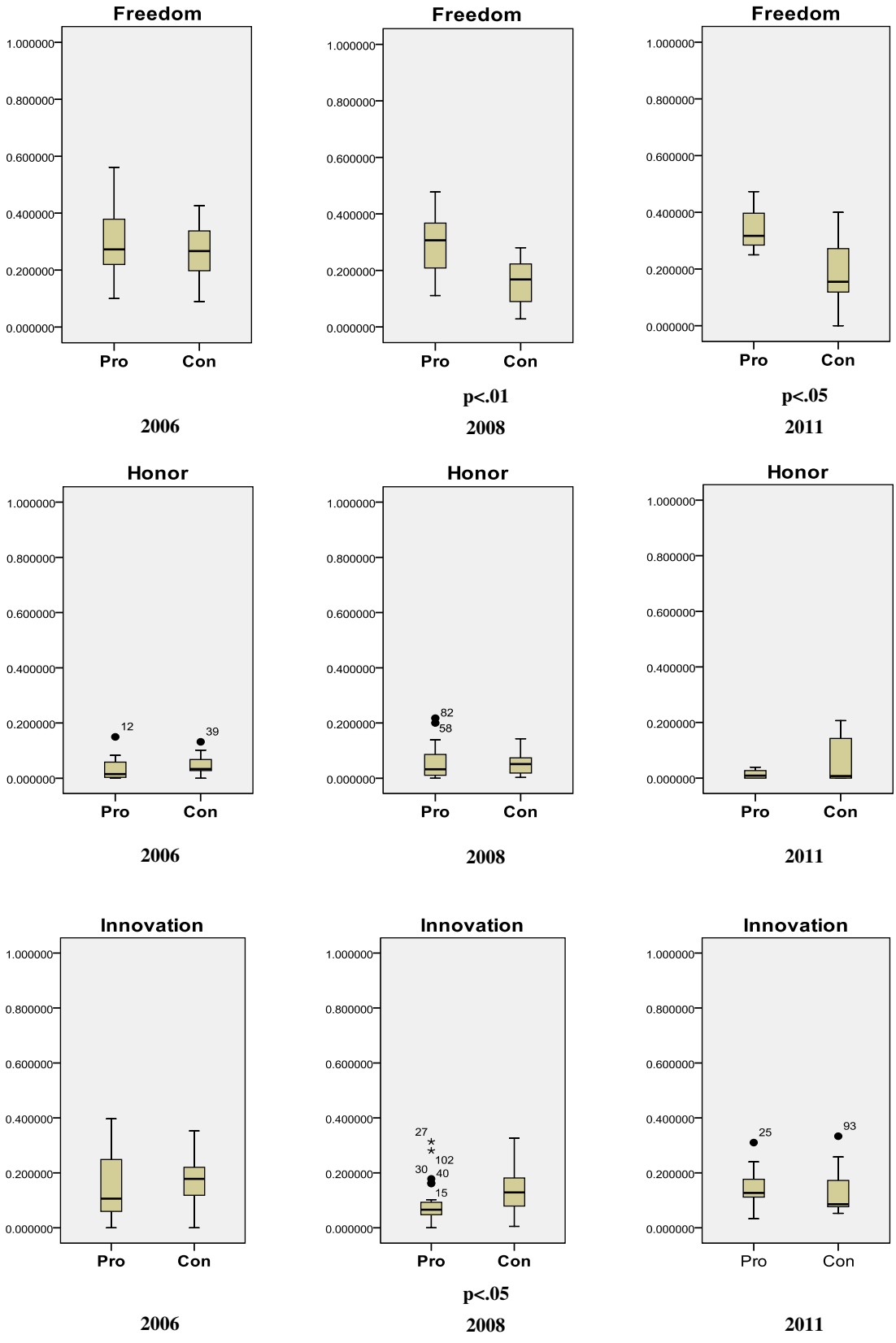

Figure 5-5 Boxplots for Values Shifts between Proponents and Opponents

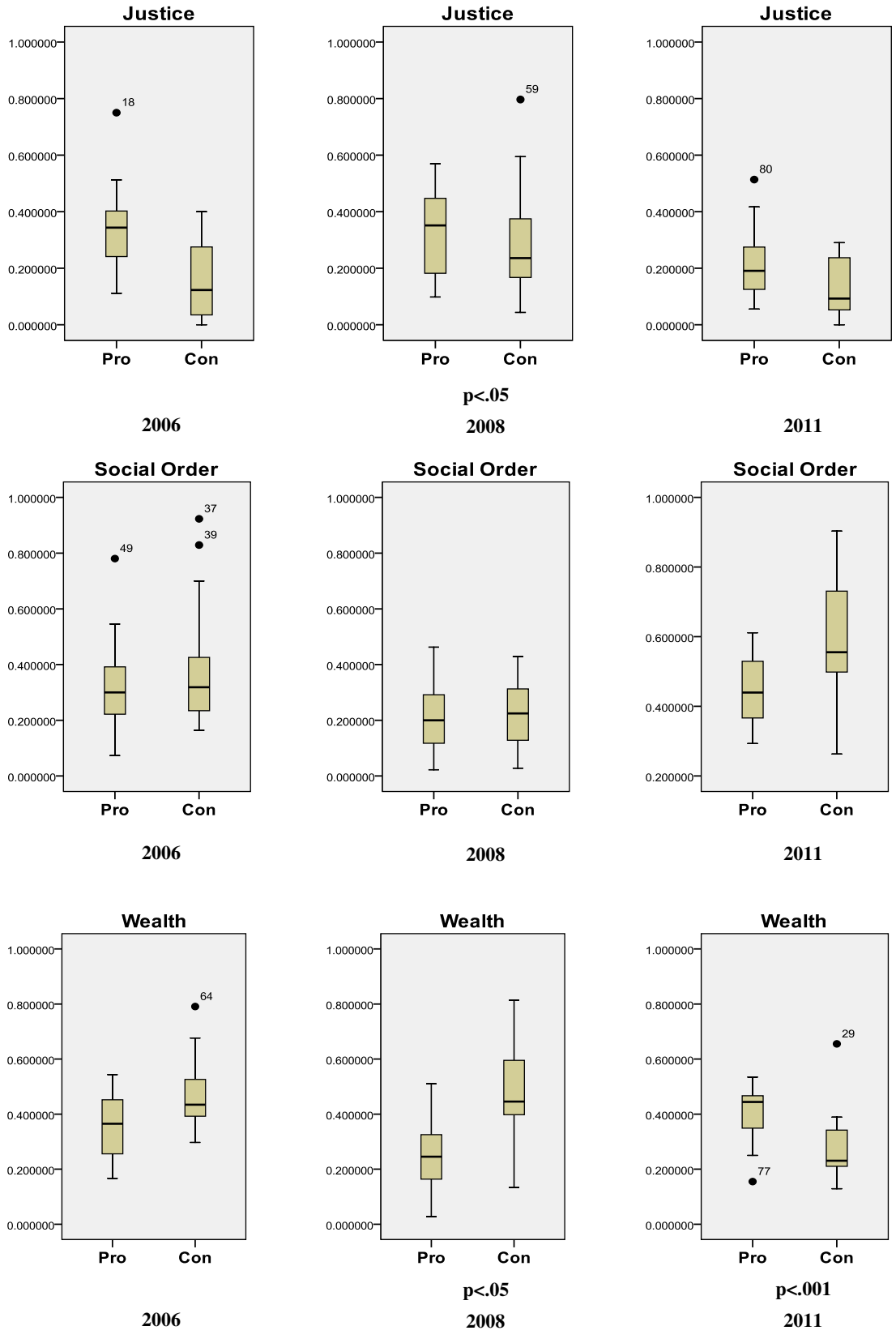

Figure 5-5 Boxplots for Values Shifts between Proponents and Opponents (Cont.)

5.3 Value Differences among Stakeholder Groups about Net neutrality

In this section, the study examined the value differences among stakeholder groups including government representatives, service providers, content providers, interest groups, and academics. For further analysis, the study combined service providers and content providers as corporate actors to see if there are any value differences between government representatives and corporate actors. Among government representatives, the study examined the value differences based on their party affiliation (e.g., Democrats and Republicans). The study also examined the differences between elected officials (e.g., Senators and Representatives) and appointed officials (e.g., FCC commissioner).

5.3.1 Value Differences among Government Representatives, Service Providers, Content Providers, Interest Groups, and Academics in the Net Neutrality Debate

Kruskal-Wallis test was conducted to evaluate the statistical significant relationships of the value differences among different stakeholders (government representatives, service providers, content providers, interest groups, and academics) about Net neutrality. The results showed that five stakeholder groups about Net neutrality differed significantly in the proportion of expression of the values on *honor*, *justice*, and *social order*. Table 5-11 shows that there were statistically significant differences among five stakeholder groups about Net neutrality in the proportion of expression of the values of *honor* ($H(4)=20.056$, $p=0.000$) with a mean rank of 77.63 for service providers, 58.13 for interest groups, 45.57 for government representatives, 44.57 for content providers, and 25.75 for academics; *justice* ($H(4)=10.153$, $p=0.038$) with a mean rank of 68.67 for

academics, 58.29 for content providers, 53.22 for interest groups, 41.86 for government representatives, and 39.75 for service providers; and *social order* (H(4)=29.397, *p*=0.000) with a mean rank of 64.83 for government representatives, 52.46 for interest groups, 29.63 for service providers, 26.43 for content providers, and 23.42 for academics.

Table 5-11 Kruskal-Wallis Test for Values Differences among Stakeholders

	Mean Rank					Chi-Square	df	Asymp. Sig.
	GOV	SP	CP	IG	AC			
Freedom	49.25	35.63	74.64	51.79	42.50	8.134	4	.087
Honor	45.57	77.63	44.57	58.13	25.75	20.056	4	.000***
Innovation	52.92	59.63	50.07	49.41	35.96	4.176	4	.383
Justice	41.86	39.75	58.29	53.22	68.67	10.153	4	.038*
Social Order	64.83	29.63	26.43	52.46	23.42	29.397	4	.000***
Wealth	43.46	65.88	35.14	52.90	60.58	8.262	4	.082

* $p < .05$; ** $p < .01$; *** $p < .001$

Note: GOV: Government Representatives,; SP: Service Providers; CP: Content Providers; IG: Interest Groups; AC: Academics

Pairwised comparisons among stakeholder groups were conducted using Mann-Whitney U test, which provide identical results with the Kruskal-Wallis test for two independent samples. Table 5-12 provides the Mann-Whitney U test of the pairwised comparisons among the following five stakeholder groups.

1. Government Representatives and Service Providers

The results of comparison of government representatives and service providers indicated that there were statistically significant differences between government representatives and service providers in terms of the values of *honor* (*U*=62, *Z*=-2.65, *p*=0.008) with a mean rank of 34.75 for service providers, 21.13 for government representatives; *social order* (*U*=45, *Z*=-3.1, *p*=0.002) with a mean rank of 26.32 for government representatives, 10.13 for service providers; and *wealth* (*U*=82, *Z*=-2.23, *p*=0.042) with a mean rank of 32.25 for service providers, 21.66 for government

representatives. The results indicated that government representatives invoked *social order* more frequently than service providers, while service providers invoked *honor* and *wealth* more frequently than government representatives.

2. Government Representatives and Content Providers

The results of comparison of government representatives and content providers indicated that there were statistically significant differences between government representatives and content providers in terms of the values of *freedom* (U=62.5, Z=-2.21, p=0.027) with a mean rank of 33.07 for content providers, 21.14 for government representatives; and *social order* (U=32, Z=-3.16, p=0.002) with a mean rank of 25.66 for government representatives, 8.57 for content providers. The results indicated that government representatives invoked *social order* more frequently than content providers, while content providers invoked *freedom* more frequently than government representatives.

3. Government Representatives and Interest Groups

The results of comparison of government representatives and interest groups indicated that there were statistically significant differences between government representatives and interest groups in terms of the value of *social order* (U=464.5, Z=-2.05, p=0.041) with a mean rank of 41.28 for government representatives, 31.16 for interest groups. The results indicated that government representatives invoked *social order* more frequently than interest groups.

4. Government Representatives and Academics

The results of comparison of government representatives and academics indicated that there were statistically significant differences between government representatives

and academics in terms of the values of *justice* (U=103, Z=-2.84, p=0.005) with a mean rank of 35.92 for academics, 22.21 for government representatives; and *social order* (U=54, Z=-3.95, p=0.000) with a mean rank of 30.08 for government representatives, 11 for academics. The results indicated that government representatives invoked *social order* more frequently than academics, while academics invoked *justice* more frequently than government representatives.

5. Service Providers and Content Providers

The results of comparison of service providers and content providers indicated that there were statistically significant differences between service providers and content providers in terms of the values of *freedom* (U=5, Z=-2.66, p=0.008) with a mean rank of 11.29 for content providers, 5.13 for service providers; *honor* (U=7, Z=-2.43, p=0.015) with a mean rank of 10.63 for service providers, 5 for service providers; and *wealth* (U=4, Z=-2.78, p=0.005) with a mean rank of 11 for service providers, 4.57 for content providers. The results indicated that service providers invoked *honor* and *wealth* more frequently than content providers, while content providers invoked *freedom* more frequently than government representatives.

6. Service Providers and Interest Groups

The results of comparison of service providers and interest groups indicated that there were statistically significant differences between service providers and interest groups in terms of the values of *honor* (U=70, Z=-2.12, p=0.034) with a mean rank of 29.75 for service providers, 19.56 for interest groups; and *social order* (U=66, Z=-2.24, p=0.025) with a mean rank of 23.56 for interest groups, 12.75 for service providers. The results indicated that service providers invoked *honor* more frequently than interest

groups, while interest groups invoked *social order* more frequently than service providers.

7. Service Providers and Academics

The results of comparison of service providers and academics indicated that there were statistically significant differences between service providers and academics in terms of the values of *honor* (U=4, Z=-3.41, p=0.001) with a mean rank of 16 for service providers, 6.83 for academics; and *justice* (U=15, Z=-2.54, p=0.011) with a mean rank of 13.25 for academics, 6.38 for service providers. The results indicated that service providers invoked *honor* more frequently than academics, while academics invoked *justice* more frequently than service providers.

8. Content Providers and Interest Groups

The results of comparison of content providers and interest groups indicated that there were statistically significant differences between content providers and interest groups in terms of the value of *social order* (U=52, Z=-2.32, p=0.020) with a mean rank of 22.97 for interest groups, 11.43 for content providers. The results indicated that interest groups invoked *social order* more frequently than content providers.

9. Content Providers and Academics

The results of comparison of content providers and academics indicated that there were statistically significant differences between content providers and academics in terms of the values of *freedom* (U=17, Z=-2.11, p=0.035) with a mean rank of 13.57 for content providers, 7.92 for academics; and *honor* (U=14, Z=-2.38, p=0.017) with a mean rank of 14 for content providers, 7.67 for academics. The results indicated that content providers invoked *freedom* and *honor* more frequently than academics.

10. Interest Groups and Academics

The results of comparison of interest groups and academics indicated that there were statistically significant differences between interest groups and academics in terms of the values of *honor* (U=62, Z=-3.56, p=0.000) with a mean rank of 27.68 for interest groups, 11.67 for academics; and *social order* (U=76, Z=-3.20, p=0.001) with a mean rank of 27.26 for interest groups, 12.83 for academics. The results indicated that interest groups invoked *honor* and *social order* more frequently than academics.

Table 5-13 summarizes the results of the test of significance for pairwise comparisons among five stakeholder groups for each value, and figure 5-6 provides a graphical summary of both central tendency and variation of a distribution of proportions within specific values among five stakeholder groups.

For *freedom*, content providers had the highest median score in the expression of *freedom* compared with other stakeholder groups, while service providers had the lowest median score in the expression of *freedom* among the five stakeholder groups. Statistically significant differences were found between content providers and government representatives (p=0.027), between content providers and service providers (p=0.08), and between content providers and academics (p=0.036).

For *honor*, the median scores of service providers and interest groups stand out from the other stakeholder groups. Statistically significant differences were found between service providers and government representatives (p=0.008), service providers and content providers (p=0.015), service providers and interest groups (p=0.034), service providers and academics (p=0.001), content providers and academics (p=0.017), and interest groups and academics (p=0.000).

For *innovation*, no statistically significant differences were found among the five stakeholder groups.

For *justice*, academics has the highest median score in the expression of *justice* compared with other stakeholder groups, while service providers and government representatives has the lowest median score in the expression of *justice* among the five stakeholder groups. Statistically significant differences were found between academics and government representatives (p=0.005), and between academics and service providers (p=0.011).

For *social order*, the median scores of government representatives and interest groups stand out from the other stakeholder groups. Statistically significant differences were found between government representatives and service providers (p=0.002), government representatives and content providers (p=0.002), government representatives and interest groups (p=0.041), government representatives and academics (p=0.000), interest groups and service providers (p=0.025), interest groups and content providers (p=0.020), and interest groups and academics (p=0.001).

For *wealth*, there was no overlap of the boxplots between service providers and content providers. Statistically significant differences were found in the expression of wealth between service providers and content providers (p=0.005), and between service providers and government representatives (p=0.042).

Table 5-12 Mann-Whitney U Test for Values Differences between Stakeholder Groups

	Mean Rank		Z	Mann-Whitney U	Asymp. Sig.
	GOV	SP			
Freedom	24.66	18.00	-1.28	108.00	.202
Honor	21.13	34.75	-2.65	62.00	.008**
Innovation	22.89	26.38	-0.67	129.00	.505
Justice	23.55	23.25	-0.58	150.00	.954
Social Order	26.32	10.13	-3.10	45.00	.002**
Wealth	21.66	32.25	-2.23	82.00	.042*
	GOV	CP			
Freedom	21.14	33.07	-2.21	62.50	.027*
Honor	22.95	23.29	-0.64	131.00	.949
Innovation	23.13	22.29	-0.16	128.00	.876
Justice	21.74	29.86	-1.50	85.00	.133
Social Order	25.66	8.57	-3.16	32.00	.002**
Wealth	23.58	19.86	-0.69	111.00	.491
	GOV	IG			
Freedom	35.74	37.35	-0.33	617.00	.744
Honor	32.46	41.01	-1.75	492.50	.081
Innovation	37.71	35.15	-0.52	600.00	.604
Justice	32.86	40.57	-1.56	507.50	.118
Social Order	41.28	31.16	-2.05	464.50	.041*
Wealth	33.28	40.10	-1.38	523.50	.167
	GOV	AC			
Freedom	26.21	23.25	-0.61	201.00	.540
Honor	27.53	19.08	-1.79	151.00	.073
Innovation	27.68	18.58	-1.89	145.00	.059
Justice	22.21	35.92	-2.84	103.00	.005**
Social Order	30.08	11.00	-3.95	54.00	.000***
Wealth	23.45	32.00	-1.77	150.00	.076
	SP	CP			
Freedom	5.13	11.29	-2.66	5.00	.008**
Honor	10.63	5.00	-2.43	7.00	.015*
Innovation	8.75	7.14	-0.69	22.00	.487
Justice	6.50	9.71	-1.39	16.00	.165
Social Order	8.25	7.71	-0.23	26.00	.817
Wealth	11.00	4.57	-2.78	4.00	.005**

* $p < .05$; ** $p < .01$; *** $p < .001$

Note: GOV: Government Representatives,; SP: Service Providers; CP: Content Providers; IG: Interest Groups; AC: Academics

Table 5-12 Mann-Whitney U Test for Values Differences between Stakeholder Groups (Cont.)

	Mean Rank		Z	Mann-Whitney U	Asymp. Sig.
	SP	IG			
Freedom	15.75	22.85	-1.47	90.00	.141
Honor	29.75	19.56	-2.12	70.00	.034*
Innovation	24.88	20.71	-0.86	109.00	.387
Justice	17.13	22.53	-1.12	101.00	.262
Social Order	12.75	23.56	-2.24	66.00	.025*
Wealth	24.88	20.71	-0.87	109.00	.387
	SP	AC			
Freedom	10.25	10.67	-0.15	46.00	.877
Honor	16.00	6.83	-3.41	4.00	.001**
Innovation	13.13	8.75	-1.62	27.00	.105
Justice	6.38	13.25	-2.54	15.00	.011*
Social Order	12.00	9.50	-0.93	36.00	.355
Wealth	11.25	10.00	-0.46	42.00	.643
	CP	IG			
Freedom	28.71	19.41	-1.87	65.00	.061
Honor	14.29	22.38	-1.63	72.00	.103
Innovation	21.00	21.00	0.00	119.00	1.000
Justice	22.14	20.76	-0.28	111.00	.782
Social Order	11.43	22.97	-2.32	52.00	.020*
Wealth	15.14	22.21	-1.42	78.00	.155
	CP	AC			
Freedom	13.57	7.92	-2.11	17.00	.035*
Honor	14.00	7.67	-2.38	14.00	.017*
Innovation	11.64	9.04	-0.98	30.50	.329
Justice	8.57	10.83	-0.85	32.00	.398
Social Order	10.71	9.58	-0.42	37.00	.673
Wealth	7.57	11.42	-1.44	25.00	.151
	IG	AC			
Freedom	24.68	20.17	-1.00	164.00	.317
Honor	27.68	11.67	-3.56	62.00	.000***
Innovation	25.06	19.08	-1.33	151.00	.185
Justice	21.85	28.17	-1.40	148.00	.161
Social Order	27.26	12.83	-3.20	76.00	.001**
Wealth	22.38	26.67	-0.95	166.00	.342

* $p < .05$; ** $p < .01$; *** $p < .001$

Note: GOV: Government Representatives,; SP: Service Providers; CP: Content Providers; IG: Interest Groups; AC: Academics

Table 5-13 Mann-Whitney U Test of Significance for Values between Stakeholder Groups

		Government Representatives	Service Providers	Content Providers	Interest Groups	Academics
Freedom	Government Representatives	-	.202	.027*	.744	.540
	Service Providers		-	.008**	.141	.910
	Content Providers			-	.063	.036*
	Interest Groups				-	.317
	Academics					-
Honor	Government Representatives	-	.008**	.949	.081	.073
	Service Providers		-	.015*	.034*	.000***
	Content Providers			-	.108	.017*
	Interest Groups				-	.000***
	Academics					-
Innovation	Government Representatives	-	.505	.876	.604	.059
	Service Providers		-	.487	.387	.115
	Content Providers			-	1.000	.340
	Interest Groups				-	.185
	Academics					-
Justice	Government Representatives	-	.954	.133	.118	.005**
	Service Providers		-	.165	.262	.010*
	Content Providers			-	.799	.432
	Interest Groups				-	.161
	Academics					-
Social Order	Government Representatives	-	.002*	.002**	.041*	.000***
	Service Providers		-	.817	.025*	.384
	Content Providers			-	.019*	.711
	Interest Groups				-	.001**
	Academics					-
Wealth	Government Representatives	-	.042*	.491	.167	.076
	Service Providers		-	.005**	.387	.678
	Content Providers			-	.164	.167
	Interest Groups				-	.342
	Academics					-

* $p < .05$; ** $p < .01$; *** $p < .001$

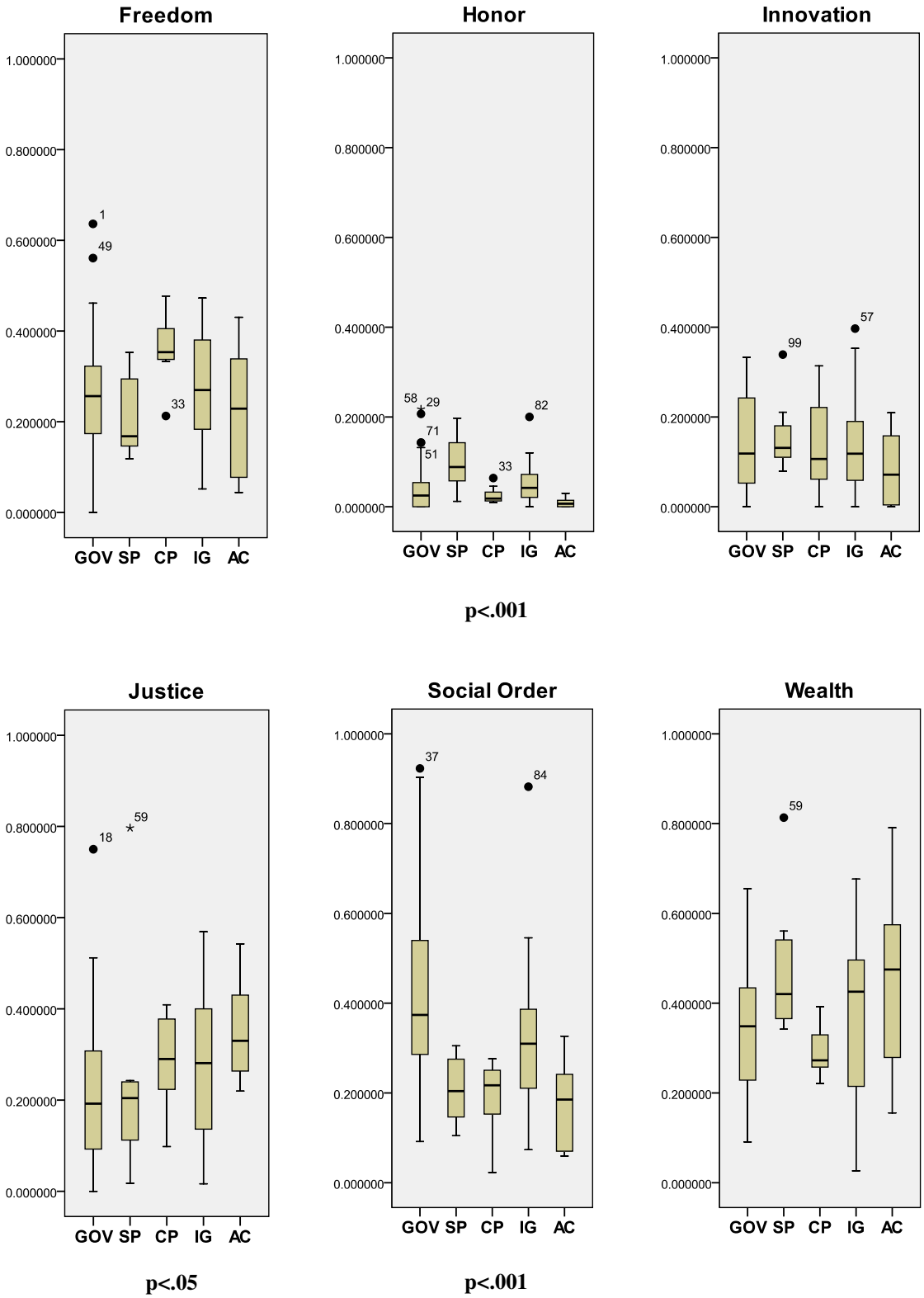

Figure 5-6 Boxplots for Values Differences among Stakeholders Groups (I)

5.3.2 Value Differences among Corporate Actors, Government Representatives, Interest Groups, and Academics in the Net Neutrality Debate

Besides the comparison of value differences among five stakeholder groups, it was also important to see if there were any value differences between corporate actors and other stakeholder groups; therefore, the study combined service providers and content providers as corporate actors and compare the value differences among corporate actors, government representatives, interest groups, and academics. Table 5-14 provides the Mann-Whitney U test of the pairwise comparisons among corporate actors, government representatives, interest groups, and academics.

1. Corporate Actors and Government Representatives

The results of comparison of corporate actors and government representatives indicated that there were statistically significant differences in the values expressed by corporate actors and government representatives on *social order* (U=77, Z=-4.11, p=0.000) with a mean rank of 32.47 for government representatives, 13.13 for corporate actors. The results indicated that government representatives invoked *social order* more frequently than corporate actors, which is consistent with the results described in section 5.3.1 that government representatives invoked *social order* more frequently than service providers and content providers.

2. Corporate Actors and Interest Groups

The results of comparison of corporate actors and interest groups indicated that there were statistically significant differences in the values expressed by corporate actors and interest groups on *social order* (U=118, Z=-2.97, p=0.003) with a mean rank of 29.03 for interest groups, 15.87 for corporate actors. The results indicated that interest groups

invoked *social order* more frequently than corporate actors, which is consistent with the results described in section 5.3.1 that interest groups invoked *social order* more frequently than service providers and content providers.

3. Corporate Actors and Academics

The results of comparison of corporate actors and academics indicated that there were statistically significant differences in the values expressed by corporate actors and interest groups on *honor* (U=18, Z=-3.52, p=0.000) with a mean rank of 18.8 for corporate actors, 8 for academics; and *justice* (U=47, Z=-2.1, p=0.036) with a mean rank of 17.58 for academics, 11.13 for corporate actors. The results indicated that corporate actors invoked honor more frequently than academics, while the academics invoked *justice* more frequently than corporate actors. These findings are consistent with the results described in section 5.3.1 that service providers and content providers invoked *honor* more frequently than academics, and academics invoked *justice* more frequently than service providers.

Figure 5-7 provides graphical summary of both central tendency and variation of a distribution of proportions within specific values among government representatives, corporate actors, interest groups, and academics. The results illustrated that corporate actors has the highest median score in the expression of *honor* compared with other stakeholder groups and there were no overlaps of the boxplots between corporate actors and academics on *honor*, and between corporate actors and government representatives on *social order*. No statistically significant differences were found in the expression of *freedom*, *innovation*, and *wealth* among government representatives, corporate actors, interest groups, and academics.

Table 5-14 Mann-Whitney U Test for Values Differences between Government Representatives and Corporate Actors

	Mean Rank		Z	Mann-Whitney U	Asymp. Sig.
	CA	GOV			
Freedom	28.77	26.30	-0.52	258.50	.601
Honor	33.13	24.58	-1.83	193.00	.067
Innovation	28.20	26.53	-0.36	267.00	.722
Justice	30.07	25.79	-0.91	239.00	.364
Social Order	13.13	32.47	-4.11	77.00	.000***
Wealth	30.20	25.74	-0.95	237.00	.343
	CA	IG			
Freedom	25.53	24.76	-0.17	247.00	.862
Honor	26.27	24.44	-0.41	236.00	.680
Innovation	26.80	24.21	-0.59	228.00	.558
Justice	23.20	25.79	-0.59	228.00	.558
Social Order	15.87	29.03	-2.97	118.00	.003**
Wealth	24.07	25.41	-0.30	241.00	.761
	CA	AC			
Freedom	15.53	12.08	-1.12	67.00	.262
Honor	18.80	8.00	-3.52	18.00	.000***
Innovation	16.17	11.29	-1.59	57.50	.112
Justice	11.13	17.58	-2.10	47.00	.036*
Social Order	15.13	12.58	-0.83	73.00	.407
Wealth	13.27	14.92	-0.54	79.00	.591

* $p < .05$; ** $p < .01$; *** $p < .001$

Note: GOV: Government Representatives,; CA: Corporate Actors; IG: Interest Groups; AC: Academics

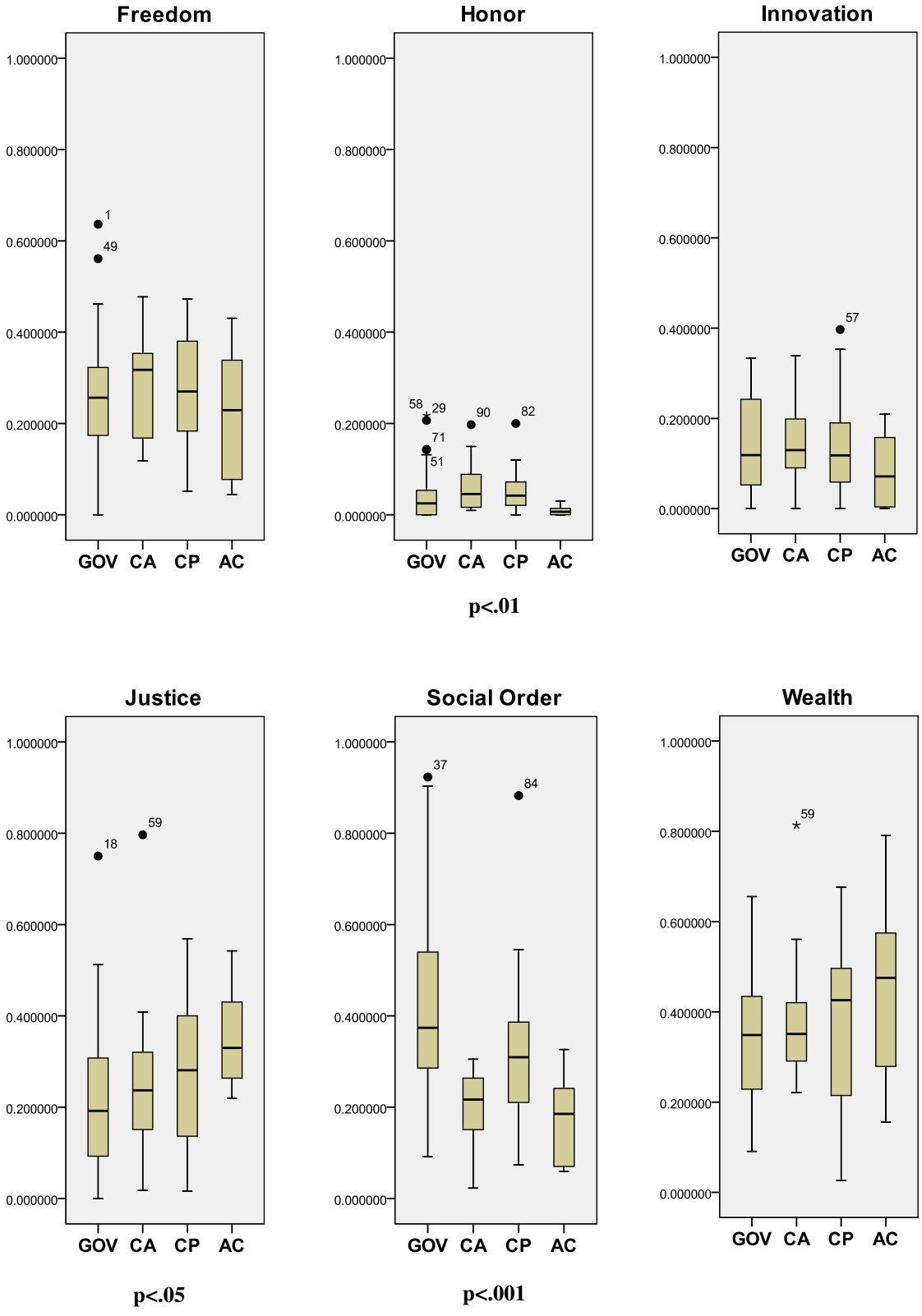

Figure 5-7 Boxplots for Values Differences among Stakeholders Groups (II)

5.3.3 Value Differences between Elected Officials and Appointed Officials in the Net Neutrality Debate

Among government representatives, it was important to see if there are any values differences between elected officials and appointed officials. An elected official refers to a person who is an official by virtue of an election. The Senators and House of Representatives were both considered as elected officials in this study. An appointed official refers to a person who is appointed to an office. The FCC and the FTC commissioners were both considered as appointed officials in this study.

Table 5-15 provides the Mann-Whitney U test of the comparison of values being expressed between elected officials and appointed officials. The results showed that there was a statistically significant difference between elected officials and appointed officials for *honor* (U=107.5, Z=-2.18, p=0.030) with a mean rank of 23.53 for appointed officials, 15.88 for elected officials. The results indicated that the appointed officials invoked *honor* more frequently than the elected officials. No statistically significant differences were found between elected officials and appointed officials on *freedom*, *innovation*, *justice*, *social order*, and *wealth*. Figure 5-8 provides the graphical summary of the comparison of value differences between elected officials and appointed officials.

Table 5-15 Mann-Whitney U Test for Values Differences between Elected Officials and Appointed Officials

	Mean Rank		Z	Mann-Whitney U	Asymp. Sig.
	Elected	Appointed			
Freedom	20.03	18.92	-0.31	169.50	.759
Honor	15.88	23.53	-2.18	107.50	.030*
Innovation	18.23	20.92	-0.75	154.50	.456
Justice	19.65	19.33	-0.09	177.00	.930
Social Order	20.65	18.22	-0.67	157.00	.501
Wealth	19.15	19.89	-0.21	173.00	.838

* $p < .05$; ** $p < .01$; *** $p < .001$

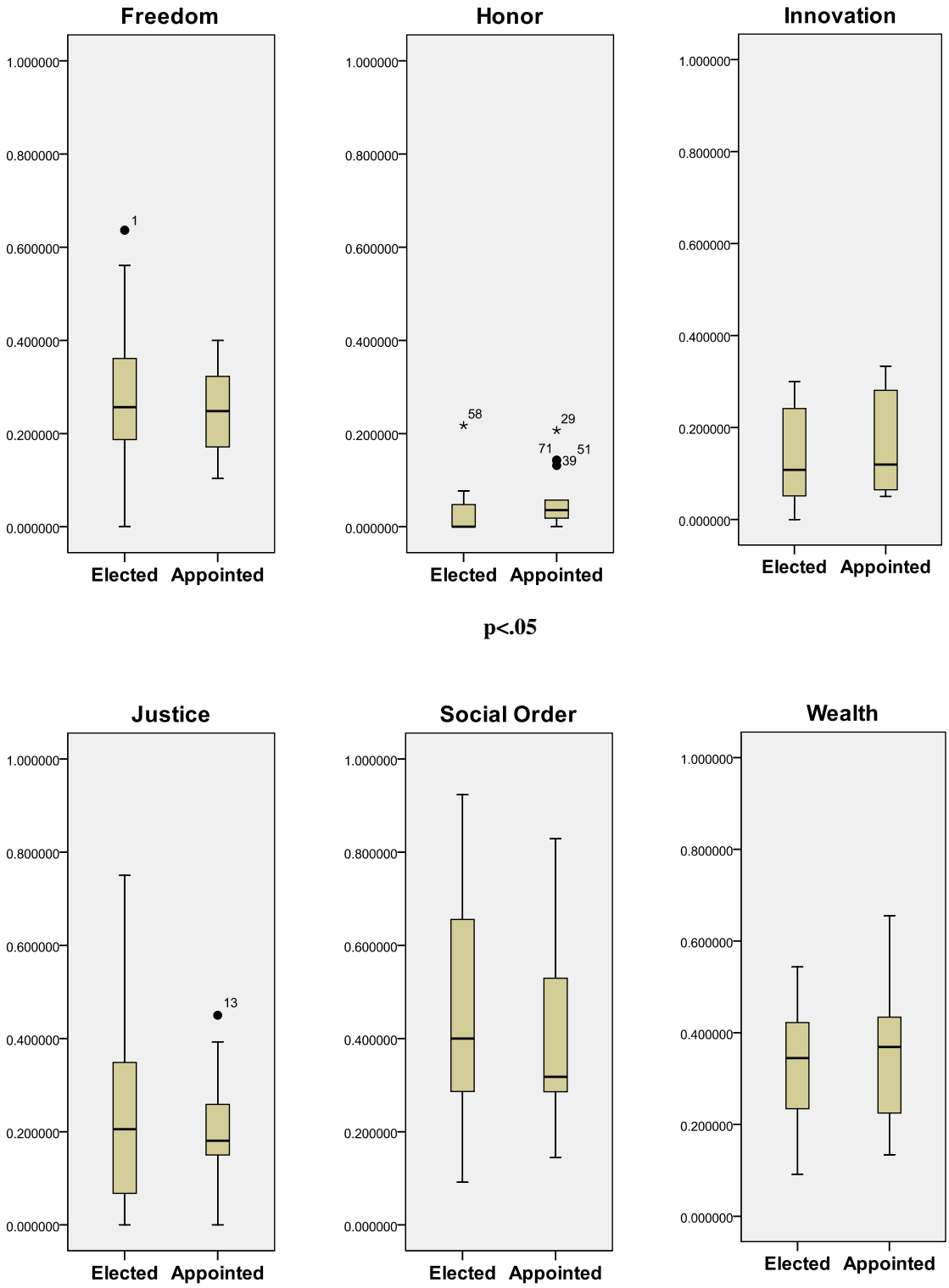

Figure 5-8 Boxplots for Values Differences between Elected Officials and Appointed Officials

5.3.4 Value Differences between Democrats and Republicans in the Net Neutrality Debate

Among government representatives, it was important to see if there are any values differences between Democrats and Republicans. Table 5-16 provides the Mann-Whitney U test of the comparison of values being expressed between Democrats and Republicans. The results showed that there was a statistically significant difference between Democrats and Republicans for *social order* (U=113, Z=-1.97, p=0.049) with a mean rank of 23.05 for Republicans, 15.95 for Democrats. The results indicated that the Republicans invoked *social order* more frequently than the *Democrats*. No statistically significant differences were found between the Democrats and the Republicans on *freedom*, *honor*, *innovation*, *justice*, and *wealth*.

Figure 5-9 provides the graphical summary of the comparison of value differences between the Democrats and the Republicans. Inspecting the plots reveals that the median score for Republicans on *social order* was higher than the Democrats. Although there was some overlap of the boxplots between Democrats and Republicans *on social order*, Mann-Whitney U test still revealed a statistically significant difference between Democrats and Republicans on *social order.*

Table 5-16 Mann-Whitney U Test for Values Differences between Democrats and Republicans

	Mean Rank		Z	Mann-Whitney U	Asymp. Sig.
	Democrats	Republicans			
Freedom	20.92	18.08	-0.79	153.50	.430
Honor	18.34	20.66	-0.66	158.50	.510
Innovation	18.89	20.11	-0.34	169.00	.737
Justice	21.66	17.34	-1.20	139.00	.231
Social Order	15.95	23.05	-1.97	113.00	.049*
Wealth	17.79	21.21	-0.95	148.00	.343

* $p < .05$; ** $p < .01$; *** $p < .001$

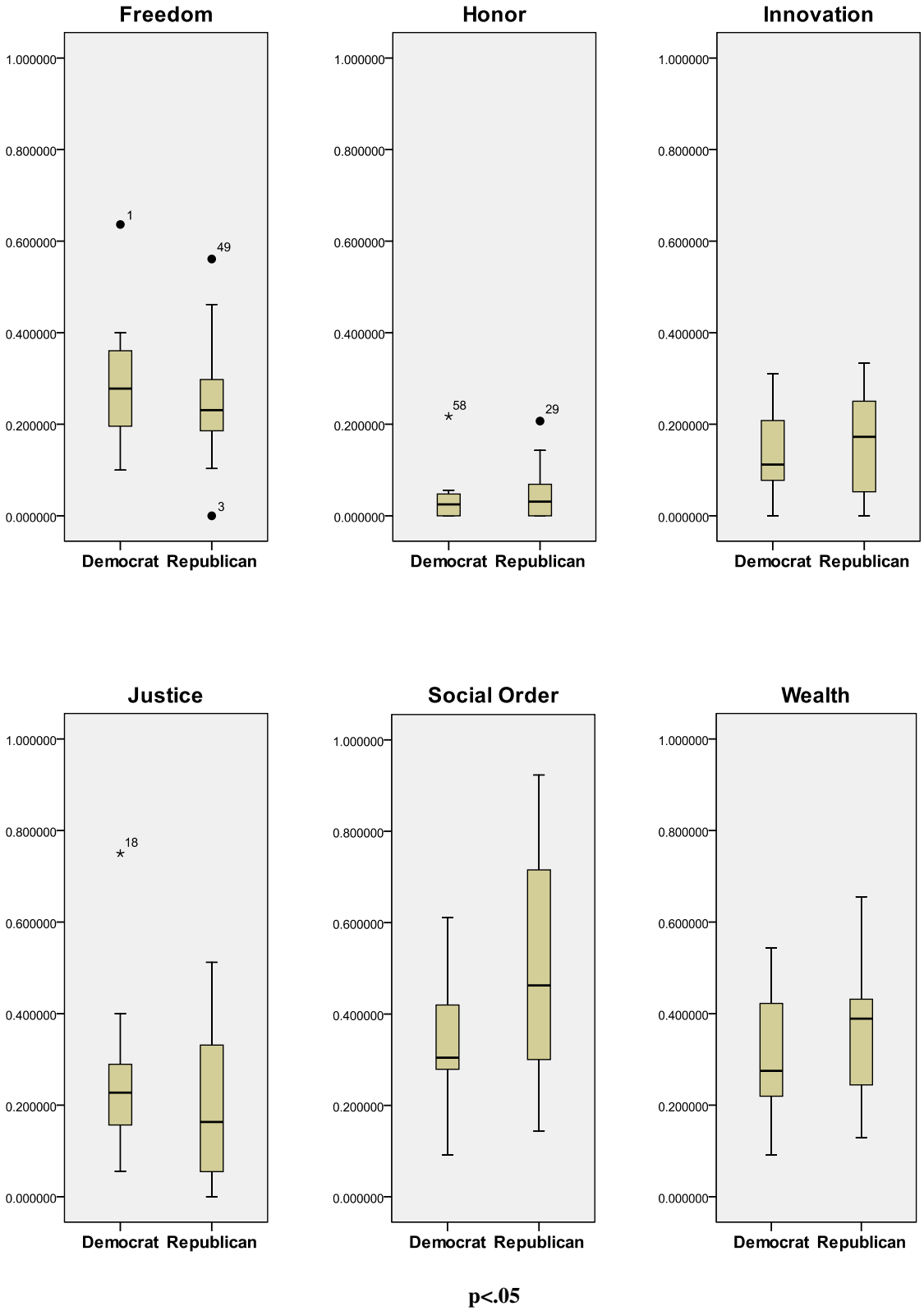

Figure 5-9 Boxplots for Values Differences between Democrats and Republicans

5.4 Value Differences among Venues in the Net Neutrality Debate

In this section, the study examined the value differences among venues including Senate hearings, House hearings and FCC hearings in the Net neutrality debate. The study also combined Senate hearings and House hearings as congressional hearings to see if there are any values differences between congressional hearings and FCC hearings.

5.4.1 Value Differences among Senate Hearings, House Hearings, and FCC Hearings in the Net Neutrality Debate

Kruskal-Wallis test was conducted to evaluate the statistical significant relationships of the value differences among different venues (Senate hearings, House hearings, and FCC hearings) about Net neutrality. The results showed that three groups of positions about Net neutrality differed significantly in the proportion of expression of the values on *freedom* and *social order*. Table 5-17 shows that there were statistically significant differences among venues about Net neutrality in the proportion of expression of the values on *freedom* (H(2)=10.15, p=0.006) with a mean rank of 59.77 for House hearings, 53.34 for Senate Hearings, and 36.98 for FCC hearings; and *social order* (H(2)=21.636, p=0.000) with a mean rank of 62.17 for House hearings, 56.56 for Senate hearings, and 29.68 for FCC hearings.

Table 5-17 Kruskal-Wallis Test for Values Differences among Venues

	Mean Rank			Chi-Square	df	Asymp. Sig.
	Senate	House	FCC			
Freedom	53.34	59.77	36.98	10.150	2	.006*
Honor	54.52	47.68	53.79	1.212	2	.545
Innovation	58.16	51.39	44.05	3.395	2	.183
Justice	51.94	48.08	56.20	1.288	2	.525
Social Order	56.59	62.17	29.68	21.636	2	.000***
Wealth	57.80	50.05	46.48	2.356	2	.308

* $p < .05$; ** $p < .01$; *** $p < .001$

Because the Kruskal-Wallis test is significant in the proportion of expression of the values on *freedom* and *social order*, pairwise comparisons among different venues were conducted using the Mann-Whitney U test, which provide identical results with the Kruskal-Wallis test for two independent samples. Table 5-18 provides the Mann-Whitney U test of the pairwise comparisons among Senate hearings, House hearings, and FCC hearings:

1. Senate Hearings and House Hearings

The results of comparison of Senate hearings and House hearings indicated that there was no statistically significant differences in the values expressed by people who testified in Senate hearings and House hearings.

2. Senate Hearings and FCC Hearings

The results of comparison of Senate hearings and FCC hearings indicated that there were statistically significant differences in the values expressed by people who testified in Senate hearings and FCC hearings on *freedom* (U=283, Z=-2.45, p=0.014) with a mean rank of 35.66 for Senate hearings, 24.61 for FCC hearings; and *social order* (U=195, Z=-3.75, p=0.000) with a mean rank of 38.41 for Senate hearings, 21.46 for FCC hearings. The results indicated that people who testified in Senate hearings invoked *freedom* and *social order* more frequently than people who testified in FCC hearings.

3. House Hearings and FCC Hearings

The results of comparison of House hearings and FCC hearings indicated that there were statistically significant differences in the values expressed by people who testified in House hearings and FCC hearings on *freedom* (U=346.5, Z=-2.90, p=0.004) with a mean rank of 41.25 for House hearings, 26.88 for FCC hearings; and *social order*

(U=230, Z=-4.29, p=0.000) with a mean rank of 44.02 for House hearings, 22.71 for FCC hearings. The results indicated that people who testified in House hearings invoked *freedom* and *social order* more frequently than people who testified in FCC hearings.

Table 5-18 Mann-Whitney U Test for Values Differences among Senate Hearings, House Hearings, and FCC Hearings

	Mean Rank		Z	Mann-Whitney U	Asymp. Sig.
	Senate	House			
Freedom	34.19	40.02	-1.16	566.00	.247
Honor	40.19	35.45	-0.94	586.00	.345
Innovation	40.77	35.01	-1.14	567.50	.254
Justice	39.00	36.36	-0.52	624.00	.600
Social Order	34.69	39.64	-0.98	582.00	.326
Wealth	41.05	34.80	-1.24	558.50	.216
	Senate	FCC			
Freedom	35.66	24.61	-2.45	283.00	.014*
Honor	30.83	30.13	-0.16	437.50	.876
Innovation	33.89	26.63	-1.61	339.50	.107
Justice	29.44	31.71	-0.50	414.00	.614
Social Order	38.41	21.46	-3.75	195.00	.000***
Wealth	33.25	27.36	-1.30	360.00	.192
	House	FCC			
Freedom	41.25	26.88	-2.90	346.50	.004**
Honor	33.73	38.16	-0.90	513.50	.368
Innovation	37.88	31.93	-1.20	488.00	.231
Justice	33.18	38.98	-1.17	490.50	.242
Social Order	44.02	22.71	-4.29	230.00	.000***
Wealth	36.75	33.63	-0.63	535.50	.529

* $p < .05$; ** $p < .01$; *** $p < .001$

Table 5-19 summarizes the results of the test of significance for pairwise comparisons among three venues for each value, and figure 5-10 provides a graphical summary of both central tendency and variation of a distribution of proportions within specific values among Senate hearings, House hearings, and FCC hearings.

For both *freedom* and *social order*, House hearings and Senate hearings have higher median score than FCC hearings. For *freedom*, there were statistically significant differences between House hearings and FCC hearings (p=0.004), and between Senate Hearings and FCC hearings (p=0.014). For *social order*, there were statistically significant differences between House hearings and FCC hearings (p=0.000), and between Senate Hearings and FCC hearings (p=0.000). No statistically significant differences were found for *honor*, *innovation*, *justice*, or *wealth* among Senate hearings, House hearings, and FCC hearings.

Table 5-19 Mann-Whitney U Test of Significance for Values among Senate Hearings, House Hearings, and FCC Hearings

		Senate	House	FCC
Freedom	Senate	-	.247	.014*
	House		-	.004*
	FCC			-
Honor	Senate	-	.345	.876
	House		-	.368
	FCC			-
Innovation	Senate	-	.254	.107
	House		-	.231
	FCC			-
Justice	Senate	-	.600	.614
	House		-	.242
	FCC			-
Social Order	Senate	-	.326	.000***
	House		-	.000***
	FCC			-
Wealth	Senate	-	.216	.192
	House		-	.529
	FCC			-

* $p < .05$; ** $p < .01$; *** $p < .001$

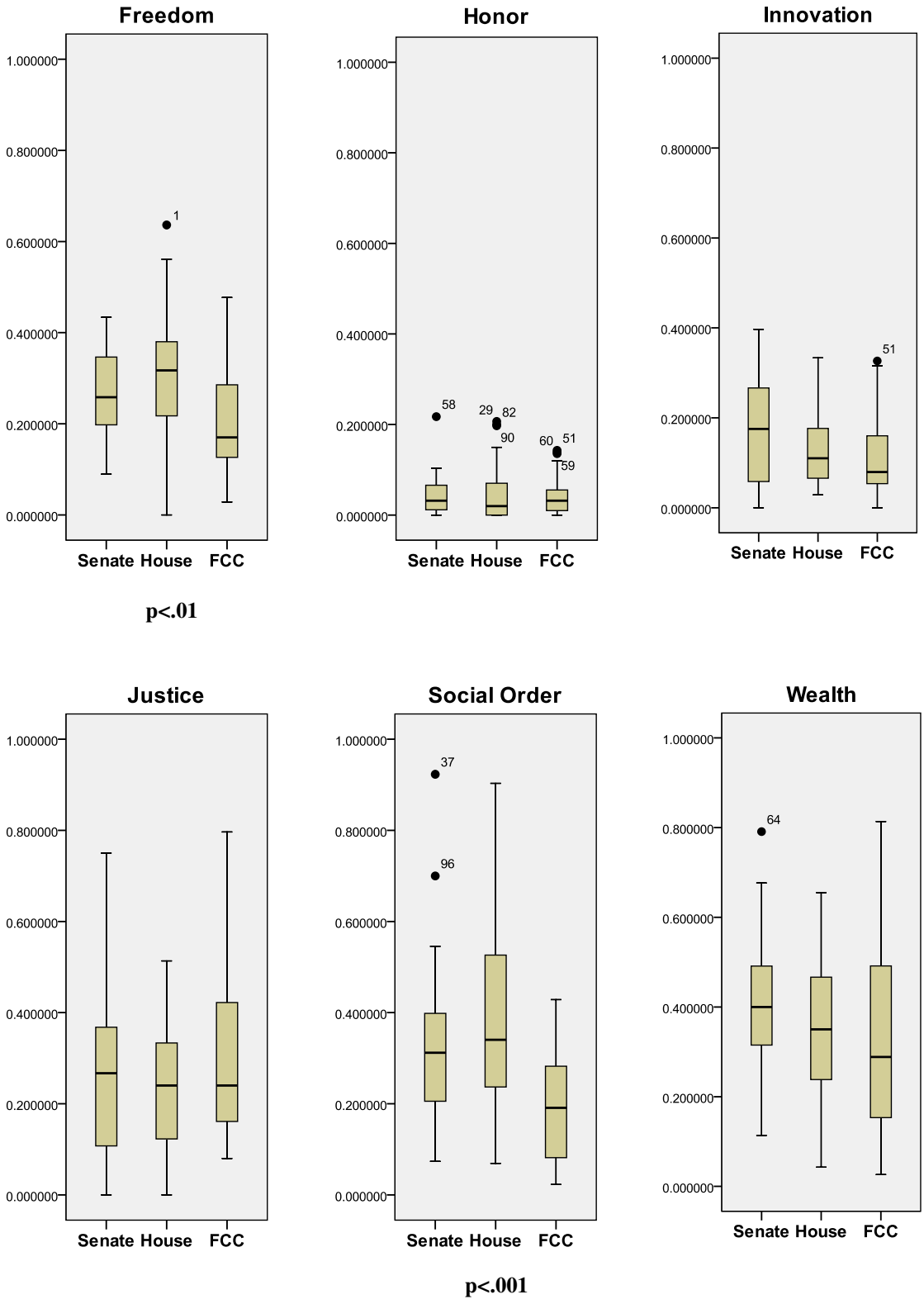

Figure 5-10 Boxplots for Values Differences among Senate Hearings, House Hearings, and FCC Hearings

5.4.2 Value Differences between Congressional Hearings and FCC Hearings in the Net Neutrality Debate

As the study was interested in whether there are any values differences between congressional hearings and FCC hearings, the study combined Senate hearings and House hearings as congressional hearings to compare with FCC hearings. Table 5-20 provides the Mann-Whitney U test of the comparison of values between congressional hearings and FCC hearings. The results indicated that there was a statistically significant difference between congressional hearings and FCC hearings on *freedom* (U=629.5, Z=-3.05, p=0.002) with a mean rank of 56.99 for congressional hearings, 36.98 for FCC hearings; and *social order* (U=425, Z=-4.58, p=0.000) with a mean rank of 59.76 for congressional hearings and 29.68 for FCC hearings. The results indicated that people who testified in congressional hearings invoked *freedom* and *social order* more frequently than FCC hearings.

Table 5-20 Mann-Whitney U Test for Values Differences between Congressional Hearings and FCC Hearings

	Mean Rank		Z	Mann-Whitney U	Asymp. Sig.
	Congress	FCC			
Freedom	56.99	36.98	-3.05	629.50	.002*
Honor	50.64	53.79	-0.48	972.00	.630
Innovation	54.32	44.05	-1.56	827.50	.118
Justice	49.72	56.20	-0.99	904.50	.324
Social Order	59.76	29.68	-4.58	425.00	.000**
Wealth	53.40	46.48	-1.05	895.50	.292

* $p < .05$; ** $p < .01$; *** $p < .001$

Figure 5-11 provides the graphical summary of the comparison of value differences between congressional hearings and FCC hearings. The boxplots illustrate that the median scores for congressional hearings on both *freedom* and *social order* were higher than FCC hearings and both with statistically significant differences.

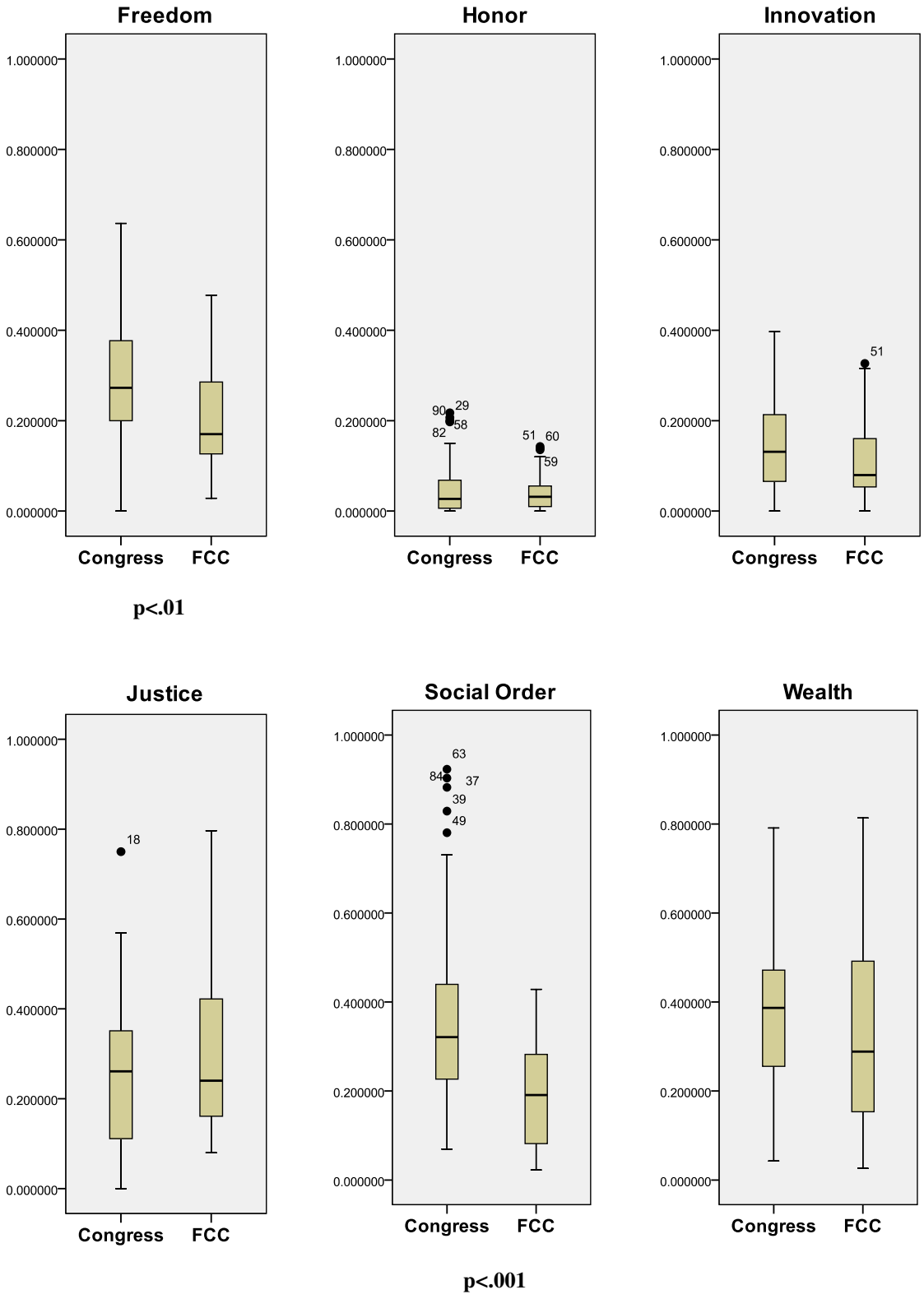

Figure 5-11 Boxplots for Values Differences between Congressional Hearings and FCC Hearings

5.5 Value Differences among Time Periods in the Net Neutrality Debate

This section examines the value differences among hearings held in 2006, 2008, and 2011. The study compared not only value differences of these testimonies across these three time periods, but also conducted pairwise comparisons among these testimonies.

Kruskal-Wallis test was conducted to evaluate the statistical significant relationships of the value differences among different time periods (2006 testimonies, 2008 testimonies, and 2011 testimonies) about Net neutrality. The results indicated that testimonies in these three time periods about Net neutrality differed significantly in the proportion of expression of the values on *freedom*, *justice* and *social order*. Table 5-21 shows that there was statistically significant differences among time periods about Net neutrality in the proportion of expression of the values on *freedom* (H(2)=6.3, p=0.043) with a mean rank of 58.76 for 2006 testimonies, 54.67 for 2011 testimonies, and 42.88 for 2008 testimonies; *justice* (H(2)=5.996, p=0.05) with a mean rank of 57.49 for 2008 testimonies, 51.69 for 2006 testimonies, and 37.08 for 2011 testimonies; and *social order* (H(2)=32.568, p=0.000) with a mean rank of 81.67 for 2011 testimonies, 55.17 for 2006 testimonies, and 34.9 for 2008 testimonies.

Table 5-21 Kruskal-Wallis Test for Values Differences among Time Periods

	Mean Rank			Chi-Square	df	Asymp. Sig.
	2006	2008	2011			
Freedom	58.76	42.88	54.67	6.300	2	.043*
Honor	51.40	57.27	38.25	5.262	2	.072
Innovation	57.87	43.48	55.36	5.344	2	.070
Justice	51.69	57.49	37.08	5.996	2	.050*
Social Order	55.17	34.90	81.67	32.568	2	.000**
Wealth	59.57	45.25	47.25	5.371	2	.068

* $p < .05$; ** $p < .01$; *** $p < .001$

Because the Kruskal-Wallis test is significant in the proportion of expression of the values on *freedom*, *justice*, and *social order*, pairwise comparisons among the testimonies from 2006, 2008 and 2011 were conducted using Mann-Whitney U test. Table 5-22 provides the Mann-Whitney U test of the pairwise comparisons among 2006 testimonies, 2008 testimonies, and 2011 testimonies:

1. 2006 Testimonies and 2008 Testimonies

The results of comparisons of 2006 testimonies and 2008 testimonies indicated that there were statistically significant differences in the values in 2006 testimonies and 2008 testimonies on *freedom* (U=603, Z=-2.5, p=0.013) with a mean rank of 49.14 for 2006 testimonies, 35.86 for 2008 testimonies; *innovation* (U=641, Z=-2.16, p=0.031) with a mean rank of 48.24 for 2006 testimonies, 36.76 for 2008 testimonies; *social order* (U=510.5, Z=-3.32, p=0.001) with a mean rank of 51.35 for 2006 testimonies, 33.65 for 2008 testimonies; and *wealth* (U=648.5, Z=-2.09, p=0.037) with a mean rank of 48.06 for 2006 testimonies, 36.94 for 2008 testimonies. The results indicated that people who testified in 2006 hearings invoked *freedom*, *innovation*, *social order*, and *wealth* more frequently than people who testified in 2008 hearings.

2. 2008 Testimonies and 2011 Testimonies

The results of comparisons of 2008 testimonies and 2011 testimonies indicated that there were statistically significant differences in the values in 2008 testimonies and 2011 testimonies on *honor* (U=242.5, Z=-2.2, p=0.028) with a mean rank of 33.73 for 2008 testimonies, 22.97 for 2011 testimonies; *justice* (U=226.5, Z=-2.44, p=0.015) with a mean rank of 34.11 for 2008 testimonies, 22.08 for 2011 testimonies; and *social order* (U=52.5, Z=-5.25, p=0.000) with a mean rank of 48.58 for 2011 testimonies, 22.75 for

2008 testimonies. The results indicated that people who testified in 2008 hearings invoked *honor* and *justice* more frequently than people who testified in 2011 hearings; while people who testified in 2011 hearings invoked *social order* more frequently than people who testified in 2008 hearings.

3. 2006 Testimonies and 2011 Testimonies

The results of comparisons of 2006 testimonies and 2011 testimonies indicated that there was a statistically significant difference in the values in 2006 testimonies and 2011 testimonies on *social order* (U=160.5, Z=-3.51, p=0.000) with a mean rank of 42.58 for 2011 testimonies, 25.32 for 2006 testimonies. The results indicated that people who testified in 2011 hearings invoked *social order* more frequently than people who testified in 2006 hearings.

Table 5-22 Mann-Whitney U Test for Values Differences among 2006, 2008, and 2011

	Mean Rank		Z	Mann-Whitney U	Asymp. Sig.
	2006	2008			
Freedom	49.14	35.86	-2.50	603.00	.013*
Honor	39.95	45.05	-0.96	775.00	.337
Innovation	48.24	36.76	-2.16	641.00	.031*
Justice	40.12	44.88	-0.90	782.00	.371
Social Order	51.35	33.65	-3.32	510.50	.001**
Wealth	48.06	36.94	-2.09	648.50	.037*
	2008	2011			
Freedom	28.52	35.11	-1.34	295.00	.181
Honor	33.73	22.97	-2.20	242.50	.028*
Innovation	28.21	35.83	-1.55	282.00	.121
Justice	34.11	22.08	-2.44	226.50	.015*
Social Order	22.75	48.58	-5.25	52.50	.000***
Wealth	29.81	32.11	-0.47	349.00	.640
	2006	2011			
Freedom	31.12	29.06	-0.42	352.00	.675
Honor	32.95	24.78	-1.68	275.00	.093
Innovation	31.13	29.03	-0.43	351.50	.669
Justice	33.07	24.50	-1.74	270.00	.081
Social Order	25.32	42.58	-3.51	160.50	.000***
Wealth	33.01	24.64	-1.70	272.50	.089

* $p < .05$; ** $p < .01$; *** $p < .001$

Table 5-23 summarizes the results of the test of significance for pairwise comparisons among 2006, 2008, and 2011 testimonies, and figure 5-12 provides graphical summary of both central tendency and variation of a distribution of proportions within specific values among 2006, 2008, and 2011 testimonies. For *freedom*, statistically significant differences were found only between 2006 testimonies and 2008 testimonies (p=0.013); for *honor*, statistically significant differences were found only between 2008 testimonies and 2011 testimonies (p=0.028); for *innovation*, statistically significant differences were found only between 2006 testimonies and 2008 testimonies (p=0.031); for *justice*, statistically significant differences were found only between 2008 testimonies and 2011 testimonies (p=0.015); for *wealth*, statistically significant differences were found only between 2006 testimonies and 2008 testimonies (p=0.037); but for *social order*, statistically significant differences were found between 2006 testimonies and 2008 testimonies (p=0.001), between 2008 testimonies and 2011 testimonies (p=0.000), and between 2006 testimonies and 2011 testimonies (p=0.000).

Table 5-23 Mann-Whitney U Test of Significance for Values across Time Periods

		2006	2008	2011
Freedom	2006	-	.013*	.675
	2008		-	.181
	2011			-
Honor	2006	-	.337	.093
	2008		-	.028*
	2011			-
Innovation	2006	-	.031*	.669
	2008		-	.121
	2011			-
Justice	2006	-	.371	.081
	2008		-	.015*
	2011			-
Social Order	2006	-	.001**	.000**
	2008		-	.000**
	2011			-
Wealth	2006	-	.037*	.089
	2008		-	.640
	2011			-

* $p < .05$; ** $p < .01$; *** $p < .001$

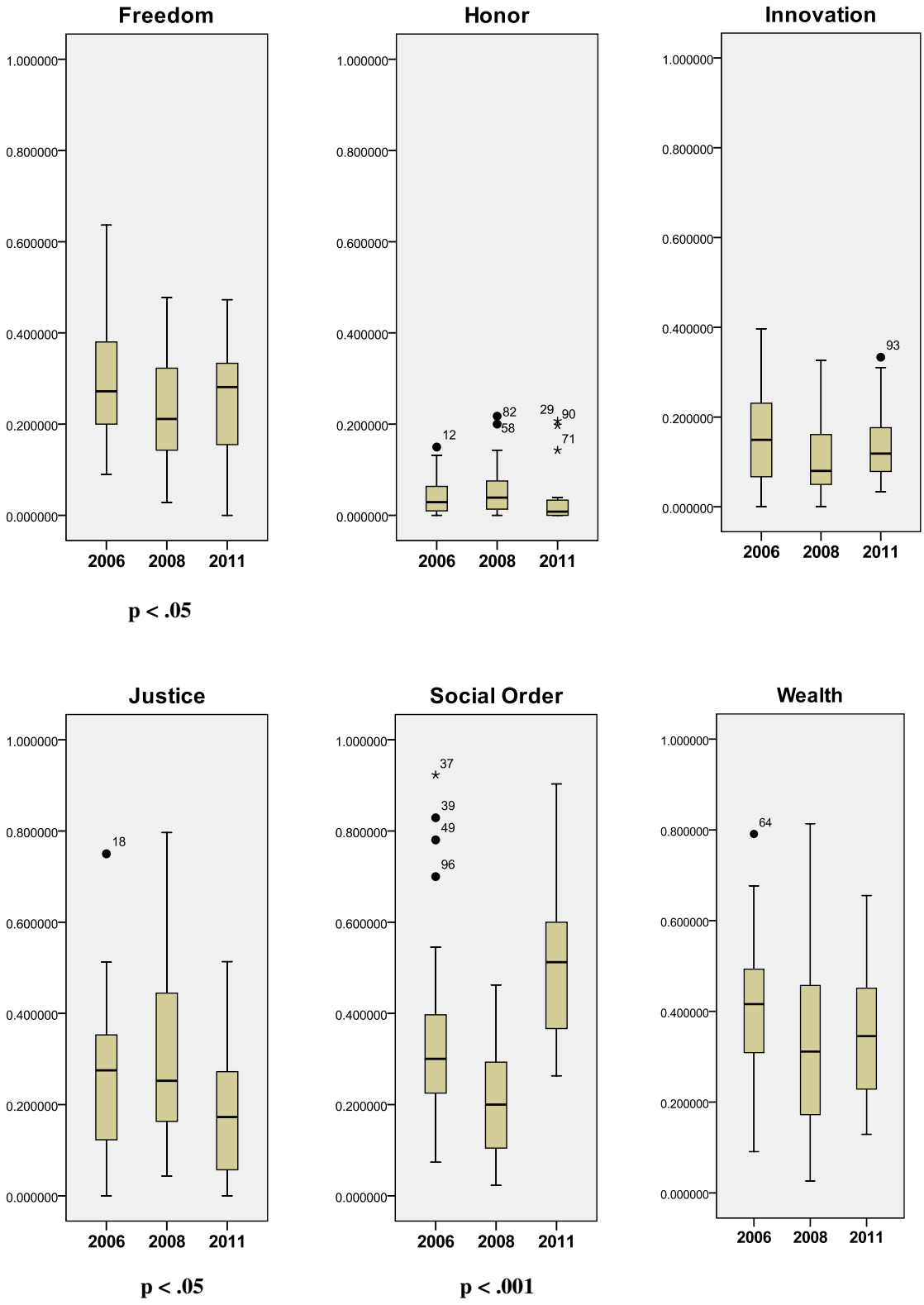

Figure 5-12 Boxplots for Values Differences among Different Time Periods

5.6 Summary

Table 5-24 summarizes the results of the test of significance for Kruskal-Wallis and Mann-Whitney U about the value differences among positions, stakeholder groups, venues, and time periods. As Kruskal-Wallis test compares the population mean ranks for three or more independent groups, the statistically significance results for Kruskal-Wallis test indicated in table 5-24 only reveal those with the highest mean ranks among groups. As Mann-Whitney U test compares the population mean ranks for two independent groups, the statistically significance results revealed in table 5-24 are those with the highest mean ranks between the two independent groups.

1. Value Differences among Positions

In general, the proponents of Net neutrality invoked *freedom* and *justice* more frequently than the opponents, while the opponents of Net neutrality invoked *wealth* more frequently than the proponents.

2. Value Differences among Stakeholder Groups

In general, among the five stakeholder groups, service providers invoked *honor* most frequently, academics invoked *justice* most frequently, and government representatives invoked *social order* most frequently. When comparing service providers and content providers, service providers invoked *honor* and *wealth* more frequently than content providers, while content providers invoked *freedom* more frequently than service providers. When comparing corporate actors and government representatives, the government representatives invoked *social order* more frequently than the corporate actors. The comparison between appointed and elected officials indicated that the appointed officials invoked *honor* more frequently than the elected officials. The

comparison between Democrats and Republicans indicated that Republicans invoked *social order* more frequently than Democrats.

3. Value Differences among Venues

In general, people who testified in congressional hearings invoked *freedom* and *social order* more frequently than people who testified in FCC hearings. However, no statistically significant difference was found in the values expressed by people who testified in Senate hearings and House hearings.

4. Value Differences across Time Periods

In general, people who testified in 2006 hearings invoked *freedom* more frequently than people who testified in 2008 and 2011 hearings; people who testified in 2008 hearings invoked *justice* more frequently than those who testified in 2006 and 2011 hearings; and people who testified in 2011 hearings invoked *social order* than those who testified in 2006 and 2008 hearings.

When comparing values differences across time periods, the most frequently invoked values revealed a trend of convergence. Statistically significant results were found in four values between 2006 and 2008 testimonies (*freedom*, *innovation*, *justice*, and *social order*), three values between 2008 and 2011 testimonies (*honor*, *justice*, and *social order*), and one value between 2006 and 2011 testimonies (*social order*). These results revealed that people who testified in 2006 hearings tended to frame their arguments by invoking *freedom*, *innovation*, *justice*, and *social order*, while people who testified in 2008 hearings tended to frame their arguments by invoking *honor* and *justice*, and people who testified in 2011 hearings tended to frame their arguments by invoking *social order*.

Table 5-24 Summary of Statistically Significant Value Differences among Positions, Stakeholders, Venues, and Time Periods

	Test	Freedom	Honor	Innovation	Justice	Social Order	Wealth
Position							
Overall (Pro, Con, Other)	Kruskal-Wallis H	Pro***			Pro***		Con*
Pro vs Con	Mann-Whitney U	Pro***			Pro***		Con**
Pro vs Con 2006	Mann-Whitney U				Pro**		Con*
Pro vs Con 2008	Mann-Whitney U	Pro***		Con*			Con***
Pro vs Con 2011	Mann-Whitney U	Pro*					
Stakeholder							
Overall	Kruskal-Wallis H		SP***		AC*	GOV***	
GOV vs SP	Mann-Whitney U		SP**			GOV**	SP*
GOV vs CP	Mann-Whitney U	CP*				GOV**	
GOV vs IG	Mann-Whitney U					GOV*	
GOV vs AC	Mann-Whitney U				AC**	GOV***	
SP vs CP	Mann-Whitney U	CP**	SP*				SP**
SP vs IG	Mann-Whitney U		SP*			IG*	
SP vs AC	Mann-Whitney U		SP**		AC*		
CP vs IG	Mann-Whitney U					IG*	
CP vs AC	Mann-Whitney U	CP*	CP*				
IG vs AC	Mann-Whitney U		IG***			IG**	
GOV vs CA	Mann-Whitney U					GOV***	
CA vs IG	Mann-Whitney U					IG**	
CA vs AC	Mann-Whitney U		CA***		AC*		
Elected /Appointed Officials							
Elected vs Appointed	Mann-Whitney U		Appointed*				
Party Affiliation							
Democrat vs Republican	Mann-Whitney U					Republican*	
Venue							
Overall	Kruskal-Wallis H	House*				House**	
Senate vs House	Mann-Whitney U						
Senate vs FCC	Mann-Whitney U	Senate*				Senate***	
House vs FCC	Mann-Whitney U	House**				House***	
Congress vs FCC	Mann-Whitney U	Congress*				Congress**	
Time							
Overall	Kruskal-Wallis H	2006*			2008*	2011**	
2006 vs 2008	Mann-Whitney U	2006*		2006*	2006**	2006*	
2008 vs 2011	Mann-Whitney U		2008*		2008*	2011***	
2006 vs 2011	Mann-Whitney U					2011***	

* $p < .05$; ** $p < .01$; *** $p < .001$

Chapter 6: Discussion

The purpose of this study is to understand the role of human values in shaping the Net neutrality debate. This dissertation focuses on public hearings related to Net neutrality that provide useful data points that help to expose the values of various Net neutrality stakeholders. Content analysis of testimonies from Congressional and FCC hearings on Net neutrality is employed to study values expressed by stakeholders.

Using both qualitative and quantitative content analysis, this dissertation attempts to answer the following research questions: (1) Are there any differences in the values expressed by proponents and opponents of Net neutrality? (2) Are there any differences in the values expressed among stakeholders of Net neutrality? (3) Are there any differences in the values expressed in relation to Net neutrality in different venues? (4) Are there any changes across time in the differences in the values expressed in the Net neutrality debate?

Based on the qualitative and quantitative content analysis of Net neutrality testimonies, conclusions can be made regarding the value differences among positions, stakeholder groups, venues, and time periods in the Net neutrality debate. This chapter first discusses the findings related to the values expressed by proponents and opponents of Net neutrality, then discusses the appropriate answers to the applicable research questions regarding the value differences among positions, stakeholder groups, venues, and time periods in the Net neutrality debate. Examples of values expressed by stakeholders are also provided for each value discussed in this chapter.

6.1 How Values Are Expressed in the Net Neutrality Debate

As discussed in Chapter 2, the Net neutrality issue can be framed in a variety of ways by various stakeholders who shaping the debate. To understand the role of values in shaping the Net neutrality debate, this section first identifies how proponents and opponents of Net neutrality expressed these values.

6.1.1 Freedom in the Net Neutrality Debate

The study defined *freedom* as "the condition of being free of restraints and encouraging competition; allowing individuals to have their own beliefs and to make their own choices; freedom from interference or influence of another or others; the quality of being autonomous and independent." Based on this definition, the study found the value *freedom* in Net neutrality debate can be framed in the following ways:

1. Freedom to Access

The four "Internet Freedoms" announced by former FCC chairman Michael Powell (2004) best illustrate how Net neutrality debate was framed by the concept of freedom to access. Proponents viewed the four principles as an endorsement of Net neutrality regulation includes freedom to access content, freedom to run applications, freedom to attach personal devices, and freedom to obtain service plan information. A proponent of Net neutrality argued, "It is my view that Congress should ratify Powell's "Internet Freedoms," making them a part of the FCC's basic law" (Lessig, 2006).

The Federal Communications Commission (2005) has later incorporated the four principles into a policy statement: (1) Consumers are entitled to access the lawful Internet content of their choice; (2) Consumers are entitled to run applications and use services of

their choice, subject to the needs of law enforcement; (3) Consumers are entitled to connect their choice of legal devices that do not harm the network; and (4) Consumers are entitled to competition among network providers, application and service providers, and content providers. These principles that seek to protect consumers' unrestricted access to the Internet can be found in most Net neutrality discussions.

2. Freedom of Speech

Net neutrality debate can also be framed in terms of freedom of speech. As Fredrickson (2008) stated:

> *"The United States Supreme Court has concluded that speech on the Internet is entitled to the highest level of protection under the First Amendment. Any attempts to censor its content or silence its speakers are viewed with extreme disfavor. In addition, courts recognize that the public has a First Amendment interest in receiving the speech and expression of others. ' [T]he right of the public to receive suitable access to social, political, aesthetic, moral and other ideas and experiences' is one of the purposes served by the First Amendment"* (p. 6).

The proponents of Net neutrality argued for preserving the open discourse of the Internet. They claimed that the Internet is one of today's most important means of disseminating information and the source for the public to access information. Any forms of restriction on the dissemination of information on the Internet must be forbidden. While the opponents of Net neutrality argued that they also pose free speech rights. They argued that they are entitled to use their facilities to convey message of their own choosing. As Downes (2011) argued:

"A decision by a broadband Internet access provider to block specific content, so long as it is not motivated by anticompetitive objectives, is likely to be a form of protected speech for the provider" (p. 22).

3. Freedom to Experiment with Different Business Models

As the proponents of Net neutrality argued for freedom of speech on the Internet, the opponents argued for freedom to experiment with different business models on the Internet. They argued that governments should allow Internet service providers to experiment with different business models such as freedom of pricing and freedom to provide premium services. Hahn (2008) argued, "Allowing such market flexibility is likely to be the best way to ensure efficient innovation on the information superhighway" (para. 18). Hahn (2008) further argued:

"Firms should be allowed to experiment with different pricing schemes for providing Internet access. One advantage of giving Internet service providers pricing flexibility is that it will give them incentives to make new investments in network intelligence, which will support a range of real-time applications from telemedicine to online games. Without such innovations, these real-time applications may never see the light of day. Another advantage of pricing freedom is that it can lead to lower subscription prices for end users. Most economic models of 'two-sided platforms' show that platform owners have strong incentives to subsidize the most price-sensitive customers, which in this case would be end users" (para. 11).

4. Promotion of Competition

Net neutrality debate can also be framed in terms of the promotion of competition. The proponents of Net neutrality pointed out that phone and cable operators together control nearly 99 percent of the broadband market. Most American consumers today have few choices for broadband services (Cerf, 2006b). According to the FCC's (2008) own data, 34 % of ZIP codes have one or less cable or ADSL provider who serves at least one subscriber living within the ZIP code.

Proponents argued that Net neutrality would encourage competition in online content and services to stay strong. By keeping broadband providers from raising barrier to competition, Net neutrality will help to resolve the problem of lack of choice in broadband providers. As FCC commissioner Copps (2011) argued:

> *"Without adequate competition in the Internet access service market, allowing these companies to exercise unfettered control over Americans' access to the Internet not only creates risks to technological innovation and economic growth, but also poses a real threat to freedom of speech and the future of our democracy"* (p. 3).

However, opponents argued that there is no clear harm to customers since competition is sufficient to ensure the welfare of network users, while regulation of network management would reduce the incentive for investing in network infrastructure. There are between 4,000 and 8,000 small, independent ISPs need to be protected from anticompetitive behavior and given an opportunity to grow (Glass, 2008). The Net neutrality regulation would undermine, not promote, consumer choice and welfare. As McSlarrow (2008) argued:

> *"[N]et neutrality requirements would frustrate the Federal policy of preserv[ing] the vibrant and competitive free market that presently exists for the Internet . . . , unfettered by Federal or State regulation.* (para. 30)"

5. End-to-End Principle

The end-to-end design principle of the Internet was also frequently used by proponents of Net neutrality to frame the debate. It describes where applications are implemented on the Internet. The Internet was designed to allow the implementation of applications to reside largely with users at the "edges" of the network, rather than in the "core" of the network itself. As a result of this design, the network can support a variety of applications with different requirements and place the power and functionality of the network in the hands of the end users (Cerf, 2006b). Lessig (2008) argued that the end-to-end principle is "the equivalent of perfect competition because it creates an environment, or platform, upon which competition among applications and content happens with minimum interference by the network or platform owner" (para. 4).

The end-to-end principle not only provides consumers with tremendous choices but also maximizes the range of competitors who can innovate the network (Lessig, 2008). As Cerf (2006a) pointed out:

> *"This [end-to-end] principle allows for vibrant user activity and creativity to occur at the network edges. In such an environment, entrepreneurs need not worry about getting permission for their inventions will reach the end users. In essence, the Internet has become a platform for innovation. One could think of it like the electric grid, where the ready availability of an open, standardized, and stable source of electricity allows anyone to build and use a myriad of different*

electric devices. This is a direct contrast to closed networks like the cable video system, where network owners control what the consumer can see and do"(p.3-4).

6.1.2 Justice in the Net Neutrality Debate

The study defined *justice* as "the state of being treated equally and fairly, especially having the same rights, status, and opportunities; the process of settling a matter properly and fairly for all parties according to their capabilities and needs, especially protecting the weak and correcting any injustice; need for equal or fair distribution of resources, information, benefits, burdens, and power among the members of a society." Based on this definition, the study found the value *justice* in Net neutrality debate can be framed in the following ways:

1. Non-Discrimination

Non-discrimination is the core of the Net neutrality debate (Scott, 2006). As discussed in Chapter 2, the Net neutrality debate has focused primary on a type of discrimination know as "access tiering" which means the charging of different fees, or the establishment of different terms and conditions to content, services, or applications providers for access to the broadband infrastructure (Gilroy, 2007). The proponents of Net neutrality argued that the Internet service providers with market power have always been tempted to use their gatekeeper position to discriminate against content providers. The ISPs will decide what consumers want by slowing down disfavored companies, and speeding up favored companies. Wu (2006) provided a metaphorical example:

"Imagine, for a moment, that private American highway companies reserved a lane for Ford cars. That would be good for Ford, but obviously would affect competition as between Ford and General Motors. It would also slow

innovation—for it would no longer be the best car than wins, but the one that signs the best deals and slows down their competitors. The race is no longer to build a better car, but to fight for a better deal with the highway company" (para. 16).

As opposed to the proponents of Net neutrality who argued that the ISPs should treat all data traveling over their network equally and offer fair, reasonable, and non-discriminatory rates to customers, the opponents of Net neutrality argued that prioritization is necessary to manage the problems of congestion that enhances both network performance and consumer welfare. As Rosston (2008) argued, "requiring that a network operator treat all bits equally would... harm high-value services, reducing consumer welfare" (p.3). Furthermore, "a strict nondiscrimination rule would have also discouraged or perhaps banned tiered pricing, harming consumers who do not need the fastest speeds and the highest volume of downloads to accomplish what they want to do online" (Downes, 2011, p.21).

2. Double Recovery

In addition to non-discrimination principle, the proponents of Net neutrality also argued that the Internet application companies already paid their fair share for Internet access and the ISPs already are fully compensated by their residential customers for their use of the network. Trying to extract additional fees from the content and application providers would constitute a form of "double recovery" (Cerf, 2006a). Cerf (2006b) emphasized that:

"In order for the content and applications to be delivered into the Internet, so it can be made available to consumers, Internet-based service companies must

arrange with and pay network operators to: (1) carry the data traffic from company facilities to their servers over local telecom lines (the last mile); (2) carry the data traffic from the servers into the Internet over high-speed, high-capacity data lines (sometimes called "special access"); and (3) carry the data traffic over the numerous interconnected networks that make up the Internet backbone. Internet-based application companies collectively pay the carriers billions of dollars per year for all three types of network access and transport" (para. 42).

As such, Net neutrality advocates urged that the ISPs, particularly local distribution networks, should be obliged to charge for service only to end users and be forbidden to charge content and application providers (Hahn & Wallsten, 2006). They argued that consumer-tiering, which is the charging of different rates to subscribers based on access speed, should be encouraged, while access-tiering should be forbidden.

3. Transparency

Transparency is one of the principles that the FCC (2010a) proposed in the Open Internet Order for maintaining Net neutrality. The transparency principle ensures that ISPs must disclose their network management practices and must fully inform consumers about the exact nature of the service they are purchasing and any potential limitations associated with that service (Martin, 2008b). Transparency enables freedom of choices and enhances competition. As van Schewick (2008) argued:

"Disclosure improves competition by enabling customers to make informed decisions when choosing providers. Disclosure also enables competitors to differentiate themselves along these dimensions... It avoids the waste of resources

spend when users or application or content providers try to figure out what is going on on a particular network, ... Customers who do not like how a provider manages its traffic can switch to another provider" (p. 2-3).

The opponents of Net neutrality also agreed with the principle of transparency. As a service provider claimed:

"We have long recognized that clear communication with our customers is an important part of a successful long-term relationship. For years, our written usage policies have informed customers that our Internet service is a shared resource and that we manage our network to ensure as high a level of performance for all users as possible" (Cohen, 2008, p. 15).

However, the opponents of Net neutrality also argued that detailed disclosure of network management practices could have unintended consequences. As Cohen (2008) further emphasized, "[Disclosure] could facilitate modifications to the BitTorrent protocol which would defeat legitimate necessary traffic management" (p. 16).

4. Injustice in Bandwidth Consumption

One of the arguments made by opponents of Net neutrality is that relatively few customers who utilize bandwidth-heavy applications consume the vast majority of bandwidth and those bandwidth hogs would degrade or otherwise adversely affect broadband Internet access for the vast majority of customers. Yoo (2008a) argued that:

"Network providers estimate that as few as 5% of end users represent between 50% and 80% of the network's total usage, and many applications are designed to increase their usage as long as capacity is available. The question in such a world is not whether congestion will occur. The existence of applications that

increase their usage to fill all available bandwidth makes that inevitable. The question is whether the costs of those congestion will be borne by all users or only by the handful of users responsible for that congestion. Under these circumstances, requiring those most responsible for congestion to bear a greater percentage of the costs would be both good network management and fair from a consumer standpoint" (p. 5).

As such, the proponents of Net neutrality need to implement certain network management technologies to solve the congestion problem. An unmanaged network would make the few users who consume disproportionate resource of the network could crowd out the vast majority of users and adversely affect far more users than the few currently affected by commonly used network management technologies (Cohen, 2008).

5. Digital Divide

The Net neutrality debate also involves how regulators can promote broadband availability in unserved and underserved areas, and how they can ensure that users have access to affordable broadband. The opponents of Net neutrality argued that the imposition of Net neutrality would hinder the ability for ISPs to obtain investment capital and deploy new services in unserved areas. They urged that policymakers must recognize that the Net neutrality regulations are likely to have a disproportional effect on small firms and rural markets. As Ford (2008) argued:

"[T]he cost of network neutrality mandates will be felt disproportionately in rural and high-cost regions of the country. Our empirical analysis shows that the distribution of costs across markets of different sizes and population densities causes the network neutrality mandates to more severely curtail of network

deployment in rural areas. On average, rural, high-cost areas will bear the burden of network neutrality mandates at a magnitude of six times the impact relative to lower-cost urban areas" (p. 13-14).

The opponents of Net neutrality argued that if the ISPs are only permitted to invest in more bandwidth instead of using network management technologies to address capacity problems, the rural, high-cost areas will get left behind and there will not be enough investment in broadband infrastructure for unserved and underserved areas.

6. Protecting Intellectual Property

Protection of Intellectual Property is also a core issue in the Net neutrality debate. The debate centered on whether or not to permit network management practices that discriminate against unlawful content. The proponents argued that the Net neutrality regulation ensures that the Internet remains open to all lawful content, information, applications and equipment, while the opponents argued that the Net neutrality regulation would create a legal safe harbor for pirates to continue to loot intellectual property, primarily by discouraging network operators from taking actions to prevent such misconduct.

The opponents argued that although the FCC would limit regulatory protections to "lawful" content, the FCC ignores the fact that most content distributed through peer-to-peer file sharing mechanisms is unlawful. As the president of the Songwriter Guide of America (SGA) Carnes (2008) argued:

"The reality of the current situation in the digital world is that online piracy of music is rampant. Sources like IFPI suggest that songs downloaded illegally may outnumber songs downloaded legally by a factor of some 20 to one worldwide.

> *Network experts have indicated that up to 70% of the volume of traffic on broadband networks is Peer-to-Peer, or P2P traffic relating to 5% of the users, and easily 90% of such traffic is unlawful. Since stolen music provides no compensation to songwriters, this online piracy has deeply and materially affected the creative community"* (p. 2).

McSlarrow (2008) argued that P2P is not only used for piracy of intellectual property, it also congests networks, degrading quality of service for other customers. It bears the burden of congestion caused by those who abuse their network access to engage in the widespread distribution of infringing works. Therefore, the opponents of Net neutrality emphasized the need for ISPs to use network management technologies to monitor and manage the content that flows over their networks, to detect illegal content and to help eradicate copyright piracy. As McSlarrow (2008) argued:

> *"Broadband providers, content owners and others all have a stake in exploring technology solutions that address piracy in ways that respect our customers' expectations and respect the copyright owner's rights, not simply to curtail congestion but for reasons of fairness to those who invest in content and make an important contribution to our economy"* (para. 22).

6.1.3 Wealth in the Net Neutrality Debate

The study defined *wealth* as "an explicitly stated concern with or interest in pursuing economic goals such as money, material possessions, resources, and profit; focusing on the market value of a change, decision, or action; allocating resources appropriately and/or efficiently." Based on this definition, the study found the value *wealth* in Net neutrality debate can be framed in the following ways:

1. Property Rights

Opponents of Net neutrality argued that Net neutrality is a violation of the property rights of ISPs. As property owners, the ISPs have a right to deliver whatever they think to be the best service for their customers and government should not interfere with how ISPs manage their respective networks. As McSlarrow (2008) argued:

> *"Cable modem service has never been subject to regulation. ...there has been no evidence of any practices that would change those conclusions or warrant government intervention generally or specifically with respect to permissible network management activities"* (para. 24).

Property Rights Alliance (2009) also released a statement claiming that government should not impose Net neutrality regulation that infringes private property rights:

> *"PRA opposes any plan that could lead to so-called 'network neutrality', viewing the policy as firmly against private property rights. Simply put, 'network neutrality' would provide the federal government extensive power to mandate how businesses can provide Internet service to their consumers. Innovation and investment in the Internet has occurred due to an absence of government regulation and interference. Allowing the government to step in to impose mandates on network management would represent a dangerous precedent in terms of Internet regulation and a clear infringement of private property rights by government."*

2. Reasonable Network Management

Reasonable network management is also a core issue in the Net neutrality debate. It is defined as "all 'reasonable practices' broadband Internet access providers undertook to, among other things, reduce or mitigate the effects of congestion on the network or to address quality-of-service concerns" (Downes, 2011, p.33). The opponents of Net neutrality argued that bandwidth is not public infrastructure and it is by no mean unlimited (Cohen, 2008). Management of scarce and common resources is important for ISPs who want to deliver the best service for their customers and preserve the network performance. Reasonable network management has the potential to solve congestion problems and combat online piracy. First, the network itself cannot eliminate congestion. Reasonable network management is an effective way to solve the problems of congestion:

> *"network management can constitute an important safety valve that can alleviate network congestion when expanding capacity is not an option. In this sense, capacity expansion and network management are more properly regarded as alternative approaches to deal with the problem of congestion"*(Yoo, 2008b, p. 2).

Second, reasonable network management has the potential to combat online piracy. With network management tools, ISPs can identify and discriminate against all pirated, illegitimate content and attempt to prevent spyware, malware, and other harmful traffic from adversely affecting their customers (Carnes, 2008). Depriving ISPs from using reasonable network management technologies only make the network less efficient for everyone and ultimately harm consumers and prevent them from accessing the content they desire (McSlarrow, 2008).

However, the proponents of Net neutrality considered network management unnecessary because adding bandwidth could cure congestion problems. Bachula (2006) argued, "the telecom providers should focus on providing Americans with an abundance of bandwidth, and the quality problems will take care of themselves" (p.3). In addition, "reasonable" is hard to define because in real life every network management measure will have tradeoffs and each of the available tools for network management are subject to its own strengths and weaknesses. As such, former FCC chairman Martin (2008b) illustrated that "a hallmark of whether something is reasonable is whether an operator is willing to disclose fully and exactly what they are doing" (para. 18). The discussion of transparency principle can be found in section 6.1.2.

3. Incentive on Investment

As the ISPs claimed the property rights of their network, they argued the right to recover costs from heavy bandwidth users. Internet content providers and application providers that take up a significant amount of the provided bandwidth are costing ISPs a significant amount of money in expanding their infrastructure. ISPs, therefore, have the right to seek return on their investment and demand that those who cause the costs should be charged for their use (McCormick, 2006a). Sidak (2006b) also argued:

> *"Private investors will fund the construction of a broadband network only if there is a reasonable expectation that the company making that investment will recover the cost of its investment, including a competitive return on capital"* (p. 2).

It is likely that the investors will reduce the incentive on broadband investment as they find the Net neutrality regulation will jeopardize a firm's recovery of its investment.

As such, Ford (2008) argued, "Network neutrality regulation would reduce, not increase, network investment" (p. 18)

However, Levin (2006) claimed that regulation is not the sole or even primary factor of investment decisions for network infrastructure. He argued that the level of potential competition and the opportunity created by new investment are more important than regulation in investment decisions. For example, the rise of cable broadband was the principal cause of telecommunication companies' investment in network upgrades to offer DSL (Levin, 2006). Desai (2011) also argued, "the reality is decisions in investment and deployment are not dictated simply by Net neutrality rules. Investment also depends on factors such as demand and supply costs; competition; and overall confidence in the economy" (para. 14).

4. Economic Growth

Both proponents and opponents of Net neutrality argued that Net neutrality regulation has significant impact on economic growth. The proponents of Net neutrality argued that the ISPs' anticompetitive and discriminatory conduct will not only threaten economic growth but also threaten U.S. competitiveness in the global market (Cerf, 2006a). Wu (2008) argued that application discrimination is dangerous to the economy:

> *"If carriers can doom a business model by rejecting it off the network, that model never gets a chance to prove itself in the market. Even the likelihood of getting stopped on the network is enough to deter investment and venture funding"* (p. 2).

However, the opponents of Net neutrality argued, "the proposed network neutrality rules will promote industry concentration by shrinking markets, commoditizing services, and raising entry costs" (Ford, 2008, p. 6). As Ford (2008) argued:

"[Net neutrality] rules that prohibit efficient commercial transactions between content and broadband service providers could, in fact, be bad for everyone -- consumers would pay higher prices, broadband service providers earn lower profits, and even the Internet content, software and application firms see lower sales" (p.15).

6.1.4 Social Order in the Net Neutrality Debate

The study defined *social order* as "using the power of the government, military and/or legal system to protect the stability of society and/or to protect people from possible harms mentally or physically; acting in accordance with laws, regulations, and social norms." Based on this definition, the study found that the value *social order* in the Net neutrality debate can be framed in the following ways:

1. Need for Nondiscrimination Rules

The core controversial issue of the Net neutrality debate is whether governments should establish rules limiting the extent to which network providers can interfere with the applications and content on their networks. Net neutrality proponents have long asserted the need to extend that traditional nondiscrimination norm to the Internet. They also attributed the development of the Internet and the growth of the online marketplace to nondiscrimination policies. As Scott (2006) asserted:

"Network neutrality boils down to the principle of nondiscrimination, which has been foundational in communications law for generations. It is a central reason why the Internet has proven to be the greatest engine of economic growth and democratic communication in modern memory. The development of the Internet and the online marketplace did not occur by accident. It happened with the help

of sound public policies. Nondiscrimination and the structural separation of content and conduit in telecommunications networks were chiefly responsible for the dynamic growth of the Internet environment" (para. 9).

Fredrickson (2008) claimed that nondiscrimination principle is a basic obligation of all network operators under Title II of the Communications Act of 1934. He asserted:

"[Nondiscrimination] protections are derived from Title II of the Communications Act of 1934, which grants the FCC the authority to regulate telephone companies as common carriers. ... Title II was strengthened by making common carrier telephone networks available to independent equipment manufacturers and ISPs. Internet nondiscrimination simply ensures that this same nondiscriminatory common carrier model continues to apply to the Internet when accessed through broadband connections" (p. 9).

In addition to the argument that the Internet was born and flourished under well-established nondiscrimination protections, Net neutrality proponents also argued that nondiscrimination rules would eliminate the uncertainty about ISPs' behavior and encourage greater investment in new innovation (Lessig, 2008). As Clyburn (2011) claimed that "without clear rules, investment in new services and applications will in fact be uncertain and overly cautious, resulting in an underperforming marketplace" (p. 5).

2. De-Regulation

As opposed to Net neutrality proponents who argue for imposing nondiscrimination regulation, Net neutrality opponents argued that government regulation will inevitably retard the growth and increase the cost of broadband deployment and should be sought as the last resort (Cochetti, 2006). They argued that

there is no need for "prophylactic" rules since there are no problems requiring any new regulations. As Downes (2011) argued that:

> *"Despite thousands of pages of comments from parties on all sides of the issue, in the end the majority could only identify four incidents in the last ten years of what it believed to be non-neutral behavior. All four were quickly resolved outside the agency's adjudication processes"* (p. 2).

Net neutrality opponents were also concerned that the Net neutrality mandate would lead to more burdensome regulations. As Dixon (2006) argued:

> *"The risk that a network neutrality mandate would lead to further regulation is illustrated more generally by the FCC's implementation of the provisions in the Telecommunications Act of 1996 intended to open local telephone networks to competition. As that experience suggests, mandates that one company share its network with competitors almost always lead competitors to call for more regulation regarding how that sharing is done, especially with respect to price"* (p. 8).

Net neutrality opponents also argued that Net neutrality regulation would impede innovation and stifle the growth of the Internet. Because those rules would have adverse consequences for innovation and competition in the market for broadband access by making it more difficult for ISPs to seek return on their investments in broadband networks (McSlarrow, 2008). They argued it is deregulation that fostered the massive investments in network infrastructure that the ISPs made in order to develop and deploy broadband access services (Cohen, 2006).

3. Regulatory Authority

Whether the FCC has jurisdiction over Internet services is a critical and complex issue in the Net neutrality debate. Former FCC chairman Martin (2008b) argued that the Supreme Court in its decision in the National Cable & Telecommunications Association (NCTA) v. Brand X Internet Services recognized that the FCC has ancillary authority to impose regulations to protect broadband Internet access. In that case, Brand X, an Internet service provider, wanted private cable companies to be classified as "telecommunication service" so that the "common carrier" obligations of the Telecommunication Act of 1996 could be applied. If this occurred, Brand X would be allowed to utilize the cable companies' high speed Internet access network. However, the FCC refuse Brand X's request, stating that the cable companies were "information services" and thus not subject to the "common carrier" obligations. The Supreme Court upheld the FCC's decision to categorize cable companies as "information service" and not "telecommunication service." As former FCC chairman Martin (2008b) argued:

> *"The Commission, under Title I of the Communications Act, has the ability to adopt and enforce the net neutrality principles it announced in the Internet Policy Statement. The Supreme Court reaffirmed that the Commission 'has jurisdiction to impose additional regulatory obligations under its Title I ancillary jurisdiction to regulate interstate and foreign communications.' Indeed, the Supreme Court specifically recognized the Commission's ancillary jurisdiction to impose regulatory obligations on broadband Internet access providers"* (para. 12).

However, the Net neutrality opponents argued the FCC have no regulatory jurisdiction over Internet service and Congress has not delegated authority to the FCC to

regulate broadband Internet access (Downes, 2011). In addition, existing anticompetitive law enforceable by either the Department of Justice or the Federal Trade Commission have already provided much more powerful tools to protect consumers:

> *"The Federal Trade Commission and the Department of Justice already have authority to investigate and pursue legal action in instances where broadband ISPs engage in anticompetitive conduct. The existing protections for consumers that are supplied by antitrust law need to be taken seriously before any rash move toward regulating the Internet takes place"* (May, 2011, p. 13).

On April 6, 2010, the United States Court of Appeals for District of Columbia Circuit ruled a 3-0 decision in Comcast v. FCC that the FCC lacks the authority to require broadband providers to give equal treatment to all Internet traffic being sent over their network. This ruling has far-reaching implications for the Net neutrality debate, as it invalidates the FCC's authority to regulate.

The FCC (2010b) made a statement regarding the decision:

> "*Today's court decision invalidated the prior Commission's approach to preserving an open Internet. But the Court in no way disagreed with the importance of preserving a free and open Internet; nor did it close the door to other methods for achieving this important end"* (p. 1).

Net neutrality opponents, on the other hand, were gratified by the Court's decision and asserted that the Comcast case has made clear that Congress did not delegate authority to FCC over broadband access under Title I of the Communications Act. As Downes (2011) argued:

"The FCC has made numerous efforts to attach otherwise unauthorized regulations to Title I's so-called 'ancillary jurisdiction,' but the courts frequently reject these efforts as overreaching" (p. 40).

6.1.5 Innovation in the Net Neutrality Debate

The study defined *innovation* as "the capacity to create or discover new things and new ideas that contribute to the advancement of knowledge and/or technology." Based on this definition, the study found the value *innovation* in the Net neutrality debate can be framed in the following ways:

1. Net Neutrality is Critical for Startups and Innovation

Net neutrality proponents argued that the Internet's open, neutral architecture has proven to be a critical element for market innovation and the free flow of ideas. It is important to preserve a "neutral" network that supported the explosion of innovation at the "edges" of the network and the growth of companies like Google, Yahoo, eBay, Amazon, and many others. As Goodlatte (2006) asserted:

"Part of the reason why the Internet is such a creative forum for new ideas is that there are very few barriers to using the Internet to deliver products, information and services. Startups such as Google, eBay and many others have sprung up and prospered because they had the same access to consumers via the Internet that other, larger and established entities had" (para. 3).

Without Net neutrality, ISPs would have a strategic capability and incentive to create barriers to entry for new innovators. For example, access-tiering would become another barrier to entry for competitors, reducing application or content competition on the Internet. As such, existing content providers have an incentive to block competitors

and access-tiering would be a means to effect that competitive advantage. As Lessig (2006) argued, "companies like Google in this context would have an incentive to secure sufficient bandwidth to enable its services while leaving competitors without enough bandwidth for their own" (pp. 8-9).

2. Internet is the Marketplace of Innovation

The proponents of Net neutrality also hold the view that the Internet itself is a product of innovation and it is an unrestricted free marketplace of ideas where innovators rise and fall on their merits (Scott, 2006). In essence, the Internet is a platform for innovation. With Net neutrality protection, entrepreneurs with new ideas for applications need not worry about getting permission for their inventions to reach end users. As Misener (2006) argued:

> *"Innovators large and small, as well as investors, have relied on market and regulatory certainty coupled with their own ingenuity to develop new and better online offerings. This 'innovation without permission' is, from our perspective, the essence of the Internet"* (para. 5).

3. Innovation is Critical for Both the "Core" and "Edge" of the Network

One critical argument resides in Net neutrality is the debate that whether innovation occurs at the "edge" of the network through devices attached by both business and residential end users, or at the "core" of the network does through devices controlled by the network operator (Comstock, 2006).

The Net neutrality proponents argued that the Internet was designed to allow the implementation of applications to reside largely with users at the "edges" of the network, rather than in the core of the network itself (Cerf, 2006b). While the Net neutrality

opponents argued that the practical need and technological advances have led to innovations at the "core" of the network are just as important as the advances in services and devices connected to the Internet on the "edges." They argued that innovations at the "core" of the network ensures the ISPs using the best technologies and techniques to provide reliable services to their customers and the robust broadband network is the key driver that spurs tremendous new services and innovations on the Internet. As McSlarrow (2008) argued:

> *"[T]he staggering growth of these companies would not have occurred without cable's investment in and deployment of the reliable high-speed broadband service that provides the ecosystem in which Google, YouTube, Yahoo! and other Internet services can flourish"* (para. 16).

Net neutrality opponents also argued that Net neutrality rules would discourage ISPs to make new investments in network intelligence and ultimately hinder innovation at the "core" of the network. As Baker (2011) argued:

> *"The FCC's rules will surely impact network operators' incentive to innovate, invest, and deploy broadband, directly counter to our primary mission to foster nationwide broadband availability. The FCC's decision also suggests a preference for the Internet edge companies over networks. I disagree with that approach, because there was no need to pick winners and losers in the Internet economy. Indeed, the Commission should have sought to maintain an environment in which companies across the Internet economy continue to have the incentives to invest and innovate"* (p. 3).

4. Regulation is unable to keep up with Innovation

The opponents also claimed that the Internet technologies are constantly changing and evolving. It would be impossible for any regulation to keep up with the change. Given a fast changing technological and market environment, government intervention is likely to do more harm than good (McSlarrow, 2008). As Cohen (2008) argued:

> *"There is no compelling reason for government to interfere in the Internet marketplace. ...The pace of innovation in the Internet marketplace and the constantly changing techniques used to manage networks would make any government regulation of network management wholly unworkable. The government does not have the expertise or resources to second-guess each of the thousands of network management decisions engineers make every day, much less to make those decisions at a pace that is consistent with the dynamic and vibrant nature of the Internet marketplace and technologies"* (p. 18).

6.1.6 Honor in the Net Neutrality Debate

The study defined *honor* as an "understanding of who you are and how you are perceived by others; a feeling of pride in oneself or one's organization, group, or nation and belief in one's own worth; accomplishment that is honored, esteemed, respected or well regarded by yourself or others." Based on this definition, the value *honor* in the Net neutrality debate can be framed in the following ways:

1. Establish Credibility

Both proponents and opponents of Net neutrality introduce themselves and identify their records and achievements in the testimonies to establish their credibility and reinforce the validity of their arguments. For example:

"I am one of the network engineers involved for many years in designing, implementing and standardizing the software protocols that underpin the Internet" (Cerf, 2006b, para. 2).

"For ten years, EarthLink has been on the cutting edge of Internet innovation, delivering the Internet to American consumers and business, first through dial-up, then broadband and now VoIP, wireless voice and municipal wireless Internet services" (Putala, 2006, para. 2).

"My name is Dr. George S. Ford, and I am the Chief Economist of the Phoenix Center for Advanced Legal and Economic Public Policy Studies, a non-profit 501(c)(3) organization that studies broad public policy issues related to governance, social and economic conditions, with a particular emphasis publishing scholarly research on the law and economics of telecommunications and high-tech industries. We have written nearly fifty papers on telecommunications policy in the last nine years, many of which have been published in scholarly journals" (Ford, 2008, p. 1).

2. Mission Statement

Proponents and opponents of Net neutrality also made statements of purpose for their companies or organizations. They stated how those missions and overall goals guide the actions of the organizations and how the missions and goals of the organization relate to the discussion about Net neutrality. For example:

"Christian Coalition of America is a political organization, which is made up of pro- family Americans who care deeply about becoming active citizens for the

purpose of guaranteeing that government acts in ways that strengthen, rather than threaten, families" (Combs, 2008, p. 2).

"The IETF is committed to its mission as described in RFC3935: to produce high quality, relevant technical and engineering documents that influence the way people design, use, and manage the Internet in such a way as to make the Internet work better" (Peterson, 2008, p. 1).

"Public Knowledge has and will continue to advocate for enforceable network neutrality rules that ensure: (1) Broadband Internet access providers offer a minimum level of broadband service to all broadband consumers and are not allowed to create a "private Internet" that grants exclusive access to higher bandwidth levels to certain providers selected by the network operator; (2) Paid prioritization is presumptively unreasonable and is applicable to all broadband access services; and (3) Broadband Internet access providers are not forced to obtain government pre-approval to manage their networks" (Sohn, 2011, p. 2).

3. The Contribution to Economic Growth

Both proponents and opponents of Net neutrality emphasized the importance of the Internet and their contribution to the Internet development and economic growth. Net neutrality proponents asserted that the Internet is one of the great success stories of the 20th century. It has been a key factor of the economic growth. Net neutrality opponents argued that the development of broadband services is one of the biggest success in the history of communication. For example:

"Our economy and the quality of our lives have evolved significantly because of this network of networks" (Inouye, 2008, para. 1).

"*It is difficult to imagine any other development of the past decade that has done so much to improve Americans' quality of life or the growth of the economy*" (Cohen, 2006, para. 26).

"[The broadband service] is an extraordinarily positive development for the nation's economy. . . for our global competitiveness. . . and for the next wave of broadband-driven investment and innovation" (McCormick, 2006b, para. 6).

6.2 How Values Are Expressed by Proponents and Opponents in the Net Neutrality Debate

Based on previous discussion of how values were expressed in the Net neutrality debate, the following sections summarize the arguments that address the applicable research questions regarding the statistically significant differences in values among positions, stakeholder groups, venues, and time periods in the Net neutrality debate.

The first research question of this study explored what differences in the values expressed by proponents and opponents of Net neutrality. The finding indicated that the proponents of Net neutrality invoked *freedom* and *justice* more frequently than the opponents, while the opponents of Net neutrality invoked *wealth* more frequently than the proponents.

1. Proponents of Net Neutrality

Generally speaking, the proponents of Net neutrality fall large into content providers, application providers, and consumer groups such as Consumers Union, Free Press, Internet2, and Christian Coalition of America, etc. They argued in favor of Net neutrality based on "freedom to access" and "freedom of speech." As discussed in section

6.1, Net neutrality proponents argued that Net neutrality protects consumers' rights to use any content, application, or service on a nondiscriminatory basis without interference from the ISPs. They believe that ISPs should not be allowed to prioritize as a way of tiering their service offerings, describing such practices as "anti-democratic" (Best & Wade, 2007). They also argued for "transparency" in ISPs' network management practices. As transparency principle enables freedom of choices and enhances competition in the broadband network (van Schewick, 2008).

2. Opponents of Net Neutrality

The opponents of Net neutrality fall large into service providers and the interest groups represent the interests of service providers such as National Cable & Telecommunications Association, Telecommunications Industry Association, and Computing Technology Industry Association, etc. Opponents argue against Net neutrality based on "property rights," "incentive on investment," and "reasonable network management." They claim that ISPs have the right to recover the costs from their investment. Any regulation of network management would reduce the incentive for ISPs to invest in network infrastructure and make the network less efficient. The ISPs need reasonable network management to solve problems such as congestion and online piracy.

6.3 How Values Are Expressed by Stakeholder Groups in the Net Neutrality Debate

The second research question of this study explored differences in the values expressed among stakeholders of Net neutrality. The findings indicated that among the five stakeholder groups, government representatives and interest groups tended to place more emphasis on *social order*, service providers tended to place more emphasis on *honor* and *wealth*, content providers tended to place more emphasis on *freedom*, and the

academics tended to place more emphasis on *justice*. In addition, the comparison between appointed and elected officials indicated that appointed officials invoked *honor* more frequently than elected officials. The comparison between Democrats and Republicans indicated that Republicans invoked *social order* more frequently than Democrats.

1. Government Representatives

Government representatives invoked *social order* more frequently than other stakeholder groups based on the argument that nondiscrimination rules is key for upholding the rights and welfare of consumers. They claimed that government plays a central role in protecting competition in the telecommunications industry, and the policies adopted for Net neutrality will affect competition in the industry for years to come. However, opponents argued that the FCC should strive to remove regulatory interference that may have outlived its usefulness and now only deters investment and innovation. "Streamlining our regulations could take significant burdens off the backs of entrepreneurs and give them more freedom to invest and innovate" (McDowell, 2011, p. 3).

2. Service Providers

Service providers invoked *wealth* more frequently than other stakeholder groups based on the argument of incentive on investment, profitability, covering costs, and protecting property rights. For instance, ISPs such as Verizon, Comcast, and AT&T opposed Net neutrality regulation by claiming that such regulation would discourage investment in broadband networks. They argued that Net neutrality regulation would increase costs and stifle the incentive for investment. They further argued that they have the right to control their ability to make a profit from their resources and properties by

differentiating among various types of users. They argue that unless content providers who supply bandwidth-intensive multimedia pay a premium, they would have no incentive to invest in network capacity. In addition to *wealth*, service providers also tended to place more emphasis on their achievement to the growth of the Internet in terms of *honor* to reinforce the validity of their arguments.

3. Content Providers

Content providers invoked *freedom* more frequently than other stakeholder groups based on the argument that Net neutrality ensures that the Internet remains a free and open platform for innovation and communication. They argued that the Internet is the platform that gives tremendous freedom to individual users and innovators. The remarkable success of the Internet is based on the end-to-end principle that gives consumers choices and control over their online activities (Citron, 2006). Large content providers such as Amazon, eBay, and Google urged the FCC to act to establish some baseline rules that would promote and protect Internet freedom, openness, and innovation.

4. Interest Groups

Interest groups placed emphasis on *social order* much like government representatives. As discussed above, the focus of the Net neutrality debate is whether government should establish rules to regulate the broadband market. Proponents argued the importance of Net neutrality for consumer protection and for competition on the Internet. They argued that ISPs have threatened the preservation of an open Internet resulting in the need for clear enforceable baseline Net neutrality rules. However, the opponents argued that regulations designed to protect consumers from cable monopolies now are having the equal and opposite effect of protecting cable companies from the

market disciplines -- on price, on quality of service, on innovation -- of vigorous competition (McCormick, 2006b). Government should be cautious about the "potentially adverse and unintended effects" of the Net neutrality regulation including reduced product and service innovation (McSlarrow, 2008).

5. Academics

Academics placed emphasis on *justice* partly because they were considered as disinterested experts in the Net neutrality debate. However it is possible that scholars who testified at the public hearings have industry ties they did not reveal. Nondiscrimination is the focus of Net neutrality debate among academics. The proponents of Net neutrality argued that Congressional action is needed to ensure that access to the Internet is provided in a nondiscriminatory fashion. They argued that the "common carriage" principles have played an important role in the basic infrastructure services of transportation and communications and the Internet is a "common carriage" that should serve all customers without discrimination (Crawford, 2008). However, the opponents argued that a large amount of traffic is generated by a small number of heavy users whose usage is predominantly driven by filesharing. Prioritization and network management are the essential tools for ISPs to protect end users and to preserve network performance (Yoo, 2008b).

6. Elected Officials and Appointed Officials

Among government representatives, values differences between elected officials and appointed officials were also identified. In this study, elected officials include Senators and House of Representatives; the appointed officials include FCC chairman, FCC commissioners, and FTC commissioners. The comparison between appointed and

elected officials revealed that the appointed officials invoked *honor* more frequently than the elected officials. This finding indicated that the appointed officials tended to emphasize the importance and the achievement of the agency in order to justify their authority to regulate the broadband market. As asserted by a FCC commissioner:

> *"The Federal Communications Commission (FCC) was created by Congress almost 77 years ago. Today, its influence reaches far beyond the radios, telephones and telegraphs of 1934. By some estimates, the FCC holds sway over one-sixth of the American economy - or a slice of the economic pie that is the same size as the health care sector. For better or for worse, our actions touch the daily lives of all Americans"* (McDowell, 2011b, para. 2).

A FTC commissioner also claimed their jurisdiction over consumer protection and competition:

> *"The Federal Trade Commission is the only federal agency with general jurisdiction over consumer protection and competition in most sectors of the economy. We enforce laws that prohibit business practices that are anticompetitive, deceptive, or unfair. The FTC's combination of consumer protection and competition authority allows us to take action in appropriate circumstances with a uniquely well-rounded perspective on market processes. ... The FTC is well-versed in consumer protection and competition issues raised by the offering of Internet access services. For nearly a decade, the FTC has investigated and brought enforcement actions against Internet service providers for allegedly deceptive marketing, advertising, and billing of Internet access services"* (Kovacic, 2006, para. 3).

The appointed officials also tended to emphasize their goals and objectives as a commissioner to justify their argument in the debate:

> *"During my five years as a commissioner, my focus has been to support policies that promote consumer choice offered through abundance rather than regulation and its unintended consequences, whenever possible"* (McDowell, 2011b, para. 3).
>
> *"Since arriving at the Commission, I have tried to be a voice for children and families, and continue to be that here today as I encourage all of you to adopt policies and tools in order for parents and caregivers to be able to provide a safe environment on-line as well as off-line"* (Tate, 2008, p. 3).

7. Democrats and Republicans

Among government representatives, values differences between Democrats and Republicans were also identified. The comparison between Democrats and Republicans on Net neutrality indicated that the Republicans invoked *social order* more frequently than the Democrats. As Democrats were generally proponents of Net neutrality and Republicans were opponents of Net neutrality, the finding revealed that the Republicans placed most of their arguments on the need for deregulation. They argued that deregulation fostered the massive investment in network infrastructure while Net neutrality regulation will impede innovation and stifle the growth of the Internet. They also argued for Congressional policies that are work to deregulate and remove barriers to infrastructure deployment, not new regulation and raising additional barriers.

> *" [H]history has taught us time and time again that competitive markets are far better able to satisfy consumer demand than government micromanagement. The government, and especially unelected bureaucrats such as myself, are incapable*

> *of replicating the billions of independent decisions that are made each minute in the private sector—nor should we try. The law of unintended consequences always has the last word"* (McDowell, 2008, p. 2).

The Republicans also claimed that the FCC has no authorization from Congress to impose regulation on Internet services. As a Republican Representative argued:

> *"Regulations are not the problem in and of themselves - in fact, it is regulations that implement the laws passed by Congress. The problem comes when unelected personnel in the maze of the federal bureaucracy begin using regulations to impose their own agendas, and when they do so without congressional authority or thoughtful consideration of the economic consequences"* (Upton, 2011, para. 4).

6.4 How Values Are Expressed in the Net Neutrality Debate in Different Venues

The third research question of this study explored the differences in what values are expressed in relation to Net neutrality in different venues. The findings indicated that people who testified in congressional hearings invoked *freedom* and *social order* more frequently than people who testified in FCC hearings. However, no statistically significant differences were found in the values expressed by people who testified in Senate hearings and House hearings.

Congress has considerable influence on the FCC in many ways. For example, the House Committee on Energy and Commerce and the Senate Committee on Commerce, Science, and Transportation, along with subcommittees, maintain oversight of FCC activities. Congressional committees also hold hearings relate to the business of the FCC. Furthermore, Congress has influence on the decision of legislations that can direct the

FCC to do or not to do something. As such, many debates in congressional hearings about Net neutrality were focused on whether the FCC has the authority to impose regulation on the Internet services. As a government representative argued in a congressional hearing:

> *"The Constitution provides that all legislative power is vested in Congress. The FCC can only exercise legislative power that Congress has delegated to it. The FCC acts unconstitutionally when it exceeds its limited power"* (Goodlatte, 2011, para. 5).

In addition to *social order*, *freedom* was also invoked more frequently for people who testified in congressional hearings than people who testified in FCC hearings. A possible explanation would be that the finding of value differences between congressional and FCC hearings were relevant to the finding of value differences between 2006 and 2008 hearings. As the study indicated that people who testified in 2006 hearings invoked *freedom* more frequently than people who testified in 2008 and 2011 hearings and FCC hearings all took place in 2008, it is possible that these results were interplayed across time and venues.

6.5 How Values Are Expressed across Time Periods in the Net Neutrality Debate

The fourth research question of this study explored the changes across time in the differences in the values expressed in the Net neutrality debate. The finding indicated that people who testified in 2006 hearings tended to frame their arguments by invoking *freedom*, *innovation*, *justice*, and *social order*, while people who testified in 2008 hearings tended to frame their arguments by invoking *honor* and *justice*, and people who testified in 2011 hearings tended to frame their arguments by invoking *social order*.

Comparing the four mainly invoked values between 2006 and 2011 testimonies, only *social order* revealed statistically significant differences in the comparison between 2006 and 2011 testimonies.

Based on the findings, it is reasonable to assume that at the early stage of the debate, the Net neutrality proponents and opponents tried to guide the public what to think about the issue. As a result, values like *freedom*, *innovation*, *justice*, and *social order* were frequently invoked by proponents and opponents to frame the debate in the 2006 testimonies. As the debate evolved over time, the opponents and proponents of Net neutrality tended to frame the debate using "agenda denial" strategy, which consists of "tactics used by issue opponents to keep issue initiators from attaining success at any stage in the set of policy making processes" (Cherry, 2007, p.581). As a result, when comparing value differences across time periods, only *social order* revealed statistically significant differences among the four most frequently invoked values between the 2006 and 2011 testimonies.

The agenda denial strategy can be found in many arguments made by proponents and opponents in the Net neutrality debate. For example, as the Net neutrality proponents claimed for freedom to access, the opponents argued that the problem identified by the proponents was not a real problem.

> *"For all the talk of the need to regulate in the name of "freedom," today's Internet is already truly open and our customers have the freedom to access any Internet content and use any Internet application, service, or device they want"* (Cohen, 2008, p. 6).

As the Net neutrality proponents claimed for freedom of speech, the opponents argued that ISPs also poses free speech rights. They are entitled to use their facilities to convey message of their own choosing.

> *"The Constitution forbids the FCC, and not private parties, from regulating in ways that violate basic free speech principles. A decision by a broadband Internet access provider to block specific content, so long as it is not motivated by anticompetitive objectives, is likely to be a form of protected speech for the provider"* (Downes, 2011, p. 22).

As the Net neutrality proponents claimed for nondiscrimination rules to protect the equal access to the Internet, the opponents argued that the ISPs should not be prevented from differentiate different types of users and there was no reason for government to intervene, because there was no actual evidence of discrimination.

> *"There is no neutral Internet to preserve. There's only one that works. ...The reality is that we're moving away from websites to the mobile, app-based economy, specialized services and high-bandwidth applications such as video that shouldn't be treated the same. A "level playing field" doesn't mean everyone gets a trophy"* (Downes, 2011, p. 37).

> *"[T]here are no problems with the Internet or video businesses that require new government regulation, that any regulations intended to prevent future perceived problems will likely do more harm than good, and, finally, that any risk of actual harms are already fully addressed by existing laws"* (Cohen, 2006, para. 2).

Net neutrality proponents claimed that Net neutrality is critical for startups and innovation, while opponents argued that innovations at the "core" of the network are as important as those at the "edge" of the network (Comstock, 2006).

The Net neutrality proponents also use "agenda denial" to attack the arguments made by the Net neutrality opponents. The shift of values in *wealth* between proponents and opponents of Net neutrality was a notable one. The finding indicated that the opponents invoked *wealth* more frequently than the proponents in the 2006 and 2008 testimonies, while the proponents invoked *wealth* more frequently than the opponents in the 2011 testimonies. Evidence regarding the argument of the Net neutrality proponents on issues like incentive on investment and job creation in the 2011 testimonies may provide explanation of this result.

As the Net neutrality opponents framed their arguments by claiming that Net neutrality regulation will reduce the ISPs' incentive on investment of network infrastructure and new technologies, the Net neutrality proponents argued that ISPs are earning healthy profits and the investment decisions not solely depend on Net neutrality regulation.

> *"ISPs have argued net neutrality rules will prevent them from developing models that will earn them profits to use towards investments in deployment and infrastructure. However, even in the recent difficult economic times, ISPs have been earning healthy profits. For example, in 2009, Comcast and AT&T earned 10% in profits. Only Exxon Mobile did slightly better in 2009 with 10.21% in profits; even Walmart only earned 3.3% in profits. The reality is decisions in investment and deployment are not dictated simply by net neutrality rules.*

Investment also depends on factors such as demand and supply costs; competition; and overall confidence in the economy" (Desai, 2011, para. 14).

In the 2011 testimonies, the proponents of Net neutrality also raised the importance of job creation and challenged Net neutrality opponents' argument that Net neutrality rules will affect jobs.

"The free and open Internet has been central in creating thousands of new businesses and over a million new jobs. Small businesses, and in particular new businesses, are the primary generators of new jobs in our economy" (Genachowski, 2011, p. 3)

"ISPs have suggested also that network neutrality rules will affect jobs. However, while earning billions of dollars in profits, some ISPs are still shedding their workforce. From 2007-2009, AT&T reported $36.5 billion in profit, yet reduced its workforce by 20,500 employees during that same period of time. Similarly, from 2007-2009, Verizon reported a profit of $15.6 billion, but has 19,073 fewer employees than it did in 2006" (Desai, 2011, para. 15).

Another notable finding when comparing values differences across time periods was that only *social order* revealed statistically significant differences among the four most frequently invoked values between the 2006 and 2011 testimonies. Two probable factors led to the result that people who testified in the 2011 hearings invoked *social order* more frequently than those who testified in the 2006 and 2008 hearings. First, in April 2010, the D.C. Circuit asserted that the FCC had failed to demonstrate it had the authority to impose Net neutrality rules against service providers. Second, in December 2010, the FCC established an Open Internet Order that applies to broadband Internet

providers. These two events have far-reaching implications for the Net neutrality debate in the 2011 hearings. The Net neutrality debate was not only focused on whether the government should regulate Internet access but also focused on whether the FCC has jurisdiction over Internet services. As a government representative asserted:

> *"Congress will continue through hearings like today's to reassert its rightful authority to determine the FCC's jurisdiction and to make the laws that will best protect the Internet as an open, innovative and relatively unregulated environment"* (Goodlatte, 2011, para. 4).

6.6 Summary

This chapter first discussed how proponents and opponents of Net neutrality express values and then summarized the arguments that address the applicable research questions regarding the statistically significant differences in values among positions, stakeholder groups, venues, and time periods in the Net neutrality debate.

The first research question asked, are there any differences in the values expressed by proponents and opponents of Net neutrality? This study found that the proponents of Net neutrality invoked *freedom* and *justice* more frequently than the opponents, while the opponents of Net neutrality invoked *wealth* more frequently than proponents. Net neutrality proponents tend to frame the debate in terms of freedom to access, freedom to speech, promotion of competition, the end-to-end principle, the nondiscrimination principle, and transparency. Net neutrality opponents tend to frame the debate in terms of property rights, reasonable network management, and incentive on investment.

The second research question asked, are there any differences in the values expressed among stakeholders of Net neutrality? This study identified that government representatives and interest groups invoked *social order* more frequently than other stakeholder groups. They argued for whether government should establish nondiscrimination rules to regulate the broadband Internet market. Service providers invoked *wealth* more frequently than other stakeholder groups. They argued for property rights, profitability, and incentive on investment. Content providers invoked *freedom* more frequently than other stakeholder groups. They argued for a free and open Internet platform for innovation and communication. Academics invoked *justice* more frequently than other stakeholder groups. The nondiscrimination principle is the focus of Net neutrality debate among academics.

Among government representatives, this study identified that the appointed officials invoked *honor* more frequently than the elected officials, and the Republicans invoked *social order* more frequently than the Democrats. This finding indicated that the appointed officials tended to emphasize the importance and the achievement of the agency in order to justify their authority to regulate the broadband market. The Republicans tended to frame their arguments on the need for deregulation and the FCC's regulatory jurisdiction over broadband market.

The third research question asked, are there any differences in the values expressed in relation to Net neutrality in different venues? This study identified that people who testified in congressional hearings invoked *freedom* and *social order* more frequently than FCC hearings. This finding indicated that Congress has significant

influence on the FCC's legislation decisions as many debate in congressional hearings were focused on the FCC's authority to impose regulation on the Internet services.

The fourth research question asked, are there any changes across time in the differences in the values expressed in the Net neutrality debate? This study identified that the most invoked values revealed a trend of convergence when comparing value differences across time periods. People who testified in 2006 hearings tended to frame their arguments by invoking freedom, innovation, justice, and social order, while people who testified in 2011 hearings tended to frame their arguments by invoking social order. This result assumes that at the early stage of the debate, the Net neutrality proponents and opponents tried to guide the public what to think about the issue and frame the debate with various points. As the debate evolved over time, the opponents and proponents of Net neutrality tended to frame the debate using "agenda denial" strategy. As a result, the value differences between proponents and opponents were balanced based on the arguments they made on the same issue. Only social order revealed statistically significant differences among the four most frequently invoked values between the 2006 and 2011 testimonies.

Chapter 7: Conclusions

This chapter concludes the account of the investigation into the values of stakeholders expressed in the Net neutrality debate. This chapter also includes a discussion of the implications for theory and practice as well as limitations of this study and directions for future research.

7.1 Summary of Results

Net neutrality has recently emerged as an important telecommunications policy issue that is closely tied to technological innovation, economic development, and information access. Existing studies of Net neutrality have focused mostly on technological requirements, economic analysis, and regulatory justifications. Nevertheless, when analyzing this heatedly debated issue, one cannot ignore that the use of telecommunications and the implementation of policy can never be completely value free. This study seeks to further understanding of the Net neutrality debate by exploring the values that lie at the core of this hotly contested debate and thus bridging telecommunications policy and values research.

To understand the role of values in the Net neutrality debate, this study focuses on a corpus of public hearings related to Net neutrality that provide a forum where facts and opinions can be presented by witnesses with varied backgrounds, including members of Congress and other government officials, corporate actors, interest groups, academics, and citizens. This study employs both qualitative and quantitative content analysis to identify and analyze values expressed by stakeholders toward Net neutrality regulation. The discovery and analysis of the values that expressed and invoked by stakeholders

advances the understanding of how stakeholders frame the Net neutrality debate in light of these values.

The major findings of this study include (1) the Net neutrality debate can be framed in terms of values expressed by proponents and opponents of Net neutrality; (2) there are differences in values expressed among positions, stakeholder groups, venues, and time periods in the Net neutrality debate; and (3) differences in values expressed by proponents and opponents of Net neutrality have changed over time.

1. The Net Neutrality Debate can be Framed in Terms of Values Expressed by Proponents and Opponents of Net Neutrality

Proponents and opponents frame the Net neutrality issue in a variety of ways. Using qualitative content analysis, this study identifies how the values of *freedom*, *justice*, *wealth*, *social order*, *innovation*, and *honor* shape the debate.

For *freedom*, the proponents and opponents of Net neutrality tend to frame the debate in terms of freedom to access, freedom of speech, freedom to experiment with different business models, promotion of competition, and end-to-end principles.

For *justice*, the proponents and opponents of Net neutrality tend to frame the debate in terms of nondiscrimination, double recovery, transparency, injustice in bandwidth consumption, digital divide, and protecting intellectual property.

For *wealth*, the proponents and opponents of Net neutrality tend to frame the debate in terms of property rights, reasonable network management, incentive on investment, and economic growth.

For *social order*, the proponents and opponents of Net neutrality tend to frame the debate in terms of the need for nondiscrimination rules, deregulation, and regulatory authority.

For *innovation*, the proponents and opponents of Net neutrality tend to frame the debate in terms of Net neutrality is critical for startups and innovation; the Internet is the market place of innovation; innovation is critical for both the "core" and "edge" of the network; and regulation is unable to keep up with innovation.

For *honor*, the proponents and opponents of Net neutrality tend to frame the debate in terms of establishing credibility, identifying mission statement, and asserting their contribution to economic growth.

2. There Are Differences in Values Expressed among Positions, Stakeholder Groups, Venues in the Net Neutrality Debate

One of the key findings of this study is that the proponents of Net neutrality invoked *freedom* and *justice* more frequently than the opponents, while the opponents of Net neutrality invoked *wealth* more frequently than the proponents. The results indicated that Net neutrality proponents tend to frame the debate in terms of freedom of access, freedom of speech, promotion of competition, the end-to-end principle, the nondiscrimination principle, and transparency. The Net neutrality opponents tend to frame the debate in terms of property rights, reasonable network management, and incentive on investment.

This study shows that there are value differences in values expressed among stakeholder groups. Service providers invoked *wealth* more frequently than other stakeholder groups. They argued for property rights, profitability, and incentive on

investment. Content providers invoked *freedom* more frequently than other stakeholder groups. They argued for a free and open Internet as a platform for innovation and communication. Academics invoked *justice* more frequently than other stakeholder groups. The nondiscrimination principle is the focus of the Net neutrality debate among academics.

This study also shows that there are value differences in values expressed among different venues. This study identified that people who testified in congressional hearings invoked *freedom* and *social order* more frequently than people who testified in FCC hearings. However, no statistically significant differences were found in the values expressed by people who testified in Senate hearings and House hearings. This finding indicated that Congress has significance influence on the FCC's legislation decisions as many debates in congressional hearings were focused on the FCC's authority to impose regulation on Internet services.

3. Differences in Values Expressed by Proponents and Opponents of Net Neutrality Appear to Have Changed Over Time

When comparing values differences across time periods, the most frequently invoked values revealed a trend of convergence. Statistically significant results were found in four values between 2006 and 2008 testimonies (*freedom*, *innovation*, *justice*, and *social order*), three values between 2008 and 2011 testimonies (*honor*, *justice*, and *social order*), and one value between 2006 and 2011 testimonies (*social order*). These results revealed that people who testified in 2006 hearings tended to frame their arguments by invoking *freedom*, *innovation*, *justice*, and *social order*, while people who testified in 2011 hearings tended to frame their arguments by invoking *social order*. It

assumes that at the early stage of the debate, the Net neutrality proponents and opponents tried to guide the public in terms of how to think about the issue by framing the debate using various values. As the debate evolved over time, the number of values with statistically significant differences between proponents and opponents of Net neutrality dropped. That does not mean the proponents and opponents achieved agreement on the Net neutrality debate. Instead, it indicated that both proponents and opponents of Net neutrality seek to raise arguments against their foes with an "agenda denial" strategy. Issues that emerged in the debate draw the most attention by proponents and opponents of Net neutrality as the debate evolves. For example, the Net neutrality debate was focused on whether the FCC has jurisdiction over Internet services in 2011 hearings as the D.C. Circuit asserted that the FCC had failed to demonstrate that it had the authority to impose Net neutrality rules against service providers in April 2010.

Another notable finding in the differences in values expressed by proponents and opponents of Net neutrality across time periods is that opponents invoked *wealth* more frequently than proponents in the 2006 and 2008 testimonies, while proponents invoked *wealth* more frequently than opponents in the 2011 testimonies. The shift of values in *wealth* between proponents and opponents of Net neutrality is probably because the proponents made their arguments for "agenda denial" on issues of incentive on investment and job creation in the 2011 hearings. While Net neutrality opponents framed their arguments by claiming that Net neutrality regulation will reduce the ISPs' incentive on investment in network infrastructure and new technologies, Net neutrality proponents argued that ISPs are earning healthy profits and the investment decisions not solely depend on Net neutrality regulation. The proponents of Net neutrality also raised the

importance of job creation and challenged Net neutrality opponents' argument that Net neutrality rules will affect jobs in the 2011 hearings.

7.2 Implications

This study aims to achieve two goals. The first goal is to develop a unified theory-grounded value typology through literature and qualitative analysis of public hearings. The second goal is to conduct an in-depth quantitative analysis of public hearings to get insights into the role of values in Net neutrality debate. Based on the research design, the research findings, and the process of developing a meta-inventory of human values, this study has the following implications for both theory and practice.

First, the research of values in the Net neutrality debate provides an explanatory framework for understanding the human and social dynamics in this telecommunications policy issue. This study seeks to further understanding of the Net neutrality debate by exploring the values that lie at the core of this hotly contested debate and thus bridging telecommunications policy and values research. Values influence policy goals, decisions, and implementations. At the same time, policy analysis can also influence the values of participants in the policy-making process and of people affected by this process. Analysis of values can strengthen policy arguments and alter the state of ongoing policy debates (Schwartz, 2007). As claimed by Fischer (1980), "the validity of a political argument is determined by its ability to withstand the widest possible range of objections and criticism in an open, clear and candid exchange between the relevant participants (p. 206)." Thus, policy analysts cannot avoid the importance of values in their work. Policy analysts should bring up discussions about policy problems and consequences so that all

stakeholders who can affect the policy or whom the policy can affect can express their values through public discussion (Forester, 1985).

Second, the analysis of formal testimony is an ideal way to focus policy discussions that often lack any empirical foundation. Since these hearings constitute a major dimension of the public forum for discussion of Net neutrality, including a diverse range of stakeholders, they are ideal for studying the relationship among values, policy, and technology. As many Net neutrality discussions have seldom been subjected to sufficient empirical analysis, this study provides empirical data that lays out the characteristics and major conflicts involved in the Net neutrality debate by analyzing the entire corpus of Net neutrality discussion from congressional hearings and FCC hearings. As policy design is a political and value-laden process that seeks not only to determine the best means to given ends but also to determine what the ends in themselves should be (Fischer, 1980), the analysis of formal testimony related to Net neutrality helps to explore the values expressed by various stakeholders. The findings of this research can not only help to inform and guide policy makers' decisions on Net neutrality but also help to further the academic policy discourse. As stated by Thacher and Rein (2004), "values are the ultimate ends of public policy – the goals and obligations that policy aims to promote as desirable in their own right, not just as means to some other objective (p. 460)." In this view, policy analysis is more of a process of argument that allows stakeholders to identify and communicate their implicit or explicit values than an objective evaluation of public policy (Anderson, 1979).

Third, content analysis of human values has important implications for understanding human behavior. Values serve as standards and criteria for judgment,

preference, and choice (Rokeach, 1973). They are important determinants of attitudes and behaviors (Feather, 1995; Rokeach, 1973; Schwartz, 1996). Numerous empirical studies have shown that the importance people place in specific values influences their attitudes toward behavior (Feather, 1988, 1995; Bardi & Schwartz, 2003). Specifically, in political research, Tetlock (1984, 1986) attempts to explain how individual differences such as cognitive style and political ideology influence political reasoning. He argues, "all political ideologies are core or terminal values that specify what the ultimate goals of public policy should be – values such as individual freedom, social equality, economic growth, national security, environmental protection, and crime control" (Tetlock, 1986, p. 820). Based on this theoretical proposition, he claimed that liberals are more likely to view "policy making as a matter of weighting competing interests and values" (Tetlock, 1986, p. 820) and more susceptible than conservatives to value conflicts over social welfare policy (Tetlock, 1984, 1986).

However, most of the studies that built the connection between values and behaviors were based on survey, which has methodological issues related to self-awareness (i.e., people may not know what their values are) and self-report biases (i.e., people may not respond truthfully) (Hitlin & Piliavin, 2004). Also, there may be challenges when trying to acquire survey data, especially from important stakeholders such as policymakers and industry representatives who may be unwilling to take the time (or perhaps to bear any risk) involved in completing such a survey. Due to these limitations, it is problematic to rely entirely on surveys to understand human values in a policy debate. As such, there could be significant benefits to studying an existing corpus of data produced within the policy debate itself rather than embarking on a new data

collection effort. This study has proven that content analysis is an effective approach to reveal the relationships between values and attitude of stakeholders toward Net neutrality. Values do matter with regard to who support or oppose specific policy remedies with regard to Net neutrality.

Fourth, the meta-inventory of human values (MIHV), as an unified theory-grounded value typology, developed in this study not only effectively reflected values in the Net neutrality debate, but also proved to be more effective than the SVI in reducing the ambiguity that lead to uncertainty and disagreement in classifying values in the Net neutrality debate. Although the SVI may have validity as a survey instrument for exploring the relationship between behavior and value conflicts (Schwartz & Bilsky, 1987; Schwartz, 1992; Schwartz, 2007), it was demonstrated to have limited validity as a content analysis instrument by this study.

The MIHV developed in this study represents an advance in a number of respects compared with previous value inventories. First, it is more comprehensive but more manageable for content analysis than previous value inventories. The value categories proposed for the MIHV (see table 4-5) are aggregated from different domains that address general individual values, work values, managerial values, and values for technology design. It addresses human values in a more comprehensive way than inventories such as the four value items in the CES (Ravlin & Meglino, 1987) and seven values in Jurkiewicz and Giacalone's (2004) value framework of workplace spirituality. It is also more manageable than the fine-grained 56 value items in the SVS (Schwartz, 1994) and 66 concepts in the PVQ (England, 1967), which is particularly important for applying the meta-inventory for purposes beyond survey research, such as content

analysis, where a large number of value categories can become tedious and confusing. Second, the MIHV removes the ambiguity and redundancy of value categories that previous value inventories might have. It minimizes the overlap between categories to make each category unique and distinct from others. For example, concepts such as *creativity* and *a varied life* may be ambiguous and redundant when they are in the same inventory; however, by synthesizing them under the concept of *innovation* may avoid the ambiguity and redundancy. This is especially important for purposes such as content analysis, where ambiguity and redundancy lead to uncertainty and disagreement in classifying values. Third, the MIHV is adaptable to suit the research contexts that researchers need for conducting various social inquiries. The definition and descriptions of each value items can be used to differentiate content categories. It can be tailored and modified to understand the values embedded in specific domains such as important telecommunications policy debates with economic implications (Cheng et al., 2010) and to understand values in informal communication by analyzing tweets (Koepfler & Fleischmann, 2011, 2012).

Fifth, this study successfully demonstrates how to establish a coding process for values that achieves substantial inter-coder reliability. To permit replicable and valid inferences to be drawn from data derived from content analysis, it is important for a study to demonstrate the reliability of the data collected using the coding scheme. This study demonstrates how a coding scheme is refined and developed through the iterative processes combining both top-down processing based on a priori value classifications through literature and "data driven" processing through the analysis of testimonies from public hearings, and how the coding schemes are tested for reliability. In addition, the

coding instruction (see appendix D) developed for this study has important implications for coding values and training coders. The instruction not only helps coders to tell the differences between factual statements and value judgments that defined by this study, but also helps coders to identify values expressed by stakeholders in the Net neutrality debate. The process of coding scheme modification and the development of coding instruction for values have made significant contributions to both content analysis and values research.

7.3 Limitations

It is important to note that this study has three significant limitations. First, this study describes values expressed in a single type of discourse outlet for Net neutrality. Although public hearings serve as forums that provide useful data points to help to expose the values of various stakeholders, Net neutrality has been discussed through news articles, professional magazine articles, academic papers, the blogosphere, etc. Thus, analysis of a broader range of discourse outlets (e.g., popular press, trade press, scholarly articles, blogs) would allow for comparison across these outlets.

In addition, the political environment of Net neutrality involves many actors, including the FCC, Congress, the courts, the interest groups, the public, and the telecommunications industry. As such, the FCC activities and court cases also have far-reaching implications on Net neutrality regulation. On the one hand, the legislative mandate makes the agency the principal policymaking organization in the realm of federal communications regulations. The Communication Act authorizes the FCC to use its broad rulemaking power to regulate the communications industry. On the other hand, the court is charged with ruling on rules, orders, and decisions made by the FCC. Many

FCC actions are appealed to the U.S. Court of Appeals for the District of Columbia Circuit. A number of cases involving the FCC have made their way to the Supreme Court. Section 2.1.2 has highlighted the major FCC activities and court cases related to Net neutrality. However, a more thorough and in-depth stakeholder analysis would be helpful for capturing the entire context of the Net neutrality debate.

Second, studying testimonies only facilitates seeing what speakers are saying and what statements and messages they are trying to convey to the audience. It is important to note that such testimonies are often carefully crafted and polished statements that may reflect values that the authors intend to convey as well as values held deeply by the authors themselves. As such, their arguments that Net neutrality regulation would affect the investment incentives (*wealth*) or innovation incentives (*innovation*) only reveal their arguments and justifications that support those arguments. It is not always possible to see the underlying intentions behind their arguments.

Third, the coding scheme with six value categories modified from the MIHV was constructed and applied for this study by specifically focusing on the context of the Net neutrality debate and more specifically the corpus under investigation. The approach sought to maximize inter-coder agreement, which is the objective evidence that the coding scheme reflects reality (Artstein & Poesio, 2008). As a result, the coding scheme of this study may not be applicable to other corpora, policy debates, and research methods (such as survey methods).

7.4 Future Research

Net neutrality is a complex telecommunications policy issue for which various stakeholders including government, business, academic, interest group, and general

public form the political environment of the debate. In this study, the analysis of the formal testimonies is useful to identify the arguments and values expressed by different stakeholder groups. However, the dynamic nature of participatory processes of the Net neutrality debate and arguments from other discourses (such as the FCC activities and court cases) of the Net neutrality cannot be captured merely by analyzing the testimonies. For example, on August 9, 2010, Google, as a Net neutrality proponent who argued for nondiscrimination regulation on the broadband market, announced a joint policy proposal with Verizon, a broadband Internet access provider, which they urged the Congress to adopt as legislation (Google & Verizon, 2010). They argued that the principles they proposed would preserve the open Internet while allowing network operators the flexibility and freedom to manage their networks. This case illustrates the dynamic nature of the ongoing and participatory processes of policymaking. Industry stakeholders have taken the initiative to address broadband policy issue by establishing discussion groups and frameworks to further the debate (Gilroy, 2011).

For future research, a more thorough and in-depth stakeholder analysis would be helpful for capturing the entire context of the Net neutrality debate. Stakeholder analysis is not only critical to defining the problem and weighing the proposed solutions, it also essential to capture the dynamic nature of the ongoing and participatory processes of policymaking by identifying who is affected by the problem or the proposed solution and understanding their interests (Morse & Struyk, 2006). Four basic steps of a stakeholder analysis (Morse & Struyk, 2006) could be applied for future research: First, identify key stakeholders of the debate and analyze the relationships among the stakeholders; second, assess stakeholder interests and the potential impact of the proposed legislation on these

interests; third, assess stakeholder influence and importance; and fourth, outline a stakeholder participation strategy.

In addition to stakeholder analysis, analyzing other data sources such as FCC activities, court cases, industry initiatives, news articles, academic journals, and the blogosphere could lead to broader insights for understanding the role of values in shaping the Net neutrality debate. One way to expand analysis would be to automate content analysis or at least provide computational assistance to human coders performing content analysis (Cheng, Fleischmann, Wang, & Oard, 2008). Automatic detection and classification using machine learning techniques opens up the possibility of coding large corpora (Bengston et al., 2004; Evans, McIntosh, Lin, & Cates, 2007; Ishita, Oard, Fleischmann, Cheng, & Templeton, 2010; Rubin, 2010). We recognize that automatic detection and classification may lead to mistakes in classifying individual cases; nevertheless, an unbiased automatic detection and classification tool may still yield useful results on the macro scale even if it includes errors at the micro scale (Fleischmann et al., 2009; Hopkins & King, 2010). In the future, hopefully it will be possible to conduct even broader and more sweeping analyses through the assistance of natural language processing-based automatic detection and classification tools that can help us to perform policy analysis that is as sophisticated as the telecommunications that are the focus of the policy debates (Ishita et al., 2010).

Another important direction for future research would be to refine the MIHV proposed by this study for particular domains based on empirical data from those domains. For example, value concepts that are frequently confused by multiple coders can be combined into broader value concepts that are better suited to this task. Value

concepts that do not appear frequently in domain-specific materials can also be discarded. Applying similar processes of modifying the MIHV as this study can yield specific meta-inventories of value concepts within particular domains. As such, it would be ideal to use the MIHV developed for this study to serve as an explanatory framework for understanding values in other telecommunications policy issues such as online piracy and intellectual property. In addition, the MIHV also could be used as a tool for automating analysis of values in texts.

For statistical analysis, this study employed non-parametric tests (Kruskal-Wallis test and Mann-Whitney U test) to understand the differences of values among positions, stakeholder groups, venues and time periods. For future research, regression analysis can be helpful in determining causality.

7.5 Conclusions

Policy development leads telecommunications as well as follows it. As the government regulations influence the development of telecommunications, telecommunications also compels governments to alter policies to fit new developments. In a telecommunications environment that is still evolving, information policies continue to evolve, adjust, and change due to a variety of factors and can be analyzed in a variety of ways. This study explores the values that lie at the core of the hotly contested Net neutrality debate, provides an understanding of the value differences among stakeholders, and builds a connection between values research and telecommunications policy.

The research design and method employed in this study have demonstrated how to develop a unified theory-grounded value typology through literature and qualitative analysis of public hearings and how to identify values expressed by stakeholders in the

Net neutrality debate through content analysis of public hearings. The study has also successfully demonstrated how to establish a coding process for values that achieves substantial inter-coder reliability. The MIHV developed in this study not only effectively reflected values in the Net neutrality debate, but also is adaptable to suit other research contexts that researchers need for conducting various social inquiries.

For the analysis presented above, this study concludes that (1) the Net neutrality debate can be framed in terms of values expressed by proponents and opponents of Net neutrality; (2) there are differences in values expressed among positions, stakeholder groups, venues, and time periods in the Net neutrality debate; and (3) differences in values expressed by proponents and opponents of Net neutrality appear to have changed over time.

This study not only identifies links between values and specific policy positions and illustrates the transformation over time of the Net neutrality debate, it also demonstrates that content analysis of testimonies at public hearings can serve an important role in understanding ongoing telecommunications policy debates such as Net neutrality. It is hoped that both academics studying the Net neutrality debate and policymakers who make decisions about whether or not to enact Net neutrality legislation and regulations may find this study useful in advancing their respective goals.

Appendices

Appendix A. Proponents and Opponents of Net Neutrality Legislation

PRO	CON
Amazon	AT&T Inc.
eBay	Verizon Communications
Intel	Time Warner
Google	Comcast
InterActiveCorp	Alcatel
Yahoo!	Cisco
Earthlink	Corning
Microsoft	3M
Disney	National Association of Manufacturers
PAC-West	Freedom Works Foundation
Free Press	New American Century
American Civil Liberties Union	Citizens Against Government Waste
AARP	National Coalition on Black Civic Participation
Gun Owners of America	National Black Chamber of Commerce
MoveOn.org Civic Action	Ciena Corp.
Consumers Union	Center for Individual Freedom
American Library Association	Abstinence Clearinghouse
Parents Television Council	AdvanceUSA
Consumer Federation of America	American Coalition for Fathers & Children
Common Cause	Americans for Tax Reform
Christian Coalition of America	Catholic Advocacy Network
Electronic Retailing Association	Center for Moral Clarity
American Civil Liberties Union	Discovery Institute
National Association of State PIRGs (U.S. PIRG)	Fidelis
Center for Digital Democracy	Massachusetts Family Institute
Alliance for Community Media	Morality in Media
Association of Research Libraries	Religious Freedom Coalition
Association for Community Networking	Traditional Values Coalition
Center for Creative Voices in Media	Communications Workers of America
Community HIV/AIDS Mobilization Project	Heritage Foundation
Community Technology Centers	CATO
Consumer Action	Competitive Enterprise Institute
Consumer Project on Technology	National Taxpayers Union
Democracy in Action	Internet Freedom Coalition
Future of Music Coalition	TechPolicyWatch.com
Internet2	Independent Women's Forum
International Advocates for Health Freedom	Commonwealth Foundation for Public Policy Alternatives
Independent Press Association	Cornerstone Policy Research
P2Pnet	Religious Freedom Action Coalition
The International Webcasting Association	Institute for Liberty
Women's Institute for Freedom of the Press	Free Enterprise Fund
Working Assets	Ethan Allen Institute

Source: American Telemedicine Association (2006)

Appendix B. The Corpus

No	Speaker	Affliation	Stakeholder	Position
2/7/2006 Net Neutrality Senate, Committee on Commerce, Science, and Transportation				
1	Wyden, Ron	United States Senator from Oregon	GOV	pro
2	Cerf, Vinton G.	Vice President and Chief Internet Evangelist, Google	CP	pro
3	Citron, Jeffrey	Chairman and Chief Executive Officer, Vonage	CP	pro
4	McSlarrow, Kyle	President and Chief Executive Officer, National Cable & Telecommunications Association	IG	con
5	Dixon, Kyle	Senior Fellow and Director of the Federal Institute for Regulatory Law & Economics, Progress & Freedom Foundation	IG	con
6	Inouye, Daniel K.	United States Senator from Hawaii	GOV	pro
7	Sidak, J. Gregory	Professor of Law Georgetown University Law Center	AC	con
8	McCormick, Walter B.	President and Chief Executive Officer, United States Telecom Association	IG	con
9	Bachula, Gary	Vice President for External Affairs, Internet2	IG	pro
10	Lessig, Lawrence	Professor, Stanford Law School	AC	pro
11	Comstock, Earl W.	President and Chief Executive Officer, CompTel	IG	pro
12	Stevens, Ted	United States Senator from Alaska	GOV	con
4/25/2006 Network Neutrality: Competition, Innovation, and Nondiscriminatory Access House, Committee on Judiciary				
13	Wu, Timothy	Professor of Law, Columbia Law School	AC	pro
14	Goodlatte, Bob	Representative in Congress From the State of Virginia, and Member, Committee on the Judiciary	GOV	other
15	McCormick, Walter B.	President and Chief Executive Officer, United States Telecom Association	IG	con
16	Cooper, Mark	Director of Research, Consumer Federation of America, on behalf of Consumer Federation of America, the Free Press, and the Consumers Union	IG	pro
17	Comstock, Earl W.	President and Chief Executive Officer, CompTel	IG	pro
18	Misener, Paul	Vice President for Global Public Policy, Amazon.com	CP	pro
19	Conyers, Jr., John	Representative in Congress From the State of Michigan, and Ranking Member, Committee on the Judiciary	GOV	pro

No	Speaker	Affliation	Stakeholder	Attitude
5/25/2006 S. 2686, the Communications, Consumer's Choice, and Broadband Deployment Act of 2006 (Part II) -- Net Neutraliy and Interconnection Senate, Committee on Commerce, Science, and Transportation				
20	Misener, Paul	Vice President for Global Public Policy, Amazon.com	CP	pro
21	Regan, Timothy J.	Senior Vice President, Global Government Affairs, Corning Incorporated; on behalf of Telecommunications Industry Association	IG	con
22	Scott, Ben	Policy Director, Free Press; on behalf of Consumer Union and Consumer Federation of America	IG	pro
23	Snowe, Olympia J.	United States Senator from Maine	GOV	pro
24	Smith, H. Gordon	United States Senator from Oregon	GOV	con
25	McCain, John	United States Senator from Arizona	GOV	con
26	Comstock, Earl W.	President and Chief Executive Officer, CompTel	IG	pro
27	Pies, Staci L.	Vice President of Governmental and Regulatory Affairs, PointOne; President, VON Coalition	IG	pro
28	Inouye, Daniel K.	United States Senator from Hawaii	GOV	pro
29	Brenner, Daniel	Senior Vice President of Law and Regulatory Policy, National Cable & Telecommunications Association	IG	con
30	Cochetti, Roger J.	Group Dorector for U.S. Public Policy, Computing Technology Industry Association (CompTIA)	IG	con
31	Tauke, Thomas J.	Executive Vice President – Public Affairs, Policy and Communications, Verizon Communications	SP	con
6/14/2006 Reconsidering Our Communication Laws: Ensuring Competition and Innovation House, Committee on Judiciary				
32	Kohl, Herb	United States Senator, Wisconsin	GOV	other
33	Cohen, David L.	Executive Vice President, Comcast Corporation	SP	con
34	McCormick, Walter B.	President and CEO of the U.S. Telecom Association	IG	con
35	Cerf, Vinton G.	Vice President and Chief Internet Evangelist, Google	CP	pro
36	Putala, Christopher	Executive Vice President of Public Policy, EarthLink, Inc.	SP	pro
37	Levin, Blair	Managing Director, Stifel, Nicolaus & Company, Inc.	IG	other
38	Morris, Paul T.	Executive Director, Utah Telecommunication Open Infrastructure Agency (UTOPIA)	SP	other

No	Speaker	Affliation	Stakeholder	Attitude
39	Leahy, Patrick	United States Senator, Vermont	GOV	pro
40	Kovacic, William E.	Commissioner, Federal Trade Commission	GOV	con
41	Sensenbrenner, James F.	Chairman, U.S. House of Representatives Committee on the Judiciary	GOV	pro
42	Kuhns, Jeff C.	Senior Director, Consulting and Support Services, Pennsylvania State University	IG	pro
2/25/2008 Public En Banc Hearing on Braodband Network Management Practices Federal Communications Commission				
43	Yoo, Christopher S.	Professor of Law and Director, Center for Technology, Innovation, and Competition, University of Pennsylvania Law School	AC	con
44	Reed, David P.	Adjunct Professor, Massachusetts Institute of Technology Media Lab	AC	pro
45	Cohen, David L.	Executive Vice President, Comcast Corporation	SP	con
46	Clark, David D.	Senior Research Scientist, Massachusetts Institute of Technology Computer Science and Artificial Intelligence Laboratory	AC	other
47	Tate, Deborah T.	FCC commissioner	GOV	con
48	Bosley, Daniel E.	State Representative, Massachusetts	GOV	pro
49	Wu, Timothy	Professor of Law, Columbia Law School	AC	pro
50	Copps, Michael J.	FCC commissioner	GOV	pro
51	McDowell, Robert M.	FCC commissioner	GOV	con
52	Tauke, Thomas J.	Executive Vice President – Public Affairs, Policy and Communications, Verizon Communications	SP	con
53	Adelstein, Jonathan S.	FCC commissioner	GOV	pro
54	Martin, Kevin J.	FCC Chairman	GOV	pro
3/11/2008 Net Neutrality and Free Speech on the Internet House, Committee on Judiciary				
55	Kulash, Damian	Lead Vocalist and Guitarist, OK Go	ID	pro
56	Fredrickson, Caroline	Director, ACLU Washington Legislative Office	IG	pro
57	Combs, Michele	Vice President of Communications Christian Coalition of America	IG	pro
58	Crawford, Susan P.	Visiting Associate Professor of Law, Yale Law School	AC	pro
59	Carnes, Rick	President, Songwriter Guide of America	IG	con
60	Yoo, Christopher S.	Professor of Law and Director, Center for Technology, Innovation, and Competition, University of Pennsylvania Law School	AC	con

No	Speaker	Affliation	Stakeholder	Attitude
4/17/2008 Public En Banc Hearing on Braodband Network Management Practices Federal Communications Commission				
61	Ford, George S.	Chief Economist Phoenix Center for Advances Legal & Economic Public Policy Studies	IG	con
62	Rosston, Gregory L.	Deputy Director, Stanford Institute for Economic Policy Research	AC	con
63	van Schewick, Barbara	Assistant Professor of Law, Stanford Law School	AC	pro
64	Peterson, Jon	Co-Director, Real-Time Applications and Infrastructure (RAI), Internet Engineering Task Force	IG	other
65	Tate, Deborah T.	FCC commissioner	GOV	con
66	Steyer, James P.	Chief Executive Officer and Founder, Common Sense Media	IG	other
67	Ou, George	Independent Consultant and Former Network Engineer	ID	con
68	Glass, Brett	Chief Executive Officer, LARIAT.Net	SP	con
69	Topolski, Robb	Software Quality Engineer	ID	pro
70	Devitt, Jason	Chief Executive Officer, SkyDeck	CP	pro
71	Prewitt, Jean	President and Chief Executive Officer, Independent Film & Television Alliance	IG	pro
72	Adelstein, Jonathan S.	FCC commissioner	GOV	pro
73	Scott, Ben	Policy Director, Free Press	IG	pro
74	McDowell, Robert M.	FCC commissioner	GOV	con
75	Carnes, Rick	President, Songwriter Guide of America	IG	con
76	Copps, Michael J.	FCC commissioner	GOV	pro
4/22/2008 Future of the Internet Senate, Committee on Commerce, Science, and Transportation				
77	McSlarrow, Kyle	President and Chief Executive Officer, National Cable & Telecommunications Association	IG	con
78	Martin, Kevin J.	FCC Chairman	GOV	pro
79	Lessig, Lawrence	Professor, Stanford Law School	AC	pro
80	Bateman, Justine	Founder FM78.tv	CP	pro
81	Hahn, Robert W.	Executive Director, American Enterprise Institute, Center for Regulatory and Market Studies	IG	con
82	Combs, Michele	Vice President of Communications Christian Coalition of America	IG	pro
83	Inouye, Daniel K.	United States Senator from Hawaii	GOV	pro
84	Verrone, Patric M.	President of Writers Guild of America	IG	pro

No	Speaker	Affliation	Stakeholder	Attitude
2/15/2011 Ensuring Competition on the Internet: Net Neutrality and Antitrust House, Committee on Judiciary, Subcommittee on Intellectual Property, Competition, and Internet				
85	Sohn, Gigi B.	President and Co-Founder, Public Knowledge	IG	pro
86	Downes, Larry	Senior Adjunct Fellow, TechFreedom	IG	con
87	Desai, Parul P.	Policy Counsel, Consumers Union	IG	pro
88	May, Randolph J.	President, The Free State Foundation	IG	con
89	Glass, Brett	Owner and Founder, LARIAT.Net	SP	con
2/16/2011 Network Neutrality and Internet Regultion: Warranted or More Economic Harm Than Good? House, Committee on Energy and Commerce				
90	Upton, Fred	Representative in Congress From the 6th District of Michigan; Chairman, House Energy and Commerce Committee	GOV	con
91	Clyburn, Mignon	FCC commissioner	GOV	pro
92	Walden, Greg	Representative in Congress From the 2nd District of Oregon; Chairman, Subcommittee on Communications and Technology	GOV	con
93	Genachowski, Julius	Chairman, Federal Communications Commission	GOV	pro
94	McDowell, Robert M.	FCC commissioner	GOV	con
95	Waxman, Henry A.	Representative in Congress From the 30th District of California; Ranking Member, Committee on Energy and Commerce	GOV	pro
96	Eshoo, Anna G.	Representative in Congress From the 14th District of California; Ranking Member, Committee on Energy and Commerce	GOV	pro
97	Copps, Michael J.	FCC commissioner	GOV	pro
98	Baker, Meredith A.	FCC commissioner	GOV	con
5/5/2011 Ensuring Competition on the Internet: Net Neutrality and Antitrust House, Committee on Judiciary, Subcommittee on Intellectual Property, Competition, and Internet				
99	Watt, Melvin L.	Representative in Congress From the 12th District of North Carolina, and Member, Committee on the Judiciary	GOV	pro
100	Goodlatte, Bob	Representative in Congress From the 6th District of Virginia, and Member, Committee on the Judiciary	GOV	con
101	McDowell, Robert M.	FCC commissioner	GOV	con
102	Genachowski, Julius	Chairman, Federal Communications Commission	GOV	pro

Note: GOV: Government representative; **SP**: Service Provider; **CP**: Content/Application Provider; **IG**: Interest/ Consumer Group; **AC**: Academic; **IN**: Individual

Appendix C. The First Iteration Coding Instructions: Using SVI as a Coding Scheme

Values	Description	Example excerpts	Rationale
A spiritual life	Emphasis on spiritual not material matters	• N/A	• N/A
A varied life	Filled with challenge, novelty, and change	• Capacity constraints and applications using that capacity are apt to change over time and vary by network.	• Change over time is an indication of novelty and change and the entire sentence emphasizes challenge.
		• In the meantime, America's online video market is exploding in a wonderfully energetic and chaotic way.	• Exploding in a wonderfully energetic and chaotic way here implies the market is filled with change and challenges.
A world at peace	Free of war and conflict	• N/A	• N/A
A world of beauty	Beauty of nature and the arts	• N/A	• N/A
Accepting portion in life	Submitting to life's circumstances.	• N/A	• N/A
Ambitious	Having a desire to achieve a particular goal; hard working, aspiring.	• Japan has a goal of bringing fiber to every home this year or next.	• The quote explicitly mentions having a goal and clearly aiming to bring fiber to every home in Japan is an ambitious goal.
		• A more ambitious regulation would require network providers to provide a "basic internet service" to all broadband customers.	• A more ambitious regulation is an indication of having a desire to achieve a particular goal that is ambitious.

Values	Description	Example excerpts	Rationale
An exciting life	Stimulating experiences that is interesting and full of action	• The Internet was the great economic surprise of the 20th century.	• Economic surprise is an indication of stimulating experiences of economic development and growth. • [Note] The entire sentence implies the economic development is also related to "wealth".
		• We must be vigilant regarding our children so I think it is important not only to encourage and utilize the Internet in new, innovative and exciting ways; but also fully appreciate all the illegal, unlawful and predatory uses technology allows or exacerbates as well.	• The claim for utilizing the Internet in new, innovative and exciting ways implies taking actions to create stimulating experiences and thus directly connects to an exciting life.
Authority	Have the right to lead or command someone or something and the power to make decisions or tell people what to do	• The FCC in particular has tools that can increase local competition, and remove barriers to new entry – it just needs to use them.	• Tools to increase local competition, and remove barriers to new entry indicate that government has the power and authority to command and make decisions.
		• It is my view that Congress should ratify Powell's "Internet Freedoms," making them a part of the FCC's basic law.	• The claim that Congress should use their power to make "Internet Freedom" a part of the FCC's basic law indicates that Congress has the power and authority to command and make decisions.
Broad-minded	Tolerant of different ideas and beliefs	• We will also add important new voices including representatives of families and children, as well as the creative arts community.	• The stance of being willing to add important new voices in the discussion is an indication of tolerance of different ideas, which directly relates to being broad-minded.
		• Further, unlike many participants in the policy debate, we refuse ignore the institutional realities and economic constraints of the communications business.	• The quote shows the attitude of taking other ideas into consideration, an indication of being broad-minded.

Values	Description	Example excerpts	Rationale
Capable	Have the ability, capacity, or potential of doing something well with effective or efficient attributes.	• Second, the regulation must do so efficiently, in that the expected costs of the regulations are less than the expected benefits.	• The quote explicitly shows a need for efficiency in considering regulations is related to doing something effectively or efficiently.
		• Today on our campuses students are able to take master music classes with world-renowned musicians via DVD-quality video conferencing technology.	• The quote explicitly mentions the students' capability of doing something, an indication of being capable.
Choosing own goals	The goal that someone wants to achieve, or that something is intended to achieve; selecting own purpose.	• Industry analysts estimate that most Internet users have defected from "dial-up" Internet access to broadband and that this trend is accelerating.	• The quote explicitly mentions that Internet users have defected from "dial-up" Internet access to broadband, a description of consumers' intention of choices, which relates to choosing own goals.
		• Much of what that vision looks like will be decided by how Congress approaches the issue of Net neutrality.	• The quote indicates the goal to be achieved is decided by Congress' approach, which connects with choosing own goals.
Clean	Free from dirt or pollution; carefully arranged and looking nice (neat, tidy)	• N/A	• N/A
Creativity	The ability to create new ideas or things involving uniqueness using imagination, including innovation	• This governing principle allows for vibrant user activity and creativity to occur at the network edges.	• The vibrant user activity and creativity is directly connected with creativity.
		• We should remember that the current leaders in Internet innovation all began with essentially nothing.	• Current leaders in Internet innovation all began with essentially nothing is a description of the ability to create new ideas or things that is uniqueness.

Values	Description	Example excerpts	Rationale
Curious	Interested in everything and having a strong interest in exploring	• Brilliant scientists, bold entrepreneurs and college students with unrivaled curiosity flocked here to create not merely a valley, but an entirely new, vibrant technological ecosystem.	• Curiosity is explicitly invoked in this quote.
Daring	Seeking adventure; risk in action or thought	• Any attempt to do so runs the unintended, but high, risk of promoting an approach that fails in the market.	• The quote shows the attempt of doing something is risky, an indication of daring.
Detachment	From worldly concerns	• N/A	• N/A
Devout	Holding to religious faith and belief	• N/A	• N/A
Enjoying life	Enjoying food, sex, leisure	• For example, restaurants serve dinner to multiple customers who all enjoy the same ambience and service staff.	• Enjoying the ambiance and service of restaurants is an indication of enjoying life.
		• One noisy or especially demanding diner affects how much other patrons enjoy their meals.	• The description of how patrons are affected when enjoying food implies the value of enjoying life.
Equality	the state of being equal, especially in having the same rights, status, and opportunities; equal opportunity for all	• And the FCC's definition would turn upon a judgment about the capacity necessary to assure sufficient competition among application and service providers.	• The need for sufficient competition among application and service providers is an indication of having the same rights, status, and opportunities.
		• They emphasize that the network will be an open access platform for all service providers under equal conditions.	• The description of network should be accessed under equal conditions directly indicates the state of being equal.

Values	Description	Example excerpts	Rationale
Family security	Safety from attack, harm, or damage for loved ones.	• In Common Sense Media's recent national survey, 85 percent of parents said that the Internet is the medium that poses the greatest risk to kids.	• The Internet is the medium that poses the greatest risk to kids is an indication of need for child online safety and the entire sentence emphasizes family security.
		• This is harmful to our children and their families and our society.	• Something is harmful to our children and their families and our society is an indication of family security.
Forgiving	Willing to pardon others	• N/A	• N/A
Freedom	The right to do what you want, make your own decisions, and express your own opinions; freedom of action and thought.	• The burden of proof should rest on those proposing regulation, since the 1996 Act explicitly calls for deregulation in communications.	• Call for deregulation in communications is an indication of the right to do what people want and free from regulations connects with freedom.
		• Abandonment of that policy will undermine – not promote – consumer choice.	• The term “consumer choice” is an indication of people’s right to make their own choices and the entire sentence relates to freedom.
Healthy	Showing that one is physically or mentally strong and not being sick	• A Veterans Administration study showed you could cut hospital stays in half for many patients – and yet monitor and watch over them for longer periods of time.	• Cutting hospital stays in half for many patients implies the goal of keeping people physically healthy.
Helpful	Working for the welfare of others	• I think it is especially appropriate for this Commission to focus on kids.	• The claim that the Commission’s discussion should focus on kids is an indication of helpful.
		• This results in benefits to consumers … the latest evidence coming just last week with the announcement of $12.99/month DSL service from AT&T.	• This results in benefits to consumers is an indication of working for the welfare of others and the quote provides an example that is helpful to consumers.

Values	Description	Example excerpts	Rationale
Honest	Free from fraud or deception; genuine and sincere; always telling the truth	• The recent allegations have raised concerns about level of transparency and disclosure between broadband providers and their consumers.	• The quote shows the importance of transparency and disclosure between broadband providers and their consumers, indicating the need to be genuine and sincere.
		• Our contract with our users says this, and we fully disclose it; we do not hide it.	• Full disclosure is an indication of being genuine and sincere.
Honoring of parents and elders	Showing respect for parents and elders	• N/A	• N/A
Humble	modest, self-effacing	• N/A	• N/A
Independent	One is not affected or influenced by anyone else; self-reliant, self-sufficient	• I do not represent any company, and no one has paid me to prepare this testimony.	• The declaration of not representing any company in this quote is an indication that one is not affected or influenced by anyone else.
Influential	Having an impact on people and events	• In turn the way we approach those policy choices will have a tremendous impact on our ability as a nation to compete effectively on a global stage.	• The quote mentions the policy choices have an impact on a nation's ability of competition implies the way we approach those policy choices is influential.
		• With respect to the issue of net neutrality, some have said that the future of the Internet is at stake.	• The future of the Internet is at stake is an indication of something having an impact on the Internet that is influential.
Inner harmony	At peace with myself	• N/A	• N/A

Values	Description	Example excerpts	Rationale
Intelligent	Able to think, understand, and learn logically; To educate people having appropriate judgment or sound thought	• I do not know whether they are blocking any legitimate text messages to me because I have no way of knowing what messages they block.	• I have no way of knowing what messages they block is an indication of lack of knowledge to understand or to make judgment.
		• More than ever, we must teach our children to be media savvy and that includes on-line media.	• Teaching our children to be media savvy emphasizes the need to educate children, highlighting the importance of being intelligent.
Loyal	Willing to support, work for, or be a friend to someone; faithful to my friends, groups	• Openness means faithfully guarding against interference from the cable and telephone companies who have the power to become gatekeepers between consumers and producers of Internet content.	• Faithfully guarding against consumers and Internet content is an indication of willingness to support ideals and faithfulness to consumers.
Mature love	Deep emotional and spiritual intimacy	• We're doing this because we love to do it.	• The quote describes love involved in being willing to do something.
Meaning in life	The goal that someone wants to achieve or that something is intended to achieve in life	• It's our mission and our passion.	• It's our mission and our passion clearly indicates a goal that someone wants to achieve.
		• It got that way not by government fiat, but by all interested parties working together toward a common goal.	• Having a common goal can help to give meaning in life.
Moderate	Avoiding extremes of feeling, opinion or action.	• Google supports tailored, minimally-intrusive safeguards to promote net neutrality.	• The tailored and minimally-intrusive safeguard implies the approach to net neutrality should avoid extremes of opinion or action.
		• I urge you to proceed with caution on proposals for government regulation of the Internet.	• The quote claim for cautious proceeding of government regulations implies avoiding extremes actions when proposing a regulation.

Values	Description	Example excerpts	Rationale
National security	The protection of my nation from enemies; to protect the safety of a country and its citizens.	• While this has not stopped the criminal behavior, it certainly makes it more and more difficult to utilize the Internet for these illegal purposes.	• The quote indicates the protection of the safety of a country and its citizens is relevant to national security.
Obedient	Doing what a person, law, or rule says you must do; willing to obey one's duty and meet obligations.	• We know that when an ambulance or fire truck comes down a congested highway, everybody else has to pull over and stop. • Such a move is contrary to many of the fundamental architectural principles of the Internet.	• The sentence explicitly indicates that being obedient involves pulling over to let an emergency vehicle pass (to obey the law). • Fundamental principles indicate that there are principles or rules that should be obeyed.
Pleasure	Gratification of desires	• N/A	• N/A
Politeness	Someone who has good manners toward other people in a pleasant way; the appearance of courtesy in social situation	• Thank you for the opportunity to testify today. • I am grateful for your invitation to address what I believe is one of the most important technology policy questions this Committee will face.	• Thank you shows politeness to others. • Being grateful shows politeness to others.
Preserving my public image	Protecting my "face"	• N/A	• N/A
Protecting the environment	Preserving nature	• I refer not only to movies and entertainment, but also to telemedicine advancements that can improve the accessibility, affordability and quality of health care, particularly in rural communities …telecommuting opportunities that can enhance our environment and reduce America's dependence on foreign oil … and other innovations that our best minds have yet to imagine.	• Enhancing our environment is relevant to "protecting the environment". • [Note] Reducing America's dependence on foreign oil implies "independent"; Innovation indicates "creativity"; Improve the accessibility, affordability and quality of health care is relevant to "social justice."

Values	Description	Example excerpts	Rationale
Reciprocation of favors	To do the same thing for someone that they have done for you and avoid of indebtedness	• In a "two-sided" market of this sort, the demand that one party has for the product is complementary to the demand that the other party has.	• The demand that one party has for the product is complementary to the demand that the other party has implies reciprocation of favors.
		• At the top of the headlines, Comcast and BitTorrent announced an agreement to work together to address network management problems.	• The sentence implies two parties working together to address communal problems indicates the value of reciprocation of favors.
Respect for tradition	Preservation of time-honored customs which are inherited, or established pattern of thought, action, or behavior	• The movement for Internet freedom is tapping the same American spirit that fueled the movement against media consolidation.	• American spirit is an indication of preservation of time-honored customs respect for tradition.
		• A vital and iconic piece of American culture (and a valuable source of American revenue and positive trade balance) is in danger of extinction.	• American culture is in danger of extinction implies the need to respect for American traditional customs.
Responsible	Dependable, reliable and able to be trusted to do the right thing	• Many seem to forget that the rational for reduced regulation at the FCC was based in part on the promise that carriers would build robust broadband platforms to support the Internet.	• The sentence claims that service providers are responsible for their promise of building robust broadband platforms to support the Internet.
		• Over the years, I have been responsible for ensuring that numerous networking products behaved according to established Standards.	• The quote is a description that illustrates that someone is responsible for something.

Values	Description	Example excerpts	Rationale
Self-discipline	Correction or regulation of oneself for the sake of improvement; self-restraint, resistance to temptation.	• Accordingly, governments should encourage industry self-regulation wherever appropriate and support the efforts of private sector organizations to develop mechanisms to facilitate the successful operation of the Internet.	• Self-regulation indicates the correction or regulation of oneself for the sake of improvement is relevant to self-discipline.
		• Broadband network providers like AT&T and Comcast are not going to go out willy-nilly and unduly blocking Internet applications and websites at the drop of a hat, even if those uses cause congestion.	• Network providers are not going to block the Internet unduly is an indication of self-restraint.
Self-respect	The belief in one's own worth and the feeling that you are as important or as good as other people.	• And please do not believe that songwriters will continue to create because we do so out of love for our craft.	• The quote indicates that songwriters have a high degree of self-worth that prohibits them from continuing to innovate merely out of love for their craft
		• My findings have since been independently verified, have been covered in thousands of press articles, and are at the heart of these hearings on these practices.	• The quote indicates that the speaker believes in his worth since his findings have been independently verified. • [Note] The quote also implies the findings are "influential" since they have been covered in thousands of press articles, and are at the heart of these hearings on these practices
Sense of belonging	Have close or intimate relationship; feeling that others care about me.	• With DVD-quality two-way video conferencing, patients will be able to consult with their doctors, parents will be able to confer with teachers, rural schools will be able to deliver Advanced Placement courses to their students, and families will be able to stay close no matter how much distance separates them.	• The entire sentence implies that families could stay close no matter how much distance separates them by utilizing video conferencing, an indication of the importance of a sense of belonging.

Values	Description	Example excerpts	Rationale
Social justice	A society that treats all people impartially and fairly and cares for the weak by correcting injustice	• At times, only five percent of broadband users are consuming as much as 90 percent of network capacity.	• A small portion of broadband users consume the majority of network capacity, an indication of injustice that is relevant to social justice.
		• Promoting an open and accessible Internet is critical for consumers.	• A claim for an open and accessible Internet indicates that the Internet should be easy to approach and should treat all people impartially.
Social order	A set of rules for the correct way to behave to maintain the stability of society, including laws and regulations	• Most consumers will favor the services of ISPs who limit illegal file sharing.	• The limit of illegal file sharing implies the maintenance of social order.
		• Which of these outcomes is most likely depends on supplier incentives, which in turn depend on the market structure and regulation.	• The regulations and laws stands for the mechanism of maintaining social order.
Social power	The ability to control or have power over others; showing dominance over someone or something	• Providers have every right to offer a variety of service tiers with varying bandwidth and feature options.	• The sentence claims that service providers have the right to exert control over their network, an indication of social power.
		• But the FCC's own statistics show that telephone and cable operators control over 90 percent of the residential market.	• The fact that cable operators control over the majority of the residential market is an indication of social power.
Social recognition	Respect, approval or acknowledgment by others	• You may be more familiar with me for my work over the last few decades as one of the network engineers involved in devising the software protocols that underpin the Internet.	• The acknowledgment of others about one's contribution to the growth of Internet is an indication of social recognition.
		• As far as I or anyone else can tell, this made us the world's first WISP, or wireless Internet service provider.	• This made us the world's first WISP, or wireless Internet service provider emphasizes the role that is recognized by others, an indication of social recognition.

Values	Description	Example excerpts	Rationale
Successful	Achieving the result or goals that one aspires; someone who does well in their career or business	• This approach has worked well for applications or related devices that are not time-sensitive.	• This approach has worked well is an indication of achieving the result or goals that one aspires.
		• Network neutrality mandates would not improve (and could worsen) conditions for content and applications development.	• The quote implies network neutrality mandates fail to do something or make something worsen relatively indicates the state of being (un)successful.
True friendship	Close, supportive friends	• And I can't say enough about your own Congresswoman, and my very good friend, Anna Eshoo.	• The description that someone is one's very good friend indicates true friendship.
Unity with nature	Fitting with nature	• Like nature, the Internet is highly interdependent, involving myriad collaborations among end users, broadband network providers, content and applications developers and so on.	• The analogy between Internet and nature in this sentence is an indication of unity with nature.
Wealth	Have material possessions and a large amount of money and other valuable things	• With bandwidth usage growing at a rapid pace, continued investment will be needed to keep broadband services robust.	• The sentence implies the need for investment to keep the broadband services robust, an indication of wealth.
		• The first economic consideration is that a broadband network requires substantial sunk investment.	• Sunk investment is an example of wealth.
		• At the time, a T1 line cost $6,000 a month, but we pooled our money and partnered with other providers to bring the connection into my office.	• The description of money needed to get the Internet connection is an indication of wealth.

Values	Description	Example excerpts	Rationale
Wisdom	The ability to make good decisions based on knowledge and experience; a mature understanding of life	• I learned then that the best way to resolve issues like this coherently and effectively was to return to first principles.	• The quote implies that a clear understanding of the problem's essence is the best way to resolve controversial issues.
		• Ambiguities regarding what "network neutrality" actually means would burden and delay new broadband services and networks.	• The need for a clear understanding of net neutrality is an indication of a need for wisdom.

Appendix D. Instructions for Coding Values in Net Neutrality Testimonies

(Last revised: June 30, 2011)

1. Introduction

The main purpose of this study is to analyze various stakeholders' values expressed in relation to an important and ongoing telecommunications policy issue, Net neutrality, and to examine the proposition that these stakeholders who agree on or are opposed to Net neutrality legislation share common values that are, at least in some cases, distinct between the two groups. Net neutrality refers to "the general principles that Internet users are entitled to lawful content and service that does not discriminate on the basis of source, destination, or ownership of Internet traffic." To code values expressions in the Net neutrality debate, we use the following definition: "**values serve as guiding principles of what people consider important in life and how something ought to be**."

These instructions are intended to help coders (1) to tell the differences between factual statements and value judgments, (2) to identify values expressed explicitly or implicitly by the speakers, and (3) to perform coding tasks using Atlas.ti, a qualitative content analysis software.

2. The Corpus

The corpus for this study includes testimonies from public hearings in which various stakeholder groups express values and positions on Net neutrality. The selection of public hearings as the discourse for analysis is because public hearings serve as forums to gain insights and information about the consequences of various policy proposals. They provide useful data points that help to expose the values of various stakeholders. This study focuses on testimonies by individuals from different stakeholder groups at public hearings. Data collected for this study includes testimonies prepared for and delivered at public hearings held by the U.S. Congress and the Federal Communications Commission (FCC).

3. Coding Procedure

Net neutrality testimonies are analyzed using content analysis, which is "a reliable research technique that involves specialized procedures assigning communication content to categories according to rules, and the analysis of relationships involving those categories using statistical methods." The purpose of this section is to describe the coding procedures of how to identify the values of stakeholders in Net neutrality testimonies.

3.1 Identify the Individual's Stakeholder Group

Before coding a testimony, we need to know to which stakeholder group the individual belongs. Each individual, therefore, must be categorized as a member of one of the following six groups:

(1) Government Representatives;

(2) Service/Access Providers;

(3) Content/Application Providers;

(4) Consumer/Interest Groups;

(5) Academics; or

(6) Others (Individuals) (please specify)

3.2 Determine the Coding Unit

The first step of the coding is to identify the unit of analysis which refers to the basic unit to be classified. In this study, the unit of analysis is a "sentence," defined as a sequence of words capable of standing alone to express a statement, question, exclamation, request or command, usually consisting of a subject and a predicate containing a finite verb. A sentence might stop at a period (example 1), a question mark (example 2), or an exclamation point/mark (example 3).

Example 1:	"My name is Rendall Harper and I am a board member of Wireless Neighborhoods."
Example 2:	"If a network operator starts to give preference to packets from one source, what happens to all of the other, ordinary packets?"
Example 3:	"I hope you'll join up!"

Each sentence might carry a specific human value or multiple values, or it may be free of values. In this sense, each sentence of the relevant text of a testimony should be coded into none, one, or more than one of the given value categories. Coders, therefore, are asked to carefully examine each sentence and code with all relevant values based on the given value definitions.

In some cases, a sentence may combine two or more instances or arguments which are often contained by commas, semicolons, or colons, and some are marked with hyphens or dots, as if they are separated. In these cases, everything should be considered

as a single sentence (example 4). In other some cases, the provided instances or arguments marked with hyphens or dots are separate complete sentences expressing distinct points. For cases like this, each instance or argument should be considered as an independent sentence (example 5).

Example 4 (a single compound sentence):	"The more we upload and download and share: • standard definition video, • high definition video, • home movies, and • multiple megabit photos, the more bandwidth we consume."
Example 5 (five separate sentences):	"We established four consumer-based principles: • Consumers are entitled to access the lawful Internet content of their choice; • Consumers are entitled to run applications and use services of their choice, subject to the need of law enforcement; • Consumers are entitled to connect their choice of legal devices that do not harm the network; and • Consumers are entitled to competition among network providers, application providers, and content providers."

Some prepared testimonies provide section headings as guides to the argument of the section. These section headings are not considered as text to be coded and do not count as sentences even if they are sentences. We use the category - "section heading" to distinguish section headings from sentences when coding. In example 6, "The Internet Depends on a Common Carrier Framework" should be coded as "section heading".

Example 6:	"The Internet Depends on a Common Carrier Framework The FCC's new approach will provide catastrophic precisely because the Internet depends on basic common carrier rules to ensure the availability of an essential, namely the transmission capacity over which Internet applications reach business and consumers. Those basic rules require…will soon diminish to a shadow of its former grandeur."

3.3 Identify Value Judgments

After determining the unit of analysis, the next step is to decide whether a sentence is value-laden. In this study, we deal with the things people say in testimonies. Specifically, we focus on the statements by which people express their values. This

section will help coders successfully identify the value expressions made by the individuals in Net neutrality testimonies.

3.3.1 Value Statements

Value statements are evaluative of the subject being discussed. In other words, a value statement is an expression of whether a particular thing should be considered to be a value. Value statements express how the state of affairs or events *ought to be* or *should be*, or what would be *desirable* or they *wish* were true, or stating opinions or assessments, instead of stating in narrowly defined factual terms how things are or how things happened.

A value statement contains three elements: (1) the *value object* that is being evaluated; (2) the *locus of value*; and (3) the *underlying values* that are at issue.

In example 7, the *value object* is "the Internet"; the *locus of value* is "revolutionizing the way we live"; and the *underlying value* that corresponds to the *locus of value* can be translated into "innovation."

Example 7:	"As a result, high speed access to the Internet is revolutionizing the way we work, learn, seek medical advice, gather our news, engage in public discourse, interface with government and almost every aspect of the way we live."

In some cases, value judgments come with factual statements. In example 8, the expression of Verizon as "a leader in providing wireless broadband connections to the public internet" is a fact. While the major clause "network management practices are important to the secure and reliable functioning of our network" is a value judgment. Network management practices are the *value object*; the *locus of value* is "the practices are important to the secure and reliable functioning of our network"; the *underlying values* correspond to the *locus of value* can be translated into "social order" and "effectiveness" in which the speaker implies what the network management practices *ought to be* and states clearly that the secure and reliable functioning of network should be positively valued.

Example 8:	"For a company like Verizon, which is a leader in providing wireless broadband connections to the public internet, network management practices are important to the secure and reliable functioning of our network."

In example 8, although we agree on the expression of Verizon as "a leader in providing wireless broadband connections to the public internet" is a factual statement, it is not totally value free. This sentence implies that as a wireless broadband service provider, Verizon is considered as a leader. The *value object* is the Verizon, the *locus of value* is "a leader in providing wireless broadband connections to the public internet", and the *underlying values* correspond to the *locus of value* can be translated into "honor" which refers to self-esteem and the understanding of one's position and how one is perceived by others.

In some cases, value judgments not only come with factual statements but also could be disguised as factual statements. Coders need to go deeper into the main thought of the sentence in order to get the implicit value judgment out of a sentence. The sentence in example 9 seems to be a factual statement by offerings facts that can be proved at a first glance; if we look deeper, however, we'll find the main thought of the sentence is to argue that this is not the way the manufacturer *ought to be*. The sentence implies that the manufacture *ought to* offer various ways for the speaker to back up all the content of his computer and their software *ought to* be compatible with the speaker's other computer. The underlying value here can be translated into "effectiveness" which refers to the appropriateness for completing a task and capability for data back-up and software compatibility. Seen this way, it is obviously a value statement.

Example 9:	"The manufacturer offers only one way to back up all the contents of this computer, and their software is not compatible with my other computer."

Although it is challenging to identify the value judgments from the implicit meaning of a statement, we can find some signal words or phrases to help us to locate the value expressions. Those value-laden words or phrases with favorable or adverse meanings to the *value object* are indicating the opinions or assessments to the *value object*. In example 8, "leader" can be viewed as a value-attributing word that gives the indication of opinions and assessments toward the *value object*.

3.3.2 Negation Statements

Value judgments do not always invoke in the form of affirmative statements. As mentioned previously that value-laden words or phrases could have favorable or adverse attributions toward a *value object*, and value judgments could also be invoked in the form of negative statements. Although the *locus of value* could be a negative statement, the

underlying value should be positive that indicates how the state of affairs or events *ought to be* or *should be*, or what would be *desirable* or they *wish* were true, or stating opinions or assessments. In example 10, the *locus of value* is "poor school performance" which is a negative statement, but the sentence implies positive value attributions of what school performance *ought to be* in the face of social challenges. In that, the *underlying value* corresponds to the *locus of value* should be translated into "effectiveness" which refers to the capability of producing desired results.

Example 10:	"These social challenges often translate directly into poor school performance."

3.3.3 Perfunctory Statements

Not all the expressions in the testimonies belong to any of the above statements. In general, the witnesses of testimonies will start by "salutation" and greetings before introducing themselves (example 11) and end with an interjection that expresses gratitude or politeness (example 12). These perfunctory greetings are not considered as values to be coded. As for the interrogative sentences, whether the interrogations are value-laden depend on the main idea of the sentence. Example 13 is an interrogation without values; while the main idea of example 14 implies the power people have to make choices which is value-laden.

Example 11:	"Mr. Chairman, Members of the Committee: Thank you for the opportunity to testify today. My name is …"
Example 12:	"Thank you for this opportunity to present my views."
Example 13:	"What is the difference between these two computers?"
Example 14:	"If they have no duty to you under the law, if you are no longer their primary customer, then what power do you have?"

3.4 Identify Specific Underlying Values in a Sentence

After determining a sentence is a value statement, coders need to decide which of the value categories the sentence expressed. The value categories provided in section 4 span different positions, stakeholder groups, venues, and time periods. Before starting the coding procedure, coders should read through the value categories and their definitions.

The better the coder can memorize and consistently operationalize the categories and their definitions, the easier, faster, and more effective the coding procedure will be.

To identify underlying values in a sentence, coders need to identify the three elements of a value statement as mentioned in section 3.3.1: (1) the *value object* that is being evaluated; (2) the *locus of value*; and (3) the *underlying values* that are at issue. In general, the *locus of value* can be translated into the *underlying values* as shown in example 7 and example 8.

Nevertheless, in some cases, coders may find a sentence is too ambiguous to identify the underlying values even though they perceive that the sentence is value-laden. In example 15, "great" is a signal word that the sentence contains a value claim; however, "great" in this sentence is ambiguous because it is not clear from the sentence itself exactly what "great" is referring to here. "The need is great" can be either interpreted as there is a large amount of demand or the need is important. In addition, what "the need" refers to is unknown in this sentence. We cannot identify the underlying values based on the limited information offered in this sentence. As a result, this sentence should be coded as "none" even though we perceived it is value-laden.

Example 15: "The need is great."

In some cases, although the *value object* and/or *the locus of value* of a given sentence are ambiguous, the surrounding context of the sentence provides useful information to clarify the meaning. In example 16, although it is unclear what the motivation refers to in the sentence, we can find some clues from the surrounding sentences that the motivation refers to "the intentions of major network providers to implement access-tiering for content and service providers" to "maximize revenue." Based on the *underlying values* of surrounding sentences, the sentence in example 16 could be translated into "wealth. "

Example 16: "The motivation behind this sort of tiering is perfectly understandable."

In some cases, coders may find they lack domain knowledge to identify the underlying meaning of an object or a proper none. When facing this problem, coders are encouraged to consult the dictionary, wikipedia, or other resources to clarify the meaning of the object or proper none. In example 17, the "access-tiering" may not clear to coders

without telecommunication background. After consulting the online dictionary, we realize that "access-tiering" refers to "giving network bandwidth priority to Web sites that pay for quality of service (QoS); web sites owned by, in partnership with, or that have paid a premium to the ISP would receive a higher traffic priority. Their content would ride faster over the ISP's last mile to the subscriber. "

Example 17:	"Access-tiering will create an obvious incentive among the effective duopoly that now provides broadband service to most Americans."

In some cases, coders may find that no value categories seem to apply to the corresponding sentences. Although the value categories created in this study try to capture all the values that are expressed by speakers in Net neutrality testimonies, it maybe that no category is available for describing the value(s) invoked in a given sentence. When facing this problem, the general rule is that all sentences should be coded if possible as they present value judgments. Coders are encouraged to check the definitions of all value categories, repeat reading the sentences from multiple perspectives to see if any value category can be applied to the sentence. If no value category seems to apply after again checking all of the value definitions, then code the sentence as "none".

For cases coded as "none" as mentioned above, we need to aware that "none" does not necessarily mean a sentence is devoid of values. Coding a sentence as "none" could indicate that the sentence is free of values, that the underlying value in a sentence cannot be identified, or that the value(s) expressed in the sentence clearly do not fit into any of the present value categories.

3.5 Identify the Individual's Position on Net Neutrality

After coding the entire testimony, coders need to identify the position of each stakeholder toward Net neutrality legislation as (1) Pro, (2) Con, or (3) Other (including not taking a stand on Net neutrality and advocating both pro and con).

4. Definition of Value Categories (The Meta-Inventory of Human Values)

Values	Definition
1. Freedom	The condition of being free of restraints; the right to allow individuals to have their own beliefs and to make their own choices; freedom from interference or influence of another or others; the quality of being liberal, autonomous, and independence.
2. Helpfulness	The activity of contributing to the fulfillment of a need or furtherance of an effort or purpose; Helping and thoughtful concern for others;
3. Achievement	The action of accomplishing something; the quality of being able to accomplish its intended purpose or something successfully completed
4. Honesty	The quality of being honest; openness and without concealment or intentional deception; complete and confirmed integrity; adherence to moral principles
5. Identity	The quality or state of being worthy of esteem or respect; a feeling of pride in oneself and belief in one's own worth; the condition of being honored, esteemed, respected or well regarded by others.
6. Intelligence	The ability to comprehend; to understand and profit from experience; use logical principles to understand and solve problems; trying to learn a great deal about things; having a mature understanding of life.
7. Broad-mindedness	An inclination to tolerate or overlook ideas, opinions and beliefs that differ from your own; willingness to recognize and respect the beliefs or practices of others; flexible thinking and ready to entertain new ideas
8. Innovation	The ability to create or discover new things and new ideas; contributing to the advancement of knowledge and technology; an innovative act, device, or procedure resulting from study and experimentation; things filled with challenge, novelty, and change.
9. Equality	The state of being equal, especially in having the same rights, status, and opportunities; equal opportunity for all; ensuring fair economic competition;
10. Responsibility	The state or quality of being dependable or reliable; worthy of reliance or trust; the trait of being responsible of one's conduct; a government, organization or individual has responsibility to society at large.
11. Social Order	Obeying laws, regulations, protocols, and social norms; protecting the stability of the society and free of war and conflict;
12. Wealth	Statements of intent to pursue any economic goals, such as money, material possessions, resources, and profit.
13. Competence	Capability of producing desired results; the quality of being adequately or well qualified for completing specific tasks; the power to be effective; the quality of being able to bring about an effect
14. Justice	The process of settling a matter properly; Need for fair treatment of all people; special protection for the weak and correcting the injustice; need for fair distribution of resources; removal of class barriers
15. Security	The state of being free from danger or injury; measures taken as precaution against attack or theft
16. Spirituality	Concerned with human inner nature and emphasis on spiritual not material matters; freedom from inner conflict

5. Coding Examples

The following sample texts with descriptions of coding decisions serve as coding examples. The decisions of identifying value judgments in a given sentence are provided in **bold**, the locus of value is provided in *italics*, and the underlying values are provided with underlines.

Sample Texts	Descriptions of Coding Decisions	Coding
01. Good Afternoon.	This is a perfunctory greeting.	None
02. Thank you for the opportunity to testify today.	This is an expression of gratitude or politeness.	None
03. My name is Rendall Harper and I am a board member of Wireless Neighborhoods.	This is a factual statement which is giving information.	None
04. Wireless Neighborhoods is an alliance of community and faith organizations committed to using partnerships, technology and training to improve communities' capacities to support children's education, promote economic development, and address other social barriers facing residents.	The sentence at a first glance is a factual statement indicating that Wireless Neighborhood is an alliance of community and faith organization; however, the main thought of the sentence connotes value claims along with the fact by using an adjective clause inferring that Wireless Neighborhoods (WN) is an organization committed to *using partnerships, technology and training to improve communities' capacities to support children's education*, *promote economic development*, and *address social barriers.* These expressions are value judgments inferring what the WN **ought to be.**	Intelligence (*using technology and training*) Competence (*to improve communities' capacities*) Helpfulness *(to support children's education)* Wealth *(to promote economic development)* Justice *(to address social barriers)*

Sample Texts	Descriptions of Coding Decisions	Coding
05. We were formed by a group of community organization leadership in the late 1990's to address, in part, the digital divide facing so many of our lower income and African-American urban families and to explore and support efforts to use technology to drive educational achievement in Pittsburgh lower income and African-American neighborhoods.	This sentence gives information about the WN were formed to address the digital divide and it implies what the WN **ought to be**. *We were formed to address the digital divide* implies values of "identity" and "responsibility". "Identity" refers to what the WN thinks they are and how they will be perceived by others; "responsibility" refers to the mission and obligations the WN want to fulfill.	Identity/ Responsibility (*We were formed to address the digital divide*) Justice (*to address digital divide*) Wealth (*lower income*) Helpfulness/ Achievement (*to explore and support efforts to use technology to drive educational achievement*)
06. Wireless Neighborhoods delivers fixed point broadband wireless services from the WQED tower in Oakland to approximately 40 community and faith organization throughout the city.	In this sentence, *deliver* is a **signal word** that indicates the "achievement" of WN.	Achievement (*Wireless Neighborhoods delivers fixed point broadband wireless services*)
07. I am sure that you are aware of the many challenges facing our children from lower income, urban communities.	This sentence indicates that we **ought to** protect the lower income and correct the injustice.	Justice/ Wealth (*challenges facing our children from lower income*)

Sample Texts	Descriptions of Coding Decisions	Coding
08. The vast majority of students in the neighborhoods we serve are in a battle for survival.	This sentence implies that we **ought to** protect students from possible harms.	Security (*in a battle of survival*)
09. Success at this stage will significantly reduce the likelihood that the children will become victims of all of the negative influences that exist, in too many cases, in their homes or just outside their doors.	The main point of the sentence is the effects that result from the success at this stage, which implies we **ought to** *reduce the likelihood that the children become victims of negative influences*. The "achievement" of *reducing the likelihood that the children become victims of negative influences* is **what is desired** as success.	Helpfulness/ Security *(reduce the likelihood that the children will become victims of all of the negative influences)* Achievement (*Success*)
10. Death, substance abuse, drug sales and other criminal activity are a far too real part of many of our young people's fragile families and communities.	*Far too real* is a **value-attributing phrase** that implies we **ought to** deal with *the death, substance, drug sales and other criminal activity*.	Security (*death, substance, drug sales and other criminal activity*)
11. Failure in school, whether resulting in dropout or a complete lack of preparedness for post secondary life, significantly increases their exposure to negative behaviors whereas educational success can be their shield.	This is a value claim indicating that we **ought to** *seek success in education* and *avoid failure in school to prevent our children from exposure to negative behaviors*.	Achievement *(educational success and avoid failure in school)* Helpfulness *(can be their shield)*

Sample Texts	Descriptions of Coding Decisions	Coding
12. These social challenges often translate directly into poor school performance.	This sentence is a **negation** value expression implies what school performance **ought to be** in the face of social challenges. In that, the *poor school performance* should be translated into "competence" which refers to the capability of producing desired results.	Competence *(poor school performance)*
13. In 2006-07, in Pittsburgh Public Schools, at all grade levels, African-American and lower income students scored on average 35 percentage points behind their Caucasion and more affluent counterparts in both Reading and Math on the state standardized assessment.	This is a factual statement which gives the **evidence of the state of affairs**.	None
14. The need is great.	In this sentence, *great* is a **signal word** indicating a value assertion. Although what is "the need" refers to is unknown in this sentence, we can find the surrounding context *referring the need as the need for a better school performance* which is a value assertion of "competence".	Competence (*the need for better school performance*)
15. So many vulnerable lives are on the line.	In this sentence, v*ulnerable* is a **signal word** indicating a value assertion of "justice". The statement of *vulnerable lives* implies the need for "security".	Justice/ Security (*vulnerable lives are on the line*)

Sample Texts	Descriptions of Coding Decisions	Coding
16. We feel strongly that education can be the tool that saves many of our young people from the ravages of poverty and that technology can be the great equalizer in this effort.	The sentence is composed of two independent clause joined by a conjunction mainly suggesting that we **ought to** *use education* and *technology to save people from poverty*.	Competence *(education can be the tool)* Helpfulness / Wealth *(saves many of our young people from the ravages of poverty)*
17. There are incredible online academic tools that can support a young person's learning, even in homes and neighborhoods where their learning often gets lost in life's day to day struggles.	In this sentence, *tools to support learning* is the indication of "helpfulness"; *young person's learning* can be translated into "intelligence" which refers to try to learn a great deal about things.	Helpfulness/ Intelligence (*tools that can support a young person's learning*)
18. This great work of combining traditional and technology curriculum is happening at Wireless Neighborhoods partner sites throughout the city.	In this sentence, *great* is a **signal word** indicates the combination of traditional and technology curriculum is **desirable.**	Innovation (*great work of combining traditional and technology curriculum*)
19. Wireless Neighborhoods has incredible partners including the Hill House Association, Bloomfield Garfield Corporation, several urban branches of the YMCA, and Mt. Ararat Community Activity Center, just to mention a few, that are committed to helping children and families and to finding creative ways that technology can support that mission.	The main idea of this sentence is that WN and its partners are committed to *helping children and families* and *to finding creative ways* that technology can support that mission. These expressions are value judgments inferring what the WN and its partners **ought to do**.	Helpfulness *(helping children and families)* Innovation (*finding creative ways)*

Sample Texts	Descriptions of Coding Decisions	Coding
20. We have had success bringing technology to the community organization level in many of our poorest city neighborhoods and have seen the impact these efforts can have on the lives of children.	The sentence is composed of two independent clause joined by a conjunction. The first clause is a value assertion indicating the "achievement" of *bringing technology to he community*; the second clause refers to *the efforts* mentioned in the first clause *can have impact on the lives of children*. It implies that the efforts are **ought to be** made since it has impact on the lives of children.	Achievement (*the success of bringing technology to the community organization level*) Helpfulness *(the impact these efforts can have on the lives of children)*
21. Regrettably, we have struggled to bring technology into the homes of our lower income families, those who truly could benefit most from the incredible resources available across the Internet.	The word *regrettably*, starting off this sentence and applying to the whole idea of the sentence, is a **value-attributing word**. The whole idea of the sentence implies that we **ought to** *bring technology into the homes of our lower income families* indicating the value assertions of "wealth" and "justice". The word *struggle* implies not being able to produce desired results which corresponds to "competence".	Competence/ Justice/ Wealth *(we have struggled to bring technology into the homes of lower income families)*
22. We work with hundreds of families each year and the great majority do not have internet access in their homes.	This sentence implies **it is desirable** for hundreds of families to have internet access in their homes.	Competence (*do not have internet access*)

Sample Texts	Descriptions of Coding Decisions	Coding
23. In many cases, our high school students, for example, need access to the web to complete assignments or to view their textbooks which, in many cases, are not given to them to take home to study.	This sentence implies *students need access to the web to complete assignments*.	Competence (*need access to the web to complete assignments*)
24. So, two years ago Wireless Neighborhoods took on the challenge of trying to provide connectivity to the families of our high school students.	This sentence implies the WN is striving for excellence to achieve the goals of *providing connectivity to the families of our high school students*.	Achievement (*took on the challenge of trying to provide connectivity*)
25. We worked with a local Verizon DSL reseller on this initiative.	In this sentence, *this initiative* refers to the providing of internet connectivity.	Achievement (*the initiative*)
26. It was our hope that students could use the technology to more effectively compete in high school.	This is a statement of value judgment indicating that by using technology students **ought to** *more effectively compete in high school*.	Competence *(students could use the technology to more effectively compete in high school)*
27. It quickly became apparent that delivering connectivity to many of our families was going to be a difficult, and in many cases, impossible proposition.	This is a **negation** value statement of not being able to bring about the **desired** effect and results. Difficult and impossible are **value-attributing words** indicating the capability of completion of something.	Competence (*delivering connectivity to many of our families was going to be a difficult, and in many cases, impossible proposition*)

Sample Texts	Descriptions of Coding Decisions	Coding
28. Many of our families use cell phones as their sole source of telephone communication and do not have landlines in their homes.	This is a factual statement that expresses **the state of affairs**.	None
29. In other cases, if they did have a home phone, they were not Verizon customers, which presented its own set of installation challenges.	This is a factual statement that expresses **the state of affairs**.	None
30. In either case, providing connectivity became timely and prohibitively expensive.	This statement is a value judgment that implies *providing connectivity* shouldn't be *prohibitively expensive* **as it ought to happen**.	Wealth *(prohibitively expensive)*
31. Exacerbating the situation was the fact that many of our clients moved frequently or switched between phone carriers, which made keeping them connected extremely challenging.	The sentence implies the "competence" of *making clients connected* is *challenging*.	Competence (*made keeping them connected extremely challenging*)
32. We believe that our experience was typical of the challenges confronted by so many lower income families.	In this sentence, *we believe that* is a **value-attributing phrase** that implies how something **ought to be**. "Typical" is also a **signal word** which implies *our experience* should be valued.	Intelligence *(our experience)*
33. There are other connectivity options certainly, Cable and FiOS, just to mention two, but they are not necessarily affordable or practical for many of the families we serve given the instability of their lives and their often tenuous financial situations.	The main idea of this sentence is a value judgment that implies options of connectivity *are not necessarily affordable or practical for many families*. It implies these options are not **as it ought to be**.	Wealth / Justice (*not necessarily affordable or practical for many of the families we serve given the instability of their lives and their often tenuous financial situations*)

Sample Texts	Descriptions of Coding Decisions	Coding
34. We certainly favor some of the Wi-Fi solutions currently on the market but the bottom line, while at first blush it may appear that there are affordable, available connectivity solutions for our lower income families in urban areas, in reality, it just isn't the case.	In this sentence, "favor" is a **signal word** indicating that the Wi-Fi solutions are **as they ought to be**. What have been valued here are *affordable, available connectivity solutions for our lower income families in urban areas*.	Wealth *(affordable)* Competence *(available connectivity solutions)* Justice (*for our lower income families*)
35. We certainly hope that you will consider using a larger portion of the Universal Service Fund to support the challenges that we face in the urban areas across the country.	This sentence is a value-claiming statement which implies that we **ought to** *support the challenges that we face in the urban areas across the country*.	Helpfulness *(to support the challenges that we face in the urban areas across the country)*
36. As with many things, appearances can be deceiving and once we look closer, we see the great majority of our most vulnerable urban families cut off from a technology that has transformed the world economy and could transform their lives.	This sentence claims that we need to have a deeper understanding of what the problem really is and provides the thought which implies that we **ought to** *prevent our most vulnerable urban families cut off from a technology that has transformed the world economy and could transform their lives*.	Justice *(the great majority of our most vulnerable urban families cut off from a technology)* Helpfulness/ Wealth (*transformed the world economic and their lives*)
37. Thank you.	This is a perfunctory statement that expresses gratitude or politeness.	None

Source of sample texts: Testimony of Rendall Harper in "Broadband Network Management Practices En Banc Public Hearing" at Carnegie Mellon University held by Federal Communication Commission in July 21, 2008.

6. Coding with ATLAS.ti

1. **Create a new "Hermeneutic Unit"** (HU) that encloses your data - all your codes and annotations are created under **a single file** for each testimony (i.e. each testimony has its own hermeneutic unit). (see figure1)

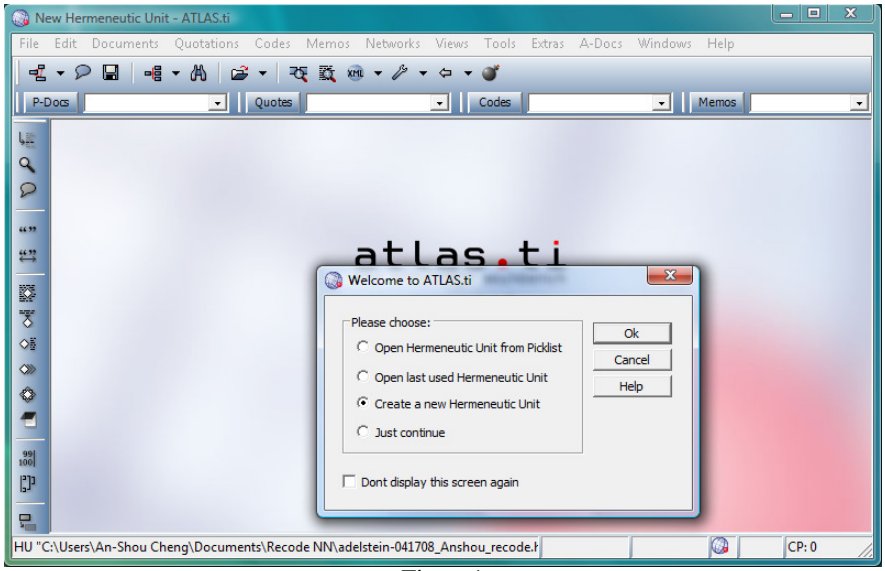

Figure1

2. **Assign a document as "Primary Document"** (PD) to the HU. The data file becomes the source material for your annotation. Choose **DOCUMENTS/ASSIGN** from the main menu. The file dialog box opens by default on the "textbank" folder. You can select the folder from where your primary documents stored. (see figure 2)

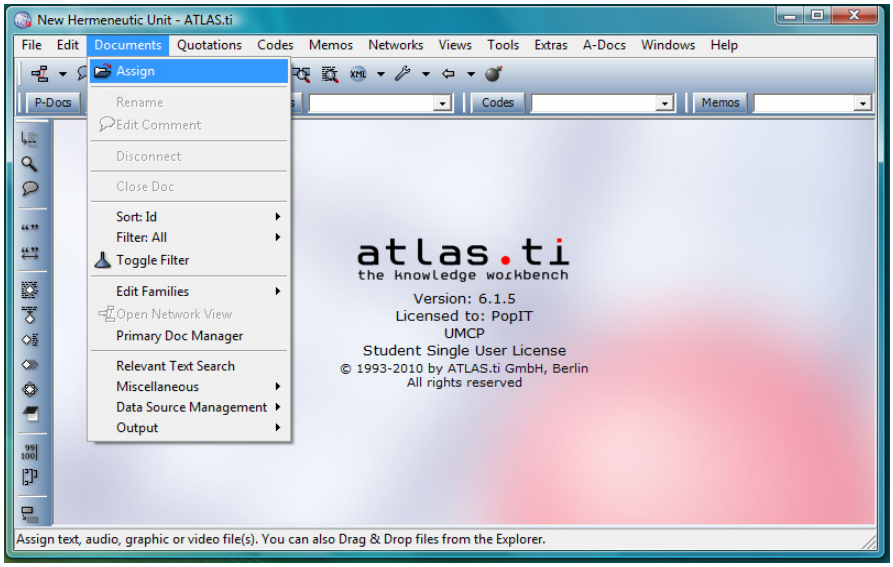

Figure 2

3. **Choose the Primary Document** that you've assigned for annotation in the tool box. (see figure3, 4)

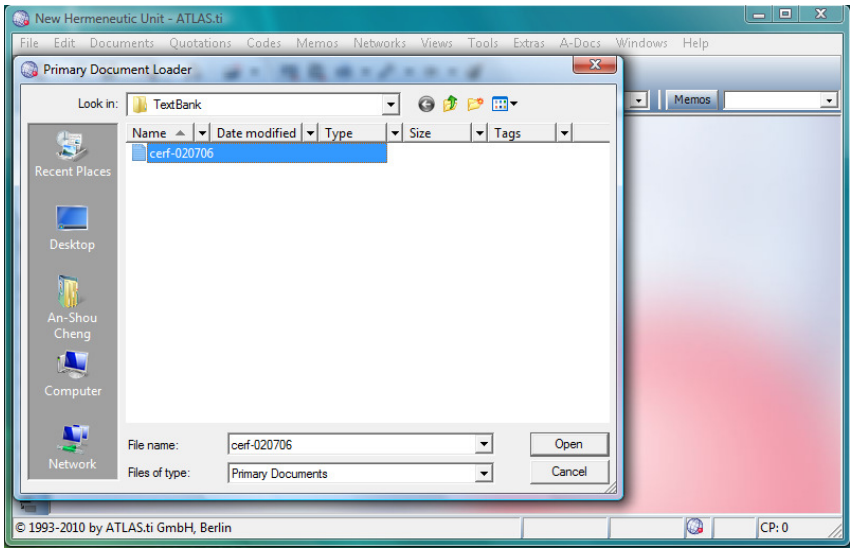

Figure 3

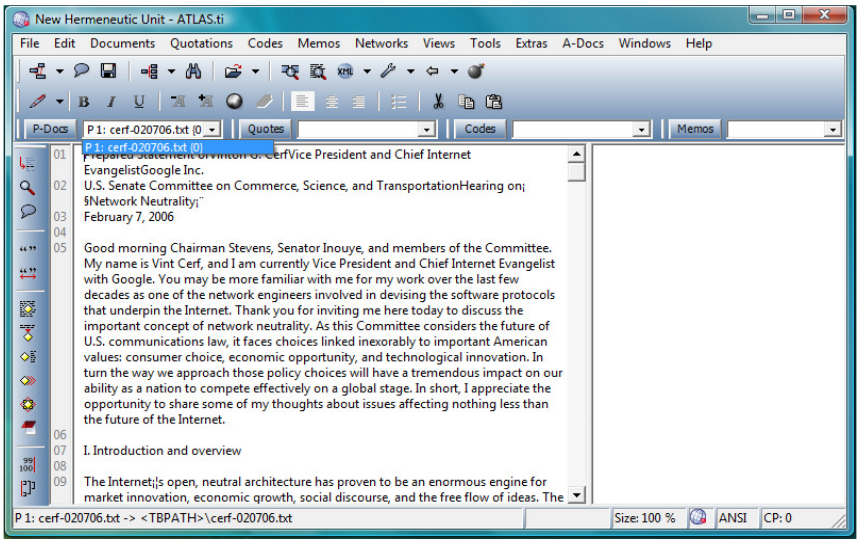

Figure 4

4. **Create "Free Codes"** that contain human values. In order to create multiple codes at a time, choose **CODES/CREATE FREE CODES** from the main menu. Enter code names (values) and separate the code names with a "vertical bar" ("|") in the dialog box (e.g. achievement | broad-mindedness | competence | equality | freedom | helpfulness | honesty | identity | Innovation | intelligence | justice | responsibility | security | social order | spirituality | wealth | none | section heading). Please note that **don't use capital letters** in the codes and use **section heading** or **none** for sentences free of values. After entering all the values in the code list, you may see all the codes from **CODE MANAGEMENT** and annotate the document without typing any code name. (see figure 5, 6, 7)

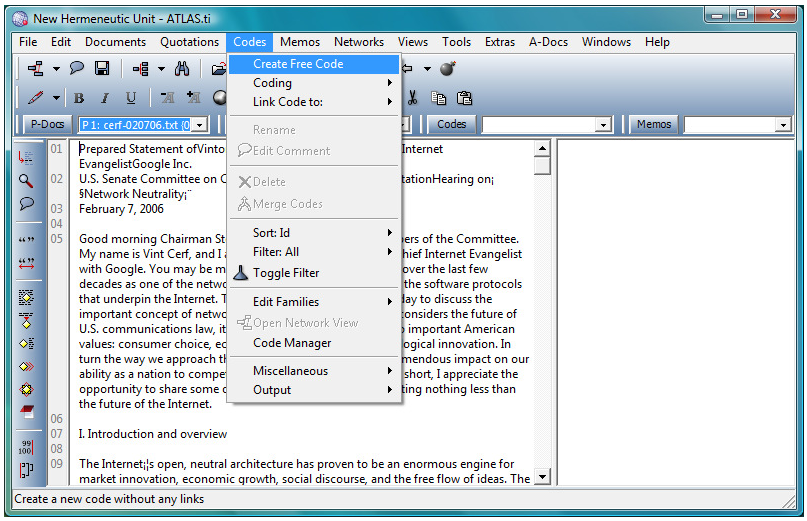

Figure 5

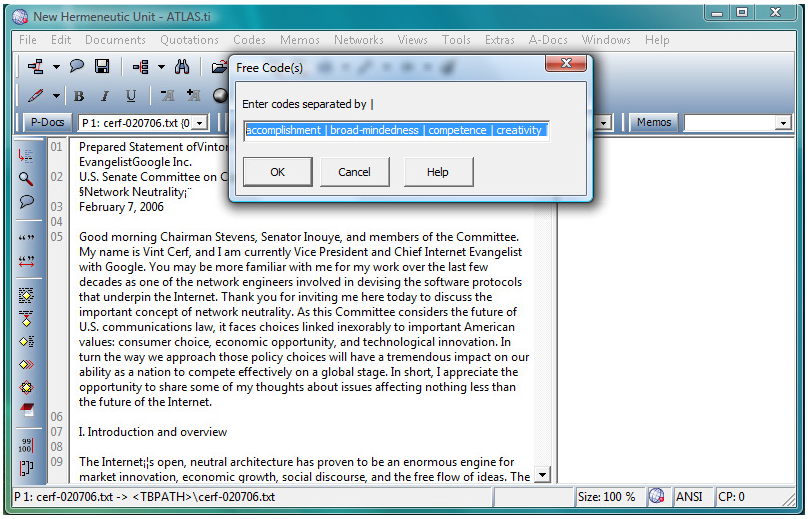

Figure 6

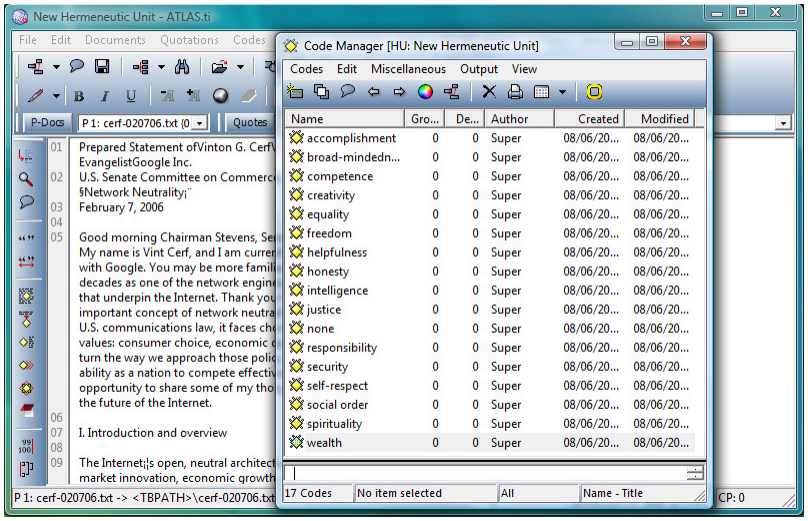

Figure 7

5. **Select the sentence** you want to code and **identify the values** correspond to that sentence. After selecting the sentence, click the right mouse button and choose **CODING/CODE BY LIST**. From the list window with applicable codes, select one or more codes that you find best represent the values invoked in the sentence and then click **OK**. (see figure 8, 9)

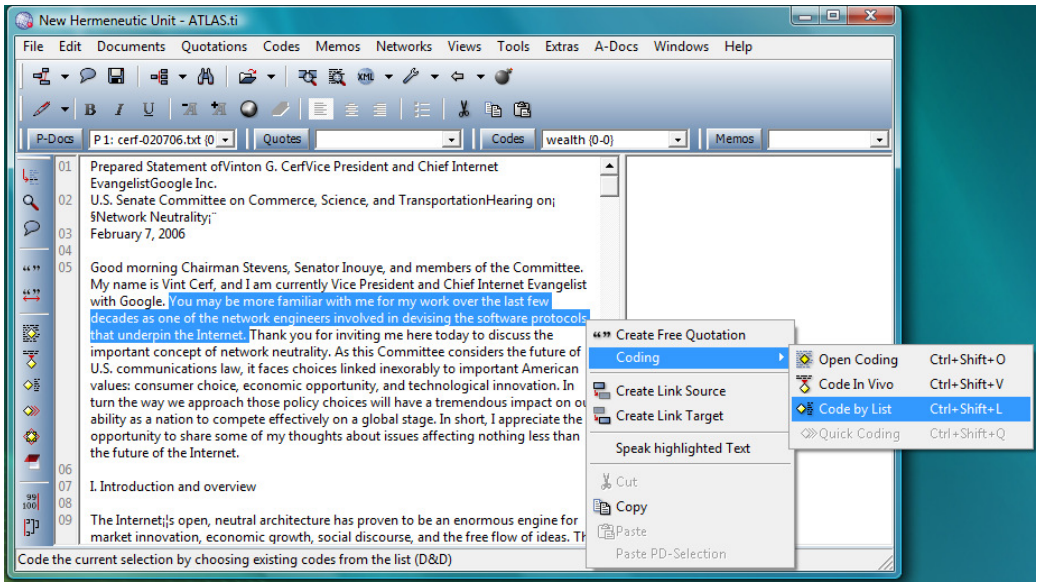

Figure 8

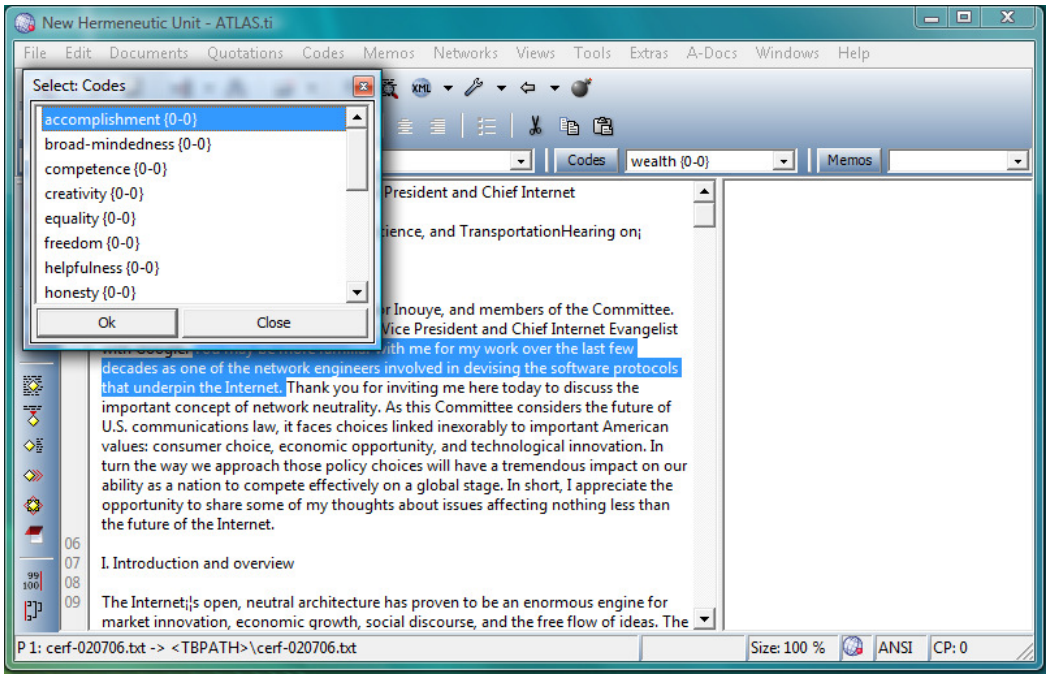

Figure 9

6. **Generate TXT and XML outputs** for further analysis

(1) After finishing your coding for a document, print all quotations and save as a txt file. Select **QUOTATIONS/ OUTPUT/ALL QUOTATIONS** from the main menu. Send output to **FILE** and click **OK**. Then save the output to the selected folder as a **TXT file**. (see figure10, 11, 12)

(2) All codes and quotations also need to be exported to XML representation via **EXTRAS/EXPORT TO/XML**. Select the "**Include Primary Documents and Quotations (meta info only)**" click **OK**. Send output to **FILE** and save the XML output to the selected folder. (see figure 13, 14)

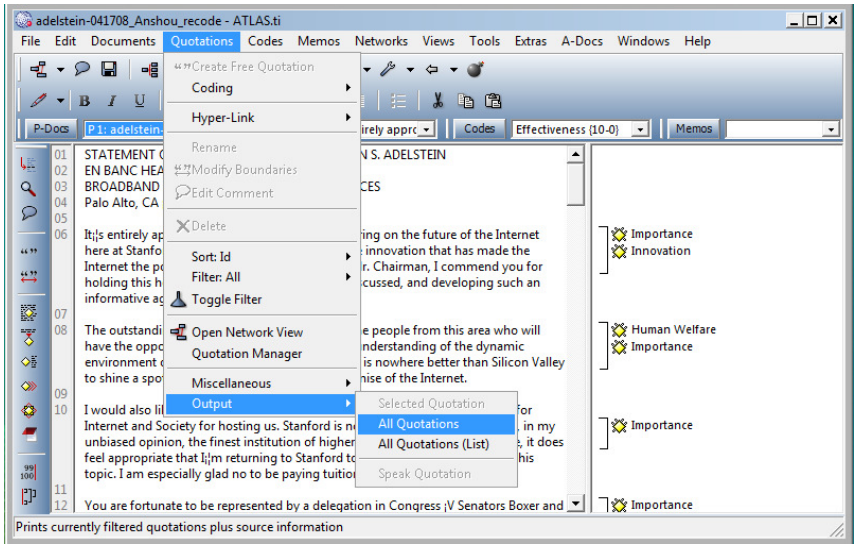

Figure 10

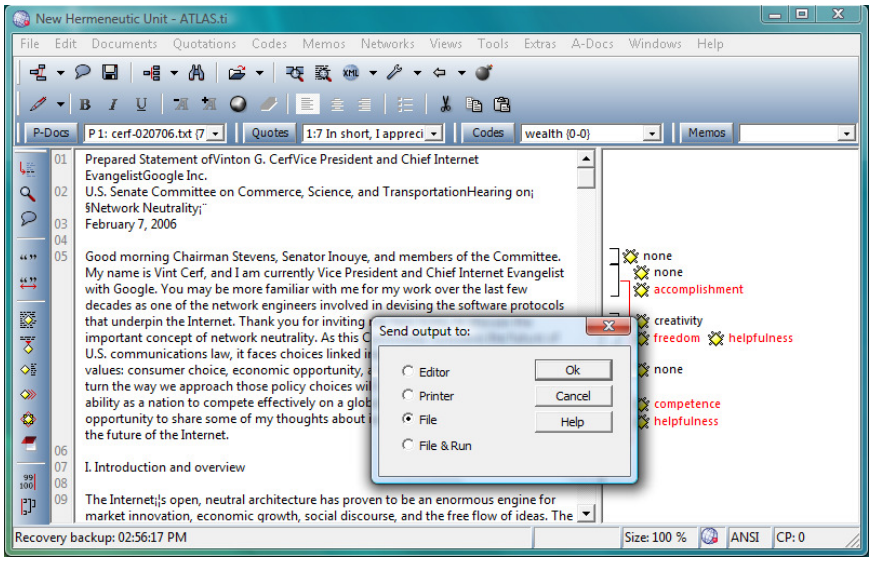

Figure 11

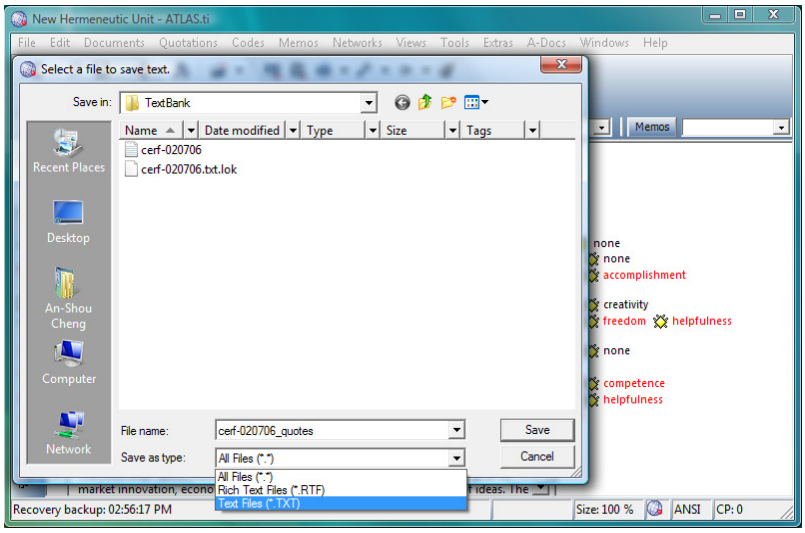

Figure 12

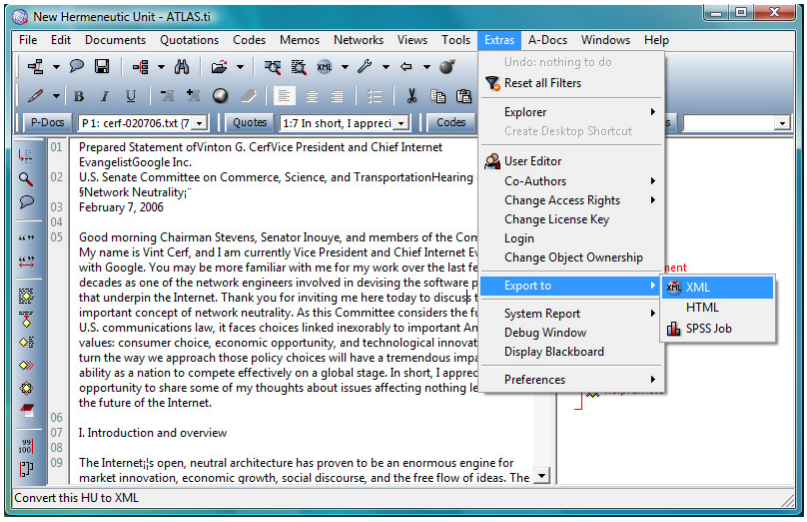

Figure 13

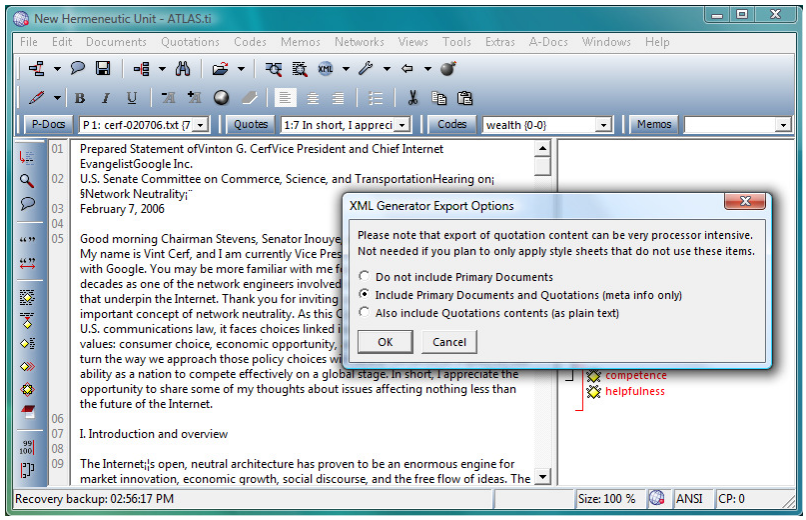

Figure 14

7. **Remove or change a code:** when you want to remove a code or change a code that corresponds to the sentence, **unlink a single code from a quotation**. Deleting a code will remove the code from the entire HU. All references that involve this code are removed. If you only want to remove a code from a specific quotation, you should "**unlink**" the code instead. Right-click a code in the margin area. Choose **UNLINK** from the context menu. The code disappears from the margin area. It does not disappear from other places in the margin where it has been used. (see figure 15)

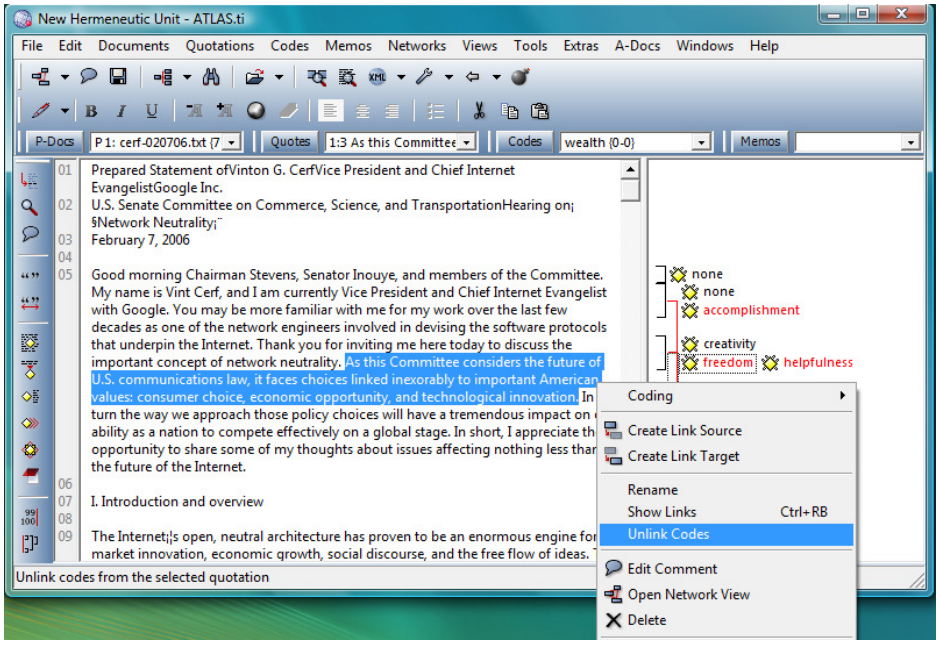

Figure 15

8. **File Naming Rules**

(1) Primary Documents
Witness of a hearing-date of hearing (e.g. cerf-020706)

(2) Hermeneutic Unit
Witness of a hearing-date of hearing_coder's name (e.g. cerf-020706_hu_anshou)

(3) XML Output
Witness of a hearing-date of hearing_xml_coder's name (e.g. cerf-020706_xml_anshou)

(4) TXT Output
Witness of a hearing-date of hearing_quotes_coder's name (e.g. cerf-020706_quotes_anshou)

Bibliography

Abrahamson, M. (1983). *Social research methods*. Englewood Cliffs, NJ: Prentice Hall.

Allport, G., Vernon, P., & Lindzey, G. (1960). *Study of values*. Boston: Houghton Mifflin.

Alvesson, M., & Karreman, D. (2000). Taking the linguistic turn in organizational research. *The Journal of Applied Behavioral Science*, *36*(2), 136-158.

American Telemedicine Association. (2006). Network neutrality: The current neutrality debate and its competing perspectives. Retrieved from http://www.americantelemed.org/files/public/policy/Net_Neutrality.pdf

Anderson, C. W. (1979). The place of principles in policy analysis. *The American Political Science Review*, *73*(3), 711-723.

Artstein, R., & Poesio, M. (2008). Inter-coder agreement for computational linguistics. *Computational Linguistics*, *34*(4), 555-596.

Atkinson, R. D., & Weiser, P. J. (2006). A "third way" on network neutrality. The Information Technology and Innovation Foundation. Retrieved from http://www.itif.org/files/netneutrality.pdf

Babbie, E. (2004). *The practice of social research* (10th ed.). Belmont, CA: Thompson Wadsworth.

Bachula, G. (2006). Testimony of Gary Bachula on Network Neutrality: Hearing before the Senate Committee on Commerce, Science and Transportation, 109th Cong., 2nd sess., February 7. Retrieved from http://commerce.senate.gov/pdf/bachula-020706.pdf

Baker, M. A. (2011). Testimony of Meredith A. Baker on Network neutrality and Internet regulation: Warranted or more economic harm than good? Hearing before the House Committee on Energy and Commerce, 112th Cong., 1st sess., February 16. Retrieved from http://democrats.energycommerce.house.gov/sites/default/files/image_uploads/Baker.pdf

Bardi, A., & Schwartz, S. H. (2003). Values and behavior: Strength and structure of relations. *Personality and Social Psychology Bulletin*, *29*(10), 1207-1220.

Bauer, J. M. (1994). Conceptual frameworks for the design of telecommunications policy, In C. Steinfield, J. M. Bauer, & L. Caby (Eds), *Telecommunications in transition: policies, services and technologies in the European context* (pp. 18-35). Thousand Oaks, CA: Sage.

Bauer, J. M. (2007). Dynamic effects of Net neutrality. *International Journal of Communication, 1*, 531-547.

Bengston, D. N. (1994). Changing forest values and ecosystem management. *Society and Natural Resources, 7*, 515-533.

Bengston, D. N., Webb, T. J., & Fan, D. P. (2004). Shifting forest value orientations in the United States, 1980-2001: A computer content analysis. *Environmental Values, 13*(3), 373-392.

Berelson, B. (1952). *Content analysis in communication research*. New York: Free Press.

Berg, B. L. (2001). *Qualitative research methods for the social sciences*. Boston: Allyn and Bacon.

Bernthal, W. F. (1962). Value perspectives in management decisions. *Journal of the Academy of Management, 5*(3), 190-196.

Best, M. L., & Wade, K. W. (2007). Democratic and anti-democratic regulators of the Internet: A framework. *The Information Society, 23*(5), 405-411.

Bird, F., & Waters. J. A. (1987). The nature of managerial moral standards, *Journal of Business Ethics*, *6*(1), 1-13.

Bos, W., & Tarnai, C. (1999). Content analysis in empirical social research. *International Journal of Educational Research, 31*, 659-671.

Braithwaite, V. & Blamey, R. (1998). Consensus, stability and meaning in abstract social values. *Australian Journal of Political Science*, *33*, 363-380.

Braithwaite, V. A., & Scott, W. A. (1991). Values. In J. P. Robinson, P. R. Shaver, & L. S. Wrightsman (Eds.), *Measures of personality and social psychological attitudes* (pp. 661-746). San Diego, CA: Academic Press, Inc.

Brown, D., & Crace, R. K. (2002). *Life values inventory: Facilitator's guide*. Williamsburg, VA: Applied Psychology Resources.

Cañón, C. (2009). Regulation effects on investment decisions in two-sided market industries: The Net neutrality debate. Retrieved from http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1374782

Caprara, G. V., Schwartz, S. H., Cabaña, C., Vaccine, M., & Barbaranelli, C. (2006). Personality and politics: Values, traits, and political choice. *Political Psychology, 27*(1), 1-28.

Carnes, R. (2008). Testimony of Rick Carnes on Net neutrality and free speech on Internet: Hearing before the Task Force on Competition Policy and Antitrust

Laws, of the House Committee on Judiciary, 110th Cong., 2nd sess., March 11. Retrieved from http://judiciary.house.gov/hearings/pdf/Carnes080311.pdf

Cerf, V. G. (2006a). Testimony of Vinton G. Cerf on Network Neutrality: Hearing before the Senate Committee on Commerce, Science and Transportation, 109th Cong., 2nd sess., February 7. Retrieved from http://commerce.senate.gov/pdf/cerf-020706.pdf

Cerf, V. G. (2006b). Testimony of Vinton G. Cerf on Reconsidering our communication laws: Ensuring Competition and Innovation: Hearing before the House Committee on Judiciary, 109th Cong., 2nd sess., June 14. Retrieved from Lexis-Nexis Congressional.

Cheng, A.-S., Fleischmann, K. R., Wang, P., & Oard, D. W. (2008). Advancing social science research by applying computational linguistics. *Proceedings of the 2008 Annual Meeting of the American Society for Information Science and Technology (ASIS&T)*. Columbus, OH.

Cheng, A.-S., Fleischmann, K. R., Wang, P., Ishita, E., & Oard, D. (2010). Values of stakeholders in the Net neutrality debate: Applying content analysis to telecommunications policy. *Proceedings of the 43rd Hawai'i International Conference on System Sciences (HICSS)*, Kauai, HI.

Cheng, A.-S., Fleischmann, K. R., Wang, P., Ishita, E., & Oard, D. (in press). The role of innovation and wealth in the net neutrality debate: A content analysis of human values in Congressional and FCC hearings. *Journal of the American Society for Information Science and Technology*.

Cheng, H. K., Bandyopadhyay, S., & Guo, H. (2008). The debate on Net neutrality: A policy perspective. *Information Systems Research*. Retrieved from http://papers.ssrn.com/sol3/papers.cfm?abstract_id=959944

Cherry, B. A. (2007). Analyzing the network neutrality debate through awareness of agenda denial. *International Journal of Communication*, *1*, 580-594.

Cherry, B. A. (2008). Back to the future: How transportation deregulatory policies foreshadow evolution of communications policies. *The Information Society, 24*(5), 273-291.

Choi, J. P., & Kim, B.-C. (2008). Net neutrality and investment incentives. CESIfo Working Paper No 2390. Retrieved from http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1264934

Citron, J. A. (2006). Testimony of Jeffery A. Citron on Network Neutrality: Hearing before the Senate Committee on Commerce, Science and Transportation, 109th Cong., 2nd sess., February 7. Retrieved from http://commerce.senate.gov/pdf/citron-020706.pdf

Clyburn, M. (2011). Testimony of Mignon Clyburn on Network neutrality and Internet regulation: Warranted or more economic harm than good? Hearing before the House Committee on Energy and Commerce, 112th Cong., 1st sess., February 16. Retrieved from http://transition.fcc.gov/Daily_Releases/Daily_Business/2011/db0216/DOC-304683A1.pdf

Cochetti, R. J. (2006). Testimony of Roger J. Cochetti on S. 2686, the Communications, Consumer's Choice, and Broadband Deployment Act of 2006 (Part II)--Net

Neutrality and Interconnection: Hearing before the Senate Committee on Commerce, Science and Transportation, 109th Cong., 2nd sess., May 25. Retrieved from Lexis-Nexis Congressional.

Cohen, J. (1960). A coefficient of agreement for nominal scales. *Educational and Psychological Measurement, 20*, 37-46.

Cohen, D. L. (2006). Testimony of David L. Cohen on Reconsidering our communication laws: Ensuring Competition and Innovation: Hearing before the House Committee on Judiciary, 109th Cong., 2nd sess., June 14. Retrieved from Lexis-Nexis Congressional.

Cohen, D. L. (2008). Testimony of David L. Cohen: Federal Communications Commission En Banc Public Hearing on Broadband Network Management Practices, Cambridge, MA, February 25. Retrieved from http://transition.fcc.gov/broadband_network_management/022508/cohen.pdf

Combs, M. (2008). Testimony of Michele Combs on Net neutrality and free speech on Internet: Hearing before the Task Force on Competition Policy and Antitrust Laws, of the House Committee on Judiciary, 110th Cong., 2nd sess., March 11. Retrieved from http://judiciary.house.gov/hearings/pdf/Combs080311.pdf

Comstock, E. W. (2006). Testimony of Earl W. Comstock on Network Neutrality: Hearing before the Senate Committee on Commerce, Science and Transportation, 109th Cong., 2nd sess., February 7. Retrieved from http://commerce.senate.gov/pdf/comstock-020706.pdf

Copps, M. J. (2011). Testimony of Michael J. Copps on Network neutrality and Internet regulation: Warranted or more economic harm than good? Hearing before the

House Committee on Energy and Commerce, 112th Cong., 1st sess., February 16. Retrieved from http://transition.fcc.gov/Daily_Releases/Daily_Business/2011/db0216/DOC-304684A1.pdf

Crace, R. K. & Brown, D. (1995). *Life values inventory*. Minneapolis: National Computer Systems.

Crawford, S. P. (2008). Testimony of Susan P. Crawford on Net neutrality and free speech on Internet: Hearing before the Task Force on Competition Policy and Antitrust Laws, of the House Committee on Judiciary, 110th Cong., 2nd sess., March 11. Retrieved from http://judiciary.house.gov/hearings/pdf/Crawford080311.pdf

Crowcroft, J. (2007). Net neutrality: The technical side of the debate: A white paper. *ACM SIGCOMM Computer Communication Review, 37*(1), 49-55.

Denzin, N. J., & Lincoln, Y. S. (2000). *Handbook of qualitative research* (2nd ed). Thousand Oaks, CA: Sage Publications.

Desai, P. P. (2011). Testimony of Parul P. Desai on Ensuring competition on the Internet: Net neutrality and antitrust: Hearing before the Subcommittee on Intellectual Property, Competition, and Internet, of the House Committee on Judiciary, 112th Cong., 1st sess., February 15. Retrieved from Lexis-Nexis Congressional.

Devos, T., Spini, D., & Schwartz, S. H. (2002). Conflicts among human values and trust in institutions. *The British Journal of Social Psychology, 41*, 481-494.

Dixon, K. D. (2006). Testimony of Kyle D. Dixon on Network Neutrality: Hearing before the Senate Committee on Commerce, Science and Transportation, 109th Cong.,

2nd sess., February 7. Retrieved from http://commerce.senate.gov/pdf/dixon-020706.pdf

Dorgan, B. L. (2007). A bill to amend the Communications Act of 1934 to ensure Net neutrality. Library of Congress Bill S.215, introduced January 9, 2007.

Downes, L. (2011). Testimony of Larry Downes on Ensuring competition on the Internet: Net neutrality and antitrust: Hearing before the Subcommittee on Intellectual Property, Competition, and Internet, of the House Committee on Judiciary, 112th Cong., 1st sess., February 15. Retrieved from http://judiciary.house.gov/hearings/pdf/Downes02152011.pdf

Duriau, V. J., Reger, R. K., & Pfarrer, M. D. (2007). A content analysis of the content analysis literature in organization studies: Research themes, data Sources, and methodological refinements. *Organizational Research Methods*, *10*(1), 5-34.

Durkheim, E. (1960). *The division of labor in society*. Glencoe, Ill.: Free Press.

Dye, T. R. (1984). *Understanding public policy*. Englewood Cliffs, NJ: Prentice-Hall.

Economides, N., & Tåg, J. (2007). Net neutrality on the Internet: A two-sided market analysis. NET Institute Working Paper No. 07-45. Retrieved from http://ssrn.com/abstract=1019121

England, G. W. (1967). Personal value systems of American managers. *Academy of Management Journal, 10*, 53-68.

Evans, M., McIntosh, W., Lin, J., & Cates, C. L. (2007). Recounting the courts? Applying automated content analysis to enhance empirical legal research. *Journal of Empirical Legal Studies*, *4*(4), 1007-1039.

Everitt, (1992). *The analysis of contingency tables* (2nd. ed.). London: Chapman & Hall.

Fallis, D., & Whitcomb, D. (2009). Epistemic values and information management. *The Information Society, 25*(3), 175-189.

Feather, N. T. (1988). Values, valences, and course enrolment: Testing the role of personal values within an expectancy value framework. *Journal of Educational Psychology*, *80*, 381-391.

Feather, N. T. (1995). Values, valences, and choice: The influence of values on the perceived attractiveness and choice of alternatives. *Journal of Personality and Social Psychology*, *68*, 1135-1151.

Federal Communications Commission. (2005). The FCC's policy statement on broadband Internet access. Retrieved from http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-05-151A1.pdf

Federal Communications Commission. (2008). *High-Speed Services for Internet Access: Status as of June 30, 2007*. Retrieved from http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-280906A1.pdf

Federal Communications Commission. (2010a). In the matter of preserving the open Internet, broadband industry practices. Retrieved from http://transition.fcc.gov/Daily_Releases/Daily_Business/2010/db1223/FCC-10-201A1.pdf

Federal Communications Commission. (2010b). FCC statement on Comcast v. FCC decision. Retrieved from http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-297355A1.pdf

Felten, E. W. (2006). Nuts and bolts of network neutrality. Center for Information Technology Policy, Princeton. Retrieved from http://itpolicy.princeton.edu/pub/neutrality.pdf

Fischer, F. (1980). *Politics, values, and public policy: The problem of methodology*. Boulder, CO: Westview Press.

Fischer, F. (2003). *Reframing public policy: Discursive politics and deliberative practices*. New York: Oxford University Press.

Fitzsimmons, G., Macnab, D., & Casserly, C. (1985). *Technical manual for the life roles inventory values scale and the salience inventor*. Edmonton, AB: PsiCan Consul.

Fleischmann, K. R., Oard, D. W., Cheng, A.-S., Wang, P., & Ishita, E. (2009). Automatic classification of human values: Applying computational thinking to information ethics, *Proceedings of the 72nd Annual Meeting of the American Society for Information Science and Technology (ASIS&T)*, Vancouver, Canada.

Ford, G. S. (2008). Testimony of George Ford: Federal Communications Commission En Banc Public Hearing on Broadband Network Management Practices, Palo Alto, CA, April 17. Retrieved from http://transition.fcc.gov/broadband_network_management/041708/ford.pdf

Forester, J. (1985). *Critical theory and public life*. Cambridge, MA: MIT Press.

Fredrickson, C. (2008). Testimony of Caroline Fredrickson on Net neutrality and free speech on Internet: Hearing before the Task Force on Competition Policy and Antitrust Laws, of the House Committee on Judiciary, 110th Cong., 2nd sess., March 11. Retrieved from http://judiciary.house.gov/hearings/pdf/Fredrickson080311.pdf

Freelon, D. G. (2010). ReCal: Intercoder reliability calculation as a Web service. *International Journal of Internet Science, 5*, 20-33.

Friedman, B., Kahn, P. H., Jr., & Borning, A. (2006). Value sensitive design and information systems. In P. Zhang & D. Galletta (Eds.), *Human-computer interaction in management information systems: Foundations* (pp. 348-372). New York: M. E. Sharpe.

Galperin, H. (2004). Beyond interests, ideas, and technology: An institutional approach to communication and information policy. *The Information Society, 20*(3), 159-168.

Genachowski, J. (2011). Testimony of Julius Genachowski on Network neutrality and Internet regulation: Warranted or more economic harm than good? Hearing before the House Committee on Energy and Commerce, 112th Cong., 1st sess., February 16. Retrieved from http://republicans.energycommerce.house.gov/Media/file/Hearings/Telecom/021611_Net_Neutrality/Genachowski.pdf

Giacomini, M., Hurley, J., Gold, I., Smith, P., & Abelson, J. (2004). The policy analysis of 'value talk': lessons from Canadian health reform. *Health Policy, 67*, 15-24.

Gilroy, A. A. (2007). Net neutrality: Background and issues. CRS Report RS22444. Retrieved from http://www.fas.org/sgp/crs/misc/RS22444.pdf

Gilgory, A. A. (2011). Access to broadband Networks: The net neutrality debate. CRS Report R40616. Retrieved from http://www.fas.org/sgp/crs/misc/R40616.pdf

Glaser, B. G., & Strauss, A. L. (1967). *The discovery of grounded theory: strategies for qualitative research*. New York: Aldine Publishing Company.

Glass, B. (2008). Testimony of Brett Glass: Federal Communications Commission En Banc Public Hearing on Broadband Network Management Practices, Palo Alto, CA, April 17. Retrieved from http://transition.fcc.gov/broadband_network_management/041708/glass-stmt.pdf

Goodlatte, B. (2006). Opening Statement of Bob Goodlatte on Network neutrality: Competition, innovation, and nondiscriminatory access: Hearing before the House Committee on Judiciary, 109th Cong., 2nd sess., April 25. Retrieved from Lexis-Nexis Congressional.

Goodlatte, B. (2011). Opening Statement of Bob Goodlatte on Ensuring competition on the Internet: Net neutrality and antitrust (Part II): Hearing before the Subcommittee on Intellectual Property, Competition, and Internet, of the House Committee on Energy and Commerce, 112th Cong., 1st sess., February 16. Retrieved from Lexis-Nexis Congressional.

Google and Verizon (2010). Verizon-Google legislative framework proposal. August, 9, 2010. Retrieved from http://static.googleusercontent.com/external_content/untrusted_dlcp/www.google.com/en/us/googleblogs/pdfs/verizon_google_legislative_framework_proposal_081010.pdf

Grunert, S. C., & Juhl, H. J. (1995). Values, environmental attitudes, and buying of organic foods. *Journal of Economic Psychology, 16*(1), 39-62.

Guth, W. D., & Tagiuri, R. (1965). Personal values and corporate strategy. *Harvard Business Review*, *43*, 123-132.

Hahn, R., & Wallsten, S. (2006). The economics of net neutrality, *Economists' Voice*, *June*. Retrieved from http://www.aei-brookings.org/publications/abstract.php?pid=1067

Hahn, R.W. (2008). Testimony of Robert W. Hahn on Future of the Internet: Hearing before the Senate Committee on Commerce, Science and Transportation, 110th Cong., 2nd sess., April 22. Retrieved from Lexis-Nexis Congressional.

Henry, P. J., & Reyna, C. (2007). Value judgments: The impact of perceived value violations on American political attitudes. *Political Psychology, 28*(3), 273-298.

Hinkle, D. E., Wiersma, W., & Jus, S. G. (2003). *Applied statistics for the behavioral scienc* (5th ed.). Boston, MA: Houghton Mifflin Company.

Hitlin, S. (2003). Values as the core of personal identity: Drawing links between two theories of self. *Social Psychology Quarterly, 66*(2), 118-137.

Hitlin, S., & Piliavin, J. A. (2004). Values: Reviving a dormant concept. *Annual Review of Sociology, 30*, 359-401.

Hofstede, G. (1980). *Culture's consequences: International differences in work related values*. Beverly Hills, CA: Sage.

Holsti, O. R. (1969). *Content analysis for the social sciences and humanities*. Reading, MA: Addison-Wesley.

Hopkins, D. J., & King, G. (2010). A method for automated nonparametric content analysis for social science. *American Journal of Political Science*, *54*(1), 228-247.

Hutcheon, P. D. (1972). Value theory: Towards conceptual clarification. *The British Journal of Sociology, 23*(2), 172-187.

Inglehart, R. F. (2008). Changing values among western publics from 1970 to 2006. *Western European Politics, 31*(1-2), 130-146.

Inouye, D. K. (2008). Testimony of Daniel K. Inouye on Future of the Internet: Hearing before the Senate Committee on Commerce, Science and Transportation, 110th Cong., 2nd sess., April 22. Retrieved from Lexis-Nexis Congressional.

Ishita, E., Oard, D. W., Fleischmann, K. R., Cheng, A.-S., & Templeton, T. C. (2010). Investigating multi-label classification for human values, *Proceedings of the 73rd Annual Meeting of the American Society for Information Science and Technology (ASIS&T),* Pittsburgh, PA.

Jenkins, W. I. (1978). *Policy analysis: A political and organizational perspective*. New York: Hudson Institute.

Jordan, S. (2009). Implications of Internet architecture on Net neutrality, *ACM Transactions on Internet Technology, 9*(2), 1-28.

Jurkiewicz, C. L., & Giacalone, R. A. (2004). A value framework for measuring the impact of workplace spirituality on organizational performance, *Journal of Business Ethics*, *49*(2), 129-142.

Just, N. (2009). Measuring media concentration and diversity: New approaches and instruments in Europe and the US. *Media, Cultural, & Society*, *31*(1), 97-117.

Kahle, L. R., Poulos, B., & Sukhdial, A. (1988). Changes in social values in the United States during the past decade. *Journal of Advertising Research*, *28*, 35-41.

Kluckhohn, C. (1951). Values and value-orientations in the theory of action. In T. Parsons, and E. A. Shils (eds.), *Toward a General Theory of Action* (pp. 388-433). Cambridge, MA: Harvard University Press.

Koepfler, J. A. & Fleischmann, K. R. (2011). Classifying values in informal communication: Adapting the meta-inventory of human values for tweets. *Proceedings of the 74rd Annual Meeting of the American Society for Information Science and Technology (ASIS&T),* New Orleans, LA.

Koepfler, J. A. & Fleischmann, K. R. (2012). Studying the values of hard-to-reach populations: Content analysis of tweets by the 21st Century homeless. *Proceedings of the iConference*, Toronto, Canada.

Kovacic, W. E. (2006). Testimony of William E. Kovacic on Reconsidering our communication laws: Ensuring Competition and Innovation: Hearing before the House Committee on Judiciary, 109th Cong., 2nd sess., June 14. Retrieved from Lexis-Nexis Congressional.

Krippendorff, K. (1980). *Content Analysis: An Introduction to Its Methodology*. Beverly Hills, CA: Sage.

Krippendorff, K. (2004). *Content analysis: An introduction to its methodology* (2nd ed.). Thousand Oaks, CA: Sage.

Kruskal, W. H. & Wallis, W. A. (1952). Use of ranks in one-criterion variance analysis, *Journal of the American Statistical Association*, *47*(260), 583–621.

Landis, J. R., & Koch, G. G. (1977). The measurement of observer agreement for categorical data. *Biometrics, 33*, pp. 159-174.

Lessig, L. (2002). The architecture of innovation. *Duke Law Journal*, 51(6):1783-1801.

Lessig, L. (2006). Testimony of Lawrence Lessig on Net neutrality: Hearing before the Senate Committee on Commerce, Science and Transportation, 109th Cong., 2nd

sess., February 7. Retrieved from http://commerce.senate.gov/pdf/lessig-020706.pdf

Lessig, L. (2008). Testimony of Lawrence Lessig on Future of the Internet: Hearing before the Senate Committee on Commerce, Science and Transportation, 110th Cong., 2nd sess., April 22. Retrieved from Lexis-Nexis Congressional.

Levin, B. (2006). Testimony of Blair Levin on Reconsidering our communication laws: Ensuring Competition and Innovation: Hearing before the House Committee on Judiciary, 109th Cong., 2nd sess., June 14. Retrieved from Lexis-Nexis Congressional.

Martin, K. J. (2008a). Keynote Remarks of Chairman Kevin Martin of the U.S. Federal Communications Commission. In *Network Neutrality Conference – Implications for Innovation and Business Online*, Copenhagen, Denmark. September 30. Retrieved from http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-285830A1.pdf

Martin, K. J. (2008b). Testimony of Kevin J. Martin on Future of the Internet: Hearing before the Senate Committee on Commerce, Science and Transportation, 110th Cong., 2nd sess., April 22. Retrieved from Lexis-Nexis Congressional.

Maslow, A. H. (1954). *Motivation and personality*. New York: Harper.

May, R. J. (2011). Testimony of Randolph J. May on Ensuring competition on the Internet: Net neutrality and antitrust: Hearing before the Subcommittee on Intellectual Property, Competition, and Internet, of the House Committee on Judiciary, 112th Cong., 1st sess., February 15. Retrieved from Lexis-Nexis Congressional.

Mayring, P. (2000). Qualitative content analysis. *Forum: Qualitative Social Research, 1*(2), 1-28.

McClure, C. R., & Jaeger, P. T. (2008).Government information policy research: Importance, approaches, and realities. *Library & Information Science Research, 30*, 257-264.

McCormick, W. G. (2006a). Testimony of Walter B. McCormick on Network Neutrality: Hearing before the Senate Committee on Commerce, Science and Transportation, 109th Cong., 2nd sess., February 7. Retrieved from http://commerce.senate.gov/pdf/mccormick-020706.pdf

McCormick, W. G. (2006b). Testimony of Walter B. McCormick on Reconsidering our communication laws: Ensuring Competition and Innovation: Hearing before the House Committee on Judiciary, 109th Cong., 2nd sess., June 14. Retrieved from Lexis-Nexis Congressional.

McDonald, P., & Gandz, J. (1991). Identification of values relevant to business research. *Human Resource Management, 30*(2), 217-236.

McDowell, R. M. (2008). Opening Statement of Robert M. McDowell: Federal Communications Commission En Banc Public Hearing on Broadband Network Management Practices, Cambridge, MA, February 25. Retrieved from http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-280468A1.pdf

McDowell, R. M. (2011a). Testimony of Robert M. McDowell on Network neutrality and Internet regulation: Warranted or more economic harm than good? Hearing before the House Committee on Energy and Commerce, 112th Cong., 1st sess., February 16. Retrieved from

http://democrats.energycommerce.house.gov/sites/default/files/image_uploads/RobertMcDowell.pdf

McDowell, R. M. (2011b). Testimony of Robert M. McDowell on Ensuring competition on the Internet: Net neutrality and antitrust (Part II): Hearing before the Subcommittee on Intellectual Property, Competition, and Internet, of the House Committee on Energy and Commerce, 112th Cong., 1st sess., February 16. Retrieved from Lexis-Nexis Congressional.

McKee, A. (2003). *Textual analysis: A beginner's guide*. London: Sage.

McSlarrow, K. (2008). Testimony of Kyle McSlarrow on Future of the Internet: Hearing before the Senate Committee on Commerce, Science and Transportation, 110th Cong., 2nd sess., April 22. Retrieved from Lexis-Nexis Congressional.

Miles, M., & Huberman, A. M. (1994). *Qualitative data analysis*. Thousand Oaks, CA: Sage Publications.

Misener, P. (2006). Testimony of Paul Misener on S. 2686, the Communications, Consumer's Choice, and Broadband Deployment Act of 2006 (Part II)--Net Neutrality and Interconnection: Hearing before the Senate Committee on Commerce, Science and Transportation, 109th Cong., 2nd sess., May 25. Retrieved from Lexis-Nexis Congressional.

Morse, K., & Struyk, R. J. (2006). *Policy analysis for effective development: Strengthening Transition Economies*. London: Lynne Rienner Publishers.

Mueller, M., Pagé, C., & Kuerbis, B. (2004). Civil society and the shaping of communication-information policy: Four decades of advocacy. *The Information Society, 20*(3), 169-185.

NetCompetition.org. (2009). Why HR 3458 is the most extreme version of net neutrality yet. Retrieved from http://www.netcompetition.org/HR_3458_Markey_Eshoo_One_Pager.pdf

Neuendorf, K. A. (2002). *The content analysis guidebook*. Thousand Oaks, CA: Sage.

Owen, B. M., & Rosston, G. L. (2003). Local broadband access: Primum non nocere or primum processi? A property rights approach. Stanford Law and Economics Olin Working Paper No. 263. Retrieved from http://papers.ssrn.com/sol3/papers.cfm?abstract_id=431620

Peha, J. M. (2006). The benefits and risks of mandating network neutrality, and the quest for a balanced policy. In *Proceedings of the 34th Telecommunications Policy Research Conference.*

Peha, J. M., Leha, W. H., & Wilkie, S. (2007). The state of the debate on network neutrality. *International Journal of Communication, 1*, 709-716.

Peterson, J. (2008). Testimony of Jon Peterson: Federal Communications Commission En Banc Public Hearing on Broadband Network Management Practices, Palo Alto, CA, April 17. Retrieved from http://transition.fcc.gov/broadband_network_management/041708/peterson.pdf

Ponser, B. Z., & Schmidt, W. H. (1993). Values congruence and differences between the interplay of personal and organizational value systems. *Journal of Business Ethics*, *12*, 341-347.

Powell, M. (2004). Preserving Internet freedom: Guiding principles for the industry. Retrieved from http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-243556A1.pdf

Property Rights Alliance (2009). Net neutrality infringes on private property rights. Retrieved from http://www.propertyrightsalliance.org/userfiles/file/092109pr_netfcc.pdf

Putala, C. (2006). Testimony of Christopher Putala on Reconsidering our communication laws: Ensuring Competition and Innovation: Hearing before the House Committee on Judiciary, 109th Cong., 2nd sess., June 14. Retrieved from Lexis-Nexis Congressional.

Ravlin, E. C., & Meglino, B. M. (1987). Effect of values on perception and decision making: A study of alternative work values measures. *Journal of Applied Psychology*, *72*, 666-673.

Relyea, H. C. (2008). Federal government information policy and public policy analysis: A brief overview. *Library & Information Science Research, 30*, 2-21.

Rescher, N. (1969). *Introduction to Value Theory*. Englewood Cliffs, NJ: Prentice-Hall.

Riffe, D., Lacy, S., & Fico, F. (1998). *Analyzing media messages: Using quantitative content analysis in research*. Mahwah, NJ: Lawrence Erlbaum Associates.

Rokeach, M. (1973). *The nature of human values*. New York: Free Press.

Rosston, G. L. (2008). Testimony of Gregory L. Rosston: Federal Communications Commission En Banc Public Hearing on Broadband Network Management Practices, Palo Alto, CA, April 17. Retrieved from http://www.fcc.gov/broadband_network_management/041708/rosston.pdf

Rubin, V. L. (2010). On deception and deception detection: Content analysis of computer-mediated stated beliefs. *Proceedings of the 2010 Annual Meeting of the*

American Society for Information Science and Technology (ASIS&T). Pittsburgh, PA.

Rust, R. T., & Cooil, B. (1994). Reliability measures for qualitative data: Theory and Implications. *Journal of Marketing Research*, *31*, 1-14.

SaveTheInternet.com. (n.d.). What is Net neutrality?. Retrieved from http://www.savetheinternet.com/faq

Schwandt, T. A. (2007). *The SAGE dictionary of qualitative inquiry*. Thousand Oaks, CA: Sage Publications.

Schwartz, G., Shetty, N., & Walrand, J. (2008). Network neutrality: Avoiding the extremes. *Proceedings of the 46th Annual Allerton Conference on Communication, Control, and Computing,* Urbana-Champaign, IL.

Schwartz, S. H., & Bilsky, W. (1987). Toward a universal psychological structure of human values. *Journal of Personality and Social Psychology*, *53*(3), 550-562.

Schwartz, S. H. (1992). Universals in the Content and Structure of Values: Theoretical Advances and Empirical Tests in 20 Countries. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 25, pp. 1-65). NY: Academic Press.

Schwartz, S. H. (1994). Are there universal aspects in the structure and contents of human values?. *Journal of Social Issues, 50*(4), 19-45.

Schwartz, S. H. (1996). Value priorities and behavior: Applying a theory of integrated value systems. In C. Seligman, J. M. Olson, & M. P. Zanna (Eds.), *The psychology of values: The Ontario symposium* (Vol. 8, pp.1-24). Hillsdale, NJ: Erlbaum.

Schwartz, S. H. (2006). Basic Human Values: An Overview. Retrieved from http://151.97.110.134/Allegati/convegno%207-8-10-05/Schwartzpaper.pdf

Schwartz, S. H. (2007). Value orientations: measurement, antecedents and consequences across nations. In R. Jowell, C. Roberts, R. Fitzgerald, & G. Eva (Eds.), *Measuring Attitudes Cross-Nationally: Lessons from the European Social Survey* (pp. 169-203). London: Sage.

Scott, W. A. (1955). Reliability of content analysis: The case of nominal scale coding. *Public Opinion Quarterly, 19*, 321-325.

Scott, W. A. (1965). *Values and organizations: A study of fraternities and sororities*. Chicago: Rand McNally.

Scott, B. (2006). Testimony of Ben Scott on S. 2686, the Communications, Consumer's Choice, and Broadband Deployment Act of 2006 (Part II)--Net Neutrality and Interconnection: Hearing before the Senate Committee on Commerce, Science and Transportation, 109th Cong., 2nd sess., May 25. Retrieved from Lexis-Nexis Congressional.

Shapiro, G., & Markoff, J. (1997). A matter of definition. In C. W. Roberts (Ed.), *Text Analysis for the Social Sciences: Methods for Drawing Statistical Inferences from Texts and Transcripts* (pp. 9-31). Mahwah, NJ: Lawrence Erlbaum Associates.

Sidak, J. G. (2006a). A consumer-welfare approach to network neutrality regulation of the Internet. *Journal of Competition Law and Economics, 2*(3), 349-474.

Sidak, J. G. (2006b). Testimony of Gregory J. Sidak on Network Neutrality: Hearing before the Senate Committee on Commerce, Science and Transportation, 109th

Cong., 2nd sess., February 7. Retrieved from http://commerce.senate.gov/pdf/sidak-020706.pdf

Sohn, G. B. (2011). Testimony of Gigi B. Sohn on Ensuring competition on the Internet: Net neutrality and antitrust: Hearing before the Subcommittee on Intellectual Property, Competition, and Internet, of the House Committee on Judiciary, 112th Cong., 1st sess., February 15. Retrieved from http://judiciary.house.gov/hearings/pdf/Sohn02152011.pdf

Spates, J. L. (1983). The sociology of values. *Annual Review of Sociology, 9*, 27-49.

Spini, D., & Doise, W. (1998). Organizing principles of involvement in human rights and their social anchoring in value priorities. *European Journal of Social Psychology, 28*, 603-622.

Tate, D. T. (2008). Opening Statement of Deborah T. Tate: Federal Communications Commission En Banc Public Hearing on Broadband Network Management Practices, Cambridge, MA, February 25. Retrieved from http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-280455A1.pdf

Tetlock, P. E. (1984). Cognitive style and political belief systems in the British House of Commons. *Journal of Personality and Social Psychology*, *46*, 365-375.

Tetlock, P. E. (1986). A value pluralism model of ideological reasoning. *Journal of Personality and Social Psychology*, *50*, 819-827.

Thacher, D., & Rein, M. (2004). Managing value conflict in public policy. Governance: An International *Journal of Policy, Administration, and Institutions, 17*(4), 457-486.

Upton, F. (2011). Opening Statement of Fred Upton on Network neutrality and Internet regulation: Warranted or more economic harm than good? Hearing before the House Committee on Energy and Commerce, 112th Cong., 1st sess., February 16. Retrieved from Lexis-Nexis Congressional.

van Schewick, B. (2007). Towards an economic framework for network neutrality regulation. *Journal on Telecommunications and High Technology Law, 5*, 329-391.

van Schewick, B. (2008). Testimony of Barbara van Schewick: Federal Communications Commission En Banc Public Hearing on Broadband Network Management Practices, Palo Alto, CA, April 17. Retrieved from http://transition.fcc.gov/broadband_network_management/041708/vanschewick-written.pdf

Webb, E. J., Campbell, D. T., Schwartz, R. D., Sechrest, L., & Grove, J. B. (1981). *Nonreactive measures in the social sciences*. Boston: Houghton Mifflin.

Weber, R. P. (1990). *Basic content analysis*. Newbury Park, CA: Sage Publications.

Williams, R. M. Jr. (1979). Change and stability in values and value systems: A sociological perspective. In M. Rokeach (Ed.), *Understanding human values* (pp.15-46). New York: The Free Press.

Wimmer, R. D., & Dominick, J. R. (2011). *Mass Media Research: An Introduction* (9th ed.), Belmont: CA: Wadsworth.

Woodrum, E. (1984). Mainstreaming content analysis in social science: Methodological advantages, obstacles, and solutions. *Social Science Research, 13*, 1-19.

Wu, T. (2003). Network neutrality, broadband discrimination. *Journal of Telecommunications and High Technology Law, 2*, 141-178.

Wu, T. (2008). Testimony of Timothy Wu: Federal Communications Commission En Banc Public Hearing on Broadband Network Management Practices, Cambridge, MA, February 25. Retrieved from http://transition.fcc.gov/broadband_network_management/022508/wu.pdf

Wyden, R. (2006). The Internet Non-Discrimination Act of 2006. Retrieved from http://thomas.loc.gov/cgi-bin/query/z?c109:S.2360.IS:

Yoo, C. S. (2005). Beyond network neutrality. *Harvard Journal of Law and Technology, 19*(1), 1-77.

Yoo, C. S. (2008a). Testimony of Christopher Yoo on Net neutrality and free speech on Internet: Hearing before the Task Force on Competition Policy and Antitrust Laws, of the House Committee on Judiciary, 110th Cong., 2nd sess., March 11. Retrieved from http://judiciary.house.gov/hearings/pdf/Yoo080311.pdf

Yoo, C. S. (2008b). Testimony of Christopher Yoo: Federal Communications Commission En Banc Public Hearing on Broadband Network Management Practices, Cambridge, MA, February 25. Retrieved from http://transition.fcc.gov/broadband_network_management/022508/yoo.pdf