The Role of Innovation and Wealth in the Net Neutrality Debate: A Content Analysis of Human Values in Congressional and FCC Hearings

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Net neutrality is the focus of an important policy debate that is tied to technological innovation, economic development, and information access. We examine the role of human values in shaping the Net neutrality debate through a content analysis of testimonies from U.S. Senate and FCC hearings on Net neutrality. The analysis is based on a coding scheme that we developed based on a pilot study in which we used the Schwartz Value Inventory. We find that the policy debate surrounding Net neutrality revolves primarily around differences in the frequency of expression of the values of *innovation* and *wealth*, such that the proponents of Net neutrality more frequently invoke *innovation*, while the opponents of Net neutrality more frequently invoke *wealth* in their prepared testimonies. The paper provides a novel approach for examining the Net neutrality debate and sheds light on the connection between information policy and research on human values.

Introduction

Recent innovations in information technology (IT) have radically transformed our access to and use of information. The rise of new technologies has in turn given rise to new ethical and policy challenges related to privacy, access,

control, and competition. The design and regulation of technology is linked not only to technological issues, but also to human factors that interact with the development and use of technology, including values such as *effectiveness, human welfare, importance, independence, innovation, law and order, nature, personal welfare, power*, and *wealth*. Given this situation, it is increasingly important to understand the role of human values in the design and regulation of our IT infrastructure.

Net neutrality has recently emerged as an important information policy issue, drawing the attention of Internet service providers, content providers, the academic community, and policy makers. The Net neutrality debate arose in response to fears that Internet 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 IT, information economics, and information policy. 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 IT and the implementation of policy can never be completely value free. As a result, values, technology, and policy are interrelated. Values play a critical role in Net neutrality discussions on issues such as oligopoly pricing, the availability

of certain services, and impediments to free speech. Understanding the role of values in the Net neutrality debate is critically important for informing the process of agenda setting and decision-making.

This study is guided by the following research questions: (1) Which values are most salient in the Net neutrality debate?; (2) Are there any differences in the values expressed by proponents and opponents of Net neutrality?; and (3) If there are differences between the values expressed by proponents and opponents of Net neutrality, how are these values being expressed? Through the application of content analysis to public hearings about Net neutrality, the goal of this paper is to provide an alternative to purely technological, regulatory, or economic analysis of the Net neutrality debate—namely, by exploring the values that lie at the core of this hotly contested debate and building a connection between information policy and research on human values.

The Net Neutrality Debate

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

Net neutrality has various definitions, ranging from absolute nondiscrimination (Wu, 2003) to limited discrimination without quality of service tiering (Dorgan, 2007). Although there is no single accepted definition of Net neutrality (Cherry, 2008), most agree that any such definition should include the general principles that the "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, p. 2).

The Federal Communications Commission (FCC) (2005) 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, 2008). These consumer-centric rights set forth by the FCC are at the heart of most Net neutrality discussions.

Recently, the FCC (2010) 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 nonharmful 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.

Technological and societal changes have reshaped the Net neutrality debate (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 nondiscriminatory 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. However, 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.

These conflicts in the Net neutrality debate have attracted scholarly attention in various fields. Examining the existing literature on Net neutrality reveals three strands that frequently arise in scholarly works. The first strand focuses on a technological perspective that provides a background for understanding of the 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 those issues (Atkinson & Weiser, 2006). The third strand focuses on an economic analysis of Net neutrality regulation that emphasizes consumer welfare (Sidak, 2006) and the economic merits of 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 arguments for and against Net neutrality. Vertical integration involves values such as *power* and *wealth* (Yoo, 2005); nondiscrimination of network access and the availability of certain services involve values such as *equality* and *human welfare* (Wu, 2003); and incentives for investment involve values such as *wealth* and *innovation* (Bauer, 2007; Lessig, 2002; Sidak, 2006). The intricacies of policy questions have attracted much attention, while the underlying forces that shape the policy outcomes have attracted significantly less attention (Galperin, 2004). It is therefore important to analyze the role of values expressed by the relevant stakeholder groups, including content providers, service providers, academics, and policymakers.

Values

Human values are a unifying theoretical concept for scholars in fields as diverse as anthropology (Kluckhohn, 1951), sociology (Parsons & Shils, 1951), social psychology (Rokeach, 1973; Schwartz, 1992, 1994, 2007), political science (Fischer, 1980; Tetlock, 1984, 1986), management (Bernthal, 1962; England, 1967), advertising (Kahle, Poulos, & Sukhdial, 1988), and human-computer interaction (Friedman, Kahn, & Borning, 2006). 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). For many years, abstraction and lack of sophisticated empirical support caused values to receive limited attention in social science research (Spates, 1983). Rokeach (1973) noted the confusion of terminology, that values were often emerging in other disciplines under different terms, causing challenges for unifying the study of human values. He established a 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). Although Rokeach's Value Survey received wide recognition among researchers across various disciplines, some researchers questioned the use of rank and the universality of the survey (Braithwaite & Law, 1985).

Schwartz (1992) proposed a new conceptual framework that sought to encompass the range of motivationally distinct values recognized across cultures. He 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" (Schwartz, 1994, p. 20). His conceptualization of values helps researchers to distinguish between different values based on the type of motivational goal that they express. In addition to the typology of values based on their motivational goals, Schwartz proposed a theory of dynamic relations among the motivational value types. This theory led to the development of a three-level hierarchy containing 56 basic human values, known as the Schwartz Values Inventory (SVI) (Schwartz, 1992, 1994, 2007). Because Schwartz combined empirical data with theoretical insights, there are both theoretical and empirical grounds for Schwartz's claims that the SVI is universal and comprehensive in nature (Schwartz, 1992). The SVI 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*.

The SVI values represent either *instrumental goals* (modes of behavior), phrased as adjectives (e.g., *obedient*) or *terminal goals* (end states), phrased as nouns (e.g., *freedom*). Schwartz combined adjective-based instrumental goals and noun-based terminal goals, since he argued that the terminal-instrumental distinction does not affect how people

relate to values, and both phrasings received similar importance ratings (Schwartz, 1992).

Schwartz's theory has received broad recognition among researchers across various disciplines. Testing of the SVI has included diverse cultural, linguistic, geographic, religious, and racial groups. Researchers in various domains have applied the SVI. For example, in psychology researchers have used the SVI to explore the relationship between behavior and value conflicts (Schwartz, 1992, 2007; Schwartz & Bilsky, 1987). In marketing research, researchers have used the SVI to explain specific aspects of consumer behavior (Grunert & Juhl, 1995). In political science, researchers have used the SVI to examine the relationship between values and party affiliation (Schwartz, 1996; Caprara, Schwartz, Cabaña, Vaccine, & Barbaranelli, 2006), the relationship between people's trust in institutions and their value priorities (Devos, Spini, & Schwartz, 2002), and the relationship between organizing principles of involvement in human rights and their anchoring in value priorities (Spini & Doise, 1998).

This paper builds on values as defined and classified by Schwartz, who argues that values serve as foundations for attitudes toward personal needs and societal demands (Schwartz, 2007). However, it is important to note that Schwartz developed the SVI through and for survey research, and survey research relies much more heavily on the SVI than does content analysis, which to date has not made widespread use of value instruments such as the SVI.

Values in Policy Analysis

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 conflict over social welfare policy (Tetlock, 1984, 1986). In this regard, values do matter with regard to who supports specific policy remedies with regard to Net neutrality.

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). 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).

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).

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. In the study, they found the choice of party from the left–center coalition correlated positively with *universalism* and *benevolence*, and negatively with *power, security*, and *achievement*. Devos et al. (2002) investigated how value priorities relate to trust in social institutions. The results indicated that trust in social institutions correlated positively with *power, tradition, conformity*, and *security*. Spini and Doise (1998) investigated the relationships between the 10 value types from the SVI and involvement in human rights. The results indicated that involvement in human rights correlated positively with *universalism* and negatively 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. For example, as the development of telecommunication technologies has significant impact on political processes and often compels governments to alter policies to fit new developments, values such as *accountability, accessibility, security*, and *privacy* are critical in policy analysis in this new technological environment (Relyea, 2008). Analysis of values within ongoing policy debates can help predict and explain individual and societal choices and strengthen policy arguments (Schwartz, 2007; Tetlock, 1986). Values also play an important role in decision-making in information management (Fallis & Whitcomb, 2009), especially within ongoing information policy debates such as those addressing Net neutrality. This paper examines the role of values that serve as an explanatory framework for understanding stakeholders' positions in the Net neutrality debate.

Research Methods

One of the most popular approaches for measuring values is to survey individuals regarding how they would rank or rate the relative importance of specific values from a list (Braithwaite & Scott, 1991). Researchers, however, do not always present values in terms of relative importance, however, but instead often in terms of their specific roles in particular contexts. Rankings and ratings can only address a limited range of values and relate them to each other in a limited way. There are 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. The aim of this research was to explore the values that lie at the core of the Net neutrality debate and to provide an understanding of the value differences among stakeholder groups as well as among proponents and opponents of Net neutrality. To achieve this goal, we used content analysis to access and analyze people's values and attitudes toward Net neutrality regulation. This section describes the purpose and rationale of our research methods, the data used for analysis, and the procedures used to refine the coding scheme between our original pilot study and the study that is the focus of this paper.

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). It can be an effective research method for studying attitudes, beliefs, values, and human relations (Woodrum, 1984). Content analysis also provides an unobtrusive analysis of publicly available documents such as speeches and testimonies, and can facilitate longitudinal analysis to a degree that is unmatched by other research techniques (Morris, 1994). Thus, due to its unobtrusive nature, content analysis can be effective for assessing value orientations (Mumford & Callicott, 2000).

Content analysis typically involves "systematic assignment of communication content to categories according to rules, and the analysis of relationships involving those categories using statistical methods" (Riffe, Lacy, & Fico, 1998, p. 18). 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. We do not mean by content analysis that we count words or other objective features of the text, but rather that we code 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). With qualitative data analysis, we can capture both manifest and latent meanings dealing with judgments, evaluations, and interpretations of the content. Thus, in this study, we employ qualitative approaches to identify and analyze values in Net neutrality testimonies. We then subject the results of that qualitative coding to quantitative analysis.

The Corpus

The corpus for this study includes testimonies from public hearings in which various stakeholder groups express values and positions on Net neutrality. 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 authors may carefully craft and polish these statements so that they reflect not only values personally held by the authors themselves but also additional values that the authors chose to convey for specific reasons. As such, like all aspects of public hearings, we must view these testimonies critically, not as absolute reality, but rather as one useful perspective on reality.

Data for this study included written opening statements and testimonies (referred to henceforth as "testimonies") prepared for two Net neutrality hearings. On February 7, 2006, the U.S. Senate Committee on Commerce, Science, and Transportation held the first hearing. On April 17, 2008, the FCC held the Broadband Network Management Practices En Banc Public Hearing held by the FCC at Stanford Law School's Center for Internet and Society. These hearings are referred to henceforth as the 2006 Senate hearing and the 2008 FCC hearing. Twelve testimonies were downloaded from the website of the U.S. Senate Committee on Commerce, Science, and Transportation and 16 testimonies were downloaded from the website of the FCC, for a total of 28 testimonies.

We identified five stakeholder groups and two other individuals within this dataset. The five stakeholder groups include six government officials (U.S. Senators and FCC commissioners), one Internet service provider, three content providers (Internet content and applications service providers), 10 interest groups (consumer groups and associations), and five academics (see Table 1). These five stakeholder groups have played key roles in deliberation of the Net neutrality debate. Key government players in the Net neutrality regulation include members of the U.S. House of Representatives, the U.S. Senate, the U.S. FCC, the U.S.

TABLE 1. The corpus.

Speaker/witness	Attitude	Venue	Stakeholder groups	Affiliation
Ted Stevens	Con	2006 hearing	GOV	United States Senator from Alaska
Daniel K. Inouye	Pro	2006 hearing	GOV	United States Senator from Hawaii
Ron Wyden	Pro	2006 hearing	GOV	United States Senator from Oregon
Vinton G. Cerf	Pro	2006 hearing	CP	Vice President and Chief Internet Evangelist, Google
Jeffrey Citron	Pro	2006 hearing	CP	Chairman and Chief Executive Officer, Vonage
Walter McCormick	Con	2006 hearing	IG	President and Chief Executive Officer, United States Telecom Association
Kyle McSlarrow	Con	2006 hearing	IG	President and Chief Executive Officer, National Cable & Telecommunications Association
Earl W. Comstock	Pro	2006 hearing	IG	President and Chief Executive Officer, CompTel
Kyle Dixon	Con	2006 hearing	IG	Senior Fellow and Director of the Federal Institute for Regulatory Law & Economics, Progress & Freedom Foundation
Gary Bachula	Pro	2006 hearing	IG	Vice President for External Affairs, Internet2
Lawrence Lessig	Pro	2006 hearing	AC	Professor, Stanford Law School
J. Gregory Sidak	Con	2006 hearing	AC	Professor, Georgetown University Law Center
Michael J. Copps	Pro	2008 hearing	GOV	FCC commissioner
Jonathan Adelstein	Pro	2008 hearing	GOV	FCC commissioner
Deborah T. Tate	Con	2008 hearing	GOV	FCC commissioner
Robert McDowell	Con	2008 hearing	GOV	FCC commissioner
Brett Glass	Con	2008 hearing	SP	Chief Executive Officer, Lariat.Net
Jason Devitt	Pro	2008 hearing	CP	Chief Executive Officer, SkyDeck
Rick Carnes	Con	2008 hearing	IG	President, Songwriter Guide of America
Jon Peterson	Neutral	2008 hearing	IG	Co-Director, Real-Time Applications and Infrastructure (RAI), Internet Engineering Task Force
Jean Prewitt	Pro	2008 hearing	IG	President and Chief Executive Officer, Independent Film & Television Alliance
Ben Scott	Pro	2008 hearing	IG	Policy Director, Free Press
James P. Steyer	Neutral	2008 hearing	IG	Chief Executive Officer and Founder, Common Sense Media
George S. Ford	Con	2008 hearing	AC	Chief Economist Phoenix Center for Advanced Legal & Economic Public Policy Studies
Gregory L. Rosston	Con	2008 hearing	AC	Deputy Director, Stanford Institute for Economic Policy Research
Barbara vanSchewick	Pro	2008 hearing	AC	Assistant Professor of Law, Stanford Law School
George Ou	Con	2008 hearing	IN	Independent Consultant and Former Network Engineer
Robb Topolski	Pro	2008 hearing	IN	Software Quality Engineer

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

Federal Trade Commission, and the U.S. Department of Justice. Internet service providers, such as AT&T, Comcast, and Verizon, who provide access to the Internet, played a key role in contesting the need for Net neutrality legislation. Content and application providers, such as Google, Amazon, and Vonage, favor Net neutrality regulation that would prevent unfair prioritization of Internet traffic. The interest groups include consumer groups, public policy groups, and associations such as Consumers Union, Free Press, Internet2, and National Cable & Telecommunications Association. Academics are professors and researchers from various domains such as law, economics, business, telecommunications, and public policy who provide views and suggestions about Net neutrality legislation. The two other individuals were an independent consultant and an engineer who were invited to testify on Net neutrality along with the individuals from the stakeholder groups. Three of the stakeholder groups were largely balanced between the proponents and opponents, but the three content providers all argued for Net neutrality regulation, while the one Internet service provider argued against Net neutrality regulation.

Coding Scheme

After we collected the corpus, we needed a coding scheme for classifying the expression of values in the texts. A coding scheme can be motivated by theories about the context of available texts or by the necessities of a complex research design (Krippendorff, 2004). Holsti (1969) identified some general principles of category construction. That is, categories should reflect the purposes of the research, be exhaustive, be mutually exclusive, independent, and be simple. To create a coding scheme that combines the theoretical foundation of values described above with the specific values that are salient in the Net neutrality debate, this study involved a two-step procedure for designing and refining the coding scheme.

In a pilot study, we applied the SVI as the coding scheme to code the 28 testimonies (Cheng, Fleischmann, Wang, Ishita, & Oard, 2010). The SVI, which was developed and validated through cross-cultural survey research, provides a foundation for the analysis of values of stakeholders in the Net neutrality debate. The universality of the SVI assists in

the generalizability of findings generated using the SVI as a coding scheme. However, the SVI was an a priori, noncontent-specific scheme not originally constructed for content analysis. The SVI may have validity as a survey instrument, but we found that it may have limited validity as a content analysis instrument. The ambiguity and complexity of the definitions for the 56 value categories made it difficult for human coders to code consistently. When using the SVI as a scheme coding the Net neutrality corpus, differences in classification did not fall neatly along Schwartz's divisions between value types or even value dimensions. Based on Cohen's (1960) kappa and Landis and Koch's (1977) benchmark that was used to interpret the kappa score, specifically, only 17 of the value categories were coded multiple times by independent coders, with Cohen's (1960) kappa results ranging from "slight" ($\kappa = 0.01$–0.20) for three value categories, "fair" ($\kappa = 0.21$–0.40) for eight value categories, "moderate" ($\kappa = 0.41$–0.60) for four value categories, and "substantial" ($\kappa = 0.61$–0.80) for only two value categories, neither of which yielded statistically significant results (Cheng et al., 2010).

For the present study, we developed a new coding scheme based on the evaluation of the SVI from the pilot study. The goal of the new coding scheme was to code categories that are important in the domain of Net neutrality in a way that independent coders could reach the same conclusion. It is not only for practical reasons that we try to maximize the ability of human coders to discriminate between the categories and minimize the complexity of the categories definitions, it is crucial to content analysis as a scientific method as well. The need for reliability is the basis for content analysis and the value of a content-analytic study rests on developing valid categories into which we can classify units.

Our development of the new coding scheme that we used in this study was an iterative process of aggregation of value categories. In this process, we dropped some value categories from the SVI that we did not find, we combined some value categories that coders found difficult to distinguish, and we rephrased some value categories that coders found difficult to understand. We worked back and forth between the Net neutrality corpus and the codes and categories to refine the meaning of categories as we proceed through the data. We tried to preserve 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 were less frequently or never assigned to a sentence (such as *inner harmony, detachment, clean, forgiving, honoring parents and elders*, and *loyal*). To improve intercoder agreement, we aggregated values 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, we 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 2) and then used to code (for a second time) the same 28 testimonies.

Again, we used Cohen's (1960) kappa to determine intercoder agreement. We used Landis and Koch's (1977) benchmarks to interpret the kappa score. For the new coding scheme, we achieved substantial agreement ($\kappa = 0.61$–0.80) for *wealth* ($\kappa = 0.77$), *independence* ($\kappa = 0.69$), *power* ($\kappa = 0.66$), *human welfare* ($\kappa = 0.65$), and *importance* ($\kappa = 0.61$); moderate agreement ($\kappa = 0.41$–0.60) for *innovation* ($\kappa = 0.60$) and *law and order* ($\kappa = 0.49$); and fair agreement ($\kappa = 0.21$–0.40) for *effectiveness* ($\kappa = 0.32$). For the two least frequently coded values, *personal welfare* and *nature*, we achieved slight or no agreement ($\kappa < 0.20$). Based on the evaluation, overall the new coding scheme serves as a promising advance for producing reliable data for content analysis of human values in the Net neutrality debate.

Data Analysis

We used content analysis to analyze the prepared opening statements and testimonies at public hearings about Net neutrality. The unit of analysis was the sentence, although we interpreted each sentence within its context within the document. Sentences were adopted as the unit of analysis because individual words or phrases were not sufficient to provide a meaningful basis for coding values, and broader units such as paragraphs or entire documents were not sufficiently fine-grained to provide a basis for establishing the quantity (i.e., volume) of discourse related to a value. We therefore coded each sentence as reflecting zero or more specific human values, regardless of whether the sentence explicitly invoked or simply implied those values. A total of 1,787 sentences, or 77.8% of the sentences within the corpus, were annotated with at least one of the 10 value categories. After coding an entire testimony, we identified the overall attitude of each stakeholder toward Net neutrality (pro, con, or neutral) based on the arguments made in the testimony. Coding was performed on a total of 2,294 sentences. To test intercoder agreement, we selected 12 of the 28 testimonies (1,279 of the 2,294 sentences) for annotation by a second coder. The kappa value for overall (testimony-level) pro or con sentiment was 0.82, which indicates almost perfect agreement ($\kappa = 0.81$–1.00) (Landis & Koch, 1977).

We used the Mann–Whitney *U*-test to compare the distributions of values included in testimonies coded as either pro or con. We performed this analysis not only on each stakeholder group, but also on each hearing separately and across both hearings. Mann–Whitney *U* is the nonparametric counterpart of a two-sample *t*-test for independent means (Hinkle, Wiersma, & Jus, 2003). It is robust and requires fewer assumptions than a *t*-test. Thus, 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

TABLE 2. Ten value categories 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.

found to be statistically significant are strong and reliable results). We used box plots to compare pros and cons by depicting the entire distribution of results wherever the Mann–Whitney *U*-test revealed statistically significant differences; where no box plot is shown, no statistically significant difference was found.

Findings

Eight of the 10 human values included in the coding scheme were highly salient within the Net neutrality debate. Table 3 summarizes the median and total number of appearances of the 10 values in all testimonies by both proponents and opponents of Net neutrality. *Effectiveness, wealth, human welfare, importance, power, law and order, independence*, and *innovation* were the most frequently occurring values in Net neutrality testimonies. *Personal welfare* and *nature* occurred less frequently in the Net neutrality debate.

Examination of the value differences in time, venues, and stakeholder groups did not reveal any statistically significant differences. However, examination of the value differences in sentiment did reveal statistically significant differences between proponents and opponents of Net neutrality. Specifically, proponents of Net neutrality statistically significantly

TABLE 3. Median and total value counts.

	Median		Total		
Value	Pro	Con	Pro	Con	Total
Effectiveness	10.5	19.5	287	298	585
Wealth	13	28	195	344	539
Human welfare	12.5	14	229	229	458
Importance	13	13.5	202	231	433
Power	9	11.5	255	168	423
Law and order	7	10	154	208	362
Independence	12.5	8.5	239	107	346
Innovation	9.5	1.5	125	36	161
Personal welfare	0	1	8	16	24
Nature	0	0	0	3	3

more frequently invoked or implied the value of *innovation* ($p < .05$), while opponents of Net neutrality statistically significantly more frequently invoked or implied the value of *wealth* ($p < .05$).

The sections below provide an overview of values with statistically significant results as well as qualitative analyses of the most salient values that arose within the Net neutrality discourse. Since many sentences indicated more than one value, the sentences used to illustrate specific values in each

section below sometimes also indicate other values not discussed in that specific section.

Wealth

We define *wealth* as "An explicitly stated concern with or interest in pursuing money, material possessions, profit, and finances." In the Net neutrality context, *wealth* relates to issues such as investment, return on investment, competition with other stakeholders, growth of the Internet economy, and power to manage property and control pricing strategies. Although *wealth* is also present in the SVI, our definition of *wealth* is refined from that of Schwartz (1994). First, *wealth* in the new coding scheme is broader than the *wealth* in the SVI. For example, when we used the SVI, we coded the concept of entrepreneurship as *daring* (seeking adventure and risk), while we coded the same sentence as *wealth* in the new coding scheme (considering the entrepreneur's attempt to make profit). Second, in the new coding scheme we coded *wealth* not only based on the surface meaning in a sentence but also based on the broader context. For example, the sentence: "we are all making our way through a sea of changes—in technology, to the communications marketplace, and to our legal framework—that are literally reshaping consumers' on-line experiences" (Adelstein, 2008, p. 2) was coded as *a varied life* (filled with challenge, novelty, and change) and *influential* (having an impact on people and events) in the SVI. By contrast, that same sentence was coded as *wealth* (as well as *importance, innovation, law and order*) in the new coding scheme, since discussion of consumers invokes a pursuit of material possessions.

These differences in the definition of *wealth* between the two coding schemes made the total counts of *wealth* coded for proponents and opponents of Net neutrality different between the two coding frames. However, statistically significant differences in coding for *wealth* between proponents and opponents were identified in the 2008 FCC hearing with the SVI (Cheng et al., 2010) and across both hearings with the new coding frame. Figure 1 provides a graphical summary of both the central tendency and variation of a distribution of frequencies within specific values. The horizontal bars represent the medians, the ends of the boxes represent the 75th and 25th quartiles, and the ends of the whiskers represent the maximums and minimums (except in cases of outliers).

Despite the fact that the frequencies of the different values called by the same name "*wealth*" differed, the result that a value called *wealth* was the most frequently coded value for opponents of Net neutrality is consistent with the findings from our pilot study (Cheng et al., 2010). However, it is also important to note that the way proponents and opponents of Net neutrality invoked *wealth* may be different. For example, the proponents of Net neutrality argue that Net neutrality regulations will promote competition among content providers while opponents argue that such rules will stifle investment in broadband infrastructure and the economic competitiveness of service providers (Wu & Yoo, 2007). As noted above, opponents of Net neutrality invoke *wealth* to
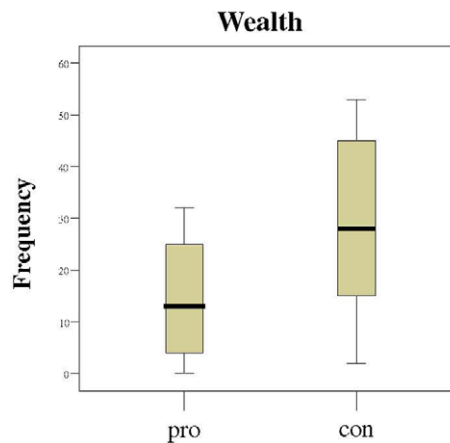

FIG. 1. Wealth ($p < .05$). [Color figure can be viewed in the online issue, which is available at wileyonlinelibrary.com.]

argue against Net neutrality regulation because Internet service providers need to remain profitable by maximizing income. As argued by an anti-Net neutrality academic, "Rules that prohibit efficient commercial transactions between content and broadband service providers could 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" (Ford, 2008, p. 16). To service providers, "regulation would heighten the burden imposed by a network neutrality mandate itself, thereby further discouraging investment in broadband networks" (Dixon, 2006, p. 8).

Innovation

We define *innovation* as "The capacity to create or discover new things and new ideas; contributing to the advancement of knowledge and technology; and curiosity." *Innovation* combines elements of the SVI values *creativity* and *a varied life*. Proponents of Net neutrality invoked *innovation* more frequently than opponents of Net neutrality, which is consistent with the coding of *creativity* and *a varied life* in the SVI (Cheng et al., 2010). Proponents argued for Net neutrality by describing the Internet as an open and competitive foundation for innovation. As one content provider stated, "one could think of it [the Internet] 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" (Cerf, 2006, p. 4). He further highlighted the value of innovation by arguing that, "This 'neutral' network has supported an explosion of innovation at the edges of the network, and the growth of companies like Google, Yahoo, eBay, Amazon, and many others" (Cerf, 2006, p. 1). To the contrary, opponents argued that a Net neutrality mandate under current competitive conditions would reduce consumer welfare by undermining investment and innovation (Dixon, 2006). They argued that the evolution of the Internet continues unabated even in the absence of a Net neutrality mandate.
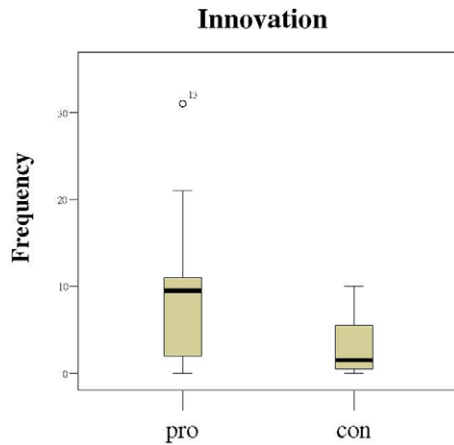
Innovation

FIG. 2. Innovation ($p < .05$). [Color figure can be viewed in the online issue, which is available at wileyonlinelibrary.com.]

Although proponents and opponents of Net neutrality invoked and implied *innovation* in ways that favored their own interests, there was a statistically significant difference in the number of times that *innovation* was invoked by proponents and opponents across both hearings. Figure 2 illustrates that in both hearings Net neutrality proponents invoked and implied *innovation* more frequently than did opponents.

Other Salient Values in Net Neutrality

We define *effectiveness* as "capability and success in producing desired results; efficiency of time and labor; appropriateness for completing specific tasks." It combines SVI values such as *capable (competent, effective*, and *efficient)* and *successful (achieving goals)*. For example, the sentence "the key to a successful regulation will be how well Congress articulates what it wants our Nation's communications infrastructure to look like 10 or 20 years hence," was coded as *effectiveness*. Opponents of Net neutrality questioned the effectiveness of Net neutrality regulation. As one anti-Net neutrality academic argued, "[Net neutrality] regulation must do so efficiently, in that the expected costs of the regulations are less than the expected benefits" (Ford, 2008, p. 4). However, the proponents viewed *effectiveness* from a different perspective, arguing that it is far more cost effective for Internet service providers to provide more bandwidth. An interest group representative argued, "With enough bandwidth in the network, there is no congestion and video bits do not need preferential treatment" (Bachula, 2006, p. 2). Moreover, a pro-Net neutrality government representative argued that "effective competition will provide real incentives for broadband providers to maintain neutral and open networks" (Adelstein, 2008, p. 2).

We define *human welfare* as "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." It combines SVI values such as *helpful, equality, social justice, family secu-*

rity, and *national security*. Both proponents and opponents of Net neutrality agreed on the need to work for consumer and social welfare. They both argued that Net neutrality regulation should take consumer welfare into account, and that policymakers must ensure that any future regulations will help consumers and society at large. As stated by a pro-Net neutrality government representative, "The recent allegations have raised concerns about level of transparency and disclosure between broadband providers and their consumers" (Adelstein, 2008, p. 3). By contrast, an anti-Net neutrality academic argued that, "the welfare effects of the existing network neutrality proposals do not increase consumer or aggregate welfare" (Ford, 2008, p. 5).

We define *importance* as "the potential to make a significant impact on someone or something; being an essential precondition for other actions or events." It relates most closely to the SVI value *influential*. *Importance* was used by participants on both sides of the Net neutrality debate. Proponents of Net neutrality argued that Net neutrality regulation has an essential impact on the Internet's innovation and a nation's competitiveness on a global stage. As a consumer group representative stated, "If we do this telecommunications reform right, it could unleash another wave of new uses, new applications, money-saving innovations, and economy-driving benefits" (Bachula, 2006, p. 3). By contrast, opponents of Net neutrality argued that any change to the existing policy could have serious repercussions to continued network innovation and investment. "As such, every request to impose significant regulatory change should be accompanied by a serious attempt to determine the probable winners, losers, and other consequences of the proposed changes" (Ford, 2008, p. 3) in the words of an anti-Net neutrality academic.

We define *power* as "possessing the ability or opportunity to lead, command, control, or dominate individuals, groups, and/or events." It combines SVI values such as *social power* and *authority*. *Power* was used by both proponents and opponents of the Net neutrality debate. Net neutrality opponents argued that government should not limit the right and the ability of service providers to differentiate among different streams of information traveling over their networks. From the opponents' point of view, service providers were not seeking to control or restrict the Internet, rather, the key issues were supply and demand (McCormick, 2006). However, proponents urged the FCC and antitrust authorities to intervene whenever a dominant network takes actions that harm competition and consumers.

We define *law and order* as "obeying laws, regulations, protocols, and social norms; protecting the stability of society; enforcing standards." It combines SVI values such as *social order, respect for tradition, obedient*, and *self-discipline*. Proponents of Net neutrality argued that nondiscriminatory regulation is necessary to ensure that a retail end user can in fact access whatever lawful content and services they chose. If an Internet service provider is under no legal obligation to protect consumers by providing access to competing content and service providers, voluntary protection rarely occurs. Opponents, however, argued that Net neutrality

regulation would do more harm than good. They suggested that Congress could specify a competitive standard to remedy market power abuses instead of enacting a mandate that might complicate efforts to keep the Internet safe and reliable (Dixon, 2006).

We define *independence* as "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." It combines SVI values such as *freedom* and *independent*. From the Net neutrality proponents' perspective, the Internet has given tremendous freedom to individual users and innovators. By contrast, an anti-Net neutrality service provider downplayed the extent to which differentiation among users is a hindrance to consumer choice and emphasized that, "what would be a threat to consumers and to free speech is the elimination of competition" (Glass, 2008, p. 3).

Personal welfare and *nature* are the values least frequently coded in Net neutrality testimonies. We define *personal welfare* as "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." We define *nature* as "having a sense of unity with nature; caring about the environment; appreciating natural beauty." In contrast to *human welfare*, *personal welfare* explicitly concerns one's own well being (or that of an organization) and putting the needs of oneself (or those of an organization) ahead of the needs of others. It combines SVI values such as *pleasure, enjoying life*, and *choosing own goals*. Individuals on both sides of the debate sought to frame the debate by questioning the justification of opposite parties. For instance, one Net neutrality opponent argued, "companies supporting network neutrality may see their greatest advantage in having a rule that frees them from negotiating with broadband providers, but such a rule is not likely to make consumers better off" (Dixon, 2006, p. 6). However, one Net neutrality proponent stated, "in the 10 years since the passage of the 1996 Act not one large cable company has voluntarily let any competitor offer competing service over its network, and not one Bell has voluntarily negotiated an interconnection agreement with a cable company or competitor. The reason is understandable—no CEO is going to voluntarily help a competitor" (Comstock, 2006, p. 7).

Discussion and Limitations

The major finding of this study is the statistically significant differences between proponents of Net neutrality, who invoke *innovation* more frequently and *wealth* less frequently, and opponents of Net neutrality, who invoke *wealth* more frequently and *innovation* less frequently. For instance, Internet service providers 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 contrast, proponents of Net neutrality regulations such as content providers and application providers argued that the Internet has operated according to the nondiscriminatory neutrality principle since its earliest days. The layered principle and end-to-end design are the main drivers of the growth and innovation of the Internet (Lessig, 2002). This innovation architecture allows all stakeholders to play a role in shaping the future direction of the Internet, not just service providers. Therefore, it is vital for the long-term development and growth of the Internet to create an environment that does not require users to seek permission from Internet service providers, which can preserve their ability to innovate.

Several scholarly works have addressed the role of *wealth* and *innovation* in the Net neutrality debate through economic modeling in the specific context of Net neutrality. Economides and Tåg (2007) conducted an economic analysis on Net neutrality in a two-sided market framework and found that Net neutrality regulation increases total industry surplus in the presence of a monopolistic ISP as well as in a duopoly. H. K. Cheng et al. (2008) studied Net neutrality regulation's impact on ISPs' investment incentives. They found that the incentive for Internet service providers to expand their network capacity under Net neutrality is higher than the incentive to expand without Net neutrality regulation. In addition to the analysis of investment incentives, Choi and Kim (2008) also focused on how innovation incentives are affected by Net neutrality. They found ambiguous results regarding the impact of Net neutrality regulations on welfare, but concluded that in a dynamic setting, Net neutrality regulation affects the incentives of the service providers by either allowing the network operator to charge for access or by allowing the network operator to sell rights to prioritized delivery of content. They also found that content providers might have stronger investment incentives under Net neutrality regulation. Cañón (2009) argued that the Internet's value comes from the investments of both content providers and service providers. The study supported the views of Net neutrality proponents by concluding that there will be more network users, more investment, and higher welfare with Net neutrality regulation. These examples indicate that *wealth* and *innovation* play an important role in the Net neutrality debate. From a policy perspective, this finding provides insight on how to frame the Net neutrality debate and suggests the need for consideration of the value differences between proponents and opponents before regulators make any regulatory decisions.

It is important to note that this study has four significant limitations. First, the corpus included only one Internet service provider and three content providers. With such limited samples, only inferences can be drawn about the saliency of values within these specific stakeholder groups

based on data analyzed in this paper. Thus, analysis of a larger number of testimonies from a broader range of stakeholders would facilitate more nuanced comparison of stakeholder groups. Second, this study describes values expressed in a single type of discourse outlet for Net neutrality. Thus, analysis of a broader range of discourse outlets (e.g., trade press, scholarly articles, blogs) would allow for comparison across these outlets. Third, by studying testimonies, we are only able to see what speakers are saying and what statements and messages they try to convey to the audience. As such, when they argued that Net neutrality regulation would affect the investment incentives (*wealth*) or innovation incentives (*innovation*), we are only able to see their arguments and justifications that support those arguments. We are not always able to see any underlying intentions behind their arguments. Fourth, we constructed the coding scheme that was used for this study by specifically focusing on the context of the Net neutrality debate and more specifically the corpus under investigation. Our approach sought to maximize intercoder agreement, which is the objective evidence that the coding scheme reflects reality (Artstein & Poesio, 2008). As a result, our coding scheme may not be applicable to other corpora, policy debates, and research methods (such as survey methods, for which the SVI was developed). Further, our coding scheme was only based on one value survey, that of Schwartz, while there are many competing value surveys. In future work, it would be ideal for us to review a larger set of value inventories so that we can come up with more overarching value categories that can be applied more broadly to additional contexts.

Conclusion

The method that we employed in this study provides an example of how to identify the values held by stakeholders to understand the value differences among stakeholder groups. Specifically, we applied this method to study the role of values in the Net neutrality debate. For the analysis above, specific values were expressed more frequently by people who were either for or against Net neutrality. By applying 10 value categories that we developed based on a pilot study that used the SVI, this study concludes that *wealth* and *innovation* are the most salient values in differentiating perspectives on the Net neutrality debate, with statistically significant differences in the values expressed by proponents and opponents of Net neutrality. Based on the statistically significant results found in this study, we can identify links between values and specific policy positions and interests. This study also demonstrates that content analysis of testimonies at public hearings can serve an important role in understanding ongoing IT policy debates such as Net neutrality. 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. Based on results and the intercoder agreement achieved in this study, the modified coding scheme 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 led to uncertainty and disagreement in classifying values in Net neutrality debate.

For future research, analyzing additional Net neutrality testimonies and other data sources such as news articles and academic journals 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, Webb, & Fan, 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, Oard, Cheng, Wang, & Ishita, 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 information technologies that are the focus of the policy debates (Ishita et al., 2010).

Policy development leads IT as well as follows it. As the government regulations influence the development of IT, IT also compels governments to alter policies to fit new developments. In an IT 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 stakeholder groups, and builds a connection between information policy and values research. 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 paper useful in advancing their respective goals.

The overall conclusion of this study is that proponents of Net neutrality regulation more frequently invoke *innovation* than do opponents, while opponents more frequently invoke *wealth* than do proponents. One way to understand this divide may be in a temporal sense. For content and application providers, innovation is a long-term investment that leads to future wealth. Thus, proponents of Net neutrality regulation may be taking a longer-term view on the issue by focusing on the innovation that may be spurred, in the long run, by Net neutrality regulation, while opponents of Net neutrality may be taking a more short-term stance by aiming to increase their profits on the bandwidth that they currently supply. Thus, when innovation meets wealth, we may merely be seeing different degrees of urgency from different stakeholders in the Net neutrality debate.

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