

The Shaping of the Network Neutrality Debate: Information Subsidizers on Twitter

KYUNG SUN LEE¹

YOONMO SANG

University of Texas at Austin, USA

WEIAI WAYNE XU

State University of New York at Buffalo, USA

Drawing on the concept of information subsidy, this study explores the network neutrality debate in the context of Twitter. Content analysis of the top 150 most retweeted URLs demonstrates that the composition of information subsidizers on Twitter was more or less evenly divided among stakeholders, including government, industry, nonprofit/advocacy, and experts. Despite the diversity of sources, there was a clear lack of diversity in stance. The majority of sources displayed a favorable attitude toward net neutrality. Our findings highlight the potential of Twitter to represent the position of resource-poor information subsidizers, including advocacy groups, entrepreneurs, and race-based online communities, as they seek to uphold the neutrality of the Internet.

Keywords: gatekeeping, information subsidy, net neutrality, Twitter

Introduction

The future of the Internet is at a critical juncture. Given that the Internet has become inextricably woven into the fabric of our daily lives, the debate surrounding network neutrality (net neutrality, hereafter) is increasingly gaining the attention of both ordinary Internet users and policymakers. Net neutrality is an antidiscriminatory design principle that dictates that all data should be treated equally and transported to the end-user on a “first-come first-served” basis (Herman & Kim, 2014). But as increasing commercialization and technological developments transform the ways in which the Internet is accessed and used, net neutrality has stirred up heated debate among both the public and policymakers (Krämer, Wiewiorra, & Weinhardt, 2013).

Kyung Sun Lee: kslee@utexas.edu

Yoonmo Sang: ysang@utexas.edu

Weiai Xu: weiaixu@buffalo.edu

Date submitted: 2014–11–17

¹ The authors would like to thank Dr. Sharon Strover, the two anonymous reviewers, and the editor for their valuable comments and suggestions.

Copyright © 2015 (Kyung Sun Lee, Yoonmo Sang & Weiai Xu). Licensed under the Creative Commons Attribution Non-commercial No Derivatives (by-nc-nd). Available at <http://ijoc.org>.

Recently, in the case of *Verizon v. FCC*, the U.S. Court of Appeals in Washington, DC, ruled that the Federal Communications Commission (FCC) needs to reconstitute its regulation, which prohibits broadband providers from blocking or discriminating against third-party content and services (*Verizon v. FCC*, 2014). Recognizing the significance and enduring consequences of net neutrality, different interest groups have sought to shape the public discourse in a way that advances their particular agenda (Bauer & Obar, 2014; Hart, 2011; Ly, Macdonald, & Toze, 2012). Adding to the controversy stimulated by the court ruling was the White House's explicit endorsement of net neutrality by urging reclassification of the Internet as "telecommunications" instead of the current "information service" status (see Copps, 2014). Such classification, it was argued, would prevent Internet service providers from any blocking or discrimination of content and free the Internet from a "future of toll-booths, gatekeepers and preferential carriage" (Copps, 2014, para. 3). The White House statement has instigated strong opposition from some politicians and corporate lobbyists, some of whom have cynically referred to net neutrality as "Obamacare for the Internet" (Cruz, 2014), pitted against supporters who are "gearing up for a fierce fight" (Manjoo, 2014).

Just as with any controversial issue, the media is one of the most effective venues to gain public exposure and to advance interests to the policy circle. However, gaining access to mainstream media is challenging, as a previous study indicates that the traditional mainstream media largely caters to the voice of a few players belonging to the highly influential and elite group of policymakers, corporate representatives, and experts (Kim, Chung, & Kim, 2011). In light of the rising debates on net neutrality, this study examines how interest groups are represented in an online media venue. Specifically, we examine the news stories that are consumed and circulated by the online public on Twitter. Two questions guiding the study are, who supplies information in news stories circulated on Twitter? And what kinds of information do Twitter users consume in relation to net neutrality?

To examine the news stories and sources of information on net neutrality, we draw on Oscar Gandy's conception of information subsidy. As Gandy (1982) points out, it is important to discover "the conditions under which subsidies of a certain type will be introduced into a particular information stream" (p. 209). This study examines the role of Twitter as an alternative venue for information subsidies. By examining information subsidy on Twitter, we seek to reveal the conditions that form the basis of shared understandings and values surrounding net neutrality in an online media outlet.

Ever since Mueller and Lentz's (2004) call for a new research direction in communication and information policy with a focus on "the social determinants of public policy" (p. 155), we have witnessed the emergence of a host of studies that address communication policy as a site of struggle among diverse interest groups (see Chini, 2008; Herman & Kim, 2014; Napoli, 2007). These studies reveal the importance of understanding policymaking as a communicative process whose outcome is a manifestation of ongoing contestation and negotiation among different social actors seeking to advance their voice and agenda. Our study seeks to contribute to this body of research by introducing the theoretical concept of information subsidy to the dissemination and consumption of net neutrality policy-related news on Twitter.

Background: Net Neutrality Debate

Net neutrality is guided by two fundamental design principles of the Internet. First, the end-to-end principle ensures that "messages fragmented into data packets are routed through the network autonomously" (Krämer et al., 2013, p. 794), regardless of the origin, destination, and content they represent. Second, the best-effort principle guarantees that this happens as expeditiously as possible. These principles are rooted in Jon Postel's philosophy of robustness: "Be conservative in what you do, and liberal in what you accept from others" (Postel, 1981, p. 13). This philosophy not only served as a practical guide to how Internet protocols were designed and implemented but also had a significant political impact, which made the Internet a symbol of the democratic flow of ideas (Geer, 2010).

The reason why net neutrality is so complicated an issue and has fomented such widespread debate is that it lies at the intersection of Internet structure and content regulation. Regulating the structural framework that transports data packets, slowing some down while prioritizing others, means that the content that the data packets represent is controlled as well. Therefore, having control over the structure also entails control over the ability to decide what content is transported to the end-user at the expense of transmissions, some of which may be slowed down or potentially blocked. An example is the 2005 case of Madison River Telephone Company, which blocked Voice over Internet Protocol service by Vonage (Federal Communications Commission, 2005). The case raised the question of whether the owner of the pipes can rightfully discriminate against content on grounds that it competes with the company's business. More recently, Netflix agreed to pay Comcast to ensure that Comcast subscribers can enjoy fast and reliable access to its content. While this case was not of direct relevance to net neutrality, this closed-door agreement nonetheless engendered intense debate surrounding the implications of such paid prioritization. First, actors speaking for the Internet content industry defended the interests of smaller, start-up application businesses without financial resources and what it means for innovation by Internet businesses that have benefited from a level playing field provided by the open Internet principle (Peck, 2014). Second, public interest groups expressed concerns about the quality of end-user experience as such deals may lead to the discriminatory provision of content by larger and wealthier corporate institutions (Morris, 2014). At the same time, speculations floated around concerning whether the "death" of net neutrality was "already being leveraged against Netflix" via decreased streaming speeds (Schoon, 2014, para. 5).

Among a number of meanings of net neutrality, two definitions, "No selectivity by the carriers over the content they transmit" and "No blocking of the access of users to some websites" invoke preservation of the freedom of speech (Noam, 2006, para. 5). In addition, the definitions of net neutrality safeguard the Internet as a space of free economic and political experimentation and innovation. However, a number of studies that examine the core issues surrounding net neutrality indicate that how this vision is operationalized and the perception of the workings of the Internet ecosystem remain contested among stakeholders (Bauer & Obar, 2014; Hart, 2011; Ly, MacDonald, & Toze, 2012). These studies aim to find ways that will narrow the gap among the stakeholders in order to reach a workable consensus. Other studies are committed to evaluating the arguments posited by these interest groups (Faulhaber, 2007). Indeed, as is the case with most policy debates, the politics of the net neutrality debate are instrumental

to the technical outcomes. But few studies examine the ways in which interest groups seek a collective advantage over others by gaining public visibility and the differential ability of these sources to influence the content of the information flows to the policymaking arena. In this paper, we draw on the theoretical framework of information subsidy to examine the conditions of the process of net neutrality policy decision making and to identify who influences the public debate on net neutrality in an online space.

Theoretical Framework: Information Subsidy

According to Gandy, information subsidy is “an attempt to produce influence over the actions of others by controlling their access to and use of information relevant to those actions” (1982, p. 61). Information subsidy takes place both *directly*, through press releases (Walters, Walters, & Starr, 1995), news conferences (Taylor, 2000), or congressional hearings (Kim et al., 2011), and *indirectly*, as delivered to key decision makers and publics through mass media coverage (Turk & Franklin, 1988). The range of activities is driven by the purpose of reducing “the prices faced by others for certain information in order to increase its consumption” (Gandy, 1982, p. 8).

The concept of information subsidy provides a useful framework for explaining how particular articulations gain more salience over others from a perspective of economic efficiency: Information is seen as a commodity that has considerable exchange value for media professionals, who are constantly constrained by the time and resources required for gathering, selecting, editing, and disseminating news information (Gandy, 1982). Seen in this light, the stakeholder that manages to subsidize information to media professionals wields significant influence as the public is exposed to the stakeholder’s position and interpretation of an issue at hand (Berkowitz & Adams, 1990; Kioussis, Kim, McDevitt, & Ostrowski, 2009; Turk, 1986). Hence, the importance of information subsidy lies in its ability to provide practical and ready-to-use knowledge to key decision makers that directs how they should to think about particular problems and offers plausible solutions (Gandy, 1982). In this respect, information subsidies will present different perspectives to understanding a single issue depending on the source of the stakeholder.

Information subsidy has been examined in the context of a wide range of social-political issues, including election campaigns (Kioussis et al., 2009), political conflict such as the Israel-Lebanon crisis (Sweetser & Brown, 2008), and social violence such as school shootings (Wigley & Fontenot, 2009). Among these, the influence of information subsidy is reported to be particularly strong for issues that tend to be abstract and technical in nature in shaping media policy and public dialogue (Kioussis, Park, Kim, & Go, 2013; Tanner, 2004).

Information Subsidy in Telecommunications Policy

Policymaker reliance on information subsidy is high in telecommunications policy issues because they require considerable outside expertise from network engineers and economists. Nonetheless, information subsidy in telecommunications policy has been characterized by uneven salience of the industry sector in the mainstream media and in highly visible information streams like congressional hearings (Kim et al., 2011).

The unevenness in salience of information subsidizers can be attributed to three factors at work in telecommunications policymaking. First, the exorbitant corporate spending in lobbying and campaign donations, which is second only to that by pharmaceuticals and insurance companies, creates an insurmountable barrier for most policy actors (Hart, 2011). For those large pro-net neutrality coalition companies equipped with financial capital, the lack of familiarity with the cultural knowledge of lobbying has served as a challenge to their efforts to access and promote their agenda to key decision makers (see Mohammed & Goo, 2006). Second, regulatory and corporate telecommunications institutions, particularly large broadband service providers, are characterized by frequent cross-migration of representatives across the two sectors (Crawford, 2013). This inevitably leads to the reflection of corporate voices inside regulatory institutions, creating an "echo chamber" within the institutions. Third, Gandy elaborates on technical factors that further challenge information subsidies by the resource poor.

The efficiencies of many mass media systems may not reach acceptable limits until the scale of operation exceeds available resources, or expected benefits, or both. Because of these economies and diseconomies of scale, certain sources may be restricted to a very limited number of ways to deliver an information subsidy. (1982, p. 199)

While the degree of relevance may have diminished to some extent in contemporary settings, more recent work on the relationship between public relations, news production, and the political decision-making process reaffirms that this logic is still very relevant today (Davis, 2002). Corporate discussions and decisions made behind closed doors only serve to increase the level of uncertainty for other actors, leading to a proliferation of conjectures, unverified information, and different scenarios of expected turns of events floating among actors outside the intimate corporate circle of network service providers and decision makers.

In such conditions that overtly favor corporate voices over others, online news platforms have emerged as an alternative space of information subsidy. Some scholars claim that online news platforms have brought about a new paradigm of news reporting and information sharing by "blending fact with opinion, and objectivity with subjectivity" (Papacharrissi & de Fatima Oliveira, 2012, p. 267). Not only do online news outlets enable those sources equipped with fewer resources to present and distribute information, they also offer a venue for discussion on the part of interested publics. Based on hyperlink analysis of key websites relating to network neutrality, Herman and Kim (2014) found that the Internet is more important for those who have less access to formal policy venues and traditional media outlets. Their study demonstrated a heavily skewed balance toward pro-network neutrality online and showed that the pro-network neutrality coalition urged the general public to participate in political actions more frequently than did the anti-network neutrality coalition. In the context of copyright debates, Herman (2012) found that online discussions favor the position of fair use that "invokes the cause of Internet freedom" (p. 355). Both studies highlight the potential of online space where everyday users of the Internet can represent their interests.

Herman and Kim's study (2014) has advanced our understanding of the Internet as an alternative space for actors promoting net neutrality policy who have fewer resources to effectively make their presence known to the public. We build on their research by investigating the types of interest

groups who act as information subsidizers of network neutrality in an online news dissemination platform, Twitter.

Information Subsidy on Twitter

Since its launch in 2006, Twitter has risen to prominence as a major news distribution outlet. The application of Twitter as a disseminator of news is enabled by a number of technical characteristics of the platform. The first is a reduction of the transaction costs characteristic of traditional media technologies (Benkler, 2006; Shirky, 2008). Second, the real-time, instantaneous broadcast function of the platform irrespective of the temporal and spatial location of the users allows for the rapid dissemination of information (Bruns & Yuxian, 2012). Third, a communicative feature of Twitter that distinguishes it among a diverse range of social media platforms is its broadcast feature. Twitter spreads news, not through networked groups of users, but via ad-hoc "tag channels" (Bruns & Burgess, 2011). The system of hashtags provides instant access to public discussion for any user who is interested in a particular issue or event without having to ask for permission. Furthermore, as a news-sharing platform, the 140-character limit of Tweets is extended in the news-sharing function by posting URLs (hyperlinks) of external content.

The current literature on Twitter can be broadly categorized into two camps according to their differing claims on the democratic potential of the platform. The first group claims that Twitter breaks down the two-step flow of communication that shapes the production and consumption of content in traditional mass media (Kwon, Oh, Agrawal, & Rao, 2012; Meraz & Papacharissi, 2013; Shoemaker & Vos, 2009). Studies in this group emphasize the bottom-up nature of Twitter as a decentralized communicative space "enabling the disintermediation of news" while "undermining the gatekeeping function of journalists" (Hermida, 2010, p. 300).

Twitter as an alternative news-reporting mechanism offers an outlet to express and consume contending viewpoints and interests from nonauthoritative sources in an otherwise tightly restricted policy environment. Previous studies have highlighted the use of Twitter by activist groups driven by a contentious agenda (Lovejoy, Waters, & Saxton, 2012; Merry, 2014). Often portrayed as deviant by the mainstream media (Poell & Borra, 2012), some of these groups include citizens protesting against an authoritarian government system (Chaudhry, 2014) and groups committed to public accountability (Ettema, 2009; Meraz, 2008). This body of research reflects how the centralized gatekeeping role of the media has been increasingly challenged by decentralized gatekeeping practices by users of online social media (Coddington & Holton, 2014; Meraz & Papacharissi, 2013).

While the first group of studies recognizes a transformative potential of Twitter in bringing about a virtual public sphere that eliminates the two-step flow of communication, the second group maintains that the "Twitterscape" of public deliberation "still mirrors existing social structures" (Ausserhofer & Maireder, 2013, p. 292). Studies have examined different contexts in which users engage in Twitter debates, such as national election campaigns (Larsson & Moe, 2012; Morozov, 2009; Tumasjan, Sprenger, Sandner, & Welpe, 2010), national politics (Ausserhofer & Maireder, 2013; Small, 2011), and specific political issues (Moe, 2010). According to these studies, discussions on Twitter are dominated by a small group of users who are authoritative figures offline. Such interactions exert considerable influence on the

information flow on Twitter and are very limited in engaging with ordinary citizens (Davis, 2010; Papacharissi, 2002). The central role played by politicians (Golbeck, Grimes, & Rogers, 2010), journalists, and experts, such as lawyers, consultants, and professional bloggers (Ausserhofer & Maireder, 2013), reflects the existing social structures and indicates a certain gatekeeping effect on Twitter.

Still, the two threads of literature converge in their observation that regardless of the issue at hand, groups that are comparably resource poor tend to actively engage with Twitter more than their mainstream counterparts, even within elite groups of users. For example, in a study of Twitter use during a Swedish election, Larsson and Moe (2012) point out that while high-end users largely consisted of an elite group of actors already affiliated with mainstream media or major political parties, these actors mainly used the platform for information dissemination. On the other hand, minor political parties such as the Pirate and the feminist parties more frequently appropriated Twitter as a space for dialogue by using the retweeting function. Similarly, a study on the 2012 U.S. election illustrates the ways in which minority "third-party" candidates tactfully utilized Twitter (Christensen, 2013). By "wave-riding" on prominent Hashtags such as #Obama and #Election2012, the candidates presented alternative perspectives to ongoing debates, engendering some of the largest numbers of retweets during the election period. These studies suggest that despite the dominance in the Twittersphere of a small core group of information subsidizers, Twitter nonetheless serves as potential media space where groups equipped with a relatively small stock of economic and social capital can be represented, heard, and may even reverse the dominant public opinion on Twitter (Bastos, Raimundo, & Travitzki, 2013).

Based on the literature review, this study seeks to investigate the types of information subsidizers that appear most frequently in an alternative news distribution channel like Twitter. Specifically, this study proposes the following research questions and hypothesis.

RQ1: Who are the information subsidizers of network neutrality that appear most frequently on Twitter?

RQ1a. How frequently do the information subsidizers appear?

RQ1b. To what sectors do the information subsidizers belong?

Hypothesis 1. Among news articles about net neutrality on Twitter, those that support a pro-net neutrality stance will appear more frequently than those that support an anti-net neutrality stance.

Methods

Data Collection

This study draws on Twitter data comprised of 6,289 tweets generated between a two-week period from February 23, 2014, to March 14, 2014, that contain the hashtag #netneutrality or the keyword *network neutrality* (or *net neutrality*). A total of 4,150 users participated in the discussions, and 1,477 hyperlinks were cited, including news articles, blog entries, and government and advocacy group websites. The URLs were then ranked by the number of retweets received. The top 200 most retweeted

URLs were used for data analysis. Examining a compilation of the most retweeted news stories allowed us to investigate the types of information subsidizers and news content that are the most actively consumed and shared by Twitter users. From the 200 URLs, links to video content and images were omitted. Web content in languages other than English was also excluded. After removing irrelevant links, we were left with a total of 150 articles for analysis.

Content Analysis

This study employed content analysis of news content belonging to the top 150 most retweeted URLs. The variables consisted of (a) information subsidizer (b) subsidizer affiliation, and (c) news affiliation. *Information subsidizer* was measured by counting the total number of appearances of individuals belonging to each sector, following Kim et al. (2011). *Subsidizer affiliation* referred to the affiliations of the cited individuals and was categorized into *government sector* (FCC, European Union, executive, Congress/Court), *industry sector* (network provider, content provider, venture capitalist/entrepreneur, securities firm/investment bank, other industry, and industry associations), *experts* (professor of law, communications, or policy; research center; tech/media journalist; and professional blogger), and *nonprofit/advocacy*. As nonprofits mostly consisted of advocacy organizations, we did not further break this category down into subgroups. *News affiliation* referred to the affiliation of news source and was categorized into (a) *general news/opinion*, which referred to sources with offline news outlets; (b) *government sites*; (c) *tech-related sites*, which included tech-news and opinion sites, websites of Internet content providers, hardware and software sites, and technology services websites; (d) *academia/research*, which included research papers and reports published by think tanks and universities; and (e) *library*. Finally, *source stance* was categorized into (a) those who favored and expressed support of net neutrality, (b) those who were against and critical of net neutrality, and (c) those who were neutral or mixed in stance.

Intercoder Reliability

A randomly selected subsample of news stories (10%) was coded by the three authors to determine the reliability of the coding system. The overall average intercoder reliability across variables was 0.95 using Krippendorff's alpha. The intercoder reliability by item ranged from 0.86 to 1, all of which scored above the acceptable threshold of 0.80 (Neuendorf, 2002).

Results

We started out by asking about net neutrality information subsidizers that appear the most frequently in news consumed and disseminated on Twitter. In analyzing the 150 most heavily consumed news articles related to net neutrality on Twitter hyperlinks, we counted a total of 202 times that information subsidizers were included in our sample of 150 news articles. Table 1 indicates the most frequently cited information subsidizers. In total, these individuals were cited 86 times out of 202 times that information subsidizers were cited. This means that in approximately 45% of the time when Twitter hyperlinks cited news sources, information came from these 16 sources. Tom Wheeler, chairman of the FCC, appeared the most frequently, being cited 18 times in total or 9% out of the total number of

information subsidizer appearances. Neelie Kroes, vice president of the European Commission, was the second most frequently cited (5%). Content providers also appeared frequently as information subsidizers, including Craig Aaron, chief executive officer (CEO) of Netflix (6 times, a total of 3%). However, among the pro-net neutrality coalition, there was an absence of information subsidizers from large content providers, such as Google and Amazon.

Table 1. Most Frequently Appearing Information Subsidizers.

| First Name | Last Name | Affiliation | Number of Times Cited |
|--------------|-------------|--|-----------------------|
| Tom | Wheeler | Chairman, FCC | 18 (9%) |
| Neelie | Kroes | Vice President, European Commission | 10 (5%) |
| Tim | Wu | Professor, Columbia Law School | 7 (3%) |
| John | Bergmayer | Senior Staff Attorney, Public Knowledge | 6 (3%) |
| Reed | Hastings | CEO, Netflix | 6 (3%) |
| Craig | Aaron | President and CEO, Free Press | 5 (3%) |
| Dave | Schaeffer | Chief Executive, Cogent | 5 (3%) |
| Lowell | McAdam | CEO, Verizon | 4 (2%) |
| Susan | Crawford | Professor, Benjamin N. Cardozo School of Law | 4 (2%) |
| Tim | Berners-Lee | Director, World Wide Web Consortium | 3 (1.5%) |
| Barack | Obama | President, The United States | 3 (1.5%) |
| Berin | Szoka | President, Tech Freedom | 3 (1.5%) |
| Brian | Roberts | Chairman and CEO, Comcast | 3 (1.5%) |
| Felix | Treguer | Co-founder, La Quadrature Du Net | 3 (1.5%) |
| Matt | Wood | Policy Director, Free Press | 3 (1.5%) |
| Dan | Rayburn | Executive Vice President, Streamingmedia.com | 3 (1.5%) |
| Total | | | 86 (43.5%) |

Note: The percentage reflects the value of the number of information subsidizer appearances divided by the total number of information subsidizers ($n = 202$) appearing in the sample articles.

In Table 2, information subsidizers are grouped according to the sectors to which they belong. The industry sector appeared in 29% of the 150 news stories, followed by the government, in 27% of the news stories. The nonprofits and experts appeared with equal frequency ($n = 44$) in 22% of the total news stories. The percentages indicate that information subsidized by the four sectors was more or less evenly distributed, although information supplied by the industry sector appeared slightly more frequently than other types.

We further broke down the sectors to examine the affiliation of the information subsidizers within each sector. The stacked bar graph (Figure 1) illustrates the distribution of multiple sources within each sector. Note that the nonprofit/advocacy sector was not broken down as it was largely composed of advocacy groups.

Table 2. Information Subsidizer by Sector.

| Information Subsidizer by Sector | Number of Appearances | Percentage of Appearances |
|------------------------------------|-----------------------|---------------------------|
| Government Sector | | |
| FCC | 25 | 12% |
| European Union (EU) | 17 | 8% |
| Executive | 8 | 4% |
| Congress/Court | 5 | 2% |
| Government total | 55 | 27% |
| Industry Sector | | |
| Network provider | 22 | 11% |
| Content provider | 20 | 10% |
| Venture capitalist/entrepreneur | 7 | 3% |
| Securities firm/investment bank | 4 | 2% |
| Other industry | 4 | 2% |
| Industry Associations | 2 | 1% |
| Industry total | 59 | 29% |
| Nonprofit (Advocacy) Sector | | |
| Experts | | |
| Professor | | |
| <i>Law</i> | 18 | 9% |
| <i>Communications/Policy</i> | 5 | 2% |
| Research center | 2 | 1% |
| Tech/media journalist | 14 | 7% |
| Blogger | 5 | 2% |
| Experts total | 44 | 22% |
| Total | 202 | 100% |

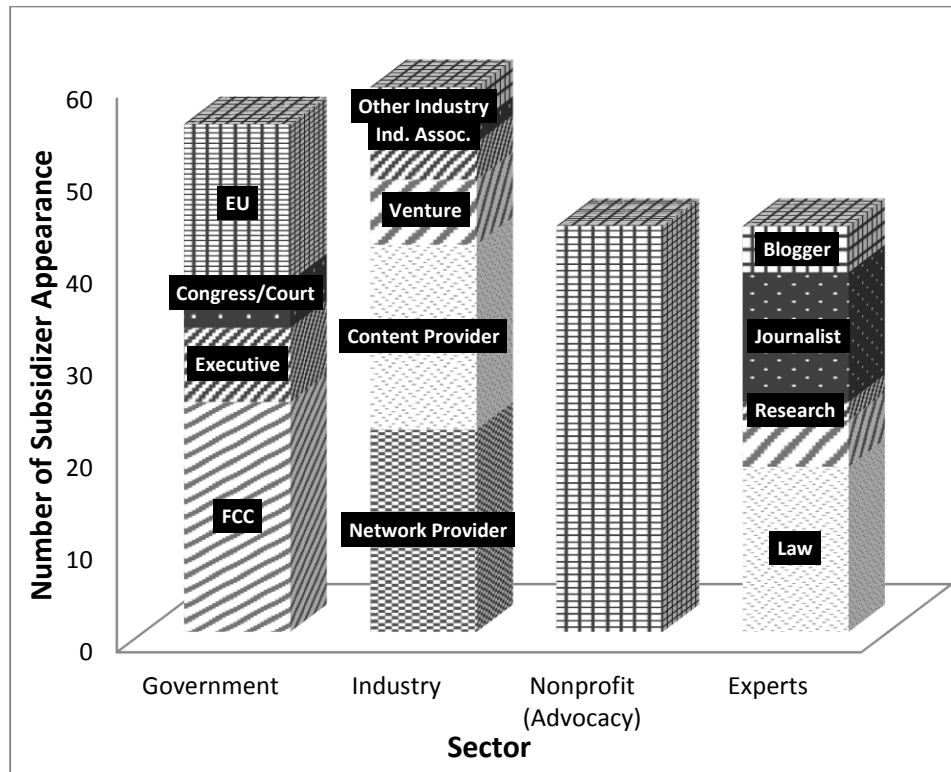


Figure 1. Affiliation of information subsidizers by sector.

Within the industry sector, network providers and content providers appeared in the news articles with equal frequency ($n = 20$). While these two groups accounted for a large proportion of the industry sector's information subsidizers (20% in total), venture capitalist/entrepreneurs appeared 7 times (3%) and securities firm/investment bank appeared 4 times (2%). Among the experts, law professors (9%) and technology/media journalists (7%) appeared most frequently, followed by communications/policy professors (2%), bloggers (2%), and research centers (1%).

Table 3. Net Neutrality Stance by News Affiliation.

| News Affiliation | Net Neutrality (NN) Stance | | | Total |
|--------------------|----------------------------|---------------|-----------------|-------------------|
| | Pro-NN | Anti-NN | Neutral | |
| Nonprofit/Advocacy | 40 (98%) | 1 (2%) | 0 (0%) | 41 (28%) |
| General News | 16 (44%) | 1 (3%) | 19 (53%) | 36 (24%) |
| Tech-news/opinion | 20 (57%) | 2 (6%) | 13 (37%) | 35 (23%) |
| Academic | 5 (63%) | 2 (25%) | 1 (12%) | 8 (5%) |
| Other | 22 (73%) | 2 (7%) | 6 (20%) | 30 (20%) |
| Total | 103 (69%) | 8 (5%) | 39 (26%) | 150 (100%) |

Our hypothesis, which proposed that news articles taking a pro-net neutrality stance would appear more frequently than those that are anti-net neutrality in stance, was supported. Table 3 reports the total count of stance on net neutrality by news affiliation. Out of the 150 most consumed news articles hyperlinked on Twitter, nonprofit/advocacy news sources comprised the largest proportion (28%). News content that was affiliated with nonprofit/advocacy websites was mostly in support of net neutrality (98%). General news, which accounted for 24% of the total news content, was either neutral (53%) or pro-net neutrality (44%) in stance. Tech-news/opinion was the third most frequently appearing news content (23%), with 57% of content being pro-net neutrality, 6% anti-net neutrality, and 37% neutral in stance. Overall, despite the diversity in sources, the stance of the news content was largely in support of net neutrality (69%), while those with a neutral stance comprised 26%, and those with an anti-net neutrality stance accounted for 5% of the news articles analyzed.

Discussions and Conclusions

This study examined Twitter as an alternative broadcast outlet to traditional mainstream media by examining the frequently appearing information subsidizers who shape the news on net neutrality. Comparing our results to a previous study addressing information subsidy of net neutrality in mainstream media (Kim et al., 2011), we found differences in patterns of information subsidizers. On the whole, our findings indicate that net neutrality-related news on the Web is characterized by the existence of a multiplicity of voices. In mainstream media, close to 50% of the subsidizers were comprised of representatives of major corporations, the majority of which were network providers and equipment manufacturers, such as AT&T and Cisco. On Twitter, industry representatives accounted for 24% of tweets, which were further divided among a variety of subsidizers, including content providers (10%) and network providers (14%). Furthermore, we found a more or less even distribution of subsidizers by sector. Clearly, Twitter users were consuming and sharing news supplied by a diverse range of stakeholders of net neutrality. The apparent difference between mainstream media and Twitter as an online broadcast outlet resonates with Herman and Kim's study (2014), which states that the Internet works as an alternative information stream for interest groups that lack access to the scarce resources of traditional media outlets.

A second diverging feature of information subsidizers on mainstream media and Twitter is their nature. The majority of the information subsidizers in the mainstream media belonged to "official" sources, and are government representatives, spokespeople, and policy directors (Kim et al., 2011). Information subsidizers on Twitter were represented by a variety of entrepreneurs, such as the founder of a platform used to develop online campaigns for smaller political candidates who lack the necessary economic and social capital (Holmes, 2014). Also visible among information subsidizers on Twitter were groups that catered to users belonging to minority social demographics. These groups included New ME Accelerator, a technology startup accelerator for underrepresented entrepreneurs, and Blogging While Brown, a support community of Black bloggers (McCauley, 2014). The visibility of race-based networked communities on Twitter, particularly African-American users, is, in fact, the subject of a growing body of research. "Black Twitter" serves as a site of cultural performance (Brock, 2012) and resistance against racial violence (Williams, 2015), in essence, "an extension of . . . Black urban experience" (McDonald, 2014, para. 3). Contributing to previous literature that approaches Twitter as an alternative news-reporting mechanism, our finding suggests that Twitter is used as an outlet to express the policy concerns and interests of a diverse range of resource-poor groups that extends beyond political and advocacy groups.

The existence of a diversity of voices, however, did not extend to diversity in stance. A majority of sources displayed favorable attitudes toward net neutrality. Those that were neutral in tone were largely from general news sources. Kim et al.'s study (2011) looking at newspaper coverage of net neutrality from 2004 to 2009 found only 20 articles (11.4%) to be pro-net neutrality, while 134 (76.1%) were neutral and 22 (12.5%) were anti-net neutrality. The findings are considerably different from the stance of the general news sources consumed on Twitter. The finding supports existing research that identifies Twitter as an alternative space for resource-poor information subsidizers, mainly advocacy groups, entrepreneurs, and pro-net neutrality coalitions, but also as a mobilization platform to uphold neutrality of the net (Herman & Kim, 2014). This study also demonstrates that ordinary Internet users are increasingly involved in the gatekeeping process online, contributing to the shifting power dynamic between the gatekeeper and the gated.

A noteworthy point of attention is that although the hyperlinks were limited to those in English, a large body of information subsidizers was European representatives. At the time that this paper was being written, the EU parliament had voted in support of the net neutrality proposal, which was in the midst of much debate during the period at which the Twitter data was collected (EU Parliament, 2014). Although the law still needs to be approved by Europe's Council of Ministers, the turn of events places the United States at odds with the European Union. In-depth discussion of the development of Europe's net neutrality issue is beyond the scope of this paper, but indeed, the high volume of information subsidizers supporting net neutrality and pressure by advocacy groups may have contributed to shaping public discussion of net neutrality on Twitter. While digital networks have been central agents of globalization and transnationalization and, therefore, assumed to be free from spatial barriers, our findings indicate that the Internet as a subject of governance is still organized within the bounds of national actors and political ideologies.

Some limitations of the study should be noted. First, the study included only English-language news stories, and therefore, excluded interpretations of net neutrality coming from non-English sources. Second, the time frame of our analysis was slightly less than three weeks, meaning that it is difficult to generalize our findings to the extended debate on net neutrality. Given the rapid developments in net neutrality, it may be a worthwhile future endeavor to examine the consistency of the findings across time. Finally, among a range of online media outlets including blogs and individual websites, we limited our analysis to Twitter. Such limitations aside, this study revealed insights regarding who is represented and whose voice is heard in relation to net neutrality in an online news broadcast outlet. Future studies will need to investigate whether, and if so, to what extent, resource-poor stakeholders who have traditionally been less visible in the mainstream media are able to contribute to the policy decision-making process. But for now, we are left with greater confidence that resource-poor stakeholder groups both actively use and are better represented in online news broadcast outlets like Twitter. And for pro-net neutrality advocacy groups, our findings serve to further justify why preserving net neutrality is so important a cause.

References

- Ausserhofer, J., & Maireder, A. (2013). National politics on twitter: Structures and topics of a networked public sphere. *Information, Communication & Society, 16*(3), 291–314.
- Bastos, M. T., Raimundo, R. L. G., & Travitzki, R. (2013). Gatekeeping Twitter: Message diffusion in political hashtags. *Media, Culture & Society, 35*(2), 260–270.
- Bauer, J. M., & Obar, J. A. (2014). Reconciling political and economic goals in the net neutrality debate. *The Information Society, 30*(1), 1–19.
- Benkler, Y. (2006). *The wealth of networks: How social production transforms markets and freedom*. New Haven, CT: Yale University Press.
- Berkowitz, D., & Adams, D. B. (1990). Information subsidy and agenda-building in local television news. *Journalism & Mass Communication Quarterly, 67*(4), 723–731.
- Brock, A. (2012). From the blackhand side: Twitter as a cultural conversation. *Journal of Broadcasting & Electronic Media, 56*(4), 529–549.
- Bruns, A., & Burgess, J. E. (2011). The use of Twitter hashtags in the formation of ad hoc publics. In *6th European Consortium for Political Research General Conference, August 25–27, 2011, University of Iceland, Reykjavik*.
- Bruns, A., & Yuxian, E. L. (2012). Tools and methods for capturing Twitter data during natural disasters. *First Monday, 17*(4). Retrieved from <http://firstmonday.org/ojs/index.php/fm/article/viewArticle/3937/3193>

- Chaudhry, I. (2014). Arab Revolutions: Breaking fear| #hashtags for change: Can Twitter generate social progress in Saudi Arabia? *International Journal of Communication*, 8, 943–961.
- Chini, I. (2008). ICT policy as a governance domain: The case of Greece and the European Commission. In C. Avgerou, M. L. Smith, & P. van der Besselaar (Eds.), *Social dimensions of information and communication technology policy: Proceedings of the Eighth International Conference on Human Choice and Computers (HCC8), IFIP TC9*, Pretoria, South Africa, September 25–26, 2008, (pp. 45–62). New York, NY: Springer.
- Christensen, C. (2013). Wave-riding and hashtag-jumping: Twitter, minority 'third parties' and the 2012 US elections. *Information, Communication & Society*, 16(5), 646–666.
- Coddington, M., & Holton, A. E. (2014). When the gates swing open: Examining network gatekeeping in a social media setting. *Mass Communication and Society*, 17(2), 236–257.
- Copps, M. J. (2014). From the desk of a former FCC Commissioner: Journalists need to generate a national discussion on the future of the Internet. *Columbia Journalism Review*. Retrieved from http://www.cjr.org/essay/from_the_desk_of_a_former_fcc.php
- Crawford, S. P. (2013). *Captive audience: The telecom industry and monopoly power in the new gilded age*. New Haven, CT: Yale University Press.
- Cruz, T. (2014, November 13). Ted Cruz: Regulating the Internet threatens entrepreneurial freedom. *The Washington Post*. Retrieved from http://www.washingtonpost.com/opinions/ted-cruz-regulating-the-internet-threatens-entrepreneurial-freedom/2014/11/13/a0a852e6-6aaf-11e4-a31c-77759fc1eacc_story.html
- Davis, A. (2002). *Public relations democracy: Public relations, politics, and the mass media in Britain*. Manchester, UK: Manchester University Press.
- Davis, A. (2010). New media and fat democracy: The paradox of online participation. *New Media & Society*, 12(5), 745–761.
- Ettema, J. S. (2009). New media and new mechanisms of public accountability. *Journalism*, 10(3), 319–321.
- EU Parliament. (2014). Ensure open access for Internet service suppliers and ban roaming fees, say MEPs. Press Release. Retrieved from <http://www.europarl.europa.eu/news/en/news-room/content/20140331IPR41232/html/Ensure-open-access-for-internet-service-suppliers-and-ban-roaming-fees-say-MEPs>

- Faulhaber, G. R. (2007). Network neutrality: The debate evolves [Special section on net neutrality]. *International Journal of Communication, 1*, 680–700.
- Federal Communications Commission. (2005). Madison River Communications, LLC and affiliated companies. Consent Decree. (Record 20: 4296–4299). Retrieved from https://apps.fcc.gov/edocs_public/attachmatch/DA-05-543A2.pdf
- Gandy, O. H. (1982). *Beyond agenda setting: Information subsidies and public policy*. Norwood, NJ: Ablex.
- Geer, D. (2010). Vulnerable compliance. *login: , 35*(6), 26–30.
- Golbeck, J., Grimes, J. M., & Rogers, A. (2010). Twitter use by the US Congress. *Journal of the American Society for Information Science and Technology, 61*(8), 1612–1621.
- Hart, J. A. (2011). The net neutrality debate in the United States. *Journal of Information Technology & Politics, 8*(4), 418–443.
- Herman, B. D. (2012). Taking the copyright online: Comparing the copyright debate in congressional hearings, in newspapers, and on the Web. *Journal of Computer-Mediated Communication, 17*(3), 354–368.
- Herman, B. D., & Kim, M. (2014). The Internet defends itself: The network neutrality debate on the Web. *The Information Society, 30*(1), 31–44.
- Hermida, A. (2010). Twittering the news: The emergence of ambient journalism. *Journalism Practice, 4*(3), 297–308.
- Holmes, D. (2014, February 24). Video killed the bootstrapper: Why the Netflix-Comcast deal is bad for entrepreneurs. *PandoDaily*. Retrieved from <http://pando.com/2014/02/24/video-killed-the-bootstrapper-why-the-netflix-comcast-deal-is-bad-for-entrepreneurs/>
- Kim, M., Chung, C. J., & Kim, J. H. (2011). Who shapes network neutrality policy debate? An examination of information subsidizers in the mainstream media and at Congressional and FCC hearings. *Telecommunications Policy, 35*(4), 314–324.
- Kiousis, S., Kim, S. Y., McDevitt, M., & Ostrowski, A. (2009). Competing for attention: Information subsidy influence in agenda building during election campaigns. *Journalism & Mass Communication Quarterly, 86*(3), 545–562.
- Kiousis, S., Park, J. M., Kim, J. Y., & Go, E. (2013). Exploring the role of agenda-building efforts in media coverage and policymaking activity of healthcare reform. *Journalism & Mass Communication Quarterly, 90*(4), 652–672.

- Krämer, J., Wiewiorra, L., & Weinhardt, C. (2013). Net neutrality: A progress report. *Telecommunications Policy, 37*(9), 794–813.
- Kwon, K. H., Oh, O., Agrawal, M., & Rao, H. R. (2012). Audience gatekeeping in the Twitter service: An investigation of tweets about the 2009 Gaza conflict, *AIS Transactions on Human-Computer Interaction, 4*(4), 212–229.
- Larsson, A. O., & Moe, H. (2012). Studying political microblogging: Twitter users in the 2010 Swedish election campaign. *New Media & Society, 14*(5), 729–747.
- Lovejoy, K., Waters, R. D., & Saxton, G. D. (2012). Engaging stakeholders through Twitter: How nonprofit organizations are getting more out of 140 characters or less. *Public Relations Review, 38*(2), 313–318.
- Ly, A., MacDonald, B., & Toze, S. (2012). Understanding the net neutrality debate: Listening to stakeholders. *First Monday, 17*(5). doi:10.5210/fm.v17i5.3857
- Manjoo, F. (2014, November 11). In net neutrality push, Internet giants on the sidelines. *The New York Times*. Retrieved from http://www.nytimes.com/2014/11/13/technology/in-net-neutrality-debate-tech-giants-on-the-sidelines.html?_r=0
- McCauley, G. (2014, February 25). Wednesday, February 26th: Blogging while Brown talks net neutrality. *Blogging While Brown*. Retrieved from <http://bloggingwhilebrown.com/blog/2014/2/25/wednesday-february-26th-blogging-while-brown-talks-net-neutrality>
- McDonald, S. N. (2014, January 20). Black Twitter: A virtual community read to hashtag out a response to cultural issues. *The Washington Post*. Retrieved from http://www.washingtonpost.com/lifestyle/style/black-twitter-a-virtual-community-ready-to-hashtag-out-a-response-to-cultural-issues/2014/01/20/41ddacf6-7ec5-11e3-9556-4a4bf7bcbd84_story.html
- Meraz, S. (2008). The blogosphere's gender gap: Differences in visibility, popularity, and authority. In P. Poindexter (Ed.), *Women, men, and news* (pp. 142–167). New York, NY: Routledge.
- Meraz, S., & Papacharissi, Z. (2013). Networked gatekeeping and networked framing on# Egypt. *The International Journal of Press/Politics, 18*(2), 138–166.
- Merry, M. K. (2014). Broadcast Versus Interaction: Environmental Groups' Use of Twitter. *Journal of Information Technology & Politics, 11*(3), 329–344.
- Moe, H. (2010). Mapping the Norwegian blogosphere: Methodological challenges in internationalizing Internet research. *Social Science Computer Review, 29*(3), 313–326.

- Mohammed, A. & Goo, S. K. (2006, June 7). Google is a tourist in D.C., Brin finds. *The Washington Post*. Retrieved from <http://www.washingtonpost.com/wpdyn/content/article/2006/06/06/AR2006060601723.html>
- Morozov, E. (2009). Iran: Downside to the "Twitter revolution." *Dissent*, 56(4), 10–14.
- Morris, S. (2014, March 21). Netflix takes on Comcast: Here is why you should worry. *Slate*. Retrieved from http://www.slate.com/blogs/future_tense/2014/03/21/reed_hastings_takes_on_comcast_other_ips_you_should_side_with_netflix.html
- Mueller, M., & Lentz, B. (2004). Revitalizing communication and information policy research. *The Information Society*, 20(3), 155–157.
- Napoli, P. M. (2007). Public interest media activism and advocacy as a social movement: A review of the literature. *McGannon Center Working Paper Series*. Paper 21. Retrieved from http://fordham.bepress.com/mcgannon_working_papers/21
- Noam, E. (2006, August 29). A third way for Net neutrality. *Financial Times*. Retrieved from <http://www.ft.com/cms/s/2/acf14410-3776-11db-bc01-0000779e2340.html#axzz3Hyr0IRpC>
- Neuendorf, K. A. (2002). *The content analysis guidebook*. Thousand Oaks, CA: SAGE Publications.
- Papacharissi, Z. (2002). The virtual sphere: The Internet as a public sphere. *New Media & Society*, 4(1), 9–27.
- Papacharissi, Z., & de Fatima Oliveira, M. (2012). Affective news and networked publics: The rhythms of news storytelling on #Egypt. *Journal of Communication*, 62(2), 266–282.
- Peck, E. (2014, September 11). Why Netflix looks different today: It's fighting for net neutrality. *The Huffington Post*. Retrieved from http://www.huffingtonpost.com/2014/09/10/internet-slowdown-day_n_5797966.html
- Poell, T., & Borra, E. (2012). Twitter, YouTube, and Flickr as platforms of alternative journalism: The social media account of the 2010 Toronto G20 protests. *Journalism*, 13(6), 695–713.
- Postel, J. (1981). *Transmission control protocol: DARPA Internet program protocol specification*. Retrieved from <http://tools.ietf.org/html/rfc793>
- Schoon, R. (2014, February 21). Is net neutrality's death responsible for slowing Netflix streaming? *Latin Post*, Retrieved from <http://www.latinpost.com/articles/7719/20140221/netflix-slow-buffering->

- house-of-cards-is-net-neutralitys-death-responsible-for-slownetflix-streaming.htm#disqus_thread
- Shirky, C. (2008). *Here comes everybody: The power of organizing without organizations*. New York, NY: Penguin Press.
- Shoemaker, P. J., & Vos, T. (2009). *Gatekeeping theory*. New York, NY: Routledge.
- Small, T. A. (2011). What the hashtag?: A content analysis of Canadian politics on Twitter. *Information, Communication & Society, 14*(6), 872–895.
- Sweetser, K. D., & Brown, C. W. (2008). Information subsidies and agenda-building during the Israel–Lebanon crisis. *Public Relations Review, 34*(4), 359–366.
- Tanner, A. H. (2004). Agenda building, source selection, and health news at local television stations: A nationwide survey of local television health reporters. *Science Communication, 25*(4), 350–363.
- Taylor, M. (2000). Media relations in Bosnia: A role for public relations in building civil society. *Public Relations Review, 26*(1), 1–14.
- Tumasjan, A., Sprenger, T. O., Sandner, P. G., & Welpe I. M. (2010). *Predicting elections with Twitter: What 140 characters reveal about political sentiment*. Paper presented at the Fourth International AAAI Conference on Weblogs and Social Media, May 23–26, 2010. Washington, DC: George Washington University.
- Turk, J. V. (1986). Public relations' influence on the news. *Newspaper Research Journal, 7*, 15–27.
- Turk, J. V., & Franklin, B. (1988). Information subsidies: Agenda-setting traditions. *Public Relations Review, 13*(4), 29–41.
- Verizon v. FCC*, 740 F. 3d 623 (D.C. Cir. 2014).
- Walters, T. N., Walters, L. M., & Starr, D. P. (1995). After the Highwayman: Syntax and successful placement of press releases in newspapers. *Public Relations Review, 20*(4), 345–356.
- Wigley, S., & Fontenot, M. (2010). Crisis managers losing control of the message: A pilot study of the Virginia Tech shooting. *Public Relations Review, 36*(2), 187–189.
- Williams, S. (2015). Digital defense: Black feminists resist violence with hashtag activism. *Feminist Media Studies, 15*(2), 341–344.