

**PRIVILEGE AS A FUNCTION OF PROFIT: NETWORK  
NEUTRALITY AND THE DIGITAL PUBLIC SPHERE**

A Senior Scholars Thesis

by

BRANDON MATS WARDLAW

Submitted to the Office of Undergraduate Research  
Texas A&M University  
in partial fulfillment of the requirements for the designation as

UNDERGRADUATE RESEARCH SCHOLAR

April 2011

Major: Political Science

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Approved by:

Research Advisor:  
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## ABSTRACT

Privilege as a Function of Profit: Network Neutrality and the Digital Public Sphere.  
(April 2011)

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This paper seeks to evaluate the role that Network Neutrality policies play in terms of access to knowledge in the public sphere, as well as the role that approaches to distributive justice might play in offering justification for pro-Network Neutrality viewpoints. I argue that information technologies provide a means for knowledge – which often acts as a commodity – to be selectively manipulated in ways previously unheard of, and that the widespread adoption of Internet-based technologies for social, educational, and political purposes creates a dangerous juxtaposition of commercial interests against those of the public. I posit that an approach to Network Neutrality whereby the Internet Service Provider acts as a neutral fiduciary in the transport of information provides an effective means to balance commercial against public interests. I analyze public interests in terms of the Capabilities Approach to distributive justice, as it best encompasses the wide variety of purposes for which the Internet is often used in both public and private life.

## **DEDICATION**

This thesis is dedicated to my parents, Cindi and Greg Wardlaw, as well as my grandmother, Elaine Mats, as thanks for their unceasing support of my studies and ambitions.

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## NOMENCLATURE

IP	Internet Protocol
ISP	Internet Service Provider
κ	Knol
VoIP	Voice over IP

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## CHAPTER I

### INTRODUCTION AND BACKGROUND

If there is a universally indisputable theme to be found in the recent history of developed and developing societies, perhaps it is the display of increasing degrees of interdependence between two of humanity's greatest enterprises: technology and politics. Technology has always been a crucial asset to the political endeavors of states and their elites; history seems to smile favorably upon those civilizations prescient enough to realize<sup>1</sup> the advantages of technological innovation. On occasion, innovations that result in radical social change emerge, perhaps altering the manner in which societies approach endeavors in transportation, production, or communication. After new technologies twist their way into the very fibers of public and private domains, the manner in which these technologies are developed, distributed, and regulated can have a significant impact on the socioeconomic success of institutions and individuals.

This paper focuses upon a development in the manner by which information comes to be distributed across broad geographic and social domains. The most well known example of this sort of development within western history would likely be the introduction of Gutenberg's movable-type press system – which is often credited with turning the structure of western civilization on its head. During the late 1960's, a technological innovation with equal – or perhaps even greater – potential for democratization was

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<sup>1</sup>This thesis follows the style of *Perspectives on Politics*.

developed at the behest of the United States Department of Defense's research and development branch, ARPA<sup>2</sup>.

The project – ARPANET – was the world's first implementation of a “packet-switching”<sup>3</sup> network. This allowed data contained in “packets” to be routed through a series of inter-connected computers, and the packets could be directed from one computer to another without the establishment of a direct circuit. It is this technology that gave birth to the Internet as we know it today: a vast web of billions of inter-connected devices spanning the globe. Just as the Republic of Letters gave way to more popular mass consumption of printed materials, the Internet sprouted from an obscure and specialized communications technology, and has thrust its roots into the institutions and societies worldwide. The proliferation of the Internet and widespread adoption of the World Wide Web has led to a revolution in how information is transferred and shared among citizens, corporations, and governments. The Internet has pervasive influence in nearly every element of public life - social interactions, media exposure, education, and political activity happen “online” with ever-increasing frequency.

Presently, the Internet is something of a free-for all; for the vast majority of Internet users, very few, if any restrictions exist that prohibit utilization<sup>4</sup> of the entirety of the offerings available on the Internet. However, many telecommunications companies within the United States are engaged in a perpetual struggle to keep up with increasing amounts of traffic, and have proposed to begin charging variable prices based upon the

nature and type of content being accessed by consumers. The intent is twofold: to limit consumption of resources by consumers, and to monetize certain types of Internet content or services the Internet Service Provider (ISP) deems to be “premium” content (and thus, more profitable content). This two-tiered (or more) approach to the provision of Internet services has resulted in a great deal of outraged rabble-rousing by Internet advocacy groups and “tech guru” personalities. These opponents of tiered access-schemes promote the concept of “Network Neutrality” - the proposition that all traffic carried by ISPs ought to be treated neutrally. The imposition of Network Neutrality policies can ensure that consumers are being billed for the quality and capacity of Internet service they receive, rather than being charged for the nature of content they wish to access. In this manner, tension between the citizen’s information interests and their economic interests is reduced.

The ability for ISPs to offer tiered-access plans has obvious consequences for political behavior: any political activities conducted online, and the ability to access relevant information distributed online, could be severely curtailed in the interest of profit. This paper seeks to determine a means to weigh each side of the Network Neutrality debate in a way that focuses primarily upon the interests of those affected by changes in ISP policies. First and foremost, I evaluate the interests of the individual citizen that are at stake: the abilities to access and distribute certain forms and categories of knowledge. Where the interests of citizens and institutions conflict, I will tend to favor the citizens. I do not have an anti-establishment agenda; rather I feel (for reasons detailed later in this

paper) the fact that a Network Neutrality debate *even exists* is indicative of the widespread (a) ignorance concerning the implementation, use and logistics of Internet service, and (b) a general trend towards a loss of agency (or at least, the loss of means to effectively utilize basic human capabilities enhanced by technology) on the part of the average citizen. I chose to focus on the individual citizen's interests and perspectives, because of all players involved with the Network Neutrality debate, it is the average citizen who stands to gain or lose the most. They are also the least powerful of any party involved: unlike many instances where the business-customer relationship is self-regulated by the free market, most areas of the country have a local monopoly or duopoly offering television and telecommunications services. This severely limits the ability for consumers to "vote with their dollars", or otherwise choose alternative solutions to maintain the status quo for Internet access. The quantity of available ISPs appears to be a function of how rural an area happens to be: though more metropolitan citizens might have the benefit of choice between several ISPs, a significant portion of Americans – even those in suburbs – only have one or two choices at best.<sup>5</sup>

For many scholars, the Internet appears to be something of a black box: while the uses and effects of this black box hold interest, the box itself is largely ignored and taken for granted. I maintain that the only adequate approach to researching issues concerning the Internet is to transmogrify the black box into a box of glass, for the inner workings of the Internet provide revelations of theoretical importance. We ought to evaluate Internet technologies in terms of what they actually do – both at a raw, mechanical level, and in

terms of what these technologies do for the public. Thus I am concerned with how one might approach the Network Neutrality issue with the idea of justice in mind, given that it appears to be at stake: the Internet has revolutionized the exchange of knowledge among individuals and groups, and certain industry players have presented proposals to curtail that exchange of knowledge. *Prima facie*, the transformation of a self-regulating, open discursive environment into a corporate technocracy - where the privilege to access certain forms of knowledge is determined by motives of profitability - ought to deeply trouble liberals.

## CHAPTER II

### THE STATE OF NETWORK NEUTRALITY

For those living within free, liberal societies, there exists a nearly limitless freedom to acquire and share information on the Internet. With exceptions for illegal content, most western governments have taken a primarily hands-off approach to the way in which information is distributed on the Internet.<sup>6</sup> This sort of freedom is embodied in an approach to Internet policy dubbed “Network Neutrality” - the idea that all data ought to be treated equally, and flow freely from one party to another within the limits of the law. According to the principle of Network Neutrality, ISPs ought not assess fees for access to particular web sites or Internet services based on the nature of their content<sup>7</sup> (essentially creating a condition of artificial scarcity), but should only charge for the consumer’s raw data usage.<sup>8</sup>

The Network Neutrality debate has been most virulent in the United States. The current presidential administration has at least signaled its recognition of the importance of open, available Internet access: for example, President Obama appointed Julius Genachowski – an open proponent of Network Neutrality – to head the FCC.<sup>9</sup> Additionally, Congress made \$4 billion dollars available through stimulus packages for the purpose of expanding the accessibility of high-speed broadband Internet connections throughout the United States. These \$4 billion dollars are tied to strict Network Neutrality rules.<sup>10</sup> Regardless, some politicians (and telecom industry lobbyists) have

defended the stance that businesses reserve the right to ration their services in any way they see fit, and that the marketplace ought to determine how “open” the Internet may be. A recent high-profile example of this argument being made by public figures in the US was in September 2009. Senator Kay Bailey Hutchinson (R-TX) led five other Republican senators on the Senate Commerce, Science, and Technology committee in an attempt to block Network Neutrality from being stipulated in the allocation or use of any stimulus funding.<sup>11</sup> Though the attempt was ultimately unsuccessful, the issue has continued to be a point of contention in congress (with various pro- or anti-Network Neutrality bills being introduced, though none ultimately successful as of yet), as well as in ongoing FCC hearings.

As of December 2010, the FCC adopted what some commentators have dubbed “Network Neutrality Light” - regulatory standards that prohibit last-mile<sup>12</sup> ISPs from blocking access to content (such as that provided by competitors, or that which consumes a large amount of bandwidth<sup>13</sup>), but allow ISPs to offer so-called “Managed Services”<sup>14</sup> over their last-mile infrastructure. ISPs are allowed to prioritize certain forms of traffic, so long as their prioritization is “reasonable”.<sup>15</sup> Additionally, wireless Internet service providers are exempt from these rules for the present time, given that wireless ISPs (WISPs) are facing urgent congestion issues that threaten the reliability of cellular phone services.<sup>16</sup>

## CHAPTER III

### DIGITAL CITIZENSHIP AND POLITICAL PARTICIPATION

For individuals in the developed world, it is impossible to deny the ubiquitous presence of the Internet: a web address can be found adorning nearly any object of interest; Internet-based media are steadily eroding traditional media's market share; Internet-enabled "smart phones" are altering the way we communicate. These developments have allowed the Internet to serve as the backdrop for a radical reformulation of the possibilities for education and interaction, and transformed the manner in which candidates, politicians, and government agencies reach out to citizens. For instance: Presidential candidates Howard Dean, Ron Paul, and Barack Obama are noted in popular media for their innovative use of the web for fund-raising and publicity. Social media networks such as Facebook, Twitter, and YouTube have emerged as legitimate avenues for politicians and government agencies to directly engage citizens.<sup>17</sup> One particularly interesting agenda promoted by the Obama administration has been to promote the publication of easy-to-access information from government agencies on government websites.

Likewise, the recent uprisings against governments in the Middle East have ostensibly relied upon Internet technologies (in combination with SMS messaging<sup>18</sup>) to coordinate protest activity, as well as to circumvent control of information distribution by state media.<sup>19</sup> In response to these activities, various Western activist groups worked to



facilitate protestors by providing protestors information, instructions and avenues to circumvent state shutdowns of ISPs<sup>20</sup>; others have used the opportunity to promote encryption and anonymization technologies that aid in circumventing stringent government censorship.<sup>21</sup>

Provided one has access to an Internet connection, it appears that the barriers to participation in the public sphere are lower than ever before. Access to information is far more efficient, the ability for politicians to directly engage certain interests enhanced, and the possibilities for taking active roles in politics – particular by various forms of speech – are more numerous than ever before. For those who value free exchange of information and democratic governance, the Internet presents itself as a valuable tool to cultivate a well-informed, engaged body politic.

The increasing social relevancy of the Internet is reflected in metrics regarding Internet usage. Real-time entertainment – better understood as streaming media, or the equivalent of on-demand broadcast TV distributed over the Internet – plays an increasingly important role in the lives of American citizens. According to data collected by Sandvine - an international firm specializing in broadband Internet optimization and traffic analysis – up to 43 percent of all Internet traffic within the United States is composed of real-time entertainment traffic. 20 percent of that traffic can be attributed to a single source – Netflix. What is particularly shocking is that the traffic at hand is the product of activity by only 1.8% of the service's current subscribers. The amount of traffic

produced by Netflix will only grow as consumers become more attuned to the digital content distribution model. The approximately 3 million users of Netflix's streaming entertainment offerings watch a total of over 5 million movies and television shows per week. This on-demand, quasi-interactive form of accessing media is poised to replace traditional television – which has been the primary source of media for citizens within the United States for over 50 years. Whether or not the content being distributed is of direct political import, mass media is understood to be an essential component in political socialization. The media – including entertainment-oriented media - serve to inform the political opinions of the public in a rudimentary sense (at the very least).

Given that in a little over a decade since its widespread consumer debut the Internet has come to color nearly every aspect of modern life, it seems easy to assume that the Internet must play an important role in public life. Yet there is a great deal of dispute amongst scholars as to exactly how valuable the Internet is, or if it can even be said to serve as an extension of the public sphere. There are certainly a great number of technical minutiae that govern the Internet which have no parallel in traditional understandings of the public sphere, and the opaque nature of infrastructures that govern interactions on the Internet (search engine software, for example) seem to cast such dark shadows on key areas of the Internet's topography that it can be difficult to pass judgment about how "open" the Internet actually is. There is also the added difficulty of classifying and determining how to interpret interactions on the Internet.

A great deal of older literature and media concerning the Internet reveals a “pervasive *weltanschauung*”<sup>22</sup> that Paulina Borsook calls “technoliberalism” – an agglomeration of laissez-faire economics, Social Darwinism, and anarcho-capitalism.<sup>23</sup> Felicia Song notes that the “revolutionary spirit of technoliberalism was best captured in early visions of cybercities and virtual reality, where cyberspace would become a wholly alternative realm in which individuals interact and live”.<sup>24</sup> Perhaps these dreams of an alternate, digital reality are simply yet to be realized – but the likelier conclusion that we may draw is that these visions are closer to science fiction than reality. Thomas Streeter explains:

Some of what has happened to our cultural landscape, particularly when it concerns networking, can be seen by contrasting Gore’s phrase “information superhighway” with the word “cyberspace”. “Information superhighway” sounds clean, obedient, and orderly; it sounds a bit like a vision of the future from 1950s futurology, those pamphlets that many of us remember from our childhoods: pictures of smiling, clean, deliriously happy families out for Sunday drives in their flying cars. The connotations of “cyberspace,” in contrast, are darker, less regimented, more thrilling, particularly if one recognizes the term in the ur-cyberpunk novel, *Neuromancer*. Significantly, the word cyberspace has outlived information superhighway in popular usage.<sup>25</sup>

Streeter claims that this proclivity towards treating the Internet as a sort of other-space (that is – *other* than the physical space we persons inhabit) has much to do with the

heavy countercultural background associated with founding figures in the Information Technology (IT) sector, and a desire for a “space” for IT intelligentsia to call their own.

But is it actually useful to consider the Internet to be a separate “place” – which carries the associated implications of property, spatial relation, etc.? As John Perry Barlow<sup>26</sup> explains to those having trouble wrapping their head around the concept,

If you’re having trouble with the concept [of cyberspace], ask yourself where phone conversation takes place. That’s right. Cyberspace is where you are when you’re on the phone.

I feel this explanation does a good job exhibiting the confusing nature of indirect discourse; we can all agree that discourse can occur, whether it happens via letter, phone, or e-mail. But the actual *discourse* takes place in a sort of ether that transcends the physical. The actual acts of receiving and understanding information, or constructing a response take place independent of the medium of information transport.

Short of the development of genuine virtual-reality interaction (à la TRON), the notion of “cyberspace” is something of a misnomer. It describes a space that isn’t. It is an attempt to come to terms with the intangible nature of human cognition. Cyberspace is but a convenient illusion: a canvas tossed over mounds of raw information, colored with familiar pictures and concepts loaned from the world into which humans may actually gaze.

Much like cyberspace, the “public sphere” is a similarly abstract concept. To borrow from Barlow’s explanation of cyberspace, we could perhaps say that the public sphere is where “political discourse happens”. Political discourse is facilitated by any number of methods of information transport, but ultimately occurs in a cognitive medium that is beyond physical constraint; we cannot watch, hear, nor feel the process of a subject coming to understand, judge, and develop a response (if any) to politically-relevant information offered by another subject. I argue that differentiates the “digital public sphere” (as opposed to the unqualified “public sphere”) is the manner in which raw information is transported.

By segregating the transportation of information utilized in discourse from the cognitive acts of participation in discourse in this manner, we avoid falling into one of the most common traps in addressing the Internet – treating the Internet as some sort of alternate-reality. Just as one doesn’t imagine being immersed in some alternate-reality world-of-paper when reading The New York Times, it makes little sense to treat the Internet as some kind of an electronic fantasy world. In fact, I argue that it is harmful: thinking of and treating the Internet as if it is a blank-slate, pseudo-anarchic world for humans to shape as they wish ignores the fact that the Internet, as a communications technology that serves *real interests* in the *real world*<sup>27</sup>, can (and does) seriously impact the welfare of *real people*. This is why I feel my project is politically relevant: it is aimed at addressing real impacts of information inequality that can be perpetuated by unregulated control of communications technology.

Though this paper presents a question that is political in nature, I seek to focus beyond the scope of political activity. There are, of course, individual circumstances where the Internet plays an obviously important role – fundraising for the Dean, Obama and Paul presidential campaigns; the ousting of Trent Lott after scandal uncovered by bloggers; circumventing censorship under authoritarian regimes; – in aggregate, it is quite difficult to say how important the Internet is actually is for politics. Many studies conclude that Internet use has little or negligible effect on political engagement, while others conclude that the Internet will lead to increased political engagement – little consensus appears to have been reached<sup>28</sup>; some conclude that the Internet’s social norms prohibit the interpersonal intimacy necessary to represent a public sphere, that the apparent discursiveness fostered by the Internet is an illusion, and that the range of Internet users represents too narrow a set of demographics.<sup>29</sup> However, I assert that even if the Internet might be deemed relatively unimportant in terms of its causative effects on political behavior, its importance as a medium of information transmission holds a uniquely privileged role in providing access to information that affects various judgments and capabilities across broad sociopolitical contexts.

## CHAPTER IV

### PROVISIONAL KNOWLEDGE AS COMMODITY

Though this paper utilizes Network Neutrality as a central issue of interest, a more important issue lurks behind the scenes. The information protected by Network Neutrality policies – whether politically salient or not – has an impact on the deliberative capacities of subjects. That is: the most important commodity being addressed by Network Neutrality policies is *not* bandwidth or connection speed – it is *raw information*, which is a prerequisite for any degree of knowledge; one cannot be said to *know* that proposition *p* without exposure to *p* in the first place. Ergo, the ability for a subject to utilize knowledge<sup>30</sup> seems to be a fundamental prerequisite for political participation. There are certainly grounds for a stronger claim that *all* freely willed acts require the subject to act according to knowledge, but the utilization of knowledge in a political manner will be sufficient for the purpose of my work.

Further, this paper departs from the textbook interpretation of knowledge – variants on *justified, true belief*. In particular, I accord very little import to the *truth* of propositions, for two reasons. Firstly, the development of a theory of knowledge capable of playing the role of ultimate arbiter over claims of truth concerning propositions is a dismal and likely futile task. It seems that any theory that bubbles to the forefront of academic literature in epistemology will ultimately be popped by the latest generation of the Gettier chimera. Then the cycle repeats. Whilst this vicious circle provides a wealth of

interesting, important philosophical work, the epistemologist's obsession with the truth of propositions creates a roadblock for the development of practical theory. Second, the actual truth-value of a proposition that a subject considers and acts upon is an irrelevant consideration for purposes of utilizing agency. Though in certain instances the truth of propositions inspiring free acts carries moral or legal import, it carries little to no import in the evaluating the causality of acts the subject partakes in. This is particularly true within the realm of politics: subjects can, do, and will initiate and partake in acts influenced in part or caused in whole by propositions that are objectively untrue.

An interlocutor might accuse me of bastardizing the concept of "knowledge", for this approach of knowledge I propose – whereby I strip truth values of their import – isn't actually addressing knowledge at all, but only *justified belief*, or perhaps just *belief*. I insist that this claim is irrelevant, because of a fundamental difference between the aim of my work and that of epistemologists. An epistemologist is concerned with the question of *what knowledge is*; my work is concerned with *how knowledge appears to function in decision-making*. For most practical decisions, the truth of a proposition is either a) entirely without weight, because the proposition is included in a subject's reasoning solely for the purpose of presenting a façade of logical consistency or validity, or b) only bears significance in that it is contextually relevant to the subject at hand (and perhaps those in similar situations).



In the first case, subjects are primarily focused on providing justification for conclusions or actions. The subject either takes the assumed truth-value of propositions integrated into their justification at face value, or otherwise lacks the means necessary to confirm or deny the truth-value of propositions. Given that the subject has more practical interests at hand than nitpicking the truth value of every portion of their reasoning, they are more apt to assume that propositions which conveniently fit into their reasons are true. Take the ubiquitous urban legend: “you only use 10% of your brain!” While this proposition is objectively false, it continues to live on and be utilized by the public.<sup>31</sup> Though the public might have some interest in the actual truth-value of this proposition, it is not an important factor in the spreading of this urban legend; the point of sharing this piece of information or making arguments with it functions as an absurd sort of entertainment – not to promote an objectively true proposition. Democracy fosters an environment wherein this sort of anti-intellectual discourse might thrive, leading Isaac Asimov to remark<sup>32</sup>, “Anti-intellectualism has been a constant thread winding its way through our political and cultural life, nurtured by the false notion that democracy means that *‘my ignorance is just as good as your knowledge.’*” Cynical as this might be, it expresses a great deal of truth about democratic societies; societies that fail to accommodate the judgments and acts of individuals rooted in ignorant<sup>33</sup> “facts” cannot, by most accounts, be called democratic. Though the so-called “miracle of aggregation” often serves to even out the impact of the application of objectively untrue facts in politics, they still remain an important part of political life.<sup>34</sup> A fundamental component of western democracy is plurality – and there is no litmus test for the objective sensibility of the propositions

upon which certain interests and political acts are founded. Even at the earliest stages of the implementation of liberal democracy, we see this recognition in the anti-populist musings of Madison in Federalist 10. Madison's cynicism towards the public at large leads him to conclude that, given the impossibility of controlling the ideas present within the citizen's mind, the best we can do is embrace a republic large enough (in terms of size and diversity of interest groups and ideas) to effectively mute the less-desirable<sup>35</sup> ideas and inclinations of the public. Whatever sort of "knowledge" citizens base their political opinions and behavior upon, liberal democracy seems bound to accommodate it; No matter if a citizen decides to cast a vote due to an understanding of economic policy learned at university, or because of the insane and unfounded rants of a conspiracy theorist, each has a right to air their opinion and act upon it.

I propose that as the "Information Age" continues to seep into every facet of modern being, knowledge increasingly resembles a sort of commodity, which is used to facilitate the development of political ideas and to justify political actions. This carries some degree of difficulty – how could something so abstract be thought of in terms of a commodity? My claim that a largely intangible concept can be treated as a commodity is not particularly unusual. Marxist thought requires the ability to consider labor – in itself an intangible object – and treat it as a commodity; Hayek references the behavior of knowledge as commodity in his works on economics; Utilitarians manage ethical propositions by weighing utiles; rational choice theory depends upon certain balances in knowledge to determine player strategies; etc. As early as 1945, F. A. Hayek was

considering the role that knowledge plays in the structure of “rational economic order”, and indicates

knowledge of the circumstances of which we must make use never exists in concentrated or integrated form, but solely as dispersed bits of incomplete and frequently contradictory knowledge which all the separate individuals possess.<sup>36</sup>

Hayek is particularly critical of his contemporaries’ readiness to discount the value of “the knowledge of the particular circumstances of time and place”, with which “every individual has some advantage over all others in that he possesses unique information of which beneficial use might be made.” Hayek claims that an obsession with “scientific” knowledge – that defined by ostensibly qualified experts and codified in authoritative tomes – causes many to overlook the practical significance of subjectively relevant types of knowledge (i.e., the factory worker who comes to know and work around the specific quirks of a particular machine, or the *arbitrageur*’s awareness of particular regional opportunities for profit). While recognizing the difficulty of translating these highly subjective instances of knowledge, Hayek indicates that hints about this relative sort of knowledge come to be known through the prices of products or commodities – based upon the pricing of particular objects, we can make limited assumptions about the efficiency of their production, the scarcity of the materials therein, etc.

Though Hayek is primarily concerned with the how one might come to view the role of knowledge for many individuals coordinating economic decisions in a marketplace, I believe he highlights an extremely important point: some facets of subjects’ knowledge

will inevitably come to be defined by their specific exposure to particular socioeconomic contexts, which ought not go unaccounted for in explanations of public life (whether those explanations be social, economic, political, or something else entirely.) I argue that a theoretical account of knowledge-as-commodity must offer a structure that accommodates judgments and experiences in such a manner that we have grounds to make normative valuations of subjectively-oriented forms of knowledge. This approach to knowledge seems particularly useful when considering my prior account of the Internet – a distribution network for information transmission overlaid upon existing social, political, and economic frameworks.

Of course, Hayek is neither the first nor last to publish thoughts upon the importance of context-specific, subjectively-determined forms of knowledge. In 1900/1901's *Logical Investigations*, Edmund Husserl attempts to tackle the issue of problems with correspondence-view approaches to epistemology, and lays the groundwork for a phenomenological method of epistemology that considers subjective *intentionality*<sup>37</sup> as a primary method of acquaintance with the external world. Much later, James Scott's 1998 book, *Seeing Like A State*, discusses the concept of *mētis* – a form of “localized” knowledge, which is juxtaposed against the “general, abstract knowledge deployed by the state and its technical agencies”.<sup>38</sup> Scott describes *mētis* as a form of knowledge often overlooked beyond local contexts. It is a sort of knowledge that is discovered in the process of task-specific labor, and often passed down as a sort of ‘trick of the trade’ – knowledge to be applied with useful practical results, but often with justifications that

provide little to no explanatory value when a task is approached from a scientific perspective.

However, one thing that appears to be missing from all the above-mentioned accounts of knowledge is a lack of a means to discuss knowledge as a commodity. That is – none of the accounts answer the question: “How can we make knowledge modular?”. Perhaps even more importantly – there remains the issue of how to create a modular concept of knowledge that remains sensitive to subjectively determined forms of knowledge - the type that no amount of positivist testing could account for, but every subject appears to utilize at some time or another? In order to address these two issues, I will borrow a term from a Google project<sup>39</sup> to develop this account of knowledge upon. The *knol* functions as a container for all knowledge about a particular subject, as well as the relationships the knol itself bears to other knols, and the relationships that the information contained within bears to information contained in other knols. In an abstract sense, a knol is a single unit – a single set - within which all propositions about a topic are contained, and relationally indexed.

For the purposes of demonstrating how the knol works, I will begin with the statement “Austin is the capital of Texas.” This proposition could be contained equally well within knols for the concepts “Austin, Texas” and “Texas”. Such a proposition can be combined with other propositions in a number of ways, often in ways that change the subjective relevancy of the proposition. For example, simply stating “Austin is the

capital of Texas” as a geographic descriptor carries little import for political reasoning.

However, consider a more complex statement that makes use of the proposition:

“Lobbyists are often found in Austin, because Austin is the capital of Texas”. This explanatory statement derives its meaning from implicitly understood relationships present within the concepts included in the statement. That is: we can break the objects of this statement down into individual knols, and establish the relationships between propositions included in the knols. I argue that it is the relations between propositions in a knol that facilitate the intelligibility of any statement. Ergo, there are knols for “Lobbyist”, “Austin”, “capital”, and “Texas”, and the relationships their respective propositions must necessarily be understood in order for the statement “Lobbyists are often found in Austin, because Austin is the capital of Texas”. I will even argue that the relationship between these knols requires the assistance of some knols that aren’t even in the statement itself: knols such as “legislature”, for instance. This statement represents a subjective understanding of American politics at several levels of analysis. An explanation of relationships between the knol-propositions here might look like as follows: Texas is a state within the United States, which entails that Texas has a representative democracy; representative democracies have some a basic structure that includes a legislative apparatus of some sort; the seat of government (hence the legislature) in Texas lies in Austin; lobbyists are known to associate with legislators for the purposes of promoting their respective agendas; the geographical position of the Texas legislature suggests that lobbyists would be in close proximity.

A formal definition for a Knol, then, would be:

- Any container  $\kappa$  that contains
  - o Any particular piece of information,  $x$
  - o Any subset of the set including all relational aspects of  $x$ ,  $\{x^{rn} \mid x^{r1}, x^{r2}, x^{r3}, \dots \}$

My purpose in utilizing the knol is as individual units of knowledge exchanged as a commodity, whereby the knol itself may function as a commodity, or subsets of propositions function as a commodity. I am not particularly concerned with the actual mapping of relations between propositions here - that is a process for semiologists and cognitive scientists to deal with – but rather that 1) these relationships between propositions exist; 2) understanding of these relationships is necessary for the intelligibility of statements. The goal here is to have something roughly resembling a knowledge-commodity that can be considered in terms of the impact it has on political possibilities for individual subjects due to regulation by public policy, market activity, or social barriers.

The perspective of knowledge I present allows for infinite variety in the knol. I argue that this is necessarily the case, because of the infinite variability in each particular subject's construction of knols. From the individual perspective, the knol must account for extreme differentiation in exposure to information and/or the relations between particular pieces of information. Additionally, the knol must be able to account for

variability in subjective judgments about information.<sup>40</sup> Aside from these requisite details, other container-constructs can add extra detail to the container that I present; other adequate knowledge-container models might already exist. For the purposes of my project, any container that can be transmitted and/or traded like a commodity, which carries a particular piece of information (and associated relationships) will suffice.

There is then the issue of how an abstract, non-finite object like a knol could be considered to be a “commodity”, given that information – particularly information transmitted digitally – is not scarce in any traditional sense. Unlike previous media formats, fully-digitized information exists without any fixed physical restraint on reproduction or transmission. Consider literature, where though the information in the body of the work is technically not a scarce resource, traditional distribution of the information required an appreciable investment in printing and distribution, and could not be easily duplicated. Hence, the actual containers for the information – books, magazines, CDs, and so forth - serve as a commodity in the traditional sense. Today, improvements in consumer technology and computer networking eliminate the production and distribution costs associated with dispersal of information<sup>41</sup>, as after the information is bound to a particular format<sup>42</sup>, the document lacks any inherent degree of scarcity: it may be copied an infinite number of times, and distributed to an infinite number of persons. Though Digital Rights Management (DRM) schemes are often instituted as an attempt to prohibit redistribution of digitized information, these schemes are 1.) not an inherent component of any computer system’s file storage/retrieval



systems, 2.) an artificial imposition of scarcity on a medium that is otherwise free from the constraints of scarceness, and 3.) proven to ultimately be an exercise in futility, as the technoliberal-minded<sup>43</sup> hacking community treats undermining (or “cracking”) DRM encryption technologies as a sport (at which they have proved to be remarkably proficient players).

Returning to Hayek, we can find justification for treating knowledge as a commodity – it has a strong impact on economic achievements and outcomes:

We need to remember only how much we have to learn in any occupation after we have completed our theoretical training, how big a part of our working life we spend learning particular jobs, and how valuable an asset in all walks of life is knowledge of people, of local conditions, and special circumstances. To know of and to put to use a machine not fully employed, or somebody’s skill which could be better utilized, or to be aware of a surplus stock which can be drawn upon during an interruption of supplies, is socially quite as useful as the knowledge of better alternative techniques. And the shippers who earn his living from using otherwise empty or half-filled journeys of tramp-steamers, or the estate agent whose whole knowledge is almost exclusively one of temporary opportunities, or the *arbitrageur* who gains from local differences of commodity prices, are all performing eminently useful functions based on special knowledge of circumstances of the fleeting moment not known to others.<sup>44</sup>

Though Hayek's concern with economic coordination narrows his work to focus on the role of price as a locus for the general signaling of information about quality, scarcity, desirability, etc., Hayek's thesis necessitates that an economy of knowledge – as hinted at in the selected passage above – underlays and compliments the process of obtaining, creating, and distributing goods. The cultivation, development, and sharing of knowledge appears to have an important role in maximizing one's efficiency in economic activities and decisions.

I argue that this underlying economy of knowledge extends far beyond the context of economic relations. Hayek's line of thinking easily extends to the efficacy of participation in social or political events or processes – the subject's development of social capital requires a particular sense of norms and traditions in her particular geographical and social context; the voter's understanding of political issues is mediated by personal experiences; processes and techniques utilized in a virtually infinite number of professional and organizational disciplines are supplemented by various forms of context specific information; all of the above generally requires affixing or linking subjective, provisional knowledge to some kind of a general-knowledge concept.

## CHAPTER V

### A CASE STUDY IN PROVISIONAL KNOWLEDGE

The knol concept delineated above was designed specifically to explain this relationship between general, foundational elements of knowledge, and the associated provisional knowledge that appears to be so important for public life. Let us say, then, that subjects A and B are residents of Houston, Texas, and hold a notion of Houston within their respective knol  $\kappa$ [Houston]. The subjects are presented with a proposition scheduled to appear on an upcoming ballot in Houston's municipal elections:

Relating to the Creation of a Dedicated Funding Source to Enhance, Improve and Renew Drainage Systems and Streets. Shall the City Charter of the City of Houston be amended to provide for the enhancement, improvement and ongoing renewal of Houston's drainage and streets by creating a Dedicated Pay-As-You-Go Fund for Drainage and Streets?<sup>45</sup>

Subject A, as a life-long Houston resident, is familiar with Houston's drainage woes. Subject A has personally experienced significant delays in transit time to work and leisure activities because of flooded streets, and being unable to attend work because her downtown parking garage has flooded is a seasonal annoyance. Though Subject A is generally perturbed by the idea of raising taxes, her personal history of frustration with metropolitan Houston's flooding problems leads her to vote in favor of the ballot proposal. In evaluating the ballot proposition, Subject A draws upon information and relationships contained in  $\kappa$ [Houston]<sup>A</sup> that justify her decision to vote in favor of the

proposition. Prompted with the idea of flood control issues in Houston triggers a series of unpleasant associations for Subject A – she enjoys living in Houston, but the flood-prone nature of Houston makes her cringe. Subject A is not a civil engineer; she has no understanding of the metrics associated with Houston’s inadequate drainage systems – and hence her judgment focuses primarily upon her subjective, all-too-common frustrations with flooding in the Houston area. That is – she cannot say in any positive sense that Houston has a flooding problem, but she *knows* (provisionally) that Houston has a flooding problem.

Subject B is a freshman at the University of Houston. He just moved to Houston<sup>46</sup> at the beginning of August – two months before the election - and registered to vote after being harassed by his Political Science professor. His notion of Houston, κ[Houston]<sup>B</sup>, is mostly empty. He knows of the local sports franchises; he recognizes the sky line; he’s familiar with the industries of the area; he has discovered the charms (or lack thereof) of the local establishments haunted by students. But he has no developed sense of what it means to live in Houston - he has yet to choke on the clouds of smog that mute the skyline on hot summer days; he has never watched in awe as nature exacts its fury by transforming Highway 59 into a river. When confronted with the ballot proposition, Subject B has very little to work with. He supposes that flooding is undesirable, and that it must be an issue if it is on the ballot – so he casts a vote in favor of the proposition, for no other reason than that he trusts that the proposition is on the ballot due to the concerns of more seasoned Houstonians.

The difference that subjective experience (stored as a provisional sort of knowledge) makes in these two examples is quite stark: one voter chooses to favor the ballot proposition because she *knows* Houston has a flooding problem that has been neglected for some time; the other voter might as well have been completely indifferent, because he has no relevant knowledge of Houston's climate and drainage issues.<sup>47</sup> The important distinction here is what when juxtaposed against more traditional epistemological approaches, the sort of "knowing" going on drops the truth-test for the propositions used in the subjects' decision-making. Subject A's example is particularly telling as to why dropping the truth-test is useful – no amount of contrary data or anecdotal testimony is going to discredit Subject A's subjective experiences with flooding in the city of Houston. For Subject A, the sum of her persistent frustrations is both a valid and important factor to consider when casting a ballot, despite that her considerations appear to lack any basis in what would traditionally be considered knowledge. In the case of Subject B, his lack of subjectively-relevant, provisional knowledge building-experiences is a significant factor in his relatively diffident approach to the ballot proposition.

Certainly, there are lots of questions that will probably arise about this method of thinking about politically-oriented decision-making, and this paper will probably leave most of them unanswered, for two reasons. First, I have yet to actually develop a fully articulated model of what "provisional knowledge" for politics actually looks like. Second, the main point of this paper is not to develop a theory of politically-oriented

epistemology. My arguments concerning epistemology are here only so far as they provide what I posit to be an effective means of evaluating the value of Network Neutrality policies according to various approaches to the question of justice.

## CHAPTER VI

### EXAMINING NETWORK NEUTRALITY IN TERMS OF JUSTICE

This paper is particularly concerned with the role that knowledge plays in terms of its impact on justice for the individual subject. I believe that this is the most appropriate approach for my analysis to take given the important role concepts of justice play in contemporary literature on Liberalism. Further, working with the concept of justice provides a great deal of room for assessing the particular needs of individual subjects and groups of subjects, hence facilitating the particular knowledge-needs of an array of dissimilar persons and groups.

Let us begin with the most obvious candidate for scholars to consider: the Rawlsian brand of justice. Though we can use Rawls's framework for justice to justify arranging or regulating institutions (such as ISPs) in a way that favors the least advantaged, I argue that Rawlsian justice fails to be the best looking glass for the Network Neutrality issue. The biggest failing of Rawlsian justice is that it fails to provide criteria for why we ought to value open access to knowledge. This failing is particularly evident when Rawls's justice is compared against that of the Capabilities Approach; the central capabilities provided by Nussbaum provide a comprehensive means to consider the explicit implications of unequal access to knowledge across many contexts.

Consider Internet service: though it is indisputably an important means by which knowledge is distributed, how could its availability be rationed by the difference principle? Identifying the key issue at hand is difficult given the vague notions of public life that are central to Rawls's thought experiment: is it the simple availability of Internet access, the quality of said means of access, or the amount of content available to the user when accessed? It is likely to be some combination of each of the aforementioned factors, but it is impossible to tell which is the most important without contextual knowledge about how and when citizens utilize the Internet. Further, even if one could arguably justify some form of Internet access as a basic feature of a Rawlsian society, its realization today would necessitate broad and costly infrastructure changes, yielding means to access the Internet that do not resemble the fragmented variety and quality for of means for access currently being utilized. Perhaps a re-structuring of the Internet's infrastructure is a palatable long-term solution, but in the short term – when politicians and bureaucrats are actively debating the merits of open access to the Internet – a system of justice that is explicitly sensitive to contextual benefits and pitfalls of Internet access seems preferable.



## **CHAPTER VII**

### **A “CAPABILITIES-APPROACH” DEFENSE OF NETWORK NEUTRALITY**

The fiduciary model I propose in the next section of this paper is intended to provide a strong mechanism to facilitate a Capabilities-Approach model for assessing the distribution of information on the Internet. Six of the ten “Central Human Capabilities” presented by Nussbaum seem to necessitate egalitarian access to knowledge in order to attain maximal development. These six Central Human Capabilities (henceforth referred to as CHCs) include:

- Senses, imagination, and thought
- Emotions
- Practical reason
- Affiliation
- Play
- Control over one’s environment

Though Network Neutrality bears little relation to the basic implementation of these various capacities, it would be myopic to claim that Network Neutrality bears no relation whatsoever. For many individuals, the Internet serves as the most convenient means to access to educational material, innovative communications technologies, and general interest entertainment media. As the social and commercial importance of commodities

exchanged on the Internet grows, the questions concerning justice that are at stake increase in significance.

### **Senses, imagination, and thought**

The impact of the Internet holds on the capacity to exercise the first capability (Senses, Imagination, and Thought<sup>48</sup>) is striking, even when considering the most casual approaches to education. Consider that the state of human knowledge - particularly concerning the sciences - hardly remains static for long; today's high school science curriculum has almost certainly undergone significant revision compared to the curriculum twenty years prior. For those citizens that wish to fill in the gaps between their formal education and the current state of scientific affairs, the Internet presents what is almost certainly the best and most efficient medium for preserving basic scientific literacy amongst the population. Further, scientific education is simply a convenient example; certainly, a plethora of freely accessible online resources concerning a multitude of academic subjects offer the citizen numerous opportunities to keep their body of knowledge up to date. To frame the issue in terms of the *knol*, as discussed earlier in this paper: a subject's *knol* for any given topic is time-sensitive, and the completeness and accuracy<sup>49</sup> of a subject's existing body of knowledge concerning a topic (represented by the *knol*) is a function of the subject's capability to access information (through projects like Wikipedia, the Stanford Encyclopedia of Philosophy, etc.) or experiences (through avenues to media exposure such as YouTube, Netflix, and the like) relevant to that particular body of knowledge. With regard to the capacity to

access information and experiences for the purposes of self-education, the advantages that Internet technologies offer when compared to traditional education and media sources are stark and numerous:

1. Barring exceptional cases, there are (within the status quo) few if any barriers to making content available to a global audience. There are no logistics issues as with print media; no network/syndication agreements or broadcast regulations as with broadcast media.
2. Unlike “traditional” media, production quality is not necessarily a function of the amount of capital invested in a project.
3. The Internet is an inherently interactive media form, and provides more opportunities for interactive learning compared to traditional media forms.
4. End-user (or consumer) cost barriers (in the status quo) are low compared to traditional media forms. This includes costs in the sense of monetary investment (juxtapose the limitless variety of information available on the Internet for a monthly fee versus the potential cost of traditional media materials covering a few topics), as well as costs to end-users in terms of the amount of effort expended (it is far easier to make a search query on the Internet for a topic of interest than to venture to a local bookseller, library, etc. for a book on the topic).
5. The Internet offers a uniquely convenient means to engage in self-education, even for those already matriculated in traditional learning environments. For some, the costs associated with additional classes or seminars concerning a particular topic cannot be justified by fleeting interest, or interest of a limited

temporal relevance to the subject. Others might desire a formal learning environment, but may be barred from completing coursework due to time or financial constraints. For these individuals, the Internet provides a means to effectively supplement traditional modes of education.

The Internet also offers the individual citizen ample avenues for participation in public activities – publishing, discourse, etc. – that concern religious or artistic preferences.

Many of the advantages discussed above apply in these cases, in ways that promote easier access to meaningful use of the *freedom of expression* Nussbaum references in her conception of Senses, Imagination, and Thought. An Internet without Network

Neutrality restrictions runs the risk of harming the advantages above:

1. Without Network Neutrality restrictions, local Internet service providers could enter into what amount to protection-agreements with media conglomerates. Local ISPs could curtail access to certain types of streaming media at the behest of traditional media interests. Hints of this type of behavior have already emerged in a recent spat between Level 3 (a “backbone” ISP)<sup>50</sup> and Comcast concerning fees for Netflix traffic passed on to Comcast’s customers. Comcast was in the process of rolling out a competing video-on-demand service at the time.<sup>51</sup>
2. ISPs could erect the virtual equivalent of toll booths, and levy tariffs on content providers before passing the data on to the consumer. They could also charge the consumer for the right to access certain types of content and/or interact with

certain content providers. They could do both. In any case, the ISP imposes artificial burdens on the consumption and/or sharing of information.

In the first case, Network Neutrality would prevent private firms from tampering with the original intent of the Internet – to be a global network for sharing information.

Without some degree of Network Neutrality policies, ISPs and their business partners could effectively take the Internet as it is known today hostage. In the latter case, given that the Internet is quickly becoming the single most important medium for participation in the public sphere, private regulation of the extent to which freedom of expression might be exercised seems completely antithetical to the Capabilities Approach.

### **Emotions**

Nussbaum claims that the Emotions component of the Capabilities Approach includes

Being able to have attachments to things and people outside ourselves; to love those who love and care for us, to grieve at their absence; in general, to love, to experience longing, gratitude, and justified anger. Not having one's emotional development blighted by fear or anxiety. (Supporting this capability means supporting forms of human association that can be shown to be crucial in their development.)

The Emotions capability is admittedly among the more difficult of capabilities to use as a justification for Network Neutrality, but I believe a case can be made. The Internet has led to a revolution in interpersonal communications: more and more individuals, particularly the young, utilize Internet technologies as a means of establishing and

maintaining bonds of friendship and familial association. Technologies such as instant messaging, e-mail, social networking sites, dating sites, social forums, and VoIP telephony have turned the communications industry on its head. The traditional telecom giants have been forced into a battle with cable television giants, and in many areas the local telecom monopoly is almost indistinguishable from the local cable monopoly, except by the type of wiring each uses. Each often offers television, Internet, and phone options, and most of these services run on the very same lines. At the same time, telecoms have also been forcefully weaned off one of their oldest and most reliable sources of revenue – long distance calling charges. Intense competition thanks to post-Regan de-regulation had already depressed long distance calling prices, which were further undercut by the development of VoIP telephony technology. This technology was heavily pushed by cable companies to boost revenue, and the utilization of Internet data routing to circumvent most (sometimes all) telephone lines allowed for unlimited calling nationwide (and sometimes worldwide) at local rates. Computer-based “soft-phone” VoIP applications – the most notable being Skype – have also played their part in cutting costs. Skype is wildly popular with those that wish to communicate via voice across national borders for free, and offers low-cost calling plans that undercut telecom offerings by several orders of magnitude. It also offers the extra perk of 2-way videoconference calling, utilizing now-ubiquitous webcam technology. Socially-speaking, the telephone may have shrunk the world, but Internet-based communications have made global communications so simple and affordable that the most pressing concern one might have when calling abroad is considering the time zones. This sort of

effortless, extremely affordable communication technology has served to foster meaningful emotional ties between persons across the globe.<sup>52</sup>

### **Practical reason**

The Practical Reason capability<sup>53</sup> is somewhat dependent upon the previous two components of the Capabilities Approach. Allowing the imposition of artificial barriers<sup>54</sup> on access to knowledge, or access to interactions with persons serves to effectively cut the legs from beneath any egalitarian account of Practical Reason. Though Net Neutrality would not prohibit those with economic advantage from purchasing relatively faster Internet service with far greater bandwidth allotments, it does serve to keep the barrier for basic access to information and communication from being set as a function of one's personal wealth. In essence, I am arguing that there is something resembling a sufficient minimum standard for Internet accessibility. I don't mean to actually establish a line demarcating the boundary between sufficient and insufficient access, but merely suggest that an assessment of the possibilities for access to information associated with a citizen's capability to plan and gain an understanding of their life's activities could serve as a means to determine a benchmark for minimally sufficient access to the Internet. This benchmark would shift given technology developments over time – consider how a 56k dial-up connection was once considered to be “sufficient” for home users<sup>55</sup>, yet today very few Internet users would consider dial-up to be sufficient for basic Internet usage. As developments in broadband technology have made transferring and storing greater amounts of information practical, the standards for minimally sufficient Internet

accessibility shift, given the changes in the stakes. For instance, we can compare a dial-up Internet user to a broadband Internet user – in the same amount of time given equitable levels of technical proficiency, the broadband user is able to access more documents, and richer media than the dial-up user. In this case, the dial-up user is put at significant disadvantage compared to his broadband-using peer, as the dial-up user must invest significantly more time to access the same sorts of information. Though I would like to avoid any strong claims here – such as “broadband access Internet is a right”, it does seem like that given the relative advantages in access to information that the average consumer Internet connection can confer, any significant alteration of which types of information are available to whom (either by reduction of transmission speed, or outright blocking certain kinds of content) represents a corporate incursion into the ability of the citizen *to know*. Of course, there will always be means to access information other than the Internet – but in a world where the Internet is quickly becoming the most accessible one-stop-shop for any and all information-related needs, tampering with the accessibility of information by private firms represents a grave threat to a sort of epistemic equality that is currently in place. Though nobody is *obligated* to know, those unfortunate enough to have an ISP that chooses to limit content availability for purposes of profit may find themselves at considerable disadvantage compared to those that have access to an open Internet. This issue is further confounded in markets where infrastructure limits the availability of Internet services – consider the United States, where Internet service is often available only through a local telecom monopoly or duopoly.



**Affiliation**

The Affiliation<sup>56</sup> capability appears to provide explicit justification for protecting the openness of the Internet. Though the Internet is not (and hopefully will ever be) the only means of affiliation between persons, it has certainly established itself as an important means of affiliation vis-à-vis social networking, VoIP technologies, e-mail, instant messaging, and many other means of communication. There are many examples of rich online communities rife with the sort of affiliation Nussbaum speaks of, and the capabilities approach calls upon a just society to protect the means by which such methods of affiliation are possible. In this case, the means is access to an open Internet, whereby individuals are free to mill about where and with whomever they please. This sort of interaction becomes difficult, if not financially untenable, when the ISP begins to wall their consumers in through the use of tiered pricing schemes, or outright denial of access to online services that facilitate affiliation between persons. That is, if a local telecom provider blocks usage of VoIP technologies in order to protect the profitability of their traditional phone service offerings, then their profit-seeking motives are pitted directly against the capability of individuals to affiliate amongst themselves freely – a matter of the privilege to interact versus profit.

**Play**

The “Play” capacity is fairly straightforward – it entails being able to “laugh, play, and enjoy recreational activities”.<sup>57</sup> It is also a unique advantage to utilizing the Capabilities Approach: it provides a means to assess the importance of entertainment and leisure

activities for which the Internet is certainly put to good use. Two particular issues hang in the balance here – the increasing popularity of streaming media, and online gaming. Streaming media is perhaps the most important: the sheer amount of bandwidth that streaming services like YouTube and Netflix utilize has become something of a contentious issue between ISPs and streaming media providers. In addition to squabbles over infrastructure, some observers of Internet-related affairs have raised concerns about corporate affiliations between ISPs and large media firms. Recently, Comcast (a major American ISP and telecom company) merged with NBC – at a time when Comcast had publicly announced that it would be developing a streaming video service to compete with the likes of Netflix and Amazon Video on Demand. Shortly thereafter, Comcast launched into a public fracas with Level 3 – a “backbone” ISP – over whether or not they would continue to allow Netflix traffic to flow freely into Comcast’s last-mile ISP infrastructure. Though the quarrel seems to have died off for the time being, an uneasy balance exists: one of the most powerful ISPs sits in a position whereby its management has a stranglehold on production and distribution of media. That is – Comcast could easily downgrade Netflix traffic priority such that the service becomes virtually unusable, forcing consumers to either change their ISP to satisfy their entertainment needs, or to cave and subscribe to Comcast’s in-house video streaming services. Though in a traditional marketplace, consumers could easily “vote” against Comcast’s behavior with their dollars, Internet services generally aren’t available in a traditional marketplace. Like telecom services, local duopolies (or outright monopolies) are quite common, and thus consumer choice is extremely limited. Online gamers stand to benefit

from Net Neutrality policies as well. One particularly irritating plight for many gamers is the “throttling”<sup>58</sup> or outright blockage of BitTorrent protocol data<sup>59</sup> by their ISPs. For example, we can consider software offered by Activision Blizzard – a leading innovator in online gaming, known for popular titles such as the Starcraft and Warcraft franchises. Blizzard utilizes BitTorrent to allow consumers to download purchased games, and updates (or “patches”) games by means of downloading files distributed with the BitTorrent protocol. This method works to the favor of Activision Blizzard and its consumers without throttled connections – but for those forced to utilize ISPs that tamper with BitTorrent traffic, downloading or patching<sup>60</sup> a game is a nightmare. For some consumers, throttling means that their download of the game (or updated content) proceeds at a rate many times slower than the actual speed at which their connection is capable of functioning; for consumers whose ISP blocks BitTorrent traffic outright, one is forced to utilize unwieldy workarounds to obtain updates, and is generally unable to download purchased games whatsoever. Though the gamers affected represent a small microcosm of gaming activity on the internet – most games played on the Internet are fare more casual games – we again see the juxtaposition of citizens’ interests against the motives of profit.<sup>61</sup>

### **Control over one’s environment**

The capability to have “Control over One’s Environment” provides another way to examine the Network Neutrality debate. This capability is concerned with both political efficacy of citizens, as well as their ability to hold and utilize property.<sup>62</sup> In the first

regard, the Internet plays a special role in political life. As mentioned before, in addition to allowing an avenue for access to politically relevant knowledge and/or experiences, the Internet provides an avenue for political communications and community development. It provides both an easily accessible platform for the utilization of politically relevant speech rights, and a means for association. These sorts of advantages the Internet might confer can be defended with other aspects of the Capabilities Approach, but the latter issue – property – seems to be unique to this aspect of the capabilities approach. Consider Network Neutrality from the perspective of an individual or business that relies upon the Internet as a means for selling their wares: Network Neutrality prohibits the ISP from profiting off the intellectual properties offered by content-providers by means of imposing what amounts to a tariff on access to said intellectual properties. Further, it prevents businesses from entering into schemes whereby they pay an ISP in exchange for privileged treatment on that ISP's network – perhaps by denying access to competitor's website or a similar practice. Here we are given grounds to both assess the role of intellectual property in Internet-mediated consumer relationships, as well as to vindicate the right of the small-business or independent entrepreneur to compete without fear of industry giants creating partnerships that create a closed marketplace online; In addition to preserving the freedom to distribute intellectual properties without fear of discrimination based on origin or content, the Capabilities Approach justifies the existence of a free market for Internet-based commercial activity.

## CHAPTER VII

### CONCLUSION: A FIDUCIARY VIEW FOR PROVISION OF NEUTRAL GOODS

I argue that the cultivation and facilitation of knowledge is a fundamental prerequisite to meaningful participation in public and private life (as explained in the previous section). But if we accept this notion, there still remains the issue of finding a sensible means to justify and implement Network Neutrality policies.

It seems that one thing remains in common between public, semipublic, and private providers of various goods that promote basic interests: they act as fiduciaries for the citizen (or consumer) in a limited sense. The actual commodities distributed in the relationship between the provider and consumers are not held in a trust (as a fiduciary in the financial sense would do). Rather, quite similar to the manner in which children's rights are often managed, the *interests* of the consumer are entrusted to the provider; my explanation of this model draws inspiration from Shapiro's chapter on the governance of children in *Democratic Justice*.<sup>63</sup> Children or consumers do not sacrifice the entirety of their rights to their fiduciary; the fiduciary performs a role on the behalf of the child or consumer, with the intent of promoting specific ends. If we regard the manner in which, and the extent to which the behavior of a fiduciary protects the capability of persons to *flourish*<sup>64</sup> via exercise of the central human capabilities, I believe we might be able to establish a fairly comprehensive and flexible means to assess issues like Network

Neutrality – where the interests of organizations and the interests of individuals hang in a balance.

Though the lay consumer does not exhibit the same degree of dependency on a fiduciary that a child does, there is an element of dependency expressed in the relationship between service provider and consumer. When service providers deal in industry sectors that require a high degree of specialized professional skills on the behalf of their agents, or utilize a technical infrastructure with material and maintenance costs that are far out of reach of the average consumer, the consumer is *depending* on service provider to yield an end that is otherwise beyond the intellectual or financial capacity of the consumer to achieve independently. Certain basic interests that an individual consumer has - which are manifest in the realization of the ends of services – are entrusted to the service provider in a limited capacity. For instance, the basic interest of *health* is partially entrusted to the provider of water utility services: the water utility is expected to provide consumers with a product that adheres to a certain standard of wholesomeness, ergo the customer is liberated from fears about his or her health<sup>65</sup>. In a similar manner, electric utilities are entrusted with *safety* and *property* interests: they ensure their lines maintain a certain level of safety<sup>66</sup>, and that their service quality is consistent enough not to damage the wiring or devices inside of consumers' homes. The entrusting of these interests to a fiduciary – the service provider – is not a complete surrendering of control over an individual's interests; it is not expected that the water utility is to be wholly responsible for all aspects of their customers' health, or that the electric utility is entirely

responsible for their customers' safety or property. Rather, the service providers play a fiduciary role that entails a limited obligation to uphold consumer interests, to the extent that they are affected by the nature or utilization of the services provided. I propose that like utility providers, Internet Service Providers (ISPs) ought to be recognized as taking on a fiduciary role.

The fiduciary role played by the service provider does not entail a right to interfere with the ends derived from the service they provide; customers ought to be free to enter into an agreement with an understanding that their access to the Internet will not be censored or compartmentalized in such a manner that impedes their ability to access information and services freely. I argue that this approach is justified because utility providers deal in what I will call *neutral goods*. Note that what utilities provide are goods in the economic sense, but they are not *goods* in any normative sense: there is nothing praiseworthy or offensive in water, electricity, or Internet service. These things are commodities that simply *are*. The individual consumer utilizes neutral goods – water or electricity, for instance – and for specific purposes that may or may not (normatively speaking) serve some *good*, manifest in the realization of consumer interest. That is: water is a neutral good that is essential for life, and the *act* of serving the end of life with water could be considered (normatively speaking) good. The same neutral good can be used to drown the innocent, or for the purposes of torture. In either case, nothing intrinsic about the basic commodity informs normative judgments about the ends to which that commodity applies. Specific applications and uses of neutral goods by the consumer ought to be

wholly beyond the domain of the provider; the provider holds an indirect relationship to the various normative interests that are yielded by the consumer utilizing their product.

This fiduciary view makes sense when applied to ISPs if one dispenses with the misconception that ISPs deal in information as a commodity.<sup>67</sup> They do not (and under the Net Neutrality view, *should not*). ISPs deal in a logistics service: they are almost entirely analogous to a parcel carrier. Information travels through the ISP's infrastructure, but the ISP plays no part in the determination of what the content of that information is. Likewise, a parcel carrier moves objects from point A to B, but the services it provides bear no relation to the contents of the parcels they carry.<sup>68</sup> In each case, the service provider is taking on a fiduciary role: the consumer surrenders possession of a parcel (or a *packet* of data) to the service provider, with expectations that the carrier's transportation network will route the parcel (or packet) properly. The information transferred through an ISP's infrastructure is a commodity only insofar as it relates to the use and exchange of information between parties at either end of an information exchange. Like a parcel carrier, the commodities that the ISP has an actual stake in are those over which they ought to be free to exercise full discretion<sup>69</sup> - not those that fall solely within the intended ends of the customer.

When specifically dealing with issues of Network Neutrality, the ends in question are those of the expansion and utilization of personal bodies of knowledge by the citizen (*knols*). That is; whenever a user initiates activities on the Internet, the user intends to



access a certain type of information output from whatever device they use to access the Internet. Whether an individual uses a smartphone to look up nearby restaurants, a digital media streaming device<sup>70</sup> to watch a television show, a video game console to play a game with friends in another state, or a VoIP device to speak with friends or family, the individual is seeking a particular set of data. The individual pieces of data become woven into the individual's awareness of themselves, of others, and the world around them; their given *knols* for a wide array of topics expand, and change in relation to one another as the individual accesses and accumulates more information.

So long as the access to information serves to expand the individual's ability to realize basic capabilities (perhaps even those that were not discussed in the previous section), I argue that given a citizen with a given method of information access, that method of information access ought not be tampered with in a way that significantly alters the availability of otherwise accessible<sup>71</sup> information. However, since we have no device that allows us to gaze into psyche of the Other, perhaps a weaker claim is more appropriate: that in cases where an individual could access information that impacts their realize basic capabilities, then the means to access said information ought to be granted special considerations and privileges.<sup>72</sup> Anything less than preserving the right of a citizen to access information as they see fit (as opposed to what an ISP determines the citizen ought to be able to access based upon profit) amounts to tacit approval of private firms setting the terms of what citizens may or may not know. Of course, this argument is not intended to suggest that the distribution of knowledge is necessarily unrelated to issues of profit. Information has always played an important role in determining the

profitability of business ventures: even in ancient Greece, Thales of Miletus used his predictions about the olive harvest to defend the profession of philosophy while earning himself a profit<sup>73</sup>; today the market offers a veritable cornucopia of firms that deal principally in the exchange of information<sup>74</sup>, such that the information they provide might be put to profitable use elsewhere. The intent of the fiduciary model that I propose is to protect the avenues by which a citizen might choose to access information-based services, given the impact that access to information may have on the development and usage of the central Human Capabilities.

## NOTES

1 In both senses of the word.

2 Advanced Research Projects Agency. Now known as the Defense Advanced Research Projects Agency, or DARPA.

3 As opposed to a circuit-switching network system, whereby a single circuit is established between two points. The best example of a single-circuit network is analog telephone systems, where a direct circuit is created between two parties.

4 By utilization I mean: passive access to resources, or the act of publishing, distributing, or making resources available.

5 Crawford 2010.

6 This will be elaborated upon later.

7 Services can be interpreted broadly here, and it should be. In the traditional sense of “service” utilized in commerce, an Internet-based service is the distribution of a digital good from provider to consumer. There may or may not be any financial exchange involved. Additionally, certain *types* of data traffic are dubbed “services” within the Information Technology field. For instance, the HTTP protocol used to transmit information over the web would be considered a distinct “service” juxtaposed against the MMS (Microsoft Media Server) protocol commonly used to stream video and audio content across networks.

8 Schwartz and Weiser 2009.

9 The Economist 2009.

10 Singel 2009*a*, Singel 2009*b*.

11 Ibid.

12 “Last-mile” refers to ISP infrastructure at the local level – this is where traffic is moved from a long-distance backbone to a smaller regional Wide Area Network (WAN).

13 A measure of digital information throughput, measured in bits per second (bps). The meaning of the term shifts based on context, however – “bandwidth” is also used as a

colloquial term for the amount of raw information transmitted over a period of time, measured in bytes (B). That is: bandwidth can either refer to line speed (“My Internet connection has a 3Mbps downlink and a 1Mbps uplink bandwidth”), or the amount of information moved across the Internet connection (“My Internet subscription entitles me to 520 Gigabytes of bandwidth per month”).

14 A Managed service is that which an ISP would provide exclusively to its own customers over the same data link the consumer would use to access the Internet at large. This could be a television/telephone/video-on-demand service bundled with Internet service (similar to AT&T’s popular “UVerse” service), or it could also allow specialized “priority” access to certain websites.

15 It is unclear as to what “reasonable” discrimination among Internet traffic actually entails, however.

16 Anderson 2010.

17 Polard, Chesebro and Studinski 2009.

18 For Americans: SMS is the proper (and more popular global term for) “Text Messaging”.

19 Richtel 2011.

20 Boyd 2011.

21 Dwyer 2011.

22 “Worldview” – but a more general, all-encompassing sense than the English word generally conveys.

23 Boorsook 2000.

24 Song 2009.

25 Streeter 2003.

26 Founding member of the Electronic Frontier Foundation (the premiere “digital rights” advocacy and legal group) and former Grateful Dead lyricist. If he isn’t a great example of the countercultural spirit associated with the Internet’s intelligentsia, then I don’t know who else would be.

27 I hate to use this term, because it gives credence to the idea that “cyberspace” is some kind of a legitimate “world” – which I firmly maintain is NOT the case.

28 In *The Myth of Digital Democracy*, Matthew Hindman compares four studies that found the Internet had little to no effect on political engagement, five that found noteworthy changes in political engagement and/or mobilization due to Internet access (particularly among the young).

29 Nederman, Jones, and Fitzgerald 1998.

30 That is, to know that  $p$  and act in a particular way given knowledge that  $p$ .

31 To save much space and effort on citations, I will direct the reader to the authoritative source for critical approaches to urban legends. See Radford 2007.

32 Or so it is attributed; supposedly a quote from a 21 January 1980 column or interview in *Newsweek*. I have failed to verify the authenticity of the quote. But this paper begs the question: does it matter anyway?

33 I take “ignorant” here to mean that something presented as “fact” does not actually reflect the nature of an object or thought, or the objective truth (if there can be said to be one) of a proposition.

34 I’m operating under the assumption that, most of the time, most citizens tend to have something resembling objectively true information guiding their judgments.

35 A particularly cynical, more Rousseauian reading – the sort that I am inclined towards – might replace “less desirable” with “wrong”, or perhaps less forgivingly (but sometimes deserved), “stupid” ideas and inclinations.

36 Hayek 1945.

37 The orientation of the subject’s consciousness towards the external world; the conscious awareness *of* things, which when applied in Husserl’s method of phenomenological reduction, is intended to be “bracketed” away from positivist metrics about the world.

38 Scott 1998.

39 The Google Knol project. The project resembles Wikipedia, but includes a variety of social networking capabilities that Wikipedia lacks. The project – which was released to public beta testing – seems to be largely inactive at the time of writing.

40 Recall earlier – the sort of knowledge I seek to work with is provisional – the truth-value of propositions matters less than the subject’s judgment regarding truth-value.

41 Or at the very least, significantly reduce the costs associated with production and distribution. Perhaps one needs to buy Internet access, and obtain web-hosting services to distribute the content to Internet users – but these costs pale in comparison to the expense (in both time and money) of traditional publishing models.

42 I.e., a PDF document.

43 Understood to generally view DRM as an attack on the spirit and utility of the Internet

44 The Use of Knowledge; Sec. III

45 Houstonians who voted in the November 2010 general election will recognize this – it’s Proposition 1.

46 From some far and distant state, like Oklahoma.

47 The difference here highlights one of the failings of the English language – the inability to describe knowledge of facts from knowledge stemming from familiarity. In French, for example, we can use the verb *savoir* to indicate that both subjects know basic facts about Houston, and the verb *connaître* to indicate that Subject A has cultivated a familiarity with Houston that Subject B lacks.

48 Described as, “*Being able to use the senses, to imagine, think, and reason – and to do these things in a “truly human” way, a way informed and cultivated by adequate education, including, but by no means limited to, literacy and basic mathematic and scientific training. Being able to use imagination and thought in connection with experiencing and producing works and events of one’s own choice, religious, literary, musical, and so forth. Being able to use one’s mind in ways protected by guarantees of freedom of expression with respect to both political and artistic speech, and freedom of religious exercise.*”, Nussbaum, 76.

49 I suppose this would be gauged in a manner similar to other correspondence-theories of epistemology.

50 Backbone ISPs are high-volume, high-throughput networks that provide inter-connectivity between regional ISPs.

51 Comcast was in the process of rolling out its own in-house subscription-based movie and TV streaming web service, and information leaked to the press by Level 3 indicated that Comcast was planning to levy an additional monthly fee on users of Netflix's video streaming services. Comcast dismissed the claims as 'unfounded accusations'. If there was any merit to the claims, then this is one of the first examples of a firm seeking to engage in the exact sort of behavior Network Neutrality is intended to prevent.

52 Garfinkel 2008.

53 *Being able to form a conception of the good and to engage in critical reflection about the planning of one's life. (This entails protection for the liberty of conscience and religious observance.)*

54 Artificial in the sense that the barrier to knowledge access is unrelated to the scarcity or inherent value; barriers to access erected without specific rationale concerning the particular information at hand.

55 And at one point – this was even seen as abnormally extravagant!

56 The first half of the capability is the relevant one: "*A.) Being able to live with and toward others, to recognize and show concern for other human beings, to engage in various forms of social interaction; to be able to imagine the situation of another. (Protecting this capability means protecting institutions that constitute and nourish such forms of affiliation and also protecting the freedom of assembly and political speech)*", Nussbaum 2007.

57 Nussbaum 2007.

58 Arbitrary slowing.

59 A type of file-sharing protocol that utilizes many decentralized computers – usually those of consumers – to share the burden of distributing large files across the Internet. Traditional "direct download" methods of file-sharing depend on a single server source providing the entirety of a file to a client. The BitTorrent protocol instead distributes comparatively small chunks of the original file to many clients, and directs the clients to trade chunks of data amongst themselves until the original file is reconstructed from the pieces. In this way, the content provider minimizes bandwidth use while maximizing file availability (both in terms of speed and redundancy).

60 To avoid cheating, to fix issues of "game balance", and repair bugs, one is only allowed to play online with the latest "patches" installed.

61 In the case of BitTorrent throttling, this is due to the popularity of BitTorrent for illegal file-sharing. Some ISPs have reported that illegal file-sharers (overall a very small percentage of their customers) sometimes constitute an overwhelming majority of the traffic transferred on the ISP's network. Hence some ISPs have instituted BitTorrent throttling as a deterrent to file-sharers, claiming that it frees up resources for other customers. However, very little information on whether or not such file-sharing has a noticeable impact on speed for non-file-sharing users (which would have a marked effect on the quality of their Internet experience; use of bandwidth by file-sharers doesn't necessarily infringe on the quality of experience for others provided sufficient infrastructure is in place), and it is unclear whether ISPs are attempting to reduce "congestion" in last-mile infrastructures, or if they are simply acting to reduce their overhead costs via reduction of bandwidth that is offloaded to backbone (cross-regional) data transfer infrastructures. Either case is feasible – ISPs tend to always engage in "overselling" of service, meaning that their infrastructure cannot actually handle the full utilization of the resources that their customers are contractually entitled to; there might be bottlenecks in the last-mile infrastructure generally obscured by fact that most consumers fail to utilize most (if any) of their uplink/downlink capabilities at any time, or bottlenecks where the ISP's WAN connects (or, *peers*) with various backbone data transport providers.

62 The "Control over One's Environment" capability entails:

- A.) *"Political" – Being able to participate effectively in in political choices that govern one's life; having the right of political participation, protections of free speech and association. And*
- B.) *"Material" – Being able to hold property (both land and movable goods), and having property rights on an equal basis with others; having the right to seek employment on an equal basis with others; having the freedom from unwarranted search and seizure....(Nussbaum 2007)*

63 Shapiro 1999.

64 As Nussbaum puts it.

65 As a result of water cleanliness, anyhow.

66 Such that their lines don't snap or topple and electrocute bystanders for instance. Perhaps this example is a bit extreme, but the point is the same: our quality of life is bolstered by this service, and we put a certain amount of trust in the provider.

67 Not to say that information isn't a commodity; rather, ISPs are not in the business of buying and selling *raw information*.



68 With, of course, exceptions for those times when it seems the parcel handlers see fit to throw packages off the roof of a building, or make a 40-yard pass for your front door. In these instances, the contents can (and do) break, and it is the carrier's fault. This happens with information transferred through digital networks as well – various electronic hiccups result in the loss of packets of information on a basis more regular than the destruction of parcels by shipping companies. The difference is that digital networks are designed to automatically correct for corrupt or missing data, and parcel services are not.

69 In the case of a traditional parcel carrier: labor; fuel; vehicles, etc. In the case of an ISP: labor, bandwidth; telecom equipment, etc. Granted, these lists are probably oversimplified, but their point stands: there are certain commodities that are germane to the actual business model, and then there are those that are not. Even in the case of commodities that might overlap between industry and consumer use (bandwidth, for instance), my fiduciary model seems to offer justification for providers of goods to avoid tampering with the goods they provide. For instance, a grocer deals in produce – a commodity – which the customer actively utilizes, similar to how a customer purchases bandwidth from an ISP. However, if a grocer were to try to impose restrictions on how her produce ought to be consumed, there's little question that most consumers would view the grocer's demands as outrageous. In most industries where a commodity is ultimately distributed to an independent citizen-consumer, there is a well understood boundary between the public and private domain usage of those commodities. The Network Neutrality debate seems to suggest that within the telecommunications market, this boundary has been blurred. Though only tangentially relevant to the goals of this paper, it seems wise to ask why this appears to be the case.

70 I.e., a Roku (Low-cost video streaming device for TVs; accesses Netflix, Hulu, and Amazon VoD – the biggest streaming media outlets, among other things), a video game console, a computer, or even a network-aware TV (Which are increasingly popular).

71 That is: I'm not arguing for a radical abolition of all data everywhere. I'm not arguing that everyone is entitled to a blazing-fast Internet connection. I'm arguing that given a person has the means to access the Internet, then they ought to be able to access any information that's intended to be accessible to whomever might desire it.

72 More specifically, special preference priority above the profit motives of any individual or firm.

73 This example – an early instance of futures trading, whereby Thales placed deposits on all nearby olive presses - is attributed to Thales of Miletus by Aristotle in *Politics*.

74 Consider Lexis Nexis.

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