

## **Introduction**

Canada is currently in the process of devising a national digital strategy, in which the government, industry, academics, and media activists will formulate a long-term plan to incorporate digital technology into business and daily life; a process that will have considerable long-lasting effects on the telecommunications industry. At present, consultation documents that have been made public regarding Canada's national digital strategy embody a free market ethos, and an approach to telecommunications policy rooted in economic terminology. Indeed, telecommunications systems, specifically digital technologies, have become an important part of the information society and are crucial to the functioning of the Canadian economy. However, the shifting telecommunications landscape has left current policy and future investment at odds with the public interest.

Recent steps taken by the government, discussed in the analysis to come, suggest a shift towards a deregulated telecommunications sector and a fragile future for the public interest (Moll & Shade, 2008). In Canada, there is a strong relationship between telecommunications and the quality of public, community, and democratic life. It is crucial that Canada's national digital strategy place the public interest at the forefront of policy decisions. Otherwise, many issues having major social significance will be viewed in the language of competition and innovation, which will have a major impact on the ability of Canadians to communicate freely and openly. A prime example of this is the issue of net neutrality, a topic that has recently been subject to fierce political and ideological debate. At its most basic, net neutrality is the belief that Internet service providers (ISPs) should treat all Internet content equally. Despite its relatively ambiguous nature, it is a concept that underpins much of the debate surrounding future telecommunications decisions as well as current legislation. As a result, it is of utmost

importance that net neutrality remain on the radar of the national digital strategy, and more specifically, that the issue of net neutrality is viewed through the lens of public interest.

Thus, the national digital strategy provides a unique opportunity to consider larger, more fundamental issues related to the public interest – more specifically, what tangible actions can be taken to tackle the issue of net neutrality. Several other countries have addressed net neutrality through different regulatory mechanisms. It would be beneficial for Canada to consider these international examples as useful points of analysis, and take into consideration the ways in which public interest is incorporated into each of these different contexts. This paper will look at the international contexts of the UK, Australia and Japan, specifically considering how they have addressed issues surrounding net neutrality, and how they may be applied to the Canadian setting<sup>1</sup>. Subsequently, I will argue that the net neutrality debate in Canada must be reframed in a way that incorporates the public interest as a key stakeholder.

The first portion of this paper establishes a clear definition of net neutrality. It uses the layered model as an analytic tool to describe the structure of the broadband industry, illuminating the different approaches and debates within net neutrality. The second part develops the theoretical framework of a public interest approach to telecommunications policy. It will look at theories of regulation and deregulation, concluding that some form of regulation is needed in favour of the public interest. The third section provides a brief historical overview of telecommunications policy in Canada. It examines how telecommunications has been historically regulated to serve the public interest, and how the concept of net neutrality was introduced through the railway and telegraph. The fourth section considers the international

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<sup>1</sup> Using the UK and Australia as points of comparison for Canada is in part influenced by the work of Catherine Middleton. See Middleton (2010).

models, including the UK, Australia, and Japan, followed by a discussion of how these models may be applied to Canada. It asks whether or not these models, or parts of these models, could be useful and beneficial for Canada. Finally, the paper concludes by offering suggestions for future telecommunications planning in Canada. It suggests a shift toward a national digital strategy focused on the public interest, and examines how we can harness the opportunity presented by the national digital strategy.

### **Defining Net Neutrality**

Before considering net neutrality as an important public interest and policy issue, it is necessary to provide a brief definition of net neutrality. Despite the relatively ambiguous nature of the term, a plethora of attempts have been made to provide a normative definition of net neutrality. Tim Wu, who coined the term in 2003, views *net neutrality* as a principle in which the aim is to treat all content, sites, and platforms equally (Wu, 2003). As such, he defines net neutrality as “an Internet that does not favour one application (say, the world wide web), over others (say, email)” (Wu, 2003: 145). This definition follows the logic of the end-to-end principle, which states that Internet content must be treated equally and afforded the same speed (Lessig 2002). Barratt and Shade (2007) hold a similar position, yet they stress another important tenet: the Internet has no centralized control mechanisms. Further commenting on the decentralization of control, Moll and Shade argue, “those who own the networks do not control the content that runs over them” (Moll & Shade, 2008: VIII). As a major part of the net neutrality debate confronts concentration of ownership within the broadband industry, distinguishing between network owners and the flow of information is a key component to ensure net neutrality. Net neutrality debates thus concern restrictions to free speech and access to information (Moll & Shade, 2008). Anderson (2009) echoes this side of the debate by

reminding us of how net neutrality is rooted in *common carriage*, a concept that has historically governed telecommunications in Canada and the US. In the context of the Internet, the idea of common carriage requires that “Internet service providers not discriminate – including speed up or slowing down Web content – based on its source, ownership, or destination” (Anderson, 2009: 8). The origins of common carriage will be further explored later in this paper, as it will highlight the historical development of net neutrality as an important public interest and policy issue.

The above definitions of net neutrality are concise and provide a relatively basic understanding of net neutrality, appropriate for many readers to engage in the debate. However, the complexity of the issue extends beyond the simplicity of these definitions. In order to take into consideration international models or potential policy suggestions to problems surrounding net neutrality, a more in-depth examination of net neutrality is needed.<sup>2</sup> It would be useful here to provide a structural breakdown of the Internet in order to see what parts of the network should arguably remain neutral. For the purposes of this paper, I will use the layered model to illustrate the organizational structure of the Internet (see **Figure 1**). This model will be used in this section to help distinguish between some of the arguments made in the net neutrality debate. Beyond this, it will help to explain the use of the term “layer” throughout the remainder of the paper. Although the layered model will be used as an analytic tool to layout various sides of the net neutrality debate, to provide more context, I will briefly review discussions that have ensued regarding other uses of the model.

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<sup>2</sup> Much of the language and terminology used in more detailed analyses of net neutrality require a previous background in a wide range of topics. It is not my aim to bog the reader down in superfluous definitions. Instead, I will employ only the most essential concepts in an attempt to demystify this complex debate.

The historical development of the layered model can be traced back to the 1970s. According to Whitt, “while sharing a common overall structure and philosophy, these protocol layers models have been organized in somewhat different ways to serve different purposes” (2004: 606). Whitt is effective in summarizing the evolution of the model, which has been used in both communications technology and policy analysis. While computer engineers have historically implemented the layered approach, “it later evolved into a policy model intended to promote a technically neutral view of the various emerging network platforms” (Sicker & Blumensaadt, 2006: 300). Yochai Benkler, a communications scholar, originally adapted the layered model in 2000 to explore the possibilities of Internet regulation. Variations of his model have since been used by several scholars, including: Frieden (2003), Lessig (2001) Solum and Chung (2003), Thierer (2005), and Yoo (2005). The layered model has spawned considerable debate in discussions surrounding Internet regulation. Sicker and Blumensaadt (2006) argue that the model has been misinterpreted, originally intended for use as a analytic framework, but now used as a vehicle to advocate regulation. Similarly, Reed (2006) critiques the idea of using the layered model as a regulatory framework for communications, stating that, “network systems ... do not intersect in the clean, simple fashion that advocates of the layered model portray” (Reed, 2006: 283). However, Whitt (2004) makes clear that although the layers are robust, they are also flexible. Indeed, the strength of the layered model lies in its ability to separate and distinguish between regulatory issues, while highlighting their close relationship to issues in other layers. Despite its misuses, Sicker and Blumensaadt (2006) conclude that the model still provides a valid and useful framework for policymaking in the current environment.

**Figure 1: The Layered Model of Broadband Architecture**

<b>Content Layer</b> (e.g., individual e-mail, webpages, voice calls, video programs)
<b>Applications Layer</b> (e.g., web browsing, e-mail, VoIP, instant messaging)
<b>Logical Layer</b> (e.g., TCP/IP, domain names, IP addresses)
<b>Physical Layer</b> (e.g., telephone lines, cable, fiber optics, satellite)

From this table, we see the structure of the Internet divided up into four layers. The *physical layer* includes the telecommunications networks over which the Internet operates; it represents the hardware infrastructure that actually carries and routes the communications. The *logical layer* is comprised of the different protocols that route communications within the network. The *applications layer* includes applications employed by Internet users that make Internet content available. At the top layer is the *content layer*, comprised of the information, content and specific data being carried to and from users.

Approaches to net neutrality will differ depending on where (or which layer within this model) individuals or groups believe the issue of net neutrality essentially lies. Although not everyone will conceptualize the Internet according to this model, it provides a means to discern different arguments embedded within net neutrality. A brief overview of the major net neutrality debates within each layer will be useful in preparation for the analysis to come. I will attempt to divide the net neutrality debate issues into each of these layers. However, it is important to note that these issues are not mutually exclusive; they overlap, are interconnected, and inevitably affect one another. As well, this summary is by no means meant to be an exhaustive overview of the net neutrality debate.

## *Content and Applications Layers*

The content and application layers are the segment of the broadband structure that average Internet users will interact with on a daily basis. In Canada, Internet content, access to content, and the speed at which we access content are services that are often overlooked or taken for granted. However, it is within these layers that many problems surrounding net neutrality are most apparent. Most predominantly, within the content layer, proponents of net neutrality are concerned with the issue of *access-tiering*. Access-tiering is the idea that bandwidth priority will be given to users willing or able to pay extra fees. This affects both content providers, such as Google, and individual/regular Internet users. For instance, ISPs currently have the option of charging content providers for faster service, hindering smaller companies or organizations that do not have enough capital to pay for the “fast lane”. Regular Internet users are also affected by access-tiering when ISPs prioritize or block content depending on its source or origin. For example, an ISP can discriminate against a competitive content supplier by restricting user access to it. Ganley and Allgrove (2006) provide an effective and concise explanation of *deep-packet inspection*, a technical tool which allows ISPs to decipher between different packets of information, prioritizing and de-prioritizing information depending on its source. ISPs argue that shaping Internet traffic is an effective practice that ensures a more robust broadband marketplace. Despite the economic advantages for major ISPs, potential harms caused by a two-tiered Internet, including the inability of smaller companies or lower income individuals to pay for the “fast lane” are a major concern for proponents of net neutrality (Ganley & Allgrove, 2006; Moll & Shade, 2008).

### ***Logical Layer***

The heart of the net neutrality debate lies in the logical layer, as the formation of this layer revolves around a principle that defines how the Internet works. Known as the “end-to-end” network design, this principle governs the Internet, stipulating that content is divorced from carriage and networks cannot distinguish between packets of information. Consequently, the most fundamental feature of this design is neutrality among packets and what is called a “dumb” network. Proponents of the end-to-end design principle argue that it has fostered innovation and the open Internet as seen today. According to Lessig, “intelligence rests in the ends, and the network itself remains simple. Simple networks, smart applications” (2002: 1789). From a theoretical standpoint, it is the logical layer that has become subject to fierce debate. Some scholars, such as Thierer (2006) argue that “dumb” systems are never completely open or dumb, and that creating the dichotomy of “dumb” versus “intelligent” networks oversimplifies the net neutrality debate. Furthermore, Thierer (2006) questions whether or not policymakers should be making decisions based on system architecture, since the concept of dumb or intelligent networks is often unclear. It is argued that dumb pipe mandates could have a discouraging affect on competition and that added “intelligence” can provide the public with more choices while using the Internet. Thus, debates within the logical layer essentially question the theoretical basis behind the concept of net neutrality as a governing principle.

### ***Physical Layer***

While a two-tiered Internet is highly unfavourable for proponents of net neutrality, Wilson (2008) argues that a more enlightened framework would reframe the net neutrality debate at the more fundamental level of infrastructure development. As it stands, the physical

infrastructure is where the least amount of competition exists in the broadband industry within Canada. Since infrastructure deployment involves heavy fixed costs, it has historically been viewed as a natural monopoly. However, the concern is that Internet providers controlling a large share of the market in the physical layer will block or discriminate against competitors offering similar applications or content (Globerman, 2008). ISPs are arguably supporting a tiered Internet in order to seek additional revenue to upgrade their last-mile infrastructure to fibre-optic technology. Thus, when examining net neutrality within the physical layer, it becomes clear that the underpinnings of the debate lie in the physical infrastructure of the broadband industry. Concerns about market power in the physical layer are most visible as Internet users in Canada are limited to accessing the Internet through either their local cable company or local telephone company (hence, a duopoly of the market). However, from an economic standpoint, it can be argued that sufficient competition in the market at the level of the physical infrastructure does exist, providing no incentive for ISPs to carry out practices that are in discordance with net neutrality, such as access-tiering and other forms of discrimination (Globerman, 2008). This portion of the debate will be flushed out further in the sections to come.

### ***Stakeholders***

Perhaps not surprisingly, the net neutrality debate is commonly divided into two sides. On one side are the telecommunications companies or ISPs. In Canada, companies such as Telus, Shaw, Rogers, and Vidéotron have been vocal about the issue of net neutrality. As opponents of government intervention, they view regulation as a hindrance to competition and innovation. Moreover, they argue that, “the increasing demands placed on the modern Internet require a level of investment that can and *will* only occur if the Internet is efficiently

commercialized” (Ganley & Allgrove, 2006: 455). Thus, incumbent telecommunications companies believe that those who profit from the Internet (say, Google) should pay for the extent of their use.

The other side of the debate is characterized by a more complex and relatively diverse mix of viewpoints. Generally speaking, proponents of net neutrality include content providers, service providers, as well as free speech and public interest groups, who believe that mandating net neutrality is necessary to maintain the integrity of the Internet and its core values. It is this side of the debate that has ignited a much larger theoretical discussion over the Internet and its use within modern society. Proponents of net neutrality believe that practices such as access-tiering will seriously threaten the social utility of the Internet, and that some level of regulation is needed to ensure that the needs of the public are met. It is this side of the debate from which I wish to tackle net neutrality. Although I am not suggesting that regulation is the only solution to problems of net neutrality, the relationship between public interest and regulation must be acknowledged. On a similar note, I do not wish to conflate net neutrality with public interest. However, public interest values largely underpin the idea of net neutrality and maintaining a free and democratic Internet. Therefore, before continuing on, the next section will provide an overview of the concept of public interest, its relationship to regulation, and why some level of regulation is most effective in addressing problems of net neutrality.

### **Public Interest and Regulation**

Public interest is a notion that is bandied about by a myriad of stakeholders such as government, business, academics, and advocacy groups, all too often with each group attaching markedly different meanings and connotations to the term. This has left public interest as

somewhat of a hollow term. Nonetheless, public interest, particularly in the context of net neutrality, is an important concept for understanding government decisions regarding new policy or existing legislation. Often times, public interest is couched in notions of public good, common well-being, or general welfare (McQuail, 1992; Leys, 2003; Croteau & Hoynes, 2006)). Although this paper will utilize a more nuanced understanding of public interest that intimately links public interest and regulation, these more basic notions of public good, common well-being and general welfare will serve as a guiding force. Briefly, for the purposes of this paper, public interest will refer to the “division of private and public property and the ensuing laws and policies that govern that division” (Quail & Larabie, 2010). More specifically, it will refer to the control and regulation of public utilities, such as roadways, electric/hydro, water supply, and telecommunications systems, in a way that ensures universal access and social equality for all citizens.

As is the case with telecommunications, some industries and services, because of their necessity, require a higher level of government control or regulation to ensure access and equality (Sayre et al., 1980; Quail & Larabie, 2010). This is by no means a new idea, as many scholars have written about the relationship between net neutrality and public interest in this vein (see Barratt & Shade, 2007; Middleton & Crow, 2008; Powell, 2009; Quail & Larabie, 2010). What this type of public interest approach allows for is a discussion and analysis of net neutrality that is not dominated by a market-based ideology or neoliberal notions of efficiency, profitability, and competitiveness. Consequently, it also opens up the debate surrounding net neutrality to the inclusion of regulation.

Since the ascendancy of neoliberalism as the dominant economic paradigm, regulation is almost always associated with negative connotations of big government, inefficiency,

bureaucratic red tape, and poor economic growth. Since the mid 1970s, the concept of deregulation has come to dominate government policy regarding industry standards, practices, and investment. Underpinned by neoclassical economic thought, an ideological shift has taken place over the past three decades, which has resulted in regulatory practices falling to the wayside in favour of unrestricted corporate growth and power. In particular, neoclassical economics stress the need for economic liberalization, which is predicated on components of deregulation, such as unfettered capital influence, open marketplaces, little to no government interference, and free trade. The supposed benefit of economic liberalization and deregulation, according to neoclassical economists, is that it promotes efficiency, cost cutting, profitability, innovation, and economic growth (Jansson, 2000).

Under neoliberalism, Canada has experienced deregulation in a number of high profile industries including energy, natural gas, and transportation (Iacobucci et al., 2006). Today, at the federal level, Prime Minister Harper and his conservative government have pushed deregulatory policies in the financial sector, the post office, agriculture and food, and most recently the telecommunications industry. With specific reference to the telecommunications industry in Canada, deregulation has not been as pervasive as in other industrial sectors. Its long history of regulation, the fundamental issue of ‘common carriage’, and its continuing importance in terms of national sovereignty, economic development, and cultural identity (Longford et al., 2008) have allowed the telecommunications industry to slow the process of deregulation, but not stop it entirely. The historical context of regulation of telecommunications is a topic that will be discussed further in the following section.

An understanding of regulation is needed in order to illustrate the necessity for government intervention in the telecommunications industry. Regulation in the canon of public

interest can be seen as a complimentary tool of the market or as an insurance of market forces (Quail & Larabie, 2010), not an adversary to economic growth and high productivity. As Sayre et al. (1980) explain: “The primary purposes of regulation ... is to provide maximum benefits to society from these ‘natural monopolies’ and other enterprises ‘affected with a public interest’, while preventing them from charging higher prices than the competitive market would allow” (p. 10). In other words, regulation with public interest in mind would promote economic growth and prosperity while also ensuring that values associated with the notion of public interest, such as enabling economic *and* social welfare, affordable access, and enhancing social well-being and the inclusiveness of Canadian society, were important aspects of the telecommunications industry (Lawson, 2008). More specifically, this conception of regulation would aim to strike a balance between economic growth and public interest that would not only benefit the corporate community, but also provide protection to citizens and ensure universal access and social equality. It is this type of regulation, with a clear preference for public interest, which will be highlighted in the coming sections detailing the exemplary international models of telecommunications and net neutrality-focused policy. It is in these coming sections that, through a detailed analysis of international models, the concept of regulation will be further fleshed out and applied to Canadian telecommunications.

The following section will trace the historical development of telecommunications policy in Canada, with specific attention given to the role that public interest and regulation have played. Not only will this section provide much needed historical context for the coming analysis, but it will also make clear the need for some level of regulation in the telecommunications sector in Canada to ensure an open Internet.

## **An Overview of Telecommunications Policy in Canada**

In order to further understand the net neutrality debate, it is important to look at the historical development of telecommunications in Canada. In doing so, we can see how net neutrality is rooted in telecommunications policy, how this legislation has evolved, and what factors have set the stage for the debate as it exists today. An overview of telecommunications policy in Canada also sheds light on the attributes of Canada's current legislative framework as a whole. Reviewing the history of all communications regulations in Canada and the US is beyond the scope of this article, and has been sufficiently addressed by several other scholars (Anderson, 2009; Lessig 2001; Mussio, 2001; Wilson, 2008). Therefore, I will only highlight several key points, specifically with relation to net neutrality.

Net neutrality is rooted in historical telecommunication policy known as common carriage. As mentioned earlier, common carriage rules require that communication networks provide non-discriminatory treatment of goods or information and neutral access to other networks. Before the concept of common carriage was applied to telecommunications, the principle was used to govern the operations of systems that transported goods to the general public. Specifically, common carrier regulations were applied to the railway, and stipulated that owners could not discriminate against cargo based on its owner or destination, creating fair competition for cargo companies (Anderson, 2009).

Common carrier rules were subsequently applied to telegraph and telephone networks, declaring that networks could not discriminate against the transportation of information. Common carriage was imposed upon the telegraph and telephone industry in the early twentieth century in favour of the public interest. The emergence and technological growth of the

telephone industry had created massive monopolies in North America, and under public-utility regulation, they were viewed as businesses vested with a public interest due to the vital role they played in the general commerce of the nation (Wilson, 2008). As a result, “civic populists and municipalities demanded that these monopolies be responsible to the community”, and regulation became necessary to ensure equitable provision of service (Mussio, 2001: 13). In Canada, the Bell Telephone Company became regulated under the *Railway Act*, establishing a formal level of government regulation. In return, the government was required to protect the industry from unfair competition from unregulated carriers. The policy of separation of content and carriage ensued to ensure that companies would have no economic incentive to discriminate in the transport of messages (Wilson, 2008).

In 1993, the *Railway Act*, which previously governed common carriage rules, was replaced by the *Telecommunications Act*, and federal jurisdiction was expanded to include all of Canada’s telephone companies (Wilson, 2008). Specifically, according to Section 27 (2) of the Telecom Act:

No Canadian carrier shall, in relation to the provision of a telecommunications service or the charging of a rate for it, *unjustly discriminate or give undue or unreasonable preference* toward any person, including itself, or subject any person to an undue or unreasonable disadvantage.

Thus, although intended for the regulation of telephone service, these principles now served as the foundation for CRTC policy and regulation with respect to new technologies and services, including broadband Internet access.

Within this section of the *Telecommunications Act*, the logic behind net neutrality is apparent, offering a moderate level of support for proponents of net neutrality. However, as Anderson contends, “this provides a point of leverage for public interest groups but does little to

keep the Internet open if Industry Canada and the CRTC are so guided by a free market ethos” (2009: 9). While Canada did not experience policy revisions (such as the reversal of open-access policy) comparable to the U.S. (see Wilson, 2008), deregulation began to occur in Canada in part due to policy reviews, consultation processes, and trade agreements, making competition one of the overriding principles in telecommunications policy. According to Moll and Shade, “the push has been so concerted that, by 2006, the final report of the Telecommunications Policy Review Panel (TPRP) felt confident enough to dispense the past, noting that ‘much of the detailed economic regulatory framework developed in the past is no longer required, since competitive market forces are now at the stage where they provide the means of achieving the core objectives of telecommunications policy’” (Moll & Shade, 2008: IV).

These ‘core objectives’ are subject to debate, along with the extent to which they serve the public interest. The pattern of deregulation in the telecommunications sector is highly problematic for several reasons:

Telecommunications has been regulated since its inception – for the benefit of the public – and the transition to a reliance on market forces misses a few key points. First and foremost, telecommunications service in Canada is still a duopoly. With broadband Internet access, most Canadians only have access to two providers – usually telephone and cable – and switching between the two can be costly and result in a lengthy service gap. Secondly, broadband Internet access is increasingly understood as a basic infrastructure – in other words, as a public good. If the reasons regulation historically shaped Canadian telecommunications policy was its role in ensuring the provision of a basic public service, then a switch to a completely free market seems inopportune (Barratt & Shade, 2007: 297).

The concentrated market structure of telecommunications in Canada is a key point in the net neutrality debate. In Canada, the five major Internet providers are Bell Canada, Telus, Rogers Communications, Shaw Communications and Vidéotron, which together, make up over 80 percent of the market share. Since these ISPs operate in regional markets, Internet service can be characterized as a duopoly; users generally have the choice between two ISPs per region of the country. Some scholars, such as Globerman (2008), argue that the telecommunications sector is

“workably competitive,” meaning that competition amongst these five predominant firms will serve the needs of consumers and producers, providing the highest quality of service at the lowest price. Although Globerman delves into a compelling argument for workable competition, past events have illustrated otherwise.

The discordances with net neutrality in Canada reveal that major corporations providing Internet access to Canadians privilege their own content, and have the power to stifle user access while carrying out traffic management practices. A prominent example of this behaviour occurred in 2005, involving Telus, the major ISP in Western Canada. During a labour dispute, Telus’ one million subscribers were blocked from a pro-union website, along with 766 additional sites hosted by the same server (Barrett, 2005). As a result, Telus subscribers were denied access to a variety of different content, and Telus became subject to fierce public scrutiny. Other cases involving Bell, Shaw, and Rogers, as outlined by Geist (2008), illustrate several other abuses of net neutrality in the form of traffic shaping, bandwidth throttling, and other related practices involving some level of discrimination. Thus, net neutrality has become a major issue in Canada, and has become amplified by its highly concentrated telecommunications sector and deregulatory framework.

In 2009, the CRTC issued an Internet traffic ruling requiring ISPs to disclose all network management practices. However, to date, ISPs have largely ignored or failed to meet these regulations (Geist, 2010). According to Geist (2009), more grievances from the general public and a concerted effort from public interest groups would be needed for a more concrete response from the CRTC. In Canada, various public interest groups are involved in the debate, including the Public Interest Advocacy Centre, the Canadian Internet Policy and Public Interest Clinic, the Electronic Frontier Foundation, and campaigns such as Save Our Net. These organizations have

formulated important consultation documents and have undoubtedly raised public awareness of the net neutrality debate. However, the next step is to examine alternative ways of thinking about the issue. If Canada is headed towards a deregulatory approach to net neutrality, and further net neutrality legislation does not fit the goals of the CRTC, what else can Canada do to deal with the issue of net neutrality? Taking into account international perspectives on net neutrality, and various models implemented to address net neutrality is much needed for Canada. If the CRTC is largely ignoring public opinion on net neutrality (Anderson, 2009), then other approaches to maintain an open Internet must be considered. The remainder of this paper will focus on international examples of how net neutrality has been addressed, and how these approaches worked in favour of the public interest.

### **Alternative Approaches to Net Neutrality: An International View**

Before examining how net neutrality issues have been addressed in the UK, Australia, and Japan, it is important to consider several contextual factors, including the historical development of telecommunications in each country, the political economic landscape, the stakeholders and major players. This context will allow for a more thorough analysis and understanding of how each of their strategies played out. Following this brief overview, the strategies used, and their impacts within each of these international contexts will be explored.

#### **UNITED KINGDOM**

Historically, telecommunications in the United Kingdom (UK) were highly regulated under the British Telecommunications (BT) monopoly. BT is the oldest and one of the largest telecommunications companies in the world. Founded in 1846, BT existed under state control up until the 1980s. During the late 1970s and 1980s, the UK, under the leadership of Margaret

Thatcher, embarked on an undertaking to liberalize the British economy and promote economic growth and prosperity. One of the key policy tools used in order to bring about these economic changes was the privatization of state owned industries, including BT (Brubaker, 2001). The privatization process took place in three stages beginning in 1984, and by 1993, the British government had sold off the remaining BT shares to private holders (BT Archives Information, 2006). From both a government and business perspective, the privatization of BT was a huge success, raising over £5 billion. As Brubaker (2001) notes, this step helped inspire other countries like Denmark, Italy, Chile, Malaysia, and Singapore to adopt similar privatization projects.

Currently, under the rule of the Conservative party, the UK government is once again moving towards increased liberalization. The telecommunications sector is one of the main targets of Prime Minister, David Cameron's liberalization project. At a speech shortly after being elected, Cameron stated: "With a Conservative Government, Ofcom [the British Telecommunications regulator] as we know it will cease to exist. Its remit will be restricted to its narrow technical and enforcement roles" (Williams, 2009). As well, like the other member states of the European Union (EU), the UK has been under increasing pressure to overhaul their telecommunications sector in order to promote more competition and adhere to changing EU regulations. Thus, the current situation in the UK is ripe for major deregulatory changes, yet as will be shown, the UK telecommunications strategy continues to strike a delicate balance between increased competition, quality broadband services, and fair Internet pricing for citizens.

## **Key Players**

In the case of the UK, there are a number of key players and stakeholders that influence telecommunications policy. First, at the centre of the telecommunications policy community is the Office of Communications (Ofcom), the communications and competition regulatory body for the UK. Ofcom is a fairly new regulatory institution, as it was established in 2002 under the Office of Communications Act. However, it enjoys full authority over all telecommunications decisions in the UK, as its creation consolidated a number of regulatory bodies including the Broadcasting Standards Commission, the Independent Television Commission, the Office of Telecommunications, the Radio Authority, and the Radiocommunications Agency. Accordingly, Ofcom has significant regulatory powers, but the newly elected UK Conservatives are “eager to reduce the regulator’s powers”, and open up the telecommunications sector further to the forces of the market (Benkler et al., 2010: 329).

The EU is another key player in the telecommunications policy community in the UK. Generally speaking, the EU plays a strong role in all areas of policy by facilitating the creation of a single market. This is largely done through the harmonizing of regulation and industry standards across all member states, and has resulted in the deregulation of industries across the EU. As such, in 2007, the European Commission (the executive body of the EU) launched a proposal to subject telecommunications regulatory decisions of member states to a new, Europe-wide authority. It should be noted that the EU has also played a key role in introducing local loop unbundling, a competition mechanism, as a requirement for all telecommunications sectors of its member states. Local loop unbundling allows any number of telecommunication operators to use the physical connections from incumbent telephone companies, and in theory, opens up the telecommunications market to increased competition by eliminating the infrastructure and

technological advantages that incumbent companies enjoy (de Bijl and Peitz, 2005). The role of local loop unbundling will be further examined momentarily.

As mentioned earlier, BT is also a major stakeholder in the telecommunications sector in Britain, owning 65 percent of broadband infrastructure. Other key competitors include Virgin Media, and several other smaller ISPs that serve the remainder of the market (Benkler et al., 2010). BT's subsidiary, Openreach, has played a key role in British telecommunications. Openreach is a functionally separate part of BT, and serves as a wholesale provider of broadband Internet, providing competing ISPs access to broadband infrastructure. To be clear, the average Internet user obtains access through the retail arm of an incumbent carrier. Wholesale arms involve leasing large portions of infrastructure and bandwidth to competing ISPs. I will delve into Openreach's effects as a strategy in the sections to come.

### **Net Neutrality in the UK**

Until recently, net neutrality has been less of an issue in the UK and Europe than in Canada and the US. In the past year, Ofcom has begun to examine traffic management practices of ISPs, as media companies have raised concerns about net neutrality and the traffic management practices of ISPs. However, this is not the first time that the issue of net neutrality has arisen in the UK. In 2009, a battle between the British Broadcasting Corporation (BBC) and BT brought the net neutrality debate to the forefront in the UK. The BBC accused BT of throttling download speeds for its iPlayer service, which provides online video and music, taking up a considerable amount of Internet bandwidth. BT admitted to this behaviour, but argued that bandwidth throttling, or slowing down access to the iPlayer would ensure fair service to all users on the network, an argument commonly made by ISPs (Wallsten & Hausladen, 2009).

BT pointed to the fact that the BBC iPlayer accounted for over five percent of customers' actual bandwidth consumption, and at high traffic periods or usage spikes, such as the streaming football matches, the iPlayer runs a serious risk of overloading the network's capabilities (Johnson & Holmwood, 2008). At this time, BT suggested that the BBC pay an equitable fee to ISPs for distributing BBC content or face throttling and traffic control (Telco 2.0, 2008; Roettgers, 2008). Up until this point, the BBC had refused to provide ISPs with any sort of payment, and had also argued that it had no responsibility to fund ISP infrastructure development, a common argument made by ISPs as to why they must carry out traffic management practices (Johnson & Holmwood, 2008). This incident closely mirrors the infamous 2005 net neutrality debate in the US, when AT&T wanted Google to pay for the costs related to increased YouTube traffic on the AT&T network (Atkinson & Weiser, 2006; Roettgers, 2008). As a result of these past events, and steps taken by other countries to address problems surrounding net neutrality, it is now a burgeoning debate and the focus of a UK government consultation process, which will take place over the next few months.

Despite the recent progression of net neutrality in the UK, Ofcom has previously held that there was insufficient evidence to justify regulation to prohibit certain forms of traffic management. Rather than taking an interventionist approach, Ofcom has argued that net neutrality legislation would be harmful to investment and growth. Also, in shifting regulatory responsibility to the consumer, Ofcom has maintained that transparency is the key, and that as long as users have information about traffic management practices, they have the freedom to choose or switch Internet providers. The UK has been effective in carrying out this option for citizens, providing relatively detailed accounts of traffic management practices of ISPs and enabling a straightforward process to change ISPs. Most notably, Ofcom has forced BT to create

an independent organization, with the role of ensuring that its control over last mile infrastructure is equally accessible at a neutral price to any competing ISP. This has been a key strategy in facing problems surrounding net neutrality.

## **Strategy**

The UK's telecommunications strategy was put in place in the mid 2000s through a number of shrewd and calculated policy changes with regards to BT. Prior to 2005, network infrastructure was managed by BT Retail and BT Wholesale. As the broadband market grew in the UK, more pressure was placed on the network to deliver faster and more advanced communications services. As well, citizens were presented with a number of choices for Internet service, and these providers relied on BT's infrastructure in order to deliver competitive services across the country. As demand grew, transparency and fair provision of service from BT Wholesale to competing ISPs became increasingly critical. In response to this, and to ensure that competing ISPs would be granted equal access, Ofcom launched the Telecommunications Strategic Review (TSR) in 2003.

By 2005, Ofcom mandated BT to functionally separate its retail Internet access services from its wholesale arm. As mentioned previously, the EU had also introduced mandatory local loop unbundling prior to this decision, which played a major role in price reduction in broadband services across member states. Compounded with the creation of Openreach, this led to widespread adoption of broadband Internet in the UK (de Bijl & Peitz, 2005; Ofcom, 2009). Therefore, since 2006, wholesale Internet has been provided by Openreach on an open access basis. The ultimate goal of Openreach is to ensure that all rival operators have equal access to BT's infrastructure, in addition to providing installation and maintenance services on behalf of

the UK's communications providers (Openreach, 2008). To date, Openreach has been highly successful in fostering strong competition in the UK telecommunications market.

A second mechanism, not so much a form of regulation, but still highly important to the discussion at hand, is a consumer group in the UK that specializes in laying out Internet service options for citizens. The organization is called Broadband Choice, and focuses on providing straightforward and clear information for citizens with regards to broadband Internet. It is an independent, privately owned company, that operates online, and is part of the umbrella group, Consumer Choice. Some of the services that this organization offers include researching and comparing service from different ISPs, highlighting discounts or hidden charges, analyzing key industry developments, and providing access to self-help consumer guides. An organization like Broadband Choices effectively complements Openreach, and aids regular Internet users when choosing an Internet provider, and facilitates the process of switching from one ISP to another. Broadband Choices essentially regards Internet access as a right, and supports access to the Internet in a democratic way.

### **Impact on Net Neutrality**

Ofcom's decision to implement a body such as Openreach addresses many net neutrality issues associated with a lack of competition. Since Openreach ensures that last-mile infrastructure is neutrally available to other ISPs, there is less incentive for BT, as well as competing ISPs, to participate in discriminatory practices. This regulatory mechanism thus addresses many net neutrality issues related to the physical layer of the network. The creation of Openreach also puts responsibility for the access network into the hands of one organization, creating a level playing field with a high level of accountability. Although Ofcom's decision to

structurally separate BT and force the monopoly to create Openreach was largely an anti-competitive decision, it provided many benefits to the public interest. In particular, it spurred widespread broadband use across the UK, lowered broadband prices, and gave citizens a wide variety of choices for Internet service.

In addition to these benefits to the public interest, the regulatory decision to create Openreach and the establishment of Broadband Choices has created a new standard for transparency on two levels. First, since BT is required through Openreach to provide equitable provision of service to competing ISPs, transparency as a governing principle has come to guide the most powerful telecommunications company in the UK. From a public interest perspective, this is an important step towards maintaining an open, democratic Internet. Second, through an organization such as Broadband Choice, citizens are able to see more clearly through the actions of ISPs. Again, sustaining this type of open environment leads to more accountability and better services for citizens as a whole. In an environment that is dominated by incumbent telecommunications companies, transparency is becoming all the more important, particularly in light of growing net neutrality problems.

Recently, Openreach has chosen ECI Telecom, a global provider of next generation networks, to upgrade the UK's broadband infrastructure. It has been selected to partner with BT to develop next generation broadband access in the UK, with a focus on open access architecture. Next generation broadband means that one network transports all information and services, including voice, data, and all types of media such as video, into packets, much like the way information is transferred on the Internet. These key architectural developments in telecommunications networks will be most likely be deployed within the next five to ten years in most countries. Therefore, it can be argued that, although the UK is reluctant to enforce official

legislation, other forms of regulation have served the public and the market well. In particular, the development of Openreach has served to regulate the market, enhance competition, instill principles of transparency across the market, and effectively aid in the investment of infrastructure.

## **AUSTRALIA**

For most of the twentieth century, telecommunications in Australia was dominated by a state-owned monopoly. Much like its British counterpart, the telecommunications market in Australia was opened up to competition by the late 1980s. In the early 1990s, state-owned domestic and international telecommunications companies were merged to form Telstra. The Australian government then launched a three-phase privatization project for Telstra, which saw the government sell off shares in 1997, 1999, and 2006. Privatization resulted in the government selling off nearly 90 percent of ownership of Telstra for over \$20 billion AUD. The late 1990s also witnessed the rise of a number of competitors in the Australian telecommunications market, with Optus emerging as the second largest telecommunications company and a legitimate challenger to some of Telstra's market share. Today, the market continues to be dominated by Telstra and Optus, but there does exist a number of smaller companies competing for a minor share of the broadband market (Benkler et al., 2010).

Australian politics have been quite tumultuous over the past decade, as John Howard's eleven-year run as Prime Minister finally came to an end with the Labor party winning the 2007 election. The Labor victory brought an end to the eleven-year reign of the Liberal/National Coalition government, however the centre-left Labor party has continued to favour a pro market approach to governance. Debates ensued over the course of the 2000s between the two parties

with regards to Telstra and other policy areas in the telecommunications sector. Up until this point, the government still owned a small portion of Telstra. However, the Coalition wanted to fully divest the government of Telstra shares, while Labor wanted to maintain a small ownership stake in Telstra and introduce changes to the structure of the company. According to Benkler et al., “the Coalition was unwilling to contemplate major structural changes to a company it was determined to sell; Labor defended public ownership of a vital national asset” (2010: 243). Debates between the two major political parties regarding telecommunications are still ongoing, particularly in light of the major public investment announced by the Labor government. This will be further discussed in the sections to come.

### **Key Players**

One key player in the Australian telecommunications sector is the Australian Communications and Media Authority (ACMA), which currently serves as the independent regulatory body for communications in Australia. The ACMA formed in 2005 when the Australian Broadcasting Authority (ABA), the former broadcasting regulator, and the Australian Communications Authority (ACA), the telecommunications regulator, merged to form a single regulatory body. The ACMA’s main duties are regulating radio communications, telecommunications, and Internet content standards, as well as representing Australian interests in international communications matters. It also plays an important role as the intermediary between industry, consumers and public interest stakeholders (ACMA, 2010).

Another key player in the telecommunications sector is the Australian Competition and Consumer Commission (ACCC). In fact, the ACCC is a separate regulatory body that deals exclusively with issues of competition. It was established in 1995 with a mandate to protect

business rights and obligations, consumer rights, and prevent anti-competitive behaviour (ACCC, 2010). Although the ACCC is responsible for competition issues across the entire economy, it does have specific powers regarding issues of network access and anti-competitive conduct in the telecommunications sector (Benkler et al., 2010). Its powers are vast, as the ACCC is empowered to bring about major penalties for any form of anti-competitive behaviour within the market (ACCC, 2010).

Another major player in the telecommunications sector is Telstra. As mentioned previously, Telstra currently dominates telecommunications in Australia. At present, Telstra controls 42 percent of telecommunications market, and owns the majority of telecommunications infrastructure (Benkler et al., 2010). Telstra's infrastructure assets have positioned it as a powerful player in the telecommunications market. Its main competitor is Optus, followed by a few other major providers including Vodafone, and Hutchinson 3G Australia (Benkler et al., 2010).

### **Net Neutrality in Australia**

Net neutrality has not received significant attention in Australia. Endres (2009) argues that strong competition in the retail provision of broadband Internet, volumetric pricing of Internet access, and an established regulatory framework for dealing with discriminatory behaviour have prevented net neutrality from becoming a major issue. However, competition in the retail provision of broadband Internet is debatable. Australian citizens have experienced a slow, and expensive take up of broadband Internet by North American standards. Over time, the broadband market became more competitive as other Internet providers built upon some of Telstra's infrastructure. This was possible due to local loop unbundling and line sharing services

enforced by the ACCC in 1999. However, the level of competition still varies greatly across the country. In September 2008, “245 of Telstra’s roughly 5000 exchanges had five or more facilities-based competitors, but 2315 had no competitor and 2221 had only one” (Benkler et al., 2010: 241). Although most Australians live in areas that are served by Telstra and at least two competing providers, Telstra has remained as the universal service carrier dominating the industry.

Volumetric pricing of Internet by ISPs in Australia has resulted in a slightly different account of net neutrality. All Internet use is currently capped in Australia, where usage above monthly plans is throttled or charged at a pre-determined rate (Marsden, 2007). It is argued that this practice reduces incentive for ISPs to block or throttle content unaffiliated to the ISP or generated by users, and encourages them to promote extra use of content from any source. Therefore, “rather than negatively discriminating against particular content, some ISPs are positively discriminating by offering unmetered access to some content” (Benkler et al., 2010: 246). However, unmetered access is usually granted to affiliated content, leaving competitors’ content and services at a disadvantage.

With regards to industry regulation, the ACCC decided against imposing a net neutrality ruling in 2004. The ACCC’s Final Report (ACCC 2004) suggested that enforcing certain net neutrality rules would negatively affect competition in the market. Endres (2009) contends that current industry-specific regulation operates in tandem with the *Trade Practices Act 1974*, offering several measures for dealing with discriminatory behaviour. Recently, Telstra was fined AUS \$18.6 million for denying other ISPs access to its infrastructure, breaching sections of the *Trade Practices Act* and the *Telecommunications Act*. However, Telstra’s abuse of market power is not new; its monopolistic control over telecommunications infrastructure has been

highly contentious since it became privatized in the 1990s. Therefore, despite Australia's reluctance to enforce net neutrality legislation, issues surrounding the debate have manifested themselves in other ways, chiefly through the lack of equal access to infrastructure. In response to these issues, and many other challenges existing within the telecommunications sector, the Australian government has decided to carry out one of the largest state-sponsored Internet infrastructure upgrades in the world.

### **Strategy**

In 2009, the Australian government announced that it would establish a new, government-controlled entity to build, own, and operate a new high speed National Broadband Network (NBN). This would include investing \$43 billion AUD of public money to build a fiber to the premises (FTTP) network, delivering high speed Internet to 90 percent of Australians. The remaining 10 percent of homes, largely in remote locations, would be reached by wireless or satellite. The NBN would be a purely wholesale, open access network. Rollout of the network is estimated to take eight years, and the Australian government has stated it would sell the National Broadband Network Company (NBN Co) within five years of completion (Corner, 2010).

The government's plans are much more grand than initially proposed in 2007. The Labor Party went into the November 2007 Federal Election pledging \$4.7 billion AUD to a fiber to the node (FTTN) network, with slower broadband speeds reaching less of the population.<sup>3</sup> In 2008, Telstra issued a bid to build the NBN, however, the bid was heavily urban-focused and came up well short of the government's demand of 98 percent coverage from the NBN. As a result,

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<sup>3</sup> Generally speaking, FTTP has greater long-term benefits for users. For an explanation of FTTP versus FTTN, see Lewin, Williamson, and Cave (2009).

Telstra's bid was rejected, and the company was subsequently removed from further NBN negotiations. Beyond Telstra, there were no other bids offering 'value for money' so the government decided to take control of the broadband project, upping its stakes in the NBN project to \$43 billion AUD (Corner, 2010). Within one month of the announcement, NBN Co had been formed, and several technical and commercial steps have been taken since then to significantly move forward with the plan (Corner, 2010).

However, it should be noted that numerous political, economic, and regulatory challenges to the success of the NBN currently exist. In particular, Telstra's participation in the NBN is essential. Telstra owns a major portion of the network infrastructure in Australia, and the NBN's rollout and commercial viability depend heavily on Telstra and NBN Co reaching an agreement. Soon after the NBN plan had been announced, Telstra was given the option to structurally separate or face functional separation through legislation. Much like in the UK, structural separation would include the establishment of a single wholesale unit, separate from retail business, while providing transparency for the ACCC. Most recently, Telstra has come to a non-binding agreement with the Australian government to participate in the NBN project. In exchange for \$11 billion AUD, Telstra will "de-commission its copper and HFC broadband networks and transfer all customer to the NBN once it is completed" (Maiden, 2010). Therefore, it would appear that Telstra's historical reign over the telecommunications sector in Australia may be coming to an end in the very near future.

## **Impact**

The NBN was developed “as a solution to many years of abject market failure in the Australian broadband market: pedestrian levels of access bandwidth in the cities, at internationally high prices; and miserable dial-up Internet access only in much of rural Australia” (Gerrand, 2010: 1). The NBN announcement fundamentally addresses net neutrality issues related to the physical layer of the network, and was a major blow to five private telecommunications firms, including Telstra, Optus, Singtel, Vodafone, and Hutchinson 3G Australia, who had been bidding to build a slower, less expensive network. Although much of the impact of the NBN has yet to be seen, several outcomes are likely to occur.

In terms of public interest, the NBN will bring about significant social progress. First, the NBN will undoubtedly provide greater service for various industrial sectors such as health, education, and ICT. Furthermore, it will address the digital divide between rural and other geographically isolated areas. By increasing Internet access and Internet speed, and regulating prices, the majority of Australian citizens will be able to enjoy the benefits of high-speed Internet as many other citizens in developed nations do. In general, the changes brought about by the NBN will result in far greater democratic, social, and economic equity across the nation. In short, the decision to invest such a lofty amount into the NBN shows a major commitment to the public interest.

As previously touched upon, the NBN will also create major changes to the regulation and structure of Telstra. The structural separation of Telstra into two separate entities will also have major effects on the telecommunications sector while fostering much more competition. Structural separation as a remedy to net neutrality is not new, as a number of different studies

have explored the benefits and consequences attached to structural separation (Nicoletti & Holmes, 2008; Havyatt, 2008; Davis & Williams, 2008; Bergstrom, 2008; Warren, 2008).<sup>4</sup>

Speaking to the importance of the NBN project to the future of telecommunications in Australia, Prime Minister Kevin Rudd stated that the plan would:

...solve once and for all, the core problem created when the previous Prime Minister [John Howard as head of a Liberal/National Party coalition government] privatized Telstra a decade ago without ever resolving the conflict of a private monopoly owning the network infrastructure and dominating the retail market...That decision has blocked competition and investment for a decade. Today, we draw a line under a decade of policy error and neglect” (Rudd quoted by Corner, 2010: 4).

With that said, the Labor government has been unwavering in its commitment to the NBN plan. Unless the Labor government loses its position in government in the upcoming election, the telecommunications sector will change drastically, fundamentally restructuring the regulatory environment.

## **JAPAN**

The development of the telecommunications sector in Japan follows a similar history to that of the UK and Australia: comprised of a monopoly incumbent carrier ultimately shifting to privatization. The Japanese government played a huge role in the investment and development of Nippon Telegraph and Telephone (NTT) and the telecommunications sector. NTT began as a government-owned corporation in 1953, and was subsequently privatized in 1985 to facilitate competition in the telecommunications market. According to Kushida and Seung-Youn Oh, “the political battle over privatizing NTT and liberalizing the telecommunications sector was complex and contentious, involving a dramatic power grab by MPT” (Kushida & Seung-Youn Oh, 2007:

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<sup>4</sup> A detailed discussion of structural separation is beyond the scope of this paper, but it will undoubtedly bring about fundamental changes to the telecommunications sector in Australia.

489). The Ministry of Posts and Telecommunications (MPT) was the regulatory body at the time, and after NTT was privatized, conflicts ensued between the company and its regulator due to NTT's monopoly power and status (Benkler et al., 2010: 286). In an attempt to weaken NTT's dominance in the market, MPT succeeded in dividing NTT into a holding company, and three telecommunications companies (NTT East, NTT West, and NTT Communications) in 1999. However, this move was considered somewhat of a compromise for MPT (Anchordoguy, 2001), as NTT continued to have major clout in the telecommunications sector.

With the goal of further developing its Information and Communications Technology (ICT) sector, Japan sought to effectively manage NTT and competition to ensure an environment that would foster productivity, innovation, and growth. While a discussion of the Japanese government's involvement in ICT is beyond the scope of this paper, it is important to note that pressure to advance the ICT sector contributed to a more expansive governmental role in telecommunications, particularly in the deployment of broadband strategies (Frieden, 2004: 4). As a result, Japan took several steps to establish new competition rules, yet was committed to empowering its regulatory agencies (Benkler et al., 2010). Kushida and Seung-Youn Oh argue that Japan has evolved from a relatively static but weak "managed regulation" approach to a "strategically liberalized" structure, in which vertical and horizontal integration was permitted, but competitive entry to the marketplace was also facilitated by the government (Kushida & Seung-Youn Oh quoted in Benkler et al., 2010). In other words, although the Japanese government was active in ensuring market-based competition, it maintained the power to strategically guide, shape, and limit the scope of the market, with the end goal of fostering rapid broadband deployment.

## **Key Players**

NTT's historical development as a government-owned monopoly is still reflected today, as the corporation dominates the telecommunications sector with a 50 percent market share. It is also one of the largest telecommunications companies in Asia (Anchordoguy, 2001). Softbank is NTT's largest competitor, followed by eAccess. Softbank played a key role in creating intense competition in the market after regulatory rules imposed on NTT. Several other smaller competitors exist, both service-based and facilities-based (Benkler et al., 2010: 285). To be clear, service-based competitors refer to providers who use NTT's facilities, usually through unbundling rules, while facilities-based competitors are those who build their own infrastructure. The latter form of competition is rising in Japan.

In 2001, MPT became reorganized under the Japan Ministry of Internal Affairs and Communications (MIC). The MIC is currently responsible for jurisdiction regarding broadband Internet. It should be noted that the MIC uses the layered model as a regulatory framework that "distinguishes between physical (access), service, platform, and content" (Benkler et al., 2010: 285). The result of this approach is that issues related to competition and discrimination are examined within each layer, "but integration between services in different layers is not prohibited. The MIC sees this as a deregulatory approach that nevertheless maintains market and social safeguards" (Benkler et al., 2010: 285). The extent to which the MIC addresses net neutrality using the layered model will be explored further in the sections to come.

Cabinet Office, whose approach to ICT is robust, historically and currently dictates many of the decisions made by MIC within the telecommunications sector. Other groups such as Japan Internet Providers Association, Telecommunications Carriers Association, Telecom Services

Association, and Japan Cable and Telecommunications Association have been part of broadband and net neutrality related consultation processes and have major stake in the telecommunications market.

### **Net Neutrality in Japan**

Japan has become increasingly concerned with issues surrounding net neutrality. As broadband Internet continues to grow in Japan, traffic management practices have become an important issue for ISPs, regulatory bodies, and the public at large. More specifically, an increase in peer-to-peer file sharing has resulted in a major take-up of bandwidth by Internet users, affecting the speed of the network as a whole. Thus, Japan shows that “contrary to the views of some proponents of national broadband policies, greater investment in broadband infrastructure alone is unlikely to eliminate the role of traffic management by network operators” (Wallsten & Hausladen, 2009: 102). In other words, although Japan’s broadband networks offer users with extremely fast Internet speed and high capacity, the MIC is nonetheless concerned about regulating network traffic and ensuring net neutrality.

In order to remedy potential problems surrounding high Internet traffic, and to provide the most efficient service for all users, some ISPs in Japan have chosen to adopt different traffic shaping practices. In 2007, the MIC formulated a “Report on Network Neutrality”, discussing packet-shaping guidelines and ways to prevent discriminatory behaviour. In this report, packet-shaping was deemed reasonable under certain circumstances. However, depending on how these practices are carried out, packet or traffic shaping could result in a breach of the Telecommunications Business Law. Accordingly, the purpose of the Telecommunications Business Law is to govern the operations of telecommunications companies to promote fair

competition, ensure equitable provision of service, and to protect public welfare (MIC, 2003). Therefore, the issue of packet-shaping required further addressing in Japan.

In 2008, four associations of telecommunications providers (Japan Internet Providers Association, Telecommunications Carriers Association, Telecom Services Association, and Japan Cable and Telecommunications Association) compiled a document entitled “Guideline for Packet Shaping”, which tackled the issue further. In short, it allowed for some restriction of traffic in the case of excessive bandwidth demand, but permitted no blocking of high-bandwidth applications or users. In addition to these reports, the MIC concluded that “consumers need to be more educated about the effects of different network management and security procedures so that they can make better decisions in choosing service providers” (Wallsten & Hausladen, 2009: 111). Likewise, part of the “Guidelines for Packet Shaping” stipulated that ISPs should disclose all information with regards to traffic shaping policies to users in advance, as well as making this information publicly available online. Overall, the Japanese government has chosen a relatively modest regulatory approach to address many of the issues raised in the network neutrality debate. These regulatory measures are discussed further below, and combined with other steps to ensure fair competition, Japan has arguably addressed net neutrality issues in relatively effective ways.

## **Strategy**

Japan’s strategy involves a combination of principles, policy rules, and incentives that have amounted to a framework that works in favour of net neutrality. As previously mentioned, the MIC released a report in 2007 addressing the net neutrality debate. Beyond dissecting packet-shaping guidelines and ways to prevent discriminatory traffic management practices, the report provided three guiding principles of net neutrality for policy developers, administrative

authorities, and other stakeholders involved in broadband deployment: 1) free access to the content/application layer, 2) free connection with any terminal that meets technical standards, and 3) use of networks at a reasonable price without discrimination. These principles are not specific to individual users per se, but more so to potential competitors entering and operating within the market. While these principles are not enshrined in actual legislation, they are intended to guide the policymaking process and evaluation of network providers, providing the conditions to ensure net neutrality. Although the report speaks mostly in the language of competition, and argues that certain existing provisions have counteracted discrimination concerns to date, the intention to combat net neutrality issues is explicit.

In addition to the report, several pre-existing conditions have created an environment in which net neutrality discordances have been less likely to occur. This includes service-based and facilities-based competition measures, particularly after the privatization of NTT. Over a short period of time, beginning in the late 1990s to the early 2000s, NTT and its fiber-to-the-home facilities became subject to a series of rules imposed by the MIC. The MIC was able to promulgate legislation once the Cabinet Office passed the “Basic IT Law” in 2000 (Kushida & Seung-Youn Oh, 2007). What really illuminated NTT’s problematic behaviour as the dominant wireline carrier in Japan was a warning given by the Fair Trade Commission (FTC) in 2000 over its treatment of competing ISPs. This prompted the MIC to “force NTT to lease out its unused fiber optic infrastructure (“dark fiber”) at low prices to competitors and allow them access to its local ‘last-mile’ infrastructure (known in the industry as ‘unbundling the local loop’)” (Kushida & Seung-Youn Oh, 2007: 500). In addition, the MIC continued to deregulate other areas of the sector to foster more competition with NTT.

In order to garner more facilities-based competition, the government offered low-interest loans and tax deductions to encourage the building of new network infrastructure. These efforts began in the mid 1990s, but as the government began to formulate national digital strategies in 2000, these incentives became more prevalent and widespread. Indeed, this firmly illustrates that developing a national digital strategy can be extremely useful in that it provides an overarching framework for which policies are followed to reach an end goal. As well, it shows an active involvement of the government in shaping investment in broadband infrastructure.

Another step taken by the MIC indicated that transparency, as a guiding principle, was becoming increasingly important with regards to broadband services and net neutrality. In 2001, the MIC created the Dispute Resolution Commission (DRC), whose purpose was to inform the public of all complaints or problems within the broadband sector, and this particularly pertained to NTT. This marked a shift away from negotiated settlements that often took place behind closed doors, and a desire to keep the public informed about the behaviour and practices of ISPs (Kushida & Seung-Youn Oh, 2007). Ultimately, this aided in providing users with more knowledge of ISPs to decide which provider they wished to enter an agreement with.

In short, Japan's strategy involved "increasing the level of competition not simply by deregulation, but also by re-regulation: the creation of 'managed competition' policy regimes to actively manage the dynamics of market competition" (Kushida & Seung-Youn Oh, 2007: 493). In other words, deregulation included steps such as dismantling several policy tools of competition management, while reregulation involved implementing new bodies such as DRC and imposing important policies such as local loop unbundling. This robust approach has had significant impact on broadband use and the broadband market in Japan.

## **Impact**

The impact of Japan's regulatory approach is evident in several different capacities, including increased competition in the market, further investment in broadband, and efficient service for the public. Japan is often cited as a global leader in broadband technology, speed, and price (Benkler et al., 2010: 283). Japan's broadband success, and lack of net neutrality discordances can be attributed to decisions made beginning from the time of NTT's privatization. The battle between NTT and MPT gave significant regulatory and policymaking power for MPT. This robust policy approach set the stage for Japan's success in telecommunications in the years to come.

Japan's competition policies aided competitors like Softbank to enter the market and create fervent competition. Competition was and continues to be a major factor in the success of Japan's widespread broadband Internet. This competition was brought about not only by allowing the entry of new providers, but by aggressively demanding that incumbent companies such as NTT offer their infrastructure to competitors at low prices. This also inevitably led to NTT's lowering of prices and further investment. In fact, NTT proceeded with major network developments and upgrades despite the obligation to share its network.

Therefore, regulatory rules imposed on NTT did not affect the growth and continued investment in broadband infrastructure. While NTT fought open access net neutrality requirements in the beginning, once they were in place, NTT had to lower its prices, innovate, and introduce new services in order to keep their customers. As such, the greatest benefit for the Japanese has been more choice and more options.

The case of Japan illustrates the importance of government investment at key moments: a fine balance between strategically thought-out regulations, targeted at the right players, (whether in the name of ICT development or the national digital strategy), compounded with sufficient room for competition to breed in the market. In sum, these conditions have served to create a level playing field in the telecommunications sector. Most importantly, nearly all Japanese citizens have access to high-speed broadband Internet at a much lower costs than in Canada or the U.S. Thus, the most valuable impact of Japan's regulatory approach has been an Internet service that effectively serves the public interest and prevails over the majority of other Internet services worldwide.

## **Discussion**

This paper will now explore how the international cases considered in this analysis may be applied to problems surrounding net neutrality in Canada. Major themes have emerged from examining net neutrality debates in the UK, Australia and Japan (see **Figure 2**). Identifying these trends in regulatory approaches, as well as in the telecommunications landscape of each context allows us to address net neutrality from a more holistic yet critical perspective. In particular, it helps us think about ways to tackle net neutrality that do not necessarily involve direct legislation, including: infrastructure policy, competition, transparency and choice. Each country utilized these approaches in various capacities, ranging from medium-high to very high, as illustrated in the table below.<sup>5</sup> As we will see, issues discussed within these areas affect one another and are often overlapping. These will be key issues for government, policymakers, and activists when thinking about net neutrality, and are the most important issues moving forward.

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<sup>5</sup> Very high denotes a vigorous, targeted strategy. High refers to a strong approach. Medium-high indicates a stable or proposed plan.

**Figure 2: Major Themes in Approaches to Net Neutrality**

<b>COUNTRY</b>	<b>Infrastructure Policy</b>	<b>Fostering Competition</b>	<b>Transparency and Choice</b>
<b>United Kingdom</b>	<i>High</i> -loop unbundling -structural separation of incumbent carrier	<i>High</i> -creation of Openreach to create level playing field -regulated wholesale arm of incumbent carrier	<i>High</i> -Openreach ensures transparency for ISPs -Broadband Choices provides clear and straightforward ISP choices for citizens
<b>Australia</b>	<i>Very high</i> -largest state sponsored national broadband network	<i>Medium-High</i> -national broadband network will be wholesale only, offered to ISPs at regulated prices	<i>Medium-High</i> -national broadband network leading to increased choice for Internet service
<b>Japan</b>	<i>Medium-High</i> - local loop unbundling -incentives through tax deductions and low-interest loans for infrastructure development	<i>Very high</i> -regulated incumbent carrier while deregulating other parts of the market	<i>Medium-High</i> -principles of transparency mandated by the regulator

### ***Infrastructure Policy***

In general, telecommunications markets can be characterized as having high levels of market concentration and limited competition, particularly at the physical layer (Cerf, 2009). Consequently, telecommunications markets are susceptible to a lack of competition, or market power abuse. Therefore, as illustrated in the previous international contexts, regulatory frameworks have been put in place to ensure non-discriminatory behaviour or unfair business practices. Although economic thinking would argue that these regulatory frameworks exist to ensure competition, the more fundamental goal is to preserve an open Internet that serves the

public interest. Despite these obvious trends in the telecommunications market, high barriers to entry still exist in the physical layer of the network.

The UK has addressed this issue via the EU's mandate for local loop unbundling. Ofcom topped this decision with the structural separation of BT, forcing regulation upon its wholesale arm. In turn, this created a level playing field for competing ISPs. Similarly, Japan also instilled local loop unbundling as a policy approach to NTT's status as the dominant wireline carrier. However, Japan was more determined to foster market competition as a solution, not only to combat NTT's dominance in the market, but to further develop its ICT sector. In comparison, the most forward and vigorous approach has arguably been that of Australia. By investing such a large sum of public money into building the NBN, Australia has attempted to tackle problems surrounding infrastructure ownership at the most fundamental level.

Canada has taken some steps in addressing infrastructure ownership. First, with the enactment of the Telecommunications Act of 1993, the CRTC imposed regulation on ISPs, including local loop unbundling on incumbent telecommunication carriers. However, these unbundling rules contained certain provisions, resulting in comparatively high rates for local loop access. Furthermore, the topic of structural separation has arisen in Canada, although a decision made by the CRTC in 1994 disregarded the option because it argued that behavioural safeguards, including open access and unbundling would be sufficient to prevent discriminatory behaviour (Hunter, 2009).

Under the direction of Industry Canada's Telecommunications Policy Review Panel in 2006, which mandated that the CRTC rely more on market forces to achieve policy objectives (Moll & Shade, 2008), Canada has experienced major setbacks with regards to infrastructure

policy. In particular, in 2010, the CRTC established a regulatory framework for wholesale Internet services, stipulating that wholesale providers such as Bell and Telus are not required to provide wholesale access to next generation networks (NGNs) at the same speeds as its retail services. Bell argued that wholesale access to NGNs would amount to “forced subsidization” of its competitors, ultimately hindering investment (Benkler et al., 2010: 252). Therefore, as it stands, the telecommunications landscape is moving towards significant deregulation.

However, similar to Australia, government investment in infrastructure may still be a viable option, specifically with regards to rural Canada. Australia has a very similar geographic breakdown to that of Canada, and there are large segments of Canada that remain unreached by broadband Internet. However, Canada has relied heavily on private sector spending to upgrade their Internet networks. As part of the Conservative government’s “Economic Action Plan”, CAD 255 million has been pledged over the next three years to provinces and private operators to improve access to underserved areas (Benkler et al., 2010: 254). While this does not near the amount invested by the Australian government, it would be beneficial for Canada to observe the rollout of Australia’s NBN over the next few years. As mentioned previously, government investment in infrastructure within Canada would alleviate some of the abuses of market power as a result of infrastructure ownership, and provide more accountability to the general public.

### ***Competition***

Where facilities-based competition may be unlikely, economically unfavourable, or harder to implement, service-based competition appears to be a more feasible option for policymakers. Promoting competition in the market as a way to prevent or remedy discriminatory behaviour of ISPs takes a hands-off approach, with aims of driving innovation

and investment. Many would argue that strong competition in the market negates net neutrality (Hahn & Wallsten, 2006; Globerman, 2008; Greenstein, 2007), mainly because ISPs would have no incentive to carry out practices such as bandwidth throttling or blocking competing content or applications; this type of behaviour would result in a loss of consumers.

In places such as Europe or Japan, it is argued that sufficient competition exists, therefore discordances with net neutrality appear to be more rare. Still, net neutrality has become a growing issue in Europe and Japan. However, competition in these two contexts *is* arguably stronger than in Canada, due to regulatory measures that have been put in place. For instance, as mentioned previously, BT's large market power was addressed through the development of Openreach. The key rule imposed by Ofcom was the regulation of wholesale pricing at relatively low and even costs. As a result, competing ISPs were able to access BT's infrastructure at regulated and fair prices, and a period of intense competition ensued. In Japan, regulatory bodies maintained significant power, thereby able to firmly regulate NTT. At the same time, however, the rest of the market was largely deregulated, permitting vertical and horizontal integration. Due to this balance, competition is very strong in Japan, placing it as a worldwide leader in broadband. Comparatively, Australia did not sufficiently address competition issues, which is likely part of the reason that Telstra infamously delivered low quality services to users at high prices, ultimately compelling the government to intervene so heavily.

High consolidation of the market in Canada means that the potential for net neutrality discordances through traffic management is greater, as demonstrated by Telus, Bell, and Shaw, and Rogers (Geist, 2008). Therefore, a few lessons can be taken from the UK and Japan with regards to competition. First, regulation of fair wholesale pricing has proven highly successful in

the UK. Although, as previously mentioned, the CRTC has recently passed a ruling reverting from this type of legislation, it is not out of the question that regulation of wholesale could be strengthened in the future. Japan illustrates that more regulation of incumbent carriers while fostering competition elsewhere is highly effective. Canada has been successful in deregulating the market via foreign investment, but this has also included deregulating incumbent carriers (Moll & Shade, 2008). A major part of the problem in Canada is that the CRTC does not have strong regulatory power. It would be useful for Canada to reconsider the power allotted to incumbent carriers, and strike more of a balance between regulating incumbent carriers and fostering competition elsewhere in the market, much like the case of Japan.

### ***Transparency and Choice***

As telecommunications is rooted in public utility philosophy, transparency and choice are two conditions that should exist regardless of a country's regulatory framework (Wu, 2006). However, these conditions should not serve as stand alone principles; they must complement a regulatory environment that aims to serve the public interest. Transparency means that ISPs disclose their traffic management practices to the regulator, customers, and the general public. As a corollary, having choice suggests that Internet users are able to access information regarding traffic management practices of ISPs, and subsequently choose which provider they wish to use. However, before a citizen can have choice with regards to choosing an ISP, there needs to be sufficient competition in the market.

The UK has created a standard for transparency and choice. Beyond its function as a managing body of BT's wholesale arm, an organization such as Openreach ensures transparency with regards to ISP services. Other groups such as a Broadband Choices have made information

regarding ISPs and switching a much more straightforward process for UK citizens. Similarly, Japan appears to be moving forward with regards to transparency. As mandated in the Report on Network Neutrality, the MIC states that ISPs are required to make traffic management practices clear to the public. However, competition in the Japanese market is more robust, thus, citizens actually have the option of choosing a different provider.

As mentioned previously, the market in Canada can be characterized as a duopoly (Barratt & Shade, 2007). This means that, in most cases, users have only one or two ISPs to access Internet from, and it is typically challenging and costly to switch service providers (Moll & Shade, 2008). To alleviate some of the net neutrality problems associated with this market structure, more transparency of ISPs would be highly valuable for citizens. Without knowledge of traffic management practices, and the option to switch providers with ease, this significantly reduces the ability of citizens to freely access Internet. As Internet access is increasingly seen as a basic right, transparency and choice are major components of the net neutrality debate. Although structural separation may not be possible, a mechanism similar to Openreach would be highly appropriate and useful to serve as an independent watchdog for ISPs in Canada. As well, policymakers can help encourage standards for transparency, or in the case of Japan, instill principles to guide the practices and policymaking process of incumbent carriers.

After taking into consideration infrastructure policy, competition, and transparency principles, it would be useful to discuss the possible impacts of official net neutrality legislation. No country examined in this analysis has instituted any net neutrality rulings beyond broad historical legislation governing ISPs. For the most part, telecommunications sectors around the world have adopted a deregulatory approach to managing ISPs, favouring methods that do not significantly restrict markets. As this analysis shows, this approach has worked effectively in

some cases. Whether or not these approaches will have a long-lasting affect is subject to debate. However, the most important element is that some form of regulation has ensued within these contexts. The UK, Australia, and Japan have each adopted different types of mechanisms, either implicitly or explicitly, to combat problems surrounding net neutrality. It is these varying degrees of regulation that must be considered in Canada.

However, shortcomings of this analysis must be noted, as the issue of net neutrality is tremendously complex and challenging to tackle for any country. Although these three international contexts have been examined in light of their effective approaches to net neutrality, they are still undoubtedly facing net neutrality related problems, or will likely be facing them in the future. In the case of the UK, although Openreach spurred a period of strong competition in 2005, this competition for market share has subsidized over the past several years, and the structure of the market is slowly becoming more consolidated again. This trend towards consolidation may have major impacts on net neutrality. It is possible that Openreach has provided a relatively short-term solution to a long-term problem.

In Japan, discordances with net neutrality are not entirely absent. Although Japan has been successful in fostering strong competition in the telecommunications market, the MIC has breached net neutrality in a different capacity: content censorship. In 2007, the MIC released a report discussing the way in which online content would be categorized according to existing media laws, and how it would restrict unacceptable content (Wallsten & Hausladen, 2009: 102). Censoring certain content, beyond abhorrent content such as child pornography, is a clear violation of net neutrality principles. Thus, it becomes evident that for Japan to effectively take into consideration the public interest, it needs to reconsider its regulatory framework from a more holistic perspective.

In Australia, although government investment in the NBN seems like a major gain for the public interest, privatization of the NBN within five years may prove otherwise. Beyond the major challenge of deciphering an appropriate regulatory framework for the NBN, the network may find itself under the control of a few or even a single private corporation. This would inevitably replace Australia in the position it was in during Telstra's reign, illustrating that government investment needs to be regulated long-term, and not fiercely subjected to the interests of major telecommunications companies looking to gain monopoly status.

In short, it would be useful to examine how the regulatory approaches of these three contexts affects other areas of telecommunications policy within these countries. For example, it would be helpful to consider regulatory issues, such as intellectual and digital property rights, copyright, piracy laws, and censorship. Looking at these other areas would provide more context as to how these strategies and choices truly affect the public interest. More research could further dissect the net neutrality debate in Canada. What factors are especially contributing to problems surrounding net neutrality? How they can be targeted directly? Taking into consideration other international contexts would also shed more light on the possible strategies Canada could undertake.

## **Conclusion**

In light of Canada's recent decision to embark on a national digital strategy, the goal of this paper was to reposition net neutrality as an important policy issue, particularly in light of the public interest. In order to do this, three international examples were chosen to illuminate useful strategies used in addressing net neutrality. By examining international approaches that have significantly benefitted the public interest, the aim of this paper was to shed light on how Canada

may become better equipped to deal with issues like net neutrality, and incorporate the public interest into future strategies and policy endeavors.

However, before examining these cases, it was essential to provide much needed context with regards to the telecommunications environment in Canada. A review of the historical development of telecommunications revealed an important principle upon which the industry was founded: common carriage. Common carriage, a rule rooted in equality and fairness, has manifested itself in the more recent debate surrounding net neutrality. Net neutrality is arguably an extension, or nuanced version of this principle and has come to be the centre of a highly contentious debate within telecommunications today.

In examining the UK, Japan, and Australia, several trends became evident. Much like Canada, the telecommunications sectors in the UK, Australia, and Japan all began with monopoly incumbent carriers. Legislation created after their privatization significantly impacted the telecommunications landscape. This affected market dynamics, regulatory structures, and ultimately led to different competitive environments. In the discussion following, infrastructure policy, competition, transparency and choice were laid out as possible ways to deal with problems surrounding net neutrality. From these three approaches, it can be argued that infrastructure policy played the most important role in addressing net neutrality. Infrastructure policy has shown to address net neutrality issues related to the physical layer of the network. On the other hand, competition and principles such as transparency appeared to play a more complementary, or secondary role. The heart of the problem ostensibly lies in who owns the infrastructure, how much power is allotted to them, and what steps the government is willing to take in order to prevent market power abuse. Directly and proactively addressing the issue from

this fundamental perspective will subsequently affect other areas of concern, such as market competition and transparency.

As media activist Steve Anderson (2010) points out, “the process of digital strategy policy formation presents us with a key point of engagement for the advancement of Canadian culture, innovation, and social justice.” Indeed, the national digital strategy has created an opportunity that academics, media activists, public interest groups, and other critical scholars should aim to harness. Given the deregulatory approach adopted by the Canadian government, vigorous net neutrality legislation may be unlikely to occur in the near future. This does not mean the issue of net neutrality will by any means fall to the wayside. In fact, quite the opposite is true: the less the regulatory framework regards net neutrality as an important issue, the more consolidated, closed, and controlled the Internet will become. Industry, academia, and the public at large must become more aware of how different regulatory approaches can affect net neutrality, and encourage the government to incorporate these factors when thinking about the national digital strategy.

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