

# **ISP REGULATION AND ANTITRUST: THE CASE FOR BETTER COMPETITION**

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## **INTRODUCTION**

On January 18, 2012, users attempting to browse Wikipedia and Google were greeted by ominous warnings, black censor bars, and pleas for help “protecting the internet.” [1] These protests were a response to two proposed bills – the Stop Online Piracy Act (SOPA), and the Preventing Real Online Threats to Economic Creativity and Theft of Intellectual Property Act (PROTECT IP Act, or PIPA) – which contained provisions that could hurt the openness and freedom that had been characteristic of the Internet since its inception.[2] Although these were not the first Internet protests of their kind, this specific blackout drew much more attention and publicity than the previous protests. [3] Many of these websites – such as Google, Flickr, Twitter, Wikipedia – which draw millions of user hits per day, featured some type of message drawing attention to its users to protest the legislation. [4] Congress eventually shelved the bills on January 20, 2012, and although multiple attempts have been made to pass bills similar to SOPA and PIPA, such as the Cyber Intelligence Sharing and Protection Act (CISPA), such bills have yet to be passed by the U.S. Senate and opposition to them remains fierce. [5]

These net neutrality and Internet regulation issues, characterized by the rise and fall of SOPA and PIPA, have been recently resolved, in part. [6] This has been achieved through the 2015 promulgation of Open Internet rules by the Federal Communications Commission (FCC), the federal agency that regulates interstate communications. The FCC Open Internet ruling both gave the FCC the ability to make rules for broadband providers and passed net neutrality regulations designed to protect free expression and innovation on the Internet. [7] However, the discussion on net neutrality should not end with the passing of the FCC’s Open Internet rules. [8]

One of the biggest issues of the net neutrality debates concerns paid prioritization, which is the potential practice of Internet Service Providers (ISPs) [9] charging customers and businesses alike for using “fast lanes” on their networks. This means that either customers would have to pay more to use a certain service at higher speeds, or businesses would have to pay more for customers to have access to their websites and services at higher speeds. [10] Although paid prioritization was outright banned by the Open Internet rules, 28 percent of Americans can only choose one ISP and 37 percent of Americans can choose between two ISPs. [11] Without a meaningful choice, American broadband providers do not need a fast-lane to make substantial profits – they can simply monopolize the market. [12] This Note attempts to address the antitrust side of net neutrality– how countries should regulate their ISPs so as to guarantee that their consumers get the best Internet possible at the lowest cost.

This Note firstly discusses net neutrality and ISP regulations broadly – do we see it as a commerce issue, a government regulation issue, a data fairness issue, or even a human rights issue? And if we decide that ISPs must be regulated, what type of antitrust regulation will be most effective? This Note takes a comparative look at Internet regulations around the world, examining both the development of broadband infrastructures and the antitrust laws (or lack thereof) of such countries. This Note ultimately concludes that the current antitrust regime in the United States will not be able to be enforced so as to break up the regional monopolies and duopolies built by the broadband companies. This Note suggests two ways to resolve the issue of concentration of broadband companies in the United States – either through a behavioral antitrust remedy and accompanying legislation, or a more radical alternative which would involve the separation of infrastructure management from the broadband industry.

## BACKGROUND

### *A. Net Neutrality Enters the Mainstream*

It is important to first unpack some of the many issues that have been presented by these aforementioned bills. [13] The Stop Online Piracy Act (SOPA) and the Preventing Real Online Threats to Economic Creativity

and Theft of Intellectual Property Act (PROTECT IP Act, or PIPA), though not identical, were created as complementary bills. [14] Broadly speaking, SOPA allowed the requesting of court orders to bar advertising networks and payment facilities from conducting business with infringing websites, and taking down web searches from linking websites, as well as enabling court orders requiring Internet Service Providers to block access to certain websites. [15] Proponents of the bill claimed that it would protect American intellectual property and jobs, and that such measures should be required to bolster American copyright laws. [16] Opponents of SOPA were primarily concerned that entire websites could be taken off web searches and that advertising networks could be barred from conducting business with them simply because of copyright infringing content being found on a site without the host's knowledge, or in an extreme case could be used to shutdown innocent sites. [17]

Such concerns, thus, related primarily to the ability of websites and businesses to operate on the Internet freely and without barrier to entry. [18] This has been a hallmark of the Internet since its inception, and yet has also a key point of discontent that some commercial industries, such as the music industry, have had with the Internet. [19] This freedom of access to the Internet has also given people the ability to illegally distribute and download movies and music online with ease, with even the idea of 3-D piracy becoming feasible in the digital age, and has both facilitated and made it incredibly difficult to stop piracy. [20] Indeed, forty-six percent of American adults have bought, copied, or downloaded unauthorized music, movies, or music files at one point. [21] This figure rises to seventy percent when looking at millennials from eighteen to twenty-nine years old. [22]

### *B. What is Net Neutrality?*

While it makes sense that such industries would want to protect their intellectual property, enforcing these intellectual property rights online can run into conflict with the basic tenets of net neutrality. [23] Net neutrality is the principle that ISPs and governments should treat all data on the Internet the same way, and that the Internet should be open and easily accessible. [24] Net neutrality touches on a broad variety of topics. [25] For example, bandwidth throttling is the practice of intentionally slowing down Internet service by a broadband provider. [26] The concern with selectively

throttling certain websites or programs is that it gives ISPs the ability to charge those certain websites, programs, or even users for the ability to use those websites. [27]

Going a step further, broadband discrimination is the practice of an ISP selectively blocking access to certain applications or websites, which is essentially outright blocking access to certain websites or programs. [28] Those who are in favor of data discrimination and bandwidth throttling argue essentially that, as businesses, banning these practices reduces the incentives to invest in broadband infrastructure by limiting their ability to recoup the costs of such infrastructure. [29] The opposition argues that such barriers to entry will hurt competition and growth of programs, websites, and other Internet-based businesses, and thus reduces the ability of emerging Internet services to survive by stifling the competitive environment. [30] Other principles of net neutrality include the idea of the dumb pipe, which states that the endpoints of the network (the end-to-end PCs/users) are where intelligence and development lie, and thus restrictions at the middle do not add any value. [31] Net neutrality policy debates can essentially touch almost any legal issue related to the Internet, whether it be cyber security laws, anti-piracy laws, policy, or even antitrust, pro-competition laws. [32]

This brings us to net neutrality in 2014. When Tom Wheeler was elected by President Obama to his current position as Chairman of the FCC, many feared that he would enact policies that would be much more beneficial to the telecommunications industry than to consumers. [33] Chairman Wheeler is a veteran lobbyist of the communications industry – formerly the Chief Executive Officer of the Cellular Telecommunication & Internet Association, and previously had also worked for the National Cable & Telecommunications Association. [34] Indeed, the FCC proposed rules that would allow Internet service providers to charge companies for access to an Internet “fast lane.” [35]

Again, the proposals were met by backlash from activists and the tech industry. [36] On September 10, 2014, users attempting to browse popular websites such as Reddit, Netflix, Tumblr, Etsy, and Kickstarter were again greeted with warnings along with a loading symbol, calling users to lobby their congressmen to push legislation and regulations promoting net neutrality. [37] By February 26, 2015, the FCC voted to promulgate rules

that reclassified broadband as a telecommunication service under Title II of the Communications Act. [38] Previously, broadband had not been classified as a telecommunication service under Title II, which allowed the FCC to avoid regulating broadband at the time. [39] Furthermore, with broadband services now considered a telecommunication service that the FCC can regulate, the FCC passed three bright line rules that banned blocking access to legal content, banned throttling of Internet traffic on the basis of “content, applications, services, or non-harmful devices,” and banned paid prioritization for “fast-lanes.” [40]

### *C. Broadband Monopolies in the United States*

Through the defeats of SOPA and PIPA and the promulgation of the FCC’s net neutrality rules, net neutrality has, so far, sustained many victories. [41] And yet these victories beg the question – why is it that fast-lanes were ever an issue? [42] After all, in an open market, consumers would in theory just choose to switch to ISPs that provide the most competitive speeds regardless of whether one offers a fast lane or not. [43] Americans have so few choices for broadband providers to the point that, when Comcast and Time Warner Cable attempted to merge recently, the companies argued that they do not compete anywhere, and thus their merger would not stifle competition amongst broadband and cable providers. [44] Such statements, perhaps unintentionally, exemplify the lack of competition in the American ISP sphere. [45] Indeed, critics of the deal have noted that Comcast has “enormous market power where it operates and has the increased ability to stifle innovation in cable boxes, in uses of the Internet.” [46]

Understanding how the broadband companies have been able to form such powerful monopolies requires taking a look at the history of cable in the United States, as most of the current broadband companies are either cable companies or telephone companies. [47] The Cable Communications Policy Act of 1984 was passed originally to provide uniform standards and regulation for the cable industry, attempting to strike a balance between “local governments... and market competition.” [48] The act enacted regulations that made it easier for local monopolies to grow in size and in influence by reducing the ability of local governments to regulate cable prices. [49] Ultimately, these local monopolies, regulated using a model

similar to the “natural monopoly” model used for utilities companies, became regional cable monopolies. [50] When the U.S. government finally allowed the privatization of the Internet after 1994, these same companies eventually added to broadband infrastructure to their existing cable infrastructure, either through turning telephone wires into DSL or using coaxial cable for cable internet. [51] Consequently, when there are only one or two competitors in the market, broadband providers get to set prices at “monopoly or duopoly pricing,” causing Americans to have to pay more for slower speeds. [52]

Going back to the net neutrality argument, why wouldn't consumers and content producers just gravitate towards ISPs that choose not to charge for separate usage of fast-lanes? [53] It is because American customers and online content producers do not have the ability to choose between many broadband ISPs at the faster end of broadband speeds, which gives the ISPs the opportunity to sell fast lanes in the first place. [54] At lower download speeds, such as 3Mbps, eighty-eight percent of the population has two or more fixed ISPs available to them. [55] At 10Mbps, 70 percent of the population has access to two or more providers. [56] At 25Mbps, this number drops drastically, to only 37 percent of the population having access to two or more ISPs. [57] By comparison, a study which compared five U.S. cities with five French cities found that French residents had on average, seven internet service providers to choose from. [58] In addition, the same survey found that French cities were paying less on average for comparable or even faster service. [59]

## DISCUSSION

### *A. Antitrust Law in the United States and in Europe*

In the United States, antitrust law exists both at the state and the federal level. [60] At the federal level, it exists primarily in three bills: the Sherman Antitrust Act of 1890 (Sherman Act), the Clayton Act of 1914 (Clayton Act), and the Federal Trade Commission Act (FTC Act). [61] The Sherman Act limits agreements that “unreasonably restrain competition.” [62] Generally speaking, Section One of the Sherman Act has been interpreted as banning horizontal agreements such as naked price-fixing, naked market divisions, and concerted refusal to deal, as well as banning

agreements and practices which unreasonably suppress market competition. [63]

Section Two of the Sherman Act is targeted at unilateral conduct of a monopolist and thus does not require an agreement for one to be in violation of the act. [64] The Clayton Act added more specific antitrust laws governing price discrimination in commodities, in sales of commodities conditioned on not dealing with rival sellers, and on mergers and interlocking directorates. [65] The portions on price discrimination were amended by the Robinson-Patman Act in 1936, and the portion on mergers was amended by the Celler-Kefauver Act in 1950 and supplemented by the Hart-Scott-Rodino Act in 1976. [66] In addition, the original Clayton Act enacted the FTC Act, which generally prohibits all “unfair methods of competition,” where unfair is defined as a “[practice that] cause[s] or is likely to cause substantial injury to consumers which is not reasonably avoidable by consumers themselves and not outweighed by countervailing a benefits to consumers or to competition.” [67]

On the other hand, in Europe, antitrust law exists primarily through the European Community treaty (“EC Treaty”) that was signed in Rome in 1957 and furthermore ratified into the Treaty on the Functioning of the European Union through the Lisbon Treaty. [68] Notably, the antitrust provisions of the original EC Treaty contained provisions which had been drafted by a number of antitrust experts, including Robert Bowie, then a law professor at Harvard Law School. [69] Article 101 of the Treaty on the Functioning of the European Union (Article 101 TFEU) sets out the EU law in this area:

1. The following shall be prohibited as incompatible with the internal market all agreements between undertakings, decisions by associations of undertakings and concerted practices which may affect trade between Member States and which have as their object or effect the prevention, restriction or distortion of competition within the internal market, and in particular those which:

- (a) directly or indirectly fix purchase or selling prices or any other trading conditions;
- (b) limit or control production, markets, technical development, or investment;
- (c) share markets or sources of supply;

(d) apply dissimilar conditions to equivalent transactions with other trading parties, thereby placing them at a competitive disadvantage;

(e) make the conclusion of contracts subject to acceptance by the other parties of supplementary obligations which, by their nature or according to commercial usage, have no connection with the subject of such contracts.

2. Any agreements or decisions prohibited pursuant to this article shall be automatically void.

3. The provisions of paragraph 1 may, however, be declared inapplicable in the case of:

any agreement or category of agreements between undertakings, any decision or category of decisions by associations of undertakings,

any concerted practice or category of concerted practices, which contributes to improving the production or distribution of goods or to promoting technical or economic progress, while allowing consumers a fair share of the resulting benefit, and which does not:

(a) impose on the undertakings concerned restrictions which are not indispensable to the attainment of these objectives;

(b) afford such undertakings the possibility of eliminating competition in respect of a substantial part of the products in question. [70]

Similar to how the United States has federal and state antitrust law, on top of European Union-wide antitrust regulation, such as Article 101 TFEU listed above, countries may individually pass antitrust legislation targeted at domestic enterprises, as exemplified by France's Competition Authority or the U.K's Enterprise Act. [71]

### *B. An Uncoupling of Cable and Telecom Company Regulations*

In part, the conditions that have allowed the American broadband duopolies stem from acts related to the cable industry in the 1990's. [72] The Cable Television Consumer Protection and Competition Act of 1992 (1992 Cable Act) was originally enacted to "enhance consumer protection and promote increased competition in the cable industry." [73] The act included provisions that refrained federal and state agencies from regulating the rates for the provision of cable services, that forced cable companies to carry



certain local television channels, and most notably provisions that required cable channels to offer, at fair rates, their exclusive programming to satellite distributors as long as those satellite distributors also happened to be cable programmers. [74] Lastly, the 1992 Cable Act also required an annual report of price rates for cable companies, including one comparing rival cable company rates. [75] Although the act essentially assuaged concerns of vertical integration and exclusivity amongst cable programs to certain programmers, the impact of the Act on household welfare has been argued to be almost none. [76]

The Telecommunications Act of 1996 also appeared to have similar goals as the 1992 Cable Act. [77] Notably, this is the first telecommunications act that mentions the Internet as part of telecommunications companies' packages, and acknowledges the Internet as "a [unique] forum for true diversity of political discourse, unique opportunities for cultural development, and myriad of avenues for intellectual activity." The 1996 Telecommunications Act had the goals of increasing competition in both telephone and cable television markets by massively deregulating the cable industry, through deregulating rates and allowing cable companies to own as many number of local television stations as they wanted. [78] In effect, the act had the effect of causing a "wave of megamergers" in telecommunications, [79] which, although had originally been seen as having delivered on higher competition, had resulted in the skyrocketing of cable rates, mergers, and a resulting loss in jobs from the jobs of around "half a million". [80] By the end of 2005, only five companies controlled 75 percent of all prime-time viewing, and cable rates had risen by 50 percent. [81] In addition to media companies, cable infrastructure companies and telecommunication providers also further merged and consolidated. [82] Interestingly enough, none of the so-called megamergers were challenged by antitrust authorities in the United States. [83]

### *C. Broadband and ISP Development Around the World*

Largely, then, the causes of the large broadband monopolies in the United States are rooted in the acts and political climate that allowed the cable and telecommunications industries to merge into huge monoliths. [84] Not all Americans have so little choice – some may get their broadband from

Google Fiber or other local internet service providers, but for most Americans this is not an option. [85] Indeed, it seems shocking that the country that created the Internet ranks constantly near the bottom when compared to other countries in broadband-only prices. [86]

The rest of this section will be focusing on analyzing the growth of broadband infrastructure in other countries, as well as well as looking at governmental policies regarding the development of broadband infrastructure. By means of contrast, not all countries have had their broadband infrastructure come from cable and telecommunication monopolies. [87] Some key examples include Sweden's fiber optics network, which was almost entirely funded by Swedish municipalities, and the United Kingdom, whose 2002 antitrust bill, the Enterprise Act of 2002, forced the largest ISP at the time – British Telecom – to allow other broadband providers to use its infrastructure to deliver broadband services at a certain price, a practice called “local loop unbundling.” [88] In addition, British broadband services are regulated by the governmental entity Ofcom, which under the Communications Act of 2003 is charged with “consumer protection, access, interconnection obligations [of the ISPs]”, as well as imposing additional obligations on BT as the “designated... provider[] of universal service”. [89]

Another interesting example of broadband development is France, which is one of the most competitive countries in Europe for ISPs. [90] Currently in France, there are at least six major ISPs in most cities for consumers to choose between. [91] France, similarly to the United Kingdom, has regulated its ISPs via antitrust law in the same way that the U.K.'s Enterprise Act forced local loop unbundling onto British Telecom, by forcing the same to the incumbent operator France Telecom. [92] In addition, France regulates its ISPs via Arcep, which monitors ISP minimum speeds and coverage. [93] In France, the French government has even been looking into plans as to how the government itself can aid and accelerate the development of fiber infrastructure, and the phasing out of the older copper infrastructure. [94] Additionally, as mentioned above, French companies that wish to merge are subject to control by the French Competition Authorities. [95] Interestingly enough, although France ranks somewhere slightly below median when it comes to Internet speeds in Europe, [96] French consumers

still have cheaper broadband for similar capacity than American consumers. [97]

On a far different end of the spectrum lie the countries that have the fastest Internet speeds in the world. [98] These include Finland, Japan, Sweden, and Korea. [99] All of these countries have had completely different models of growth – for example, Korea and Japan both have much more competition in broadband providers (the motto: managed competition), as well as very strong laws which force unbundling of telecommunications services. [100] South Korea’s Internet policy has been described as “four or five years” ahead of that of the United States, with a lot of government funding going towards the development of broadband infrastructure. [101]

#### *D. Mergers and Antitrust Remedies in Telecommunications Industries*

Along with observing the governmental policies involved in the development of broadband infrastructure, observing the number of antitrust actions taken by governments is also important to contrasting different countries’ approaches to broadband development. This section will be going in-depth in analyzing the approach to national mergers and the numbers of mergers in the telecommunication industries.

In Europe, mergers are required to be notified to the European Commission, and cannot be put into effect prior to approval by the European Commission. [102] Additionally to having to deal with the merger control authorities, European communications industry mergers potentially also have to get approval from communications regulators in their respective countries. [103]

When horizontal consolidation is about to occur (a merger of competitors) in the telecommunications industry, the merger control authorities tend to look primarily at the potential market power of the proposed post-merger entity. [104] Additionally, due to the telecommunications industry having potential competition issues due to vertical integration between merging entities (for example, a television channel owned by a cable provider). [105] Other potential competition concerns in E.U. competition law include the issue of post-merging companies having control over infrastructure that would allow it to grasp a

significant degree of control in access over a given consumer base. [106] Lastly, a common issue with telecommunications mergers is the potential for merging parties to transfer their market power into a neighboring market, through the tying of products with one another. [107] For example, an ISP may could potentially bundle a certain television channel exclusively to their cable service, which can only be purchased within a bundle that includes their Internet service. [108]

The remedies to this across countries are varied. [109] Although the traditional preferred remedy in antitrust is divestiture, the telecommunications industry comes with very specific issues. [110] Specifically, the telecommunications industry requires a more delicate balancing between thinking about what reasons telecommunications companies may desire to merge for, such as consolidation of infrastructure and technological innovation. [111] Other issues include the risk of granting monopoly power to telecommunication companies, the need to keep multiple players in certain markets to enhance competition, and ultimately the baseline and benefits to customers. [112] Accordingly, the severity and invasiveness of divestiture is less favored when it comes to deregulating telecommunication and information industries. [113] Behavioral remedies that have been used as alternatives to divestiture includes the granting of access to infrastructure, granting access to technology, granting access to content, and the termination of exclusive vertical agreements. [114]

From 2000 to 2007, merger remedies in the telecommunications and information industries of Europe did in fact lean towards behavioral remedies rather than structural. [115] The primary remedies used for the industry were behavioral, with twelve mergers in that time period given behavioral remedies, eight being given a mix of two, and only seven mergers being given structural remedies. [116]

In the United States, the Federal Trade Commission (FTC) and the Department of Justice's Antitrust Division (DOJ) are the primary authorities that are responsible for assessing a merger's potential impact on the competitiveness of a market. [117] Both share the power and ability to prescribe remedies should either decide that the resulting enterprise would be anticompetitive. [118] Traditionally, the choice of which agency will

review a transaction will depend on which industry is the subject of the acquisition – here, in the telecommunications industry, the DOJ is the primary federal agency in charge of reviewing mergers. [119] In addition to the consent requirement of merger authorities to a remedy, the Antitrust Procedures and Penalties Act (Tunney Act) requires the DOJ to file with the District Court and public in the Federal Register, the complaint and proposed consent judgment and a Competitive Impact Statement, describing the nature of the proceeding, the alleged violations, and a description of remedies available to privately injured parties. [120] This gives the District Court the opportunity to determine whether the DOJ has adequately addressed a remedy and the competitive harm in their complaint, while informing itself through the light of public comments. [121]

The United States’ approach to antitrust regulation in the telecommunications industry has been described as a “heavy-handed ex ante approach” – that is, a focus on regulation that seeks to impose sanctions and remedy behavior before any specific finding of illegal conduct. [122] An example of this ex ante approach can be found in the 1996 Telecommunications Act and its provisions, which imposes a variety of duties on telecommunications carriers. [123] Such duties include mandatory interconnection of services, selling “at wholesale rates any telecommunications service that the carrier provides at retail to subscribers.” [124]

From the passage of the 1996 Telecommunications Act to eight years onwards, the FCC and DOJ cleared many mergers that took place in the telecommunications and cable sectors, albeit with a catch. [125] These include mergers in all sectors of telecommunication, for example, between Southwestern Bell Corporation (SBC) and Ameritech (now AT&T), SBC and Southern New England Telephone (SNET), Worldcom and MCI Communications Corp. (now part of Verizon), AT&T and MediaOne (cable company acquired by AT&T), and Bell Atlantic with General Telephone & Electric Corporation (GTE) (also now part of Verizon). [126] Although all these mergers were approved, the transactions were cleared with conditions required by the merger authorities, requiring remedies that were a mix of structural and behavior in nature. [127]

Even before a deal reaches the merger authorities, the threat of antitrust action can either deter or stop a potential merger from happening, especially given enough pressure. [128] The Comcast-Time Warner Cable Merger, which would have created the United States' largest cable and broadband provider, faced wide-spread opposition, with both the DoJ and the FCC threatening to block or impede the merger. [129]

## ANALYSIS

A threshold issue that must be addressed by this Note is whether the U.S. broadband companies have monopoly power. [130] If that is the case, can these broadband companies use their market position to prevent competitors from entering the market? [131] If it is the case that U.S. broadband oligopolies are excluding competitors from the market, the final and most important question then becomes what the most appropriate remedy is for the excluded Internet Service Providers (ISPs). [132] Alternatively, a way of breaking up the broadband oligopolies could rest in technical solutions. [133]

### *A. Competition and Barriers to Entry in the U.S. Broadband Industry*

Currently, more than one-fourth of Americans do not have a broadband service, with many of such Americans citing cost as their primary reason for failing to get broadband. [134] The U.S.'s international peers pay less for their Internet, while getting faster speeds. [135] It has also been established that other many other countries, such as the United Kingdom and France, have a greater diversity of ISPs in their countries than the United States does, and that these same countries pay less for faster speeds. [136] One might suspect that a lack of market competition is what is causing the slower speeds and the higher prices – oligopolies are not known for pricing close to cost. [137]

Whether or not the lack of competition is the sole reason, or even a major reason, as to why U.S. broadband is slower and more expensive cannot be determined by looking at the data available, although the availability of cheaper Internet in cities that provide broadband at a municipal level certainly suggests this to be true. [138] There is clearly a dearth of competition in most areas of the United States. [139] Looking at the market overall, the broadband market is highly concentrated: the five

largest U.S. broadband providers own over three-fourths of the total market-share of the entire broadband market in the United States. [140]

For speeds from ten Megabits per second or higher, seventy percent of Americans can choose between two ISPs, whereas only twenty-eight percent of Americans can choose between three ISPs or more. [141] At twenty-five Megabits per second or higher, this number falls gravely, with only 37 percent of Americans having the choice between two ISPs, and nine percent having the choice between three ISPs or more. [142] At 100 Megabits per second or higher, the numbers fall even more drastically, with eight percent and three percent with the choice of respectively two ISPs and three ISPs or more. [143] Given the increasingly higher bandwidth demands of websites and content creators such as Netflix and Spotify, the concentration of market share, especially at the higher tiers of speed, can be alarming, as it means that consumers that wish to use these websites at their optimal speeds have few choices for ISPs, effectively giving those ISPs monopoly or duopoly power over many customers. [144]

It is clear that there is little choice for most U.S. customers for what ISPs they end up with. [145] Does this mean that Comcast, Verizon, Time Warner Cable (TWC), and the other dominant U.S. ISPs have the ability to stop other competitors from entering the market? Not necessarily so. [146] Firstly, antitrust law in the United States would mostly likely cover any behavior, such as predatory pricing, which might attempt to cut out competitors. [147]

It is highly unlikely that any ISP would resort to such a practice. [148] Firstly, a recent U.S. Supreme Court case showed the tendency of current antitrust law to be reluctant to challenge pricing strategies of broadband providers. [149] Secondly, the pro “natural monopoly” attitude that telephone services and cable services were built under essentially gave the current major broadband providers monopolies or duopolies all over the United States. [150] Although market division is a cognizable claim under antitrust law, this claim is only available if it is done through agreements amongst competitors, not if government policy encourages such division. [151] As it is, these broadband companies enjoy both a divided territory and the ability to not compete on price due to the natural monopolies given to them. [152] On top of this, broadband is a service that requires a lot of

infrastructure investment to operate, further creating barriers to entry. [153] Given all these factors, it is unlikely that broadband providers in the United States have to engage in any anti-competitive practices, as the “natural monopoly” cable market has built-in features which protect them from competition. [154]

Effectively, there are large barriers to entry into the broadband market, both between the existing market structure and the infrastructure investment required to be a broadband provider. [155] That is not to say that it is impossible to enter the broadband market in the United States: companies such as Google Fiber, municipal projects such as iFiber offer super-high speeds at prices comparable to the rest of the United States. [156] In cities where America’s broadband behemoths must compete with Google Fiber, they do; AT&T’s 1GBps plan costs \$70 a month in Austin, Texas, as opposed to \$120 in Cupertino, California. [157]

By comparison, some other countries have effectively used antitrust law to create a more competitive broadband market. For example, in the United Kingdom and in France, the application of Enterprise Act of 2002 (Enterprise Act), of OFCOM regulations, and of ARCEP regulations respectively have led to a highly competitive broadband industry. [158] Incumbent broadband providers in the United Kingdom have to share their fiber lines with any ISP that is willing to pay a certain price. [159] In areas where there is no fiber infrastructure yet, the companies have to share their ducts and poles with anyone who wants to run fiber. [160] Lastly, in areas where there is no competition at all, OFCOM uses price ceilings to prevent prices from getting too high. [161] It is no coincidence that the British have some of the highest speeds in Europe outside the Scandinavian countries. [162]

Such an approach could also have been effective in the United States, when local loop unbundling was once pushed upon incumbent telecoms, but the domestic telecommunications industry fought hard against the measure. [163] Although the United Kingdom and France’s policies are government intervention in the free market, it is clear that there is a market failure in the United States due to both a lack of competition, high barriers of entry, and broadband oligopolies that were created in the age of cable television. [164] One possible solution to this issue is to respond with government



intervention in order to force competition. [165] However, that is not the only possible solution.

### *B. Fiber and the Natural Monopoly*

One key technological development that has allowed many other countries to rapidly expand their broadband infrastructure is the invention and the wide-spread use of fiber optics as a replacement to traditional copper cable for Internet connections. [166] Cable and ADSL all originally used copper lines for data transmission, the same lines that were used for telephone lines. [167] It once made sense that companies that provided television services and landlines to also provide broadband – as it once used the exact same infrastructure. [168] The bronze circuits, a technology that is almost a century old, are complex pieces of infrastructure that are also expensive to maintain – consisting of many switches and conductors, and when that technology was adapted for wide-spread Internet use, the costs were even higher due to the limited range of the phone switches. [169] Different companies use different types of architectures. [170] Copper, whether through coaxial cable or through digital subscriber lines (DSL), was thus converted for broadband use. [171] Comcast leveraged its existing coaxial cable network to run data over– Verizon uses telephone lines, on the RJ11 connector, to run DSL over its copper phone lines. [172]

However, the standard for broadband communications is starting to change, through the increase in usage of fiber-optic communication for broadband infrastructure, colloquially referred to as fiber. [173] Fiber optic cables are created through thin strands of glass woven together into single cables. [174] These cables are significantly lighter than bronze cables, have a much greater range for the fiber link, and also can carry much more bandwidth, due to the cables using light instead of electricity to transmit data. [175] Additionally, the lower weight of fiber means that it can be dropped underground when paving roads along with the pipes used for water and sewage. [176] By contrast, copper cables suffer from electromagnetic interference and energy loss over range, as well as suffering from additional costs that come with maintaining the telephone poles required for copper and the higher number of switches required. [177]

Fiber can be implemented in different steps and exists at different speed tiers. [178] On an international level, submarine communication cables, which are sea-level cables that span across oceans, have been using fiber optics since the 1980's. [179] These cables are huge and expensive undertakings, though commonly when fiber is discussed it is not to discuss underwater cables. [180] Domestically, the slowest and most common form is called fiber-to-the-node (FTTN), also known as "last mile" fiber optics. [181] FTTN uses copper for the "last mile" connections – that is, the web of connections that goes from the last fiber nodes to homes, which also happens to be the most expensive part to connect via fiber. [182]

The middle tier of fiber is called fiber-to-the-cabinet (FTTC), sometimes also called fiber-to-the-curb.[183] FTTC is similar to FTTN in that it does not go directly to the home, but FTTC's end connection tends to be a pole or street cabinet close to the customer's home. [184] With FTTC, a network can be pushed to faster speeds through using faster forms of copper cables, such as gigabit Ethernet cables, which would not be feasible over FTTN. [185] The fastest type of fiber optics connection is called fiber-to-the-premises (FTTP), sometimes referred to as fiber-to-the-home (FTTH) or fiber to the building (FTTB), goes directly to a resident's junction box. [186] This is the fastest type of fiber optics technology available, as there is no copper from end-to-end, but also happens to be the most expensive to install. [187] An example of FTTH in the United States is Google Fiber, which offers 1 Gbit/s broadband as its standard option. [188]

According to BroadbandNow, a website that compares and researches the use of fiber optics, a mere twenty-three percent of Americans have access to FTTH/FTTC connections. [189] However, as established before, FTTH/FTTC are not the only forms of fiber infrastructure. [190] FTTN is used all across the United States for ISPs to connect across long distances. [191]

The increasing use of fiber across all ranges, whether FTTN to FTTC, provides compelling reasons for the ISP market to change in its organization [192] Firstly, a fiber broadband infrastructure allows for competing ISPs to share bandwidth without the same issues that may be run into should ISPs share copper-based infrastructure, as fiber does not hit

its bandwidth cap nearly as easily, and can be tweaked through switches to improve its speed rather than laying new infrastructure. [193] Secondly, the increasingly widespread use of fiber optics means that the maintenance costs of broadband infrastructure is lower than it was when still using copper. [194]

Despite the high costs of laying fiber and of displacing the current broadband incumbents, it is clear that the barriers to entry into the broadband market could theoretically be lower than ever before. [195] The cost of maintenance for broadband through fiber, and also the cost for data, could be lower than ever before. [196] Accordingly, the remaining barriers to entry must be either the costs of installing the infrastructure in the first place or of competing against the existing copper-based infrastructures. [197]

The development and use of fiber for broadband services, then, provides an exciting opportunity for municipalities to break away from the existing broadband monopolies inherited from the 1990's era of cable television and telecommunications. [198] Countries such as Australia, New Zealand, and Finland have been revolutionizing the way that broadband is provided. [199] Instead of having the infrastructure providers also be the broadband providers, these countries have opted to separate the two entities, by creating one entity, either in a small scale such as in a city or in the entire country, that owns all the fiber infrastructure, which provides wholesale use of data to ISPs at a cost. [200]

Critics may argue that the scale of the United States makes a separation of infrastructure and data providers unfeasible because fiber is too expensive to lay out on such a large scale. [201] However, this argument is lacking in two ways. [202] Firstly, the separation does not need to happen on a national scale – municipalities could develop their own fiber optics network then rent it out to broadband providers, as was the case with Sweden. [203] Secondly, multiple other large countries have had success with deploying fiber-to-the-home, notably China, which has invested over \$477 million in 3,000 kilometers' worth of fiber optics cable construction. [204]

Currently, it is unrealistic to expect that antitrust law will be what breaks the big monopolies apart. [205] Although the threat of legal action

both from the Federal Communications Commission (FCC) and the Department of Justice did stop the TWC-Comcast Merger from happening in 2015, current antitrust laws do not make illegal the possession of monopoly or duopoly power. [206] Short of a legal remedy forcing ISPs to share their infrastructure with other ISPs for a cost, which may not be feasible given that current ISPs are using broadband as a way to recoup losses from the decrease in cable use, the alternative may be a technological solution combined with a national broadband policy. [207]

Although competition theory and antitrust has long assumed that the combination of antitrust laws and the free market will lead to a more efficient, pro-consumer market, the very opposite is what has happened in the United States. [208] Americans pay more for their broadband and get slower speeds. [209] That said, one can hardly say that the free market has created the oligopolies that provide the United States with broadband service these days. [210] After all, they were built on the idea that cable television, and any extension of it, should function as natural monopolies. [211] Yet other countries have gone a step further, either by subsidizing broadband infrastructure, outright building it in the public sector, or enforcing rigorous antitrust laws to force competition. [212] The solution to this issue must be that either the market failure must be corrected with stronger antitrust laws or regulations targeted towards the broadband industry, or both the government and municipalities everywhere must change their overall policy towards broadband. [213]

Broadband, and the Internet, exists in an ecosystem. [214] That is to say, there are many different products in its universe, and certain modules rely on other platforms to function properly. [215] To that extent, some countries have gone so far as to say that unfettered access to the Internet is not merely about innovation and consumer protection, but is a fundamental right. [216] For example, Finland made broadband access to a one Megabit per second connection a legal right in 2010, arguing that Internet services are “no longer just for entertainment”, but is rather essential in an “information society”, as an extension of the right to free speech. [217]

## CONCLUSION

Net neutrality has shown itself to draw a bit from everything – within the scope of the broadband industry, it is both commercial and

governmental in that having more competition in the broadband industry through government intervention will help the end goals of net neutrality. Such intervention is necessary not only solely due to the issue of broadband costs, but because the ability to force a certain price scheme (such as the fast-lane scheme) on growing and existing internet companies or its customers is a consequence of the monopoly power of the current American ISPs. This is harmful to the promise of an open internet which fosters innovation.

The end-to-end principle, mentioned earlier, states that the pipe is dumb; the value is at the beginning and the end. ISPs curtail innovation and growth by adding costs to the pipe; we should consider restricting their power.

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[136] *See* Holmes, *supra* note 58; Karr, *supra* note 87.

[137] *See* Holmes, *supra* note 58; Karr, *supra* note 87 (where two countries that have more competition than the U.S., the United Kingdom and France also pay less for more in Internet speeds); *see also* Miller, *supra* note 52.

[138] *See* Kehl, *supra* note 135, at 8.

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[139] *See* Beede, *supra* note 11, at 6.

[140] *Id.* at 4.

[141] *Id.* at 4.

[142] *Id.*

[143] *Id.*

[144] *See id.*; *see also* Miller, *supra* note 46. (PARENTHETICAL EXPLAINING THE PARAGRAPH)

[145] *See* Beede, *supra* note 11, at 6.

[146] *See id.*; *see also* Kehl, *supra* note 123. *Contra* CONTRADICTORY THING

[147] *See* 15 U.S.C. §§1-7; 15 U.S.C. §§41-58. CHECK IF NEED MDASH

[148] *See* 15 U.S.C. §§1-7; Isaak, *supra* note 148.

[149] *See* Pacific Bell Telephone Co., v. Linklike Communications, Inc., 555 U.S. 438 (2009).

[150] *See* Isaak, *supra* note 150.

[151] *See* 15 U.S.C. §§1-7; 15 U.S.C. §§41-58; *Antitrust Guidelines for Collaboration Among Competitors*, issued by the FTC and the U.S. DOJ, Apr. 2000, available at [https://www.ftc.gov/sites/default/files/documents/public\\_events/joint-venture-hearings-antitrust-guidelines-collaboration-among-competitors/ftcdojguidelines-2.pdf](https://www.ftc.gov/sites/default/files/documents/public_events/joint-venture-hearings-antitrust-guidelines-collaboration-among-competitors/ftcdojguidelines-2.pdf)

[152] *See* Isaak, *supra* note 150 (given that territories were divided through legal action, there is no need or incentive for these companies to compete on price)

[153] *See* Brodtkin, *supra* note 131.

[154] *See* Brodtkin, *supra* note 131; Isaak, *supra* note 150.

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[161] *Id.*

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[163] Schnecker, *supra* note 160.

[164] *See* Brodtkin, *supra* note 131; Cassidy, *supra* note 47.

[165] *See* Anderson, *supra* note 160.

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[171] *See id.*

[172] *Id.* *See* Cassidy, *supra* note 47.

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