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Before the
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Washington, D.C. 20554

In the Matter of:	)	
	)	
Applications of Comcast Corp., Time Warner Cable Inc., Charter Communications, Inc. and And SpinCo	)))	GN Docket No. 14-57
For Consent to Assign or Transfer Control of Licenses and Authorizations	))	

Comments of Roslyn Layton1

August 25, 2014

As an American academic making international comparisons of broadband markets, I offer commentary on topics relevant to the evaluation of the Comcast-Time Warner Cable transaction. This comment addresses the FCC's process to evaluate the merger, dynamic competition in cable market, the access market for cable and broadband, international cable comparisons between the US and the EU, and a few points relevant to interconnection. Following are the key conclusions of this comment.

- It is important that the FCC evaluate this transaction on its merits. While public comment is helpful to consider, it is important that the FCC remain independent and not influenced by politics or public opinion. The FCC needs to do its utmost to focus on the facts, not the emotions stirred by the media about this transaction. The FCC must also ensure that it evaluates the facts in light of the antitrust standard of whether the merger will substantially lessen competition. To the extent that the FCC investigates public interest, it should be guided by matters that are effected by the merger, not other policy goals.

- The American broadband market is highly dynamic. It is characterized by high levels of investment and innovation in technology. Technological development of the market is the key driver of the market. In dynamic markets where investment and innovation create continued disruption, the FCC needs to recognize that its ability to predict the future of markets is limited. This suggests that there is a risk that the FCC can make regulatory errors (e.g. mischaracterizing the market and/or the merger) by not approving the transaction. That being said, the FCC could approve the merger today based on its merits, but should it find anticompetitive activity in the future, it can intervene as it can do with all network service providers, not just Comcast.

- Comcast has a number of serious competitors in the broadband internet access business as well as the video and voice businesses. Its competitors in broadband include other network providers of broadband through fiber, DSL and copper networks (especially the next generation standard for copper, VDSL); next generation mobile wireless providers; and other technologies. Comcast has many competitors in the video business, from the range of over the top (OTT) video providers such as Netflix, YouTube, Hulu, Amazon, and so on as well technologies such as Roku, a standalone set-top box that delivers hundreds of channels via broadband. Moreover the content/entertainment part of Comcast's business is highly

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elastic and subject to heterogeneous consumer preferences. Not only do consumers have a myriad of choices of how to spend their time online (from Facebook to online books to streaming music), consumers' choice of leisure and entertainment activities are limited only to their imagination and need not involve Comcast in any way. In fact this requested merger largely reflects the increasingly competitive world that Comcast faces. I see no evidence that competition will be lessened by this transaction.

- Comcast and TWC do not compete in any relevant market for broadband, video or voice services. Therefore this merger will not remove a competitor, which means that this merger will not reduce competition or consumer choice.

- There is no evidence that consumers would be harmed by the Comcast-TWC transaction. Comcast has many incentives to serve its customers and has made a number of significant improvements over the years. Indeed it has met all of the promises required as a part of its merger with NBC, and has exceeded a number of measures including enrolling low-income families in its Internet Essentials program, increasing broadband speeds beyond requirements, and exceeding coverage expectations. Comcast is presently the only company in America that upholds the FCC's 2010 Open Internet rules, now struck down in court. In fact there are a number of areas where the merger can enhance consumer welfare, namely in technology upgrades and enhanced scale economies for TWC customers.

- There is no evidence that content or application providers would be harmed by this merger. On the contrary the deployment of improved network technology to TWC customers will likely enhance services from third party content and application providers. Indeed the growth of such content and applications helps to drive demand for Comcast's services.

- When compared to other countries, the American broadband and cable market is highly competitive and efficient. My research shows that Americans consume increasing amounts of internet data and video at decreasing costs on a wider variety of networks. This proposed transaction will support Comcast's ability to invest in important initiatives such as neighborhood Wi-Fi and has spurred other network providers to step up their competitive strategies.

- Mergers and acquisitions create a number of benefits for companies such as deploying better business models across a larger customer base, accessing new technologies, improving terms for financing, and activating hidden or nonperforming assets in the target company. Mergers can also help to lower and make more efficient use of administration. They can make more efficient use of sales and marketing activities and improve utilization infrastructure. These efficiencies provide benefits to customers in the form of lower unit costs of service, improved quality and value of service, and new technologies and innovation. Moreover transactions such as these are important to drive the dynamism of broadband market. Innovation and investment are about risk-taking, and companies need to take risks to fulfill these objectives.

- For the reasons set out above and discussed in more detail below, I see no reason to oppose this transaction.

Internet interconnection should have no role in the merger review – Internet interconnection is a highly competitive market

Some commentators claim the danger of this merger is that Comcast will use increased share of broadband Internet subscribers to foreclose streaming video competition. These critics claim that the increase in Comcast's share of broadband subscribers will somehow enable it to extract rents from so-called edge firms such as Netflix. This argument is false for three reasons.

(1) The theory and practice of two-sided markets demonstrates that Comcast, as a platform between content providers such as Netflix and broadband subscribers, has incentives to maximize the participation of both sides of the market. This is a robust literature of some 360,000 articles covering a variety of industries. The theory of two-sided platforms, first promoted by Rochet & Tirole (2006), have an inherent incentive to price efficiently, meaning that market failures are unlikely to occur. It is not inherent that firms will attempt to act in way that deters consumer welfare, innovation, or efficiency. Platforms want to get both sides of the market "on board" so they tend to maximize—not foreclose—the participation of the parties. Anything that Comcast does to foreclose one side or the other reduces its profits.

(2) If it was the intention of Comcast to foreclose a competitor such as Netflix, then it would have done so already. It makes no sense that Comcast would nurture a competitor into a global player, only to foreclose it later when it becomes even more expensive and difficult. On the contrary, Netflix has grown into the world's leading streaming video provider precisely because Comcast and other American broadband providers offer networks and subscribers to Netflix. These kinds of arguments about Comcast using the merger to abuse other firms are plain conjecture and fear mongering and should be rejected outright.

(3) Should Comcast attempt to exploit Netflix, then Comcast will face a difficult time defending its actions to the FCC and with competition law. Indeed Netflix has many defenses against such practices, not just antitrust, but its formidable power in public relations.

Netflix as single largest source of traffic on America's broadband networks has an incentive to game the regulatory process and the Comcast-TWC merger to win favorable conditions for itself. Netflix is astute to use public relations and its dubious speed tests as a means to win public opinion and to pressure policymakers to give into its demands. I am in process of cataloguing Netflix's practices in other countries where it uses a number of manipulative tactics to force broadband providers to connect to its content delivery network, to house Netflix servers within their infrastructure, and to avoid paying transit fees. A particular case was observed in Norway in 2012 with the Netflix launch. Telenor, the largest operator in the country, deployed generation networks across the country along with its proprietary content delivery network (CDN). At more than 1000 miles, Norway is the longest country in Europe and has one of the harshest climates. So the upfront and continuing costs of broadband infrastructure are considerable.

Netflix had a global agreement with Level 3 to ensure the efficient content delivery to many countries in the world, but not to Norway. Telenor offered to cache Netflix content in its own network for a standard fee. Netflix countered that Telenor connect to Netflix's nearest exchange, located in Stockholm, Sweden and run by competitor Telia. Netflix claims that OpenConnect is free, but there are real costs for Telenor to connect to an exchange in another country. Routing content for the Norwegian market via Sweden is not an optimal solution for customer experience for Norwegian users. A local solution provides better quality of experience. Telenor declined Netflix's option both for cost reasons and because the formatting employed in Netflix is not optimal for Telenor's network.

As articles from the Norwegian press document, Netflix threatened to use its speed test to expose Telenor as having a slow network because no CDN solution was employed. Telenor refused to comply. Netflix published the report as promised, and Telenor received a number of negative articles in the press as a result.2

If Netflix were an airline, its actions would be similar to selling a ticket to Washington Reagan National Airport but landing instead at Dulles Airport and then expecting Reagan National Airport to pay the passengers' transport cost to the city. It should be observed that Netflix is unique in using these types of tactics. Operators and content providers around the world exchange traffic with little to no problem and with little regulatory oversight. Among leading content providers, only Netflix is calling for price controls (setting transit rates at zero). In any event, after some time, Netflix and Telenor were able to negotiate an agreement, and it did not require regulatory intervention.

For a profitable and growing company such as Netflix, its complaints about being oppressed and its demands for price controls are disingenuous. It audaciously couches its argumentation in the hallowed language of net neutrality while it lobbies for self-serving business conditions. This disrespects many human rights activists around the world who see net neutrality as their First Amendment.

As stated earlier, there is no reduction in competition as a result of this merger. Thus Comcast's negotiating power relative to others in the Internet ecosystem will not change. This means the FCC should pay no attention to the claims that this merger will stifle edge providers. It is important to realize, however, that not all content providers are the same. There are "hypergiants" such as Netflix and YouTube which generate disproportionate amounts of traffic, upwards of half of all traffic on American networks. And there are millions of other content providers, whose marginal traffic addition is negligible.

Research undertaken by MIT and UCSD discovered that content providers do not have a problem accessing Comcast's customers. There are over 40 peering and transit paths into Comcast. The MIT-UCSD study did find that Netflix occasionally had an issue connecting with Comcast, but there was no reason to consider it a widespread problem. The study "Measuring Internet Congestion: A Preliminary Report" investigates transit and peering links offers the following preliminary conclusions,

Congestion at interconnection points does not appear to be widespread. Apart from specific issues such as Netflix traffic, our measurements reveal only occasional points of congestion where ISPs interconnect. We typically see two or three links congested for a given ISP, perhaps for one or two hours a day, which is not surprising in even a well-engineered network, since traffic growth continues in general, and new capacity must be added from time to time as paths become overloaded... congestion does not always arise over time, but can come and go essentially overnight as a result of network reconfiguration and decisions by content providers as to how to route content." 3

In the case of large content providers (or hypergiants) such as Netflix, congestion may occur because of its enormous content loads amount to a third of network traffic. That one of millions of content providers should have an issue with congestion from time to time is not a reason to conclude that the market interconnection is not working. The issue is whether Netflix will maintain interconnection norms and negotiate commercial terms with broadband providers such Comcast, or whether it will abuse the regulatory process to win price controls and

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2 http://www.dagensit.no/article2529131.ece, http://www.dagensit.no/article2529667.ece
3 MIT, Measuring Internet Congestion: A Preliminary Report, Page 2
https://ipp.mit.edu/sites/default/files/documents/Congestion-handout-final.pdf

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favorable business conditions at the expense of all broadband subscribers, even those that don't subscribe to its service.4

It should be noted that with its Comcast agreement, Netflix was able to get better interconnection conditions, presumably lower costs because otherwise it would not have entered into it, and improved quality for its customers, as its own speed index reports. It should be noted that these two large parties resolved their dispute with adjudication. There is no market failure here that needs remedy.

The market for interconnection works on the forces of supply and demand, just like any other market. Most traffic is exchanged for free, as long as it roughly equal, which is used as a proxy for the contribution of similar value by the two parties. However some traffic is more highly demanded and comes in a greater quantity than other traffic. Netflix traffic is the best example of this. However Comcast is bounded by the demands of its customers, and if it doesn't deliver Netflix, it will lose customers. As such Comcast faces a strong incentive to find an equilibrium with Netflix. I doubt that Comcast would erect tolls on Netflix even if it could.

It should also be mentioned that large edge content providers have the potential to route their enormous traffic in such a way to create congestion on purpose, which can then be used as leverage to extract rents from broadband providers such as Comcast. The example that I noted from Norway is just one example of the types of tactics that Netflix is able to use to extract leverage. The point for the FCC is not base its analysis on conjecture. It needs to look at the facts and evidence in evaluating the merger.

As a general matter, Congress and the FCC have been reluctant to regulate internet protocol interconnection for good reason. The market for IP interconnection has been emerging and evolving. Moreover with continuing diversification of actors and business models, it is competitive. It is remarkable how well the regime has operated for over two decades with so little intervention.

However a market can quickly become uncompetitive when government creates distortions through price controls , manipulations, and lack of transparency. Not surprisingly, when the FCC entertains the possibility of regulation of IP interconnection and Title II utility regulation, it signals that it is "open for business" and creates perverse incentives. Firms line up at its door asking for handouts. A case in point is the FCC's Notice of Proposed Rulemaking 14-28 on net neutrality in which Mozilla egregiously requests the creation of a "remote delivery service", essentially creating a regulatory category to satisfy its business goals, and Netflix blatantly calls for favorable treatment through price controls in transit.

Apart from Netflix's complaining, which is largely a public relations stunt, there are no systematic problems in the IP interconnection market in need of fixing. As the last two decades have shown, the market for interconnection has worked without government oversight or intervention. Not only is this demonstrative of the competitive nature of the market, but it shows that actors have incentives to cooperate and find efficient outcomes. The FCC should have the wisdom and judgement to consider the Netflix complaint as a reflection of that company's perspective, not the characterization of the interconnection market as a whole, which the evidence and experience show is working well. The now resolved situation with Netflix is not a reason to oppose the merger.

Adam Thierer, "Unnatural Monopoly: Critical Moments in the Development of the Bell System Monopoly," Cato Journal, 1994.

4 To read about Netflix's practices, see http://www.usnews.com/opinion/economic-intelligence/2014/07/03/netflixs-net-neutrality-double-standard

The FCC should evaluate the merger on its merits

The emergence of information communication technology (ICT) has allowed Americans new, low-cost and effective ways to participate in the public process. The growth of broadband networks by copper, cable, fiber, satellite, mobile, Wi-Fi and other technologies supports an panoply of devices, platforms, content, and media. In the past if someone wanted to start broadcasting company, he had to go through a flippant and labyrinthine process at the FCC. Today online news services are started literally in garages without the FCC's permission. Individuals have numerous ways to express themselves and to join like-minded groups. Comcast along with 1700 over broadband providers in America facilitate this development of expression through the provision of high speed broadband internet networks. This has been the trend, and there is no reason it will not continue should the broadband market be left alone.

At the same time as ICT technologies enable expression, they also allow parties to game the regulatory process. The same technologies that democratize communication can also be manipulated. I observe that there is a campaign against this merger with the primary message of "big is bad" and "Comcast is bad" without providing critical substance or analysis. This campaign against this transaction flourishes primarily through shrewd marketing, slogans, and fear mongering. The campaign is further suspect when one considers that it is funded by a group of wealthy foundations, companies, and individuals who have distinct ideological positions that broadband should be a utility or have commercial objectives of winning a favorable regulatory environment for their companies at the expense of other industries and companies. Indeed the same parties that oppose this transaction also attempt to paint the picture that America's broadband market is "bad". Their objective is to build a case for the imposition of utility regulation through reclassification of broadband under Title II of the Communications Act. As I have noted in my comment[5] on the NPRM for the Open Internet, the allegations about the conduct of broadband companies come from theoretical concerns and conjecture, not demonstrated evidence.

A number of journalists and academics have an ideological view that communications is a human right and therefore should be provided by the government, not private entities. Others still do not believe in copyright and resent the earning of profit on intellectual property. They would prefer an internet with little to no commercial activity. While people have the right to their opinions, it is not the province of the FCC to make such value judgments. Indeed these arguments are better directed to the legislative process in Congress and in elections, not in the regulatory process. It is the FCC's job to enforce the law, not to bend it to special interests.

In my estimation, Comcast has many incentives to act in a responsible way. The market for broadband is increasingly competitive as noted by studies by the FCC itself,[6] the Federal Trade Commission,[7] the White House's Office of Science and Technology Policy,[8] the OCED,[9] the ITU,[10] and a number of policy analysts and academics both in the US and abroad. See the work of Christopher Yoo,[11] Jeffrey Eisenach[12], Richard

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5 http://roslynlayton.com/wp-content/uploads/2014/07/Roslyn-Layton-NPRM-14-28.pdf
6 http://www.fcc.gov/reports/measuring-broadband-america-2014
7 http://www.ftc.gov/sites/default/files/documents/reports/broadband-connectivity-competition-policy/v070000report.pdf
8 http://www.whitehouse.gov/sites/default/files/broadband_report_final.pdf
9 http://www.oecd.org/sti/broadband/oecdbroadbandportal.htm
10 "Measuring the Information Society," International Telecommunications Union, 2013, 82, http://www.itu.int/en/ITU-D/Statistics/Documents/publications/mis2013/MIS2013_without_Annex_4.pdf.
11 Yoo, Christopher. "US vs. European Broadband Deployment: What Do the Data Say?", University of Pennsylvania 2014.
12 See http://www.gsmamobilewirelessperformance.com/ and http://www.navigant.com/~/media/WWW/Site/Insights/Economics/Navigant-Mobile-Wireless-Canada-FINAL.ashx

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Bennett,13 Everett Ehrlich, Scott Wallsten, Gregory Sidak, Jonathan Liebenau, Silvia Elaluf-Calderwood, Fernando Herrera Gonzalez, and Edmond Baranes who clearly establish the dynamic and competitive nature of access to video, broadband and voice services. Consumers can and do switch cable and broadband providers, and they have an excellent free tool called the National Broadband Map which lists broadband provider information for every zip code. Furthermore the media scrutinizes Comcast's every move, and Comcast's customers are active on social media should any customer service standard slip. Not only does the FCC have the power to decide of the fate of this merger, but it has all of the powers provided by law to regulate Comcast.

There is no doubt that the Comcast-TWC merger is hotly debated, and this is why the independence of the FCC is paramount. The FCC must judge the transaction on its merits—whether it will harm competition or negatively impact the public interest--not the opinions of interested parties. That being said, it is a courtesy that the FCC allows a public comment period. It's not something afforded by the courts.

Broadband competition in America is dynamic and robust

Much of the discussion about the broadband and cable market tends to focus on national and macroeconomic statistics. For this transaction however, it is important to investigate how cable is provided at the local level through franchises, which means all services provided by cable – broadband, video and voice – are provided at the local level. It is absolutely the case—and can be independently demonstrated—that a merger between Comcast and TWC poses no concerns from a horizontal perspective. These companies do not compete in the same local markets where consumers purchase video, broadband, and voice services. A customer in Los Angeles cannot get broadband from Comcast because Comcast is not in the Los Angeles market. All that would change in Los Angeles, should the merger be approved, is that TWC would become Comcast. Consumers in Los Angeles will have the same number of providers. So, the claim by critics that the merger will reduce competition is not based on fact.

In her book Captive Audience: The Telecom Industry and Monopoly Power in the New Gilded Age, Susan Crawford asserts that there is a cable-telco duopoly for broadband and that four firms—AT&T, Verizon, Comcast, and Time Warner—control America's broadband market, charge unfair prices, and leave their networks to languish.14 My research debunks Crawford's claims including that American broadband providers do not invest in networks. On the contrary, they are leaders in broadband investment. Americans, just 4% of the world's population, have enjoyed nearly a quarter of the world's broadband investment for more than a decade and an investment rate that is nearly twice that of the EU per capita.15

As for American broadband prices, they scale with consumption, and American unit costs for broadband are lower than those of most countries in the world. Not only does the International Telecommunication Union's 2013 report "Measuring the Information Society" (based on 2012 data) show the US to have some of the lowest entry level broadband prices in the world, the FCC recognizes16 that the US has the third lowest price of gigabit

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13 Information Technology & Innovation Foundation, "The Whole Picture: Where America's Broadband Networks Really Stand" (Feb. 12, 2013). http://www.itif.org/publications/whole-picture-where-america-s-broadband-networks-really-stand

14 Susan Crawford, Captive Audience: The Telecom Industry and Monopoly Power in the New Gilded Age (New Haven, CT: Yale University Press, 2013).

15 Michael Horney and Roslyn Layton, Innovation, Investment and Competition in Broadband and the Impact on America's Digital Economy (Mercatus Center at George Mason University, August 15, 2014), http://mercatus.org/sites/default/files/Layton-Competitionin-Broadband.pdf.

16 FCC, "International Broadband Data Report" http://www.fcc.gov/reports/international-broadband-data-report-third, (Aug. 21, 2012).

of data among the countries surveyed (following Denmark and Estonia). Crawford's sweeping assertions fail to account for important differences across countries, such as network type, speed, taxation, subsidies, media license fees, homeowner fees for broadband, and so on. It is interesting to note that many of the countries that Crawford praises (Sweden, South Korea, Japan, etc.) have fewer broadband providers per capita, each with higher market shares than those in the United States.

Furthermore, Sweden has lower overall coverage for NGA or next-generation access (57% of households) to broadband and significantly lower coverage in rural areas (only 6% of households) than the US. Comparing the US to the EU as a whole is even more interesting. While only 54% of EU households can access a broadband technology that delivers 25 Mbps or more, some 82% of American households can. Moreover 48% of America's rural households can get these technologies while just 12% of those in the EU.17

Based upon the FCC's own evidence, I reject Crawford's assertion that there is a cable-telco duopoly. The FCC reports more than 1,700 providers of broadband in the country.18 There are hundreds of providers that account for two-thirds of connections provided by cable and DSL in the US.19 The FCC20 itself reports the following

- 99% of households (in census tracts) have two or more wired broadband providers as of Jun 31, 2013.
- 78% of households have three or more wired broadband providers as of June 31, 2013.
- Between December 2012 and June 2013 data, there was an extraordinary increase in broadband choice. The FCC notes, The reported data show a 30% annual increase in the number of residential fixed-location connections that are at least 6 Mbps downstream and 1.5 Mbps up stream, (from 34.5 million in June 2012 to 45 million in June 2013) and a 31% annual increase in the number of connections that are at least 10 Mbps downstream and 1.5 Mbps up stream (from 34.1 million in June 2012 to 44.8 million in June 2013).

Despite what critics claim, there is vibrant competition in access to broadband, and given the accelerated investment by AT&T and CenturyLink to upgrade their networks to VDSL and fiber to the premises (FTTP), and Google Fiber's entry into several markets, the choice and competition enjoyed by consumers will only increase. Furthermore some 99 percent of Americans can access wireless broadband speeds of 16 Mbps download via satellite, four times the minimum defined by the FCC and higher than most of the world's broadband connections.

But competition should not be measured just in the number of firms; it should be measured by the variety of networks and the level of technology. The United States has a more evenly distributed subscribership across broadband technologies (DSL, cable, 4G/LTE mobile, fiber). Only a handful of countries, mainly small, highly

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17 Christopher Yoo, U.S. vs European Broadband Deployment: What Do the Data Say? (Philadelphia, PA: Penn Law, Center for Technology, Innovation and Competition, June 2014), https://www.law.upenn.edu/live/files/3352-us-vs-european-broadband-deployment.

18 Ajit Pai (FCC commissioner), "The IP Transition: Great Expectations or Bleak House?" (remarks before the Internet Innovation Alliance, Washington, DC, July 24, 2014), http://www.fcc.gov/document/commissioner-pai-remarks-internet-innovation-alliance.

19 Leichtman Research Group, "2.6 Million Added Broadband from Top Cable and Telephone Companies in 2013," Press Release, March 17, 2014, http://www.leichtmanresearch.com/press/031714release.html.

20 FCC, Internet Access Services: Status as of June 30, 2013, June 2014 (Release Date) at p. 9. Jun 2013 Data http://www.fcc.gov/document/fcc-releases-new-data-internet-access-services-1 Dec 2012 Data http://www.fcc.gov/document/fcc-releases-new-data-internet-access-services-8

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populated European countries and city-states (Malta, Netherlands, Belgium, Luxembourg) have higher penetration of different networks.

As such, the United States should not aspire to have many providers simply for the numbers' sake. Broadband quality is not appropriately measured by the number of providers or even the speed of broadband. A proper measurement of broadband needs to take into account of how broadband is used to make a society more productive and improve social and economic value.

In any event, those concerned about market power and concentration should look not at the market for broadband access, but at the markets for mobile operating systems (two leading players), search engines (one dominant player), and social networking (one dominant player). A more salient example of duopoly is the market for search engines. Google accounts for two-thirds of all searches in the United States. Microsoft and Yahoo (which both run Microsoft search engine technology) account for 28.7 percent of all searches. Together these firms account for 96.2 percent of all searches in the United States.21

Google takes the lion's share of search advertising revenue and much online revenue in general. Google accounts for more than 40 percent of the revenue of online advertising, though Facebook is gaining, currently at 8.2 percent.22 But market power and concentration are not problematic in themselves, only in their abuse. Indeed, these companies are innovative even though they have high market concentration. The same is true for the cable industry and Comcast. Indeed market concentration can have many benefits for consumers. Think of the many benefits that Amazon has created for consumers and competition.

At $397 billion Google has a larger market capitalization than any broadband provider in America, and it operates its own fiber to the premises networks. Facebook is also significant at with a market cap of $194 billion and offers a communications platform with voice, text, and data that serves by 1.3 billion users.23 Facebook is in fact the world's largest communications company by number of users.

Both Google and Facebook have larger user bases than any American broadband provider, and they are both de facto network providers given their large infrastructure footprints, data centers, and server farms. Facebook recently acquired the world's leading OTT provider of messaging with 450 million users, WhatsApp, for $19 billion.24 While telco, cable, and cellular providers face significant regulation, Google, Facebook and other OTT providers are essentially unregulated in their provision of communication and information services.

Crawford declares that broadband is too important to be left to the market and calls for a nationalization of the nation's networks to into a national fiber to the home project. The same statement can be turned around to say that the sheer needs of information and decision-making are so vast and the nature of the technology so rapidly changing that broadband cannot be left to the government. Rather than the FCC deciding the broadband future (as the regulatory process is highly subject to errors), America is better served by a multitude of competing broadband providers in a market-led, technology-neutral framework. Each network offers a different set of advantages for consumers who should be free to choose the packages that suit their needs and budget.

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21 "US Search Engine Rankings," comScore, March 18, 2014, http://www.comscore.com/Insights/Press_Releases/2014/3/comScore_Releases_February_2014_U.S._Search_Engine_Ranking
22 "Mobile Growth Pushes Facebook to Become No. 2 US Digital Ad Seller," eMarketer, December 19, 2013, http://www.emarketer.com/Article/Mobile-Growth-Pushes-Facebook-Become-No-2-US-Digital-Ad-Seller/1010469.
23 "Company Info," Facebook, December 2013, http://newsroom.fb.com/company-info/.
24 "Facebook to Acquire WhatsApp," Facebook Newsroom, February 19, 2014,

http://newsroom.fb.com/news/2014/02/facebook-to-acquire-whatsapp/.

Big is not necessarily bad – It is frequently good

Another theme that is used to argue against this merger is that big is bad – that is, allowing this merger will allow Comcast to get even bigger and that would be bad. But, big is not always bad and regulators frequently make mistakes when they make decisions based on such rhetoric. Consider how the FTC denied the acquisition of Hollywood Video by Blockbuster Video in 2005 on the notion that Blockbuster was "too big". Blockbuster is all but a memory today. Consumer choice and a better technology, namely Netflix, replaced it. Being big is a signal to entrepreneurs and innovators to find a new business model or technology to tap a revenue stream.

It is interesting to consider what might have happened had the FTC had allowed the merger to happen. It is possible that the merger might have allowed Blockbuster to make a streaming service to compete with Netflix. Alternatively Netflix might have grown even quicker, as much of consumers' drive to switch to Netflix was driven by dissatisfaction with Blockbuster. Ironically by the FCC failing to approve the Comcast-TWC merger, the FCC may delay, if not, preclude the next disruptive innovation.

In the evaluation of this transaction, it is important to separate emotions from fact. Many commenters on this process are inconsistent in their opinions about mergers and market power. The assertion that "big is bad" is selectively applied. Broadband providers are scourged while internet companies are praised. It's not logical that big is okay when it's Google, but not okay when it's Comcast. An informed analysis shows that these two industries are highly interconnected and overlapping.

Part and parcel of the American identity is to be big. The US is a world superpower. Americans crave political, military, and economic power. That America is the world's biggest economy by gross demoestic has been predicated by having big companies. To be sure, "big" is a relative term and can fluctuate depending on the unit of measure whether revenue, market cap, customers, users, geographic coverage and so on. On the whole, big is something Americans embrace.

While "big is bad" may resonate by the loudest opponents, it does not standup to critical reasoning. Furthermore this discussion of big is not associated with any level of market share that is important from a competition perspective. Thus "bigness" is not an appropriate metric for this merger review.

Networks underpin the Internet economy – FCC shouldn't make value judgments between parts of the Internet economy

One of the most important economic developments in the last generation has been the emergence and growth of America's internet companies—built on America's networks. By 2009, the gross domestic product (GDP) of just the Internet of the United States was already greater than the total GDP of Sweden, Ireland, Switzerland, or Israel.[25] Mary Meeker's annual report of the internet industry for 2014 shows the United States with 13 of the top 20 Internet companies, and these companies comprise 90 percent of the market value and 80 percent of the revenue for the top 20 firms.[26]

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25 Matthieu Pélissié du Rausas et al., "Internet Matters: The Net's Sweeping Impact on Growth, Jobs, and Prosperity" (report, McKinsey Global Institute, McKinsey & Company, May 2011), http://www.mckinsey.com/insights/high_tech_telecoms_internet/internet_matters.

26 Mary Meeker, "2014 Internet Trends," Kleiner Perkins Caufield Byers, May 28, 2014, slide 138, http://www.kpcb.com/internet-trends.

America's internet companies are a source of pride for Americans, but these companies never would have been realized if networks had not been in place and broadband providers had not continued to invest. This also goes for countless small and medium-sized companies that would have never existed without America's networks.

Because of America's broadband networks and their millions of subscribers, Netflix has transformed itself from a DVD by mail company to world's leading streaming video on demand provider. At 50 million subscribers, it has more customers and reach that any cable company in the world. Netflix invests in its own content delivery network, but if broadband networks were not already there and not up to speed, no is no way that more than 30 million Americans could enjoy Netflix every day.

According to Cisco's Visual Networking Index, an annual report of global Internet traffic, the rate of Internet consumption per capita in the United States is on the rise and growing faster than in most countries.27 The US is in second place and on track to surpass South Korea. Internet consumption has been growing exponentially around the globe but has picked up considerable speed in the US since 2010, accounting for over 30 percent of all global traffic in 2012. Consumer video over fixed networks generates the largest share of Internet traffic.28 People are consuming more internet content than ever at declining unit costs. It cannot be the case that there is a problem in the US broadband market with competition if consumers are getting more data at better prices.

The Internet is a network of networks comprising not just last mile connection, but international cables, exchanges, backbones, content delivery networks, peering arrangements, transit agreements, and other elements. It is not the job of the FCC to carve up the Internet between networks and edge providers and then make value judgments on what needs regulation what can be left alone. The ecosystem is far too complex. Much of the success of the internet is owed to the fact that government and regulators have left the Internet alone to evolve.

Intuitively people support the notion of efficiency, economies of scale, and the benefits of mergers through synergy and cost reduction. These platform and network effects are exactly what allow companies such as Google, Facebook, Apple, and Amazon to grow and profit. But there is no logic to allow internet companies and their users to enjoy the benefits of mergers but not cable companies.

Essentially a policy to apply a tougher standard to cable providers than other industries is capricious and arbitrary. It's a front for old-fashioned, "regulate my rival" industrial policy which has no place in the digital age. With the move to an all internet protocol world, the FCC should retire the outdated classifications of networks. Consumers would be best served by a single standard that applies to all networks, technologies, business models, services, and applications.

Many of the critics who argue against this merger base their arguments on value judgments about parts of the Internet. As I noted earlier, mergers by Internet content providers and others are largely ignored while this merger is loudly opposed because in their judgment, content/application providers such as Google or Netflix need to be protected, even if they are often more powerful than Comcast based on market capitalization, market share, and user base. The FCC should see this hypocrisy and avoid succumbing to those arguments, which are attempt to manipulate the merger review process.

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27 "Cisco Visual Networking Index: Global Mobile Data Traffic Forecast Update, 2013–2018," Cisco, February 5, 2014, http://www.cisco.com/c/en/us/solutions/collateral/service-provider/visual-networking-index-vni/white_paper_c11-520862.html
28 Patrick Brogan, "Internet Usage Data Show U.S. Expanding International Leadership" (USTelecom, Washington, DC, November 7, 2013), http://www.ustelecom.org/sites/default/files/documents/110613-usage-research-brief.pdf.

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Dynamic Competition

Dynamic competition refers to technology that drives competition, not the number of providers for a given product or service. Dynamic competition is characterized by innovation, investment, and product differentiation. That is, competition comes from creating different solutions and platforms. We can see dynamic competition in the way that Netflix competes with cable; how Uber, an intelligent transportation application, competes with the traditional regulated taxi industry; and how the