

The Internet as a Telecommunications Service: Framing the Legal Issues and Business Strategies

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Abstract

This article describes the path leading to the FCC's decision to regulate the Internet, the legal battle that has ensued, the positions of interested parties, the stakes from their perspectives, the rules themselves, and the likely effects of those rules on network providers and application providers. Short case studies highlight likely sources of disputes. Recommended changes in imagery by network providers is included to re-orient the debate.

It's a good bet that everyone arguing for or against regulating the Internet as a telecommunications service in the U. S. Court of Appeals for the D.C. Court, including the judges, support an open Internet. The historical record suggests Internet Service Providers (ISPs) agree with former Federal Communications Commission (FCC) Chairman, William Powell's "four-freedoms" policy statement: that all users of the Internet should have the freedom to access lawful content, freedom to use applications, freedom to attach personal devices to the network, and freedom to obtain service plan information.¹ ISPs have consistently stated that they want to be honest and transparent with customers and treat them fairly.²

It is unlikely that anyone in court would even dispute the FCC is under pressure by the public and Congress to protect Internet customers from abusive behavior by ISPs. More generally, Congress charged the FCC with developing a regulatory platform that would spur investment in broadband networks and break down barriers for innovative applications of Internet capabilities.³ As a result, the regulatory platform would promote economic development, universal availability of Internet services at cutting edge

speeds, and nurture civic engagement that strengthens communities and the democratic process itself.

Few in court would even challenge the rules the FCC wants to put in place to protect consumers of Internet services.

Why then were they in court?

Those challenging the FCC in court brought suit because they believe the FCC overstepped its legal authority in the way the rules were adopted. After decades of decisions not to regulate the Internet and not to regulate services bundled with Internet connectivity, the FCC decided in 2015 to regulate Internet transport as a telecommunications service – as a public utility – instead of finding a much more narrow legal justification for protecting customers from unfair network practices.

On its part, the FCC tried a very narrow approach that didn't require reclassifying Internet access as a telecommunications service but failed. Using its authority to regulate communications traffic in general, the FCC tried to introduce a few simple rules that applied to network providers of Internet services: transparency in billing and other terms, no blocking of traffic, and no unfair discrimination among Internet applications.⁴ However, the FCC's attempts to introduce these rules on network providers were struck down by the courts because the rules required specific behavior that had in the past applied only to common carriers of telecommunications services. In 2014, the D.C. Circuit cited the FCC's own record of claiming Internet services were not subject to common carrier regulation that applied to telecommunications and other transport services.⁵ The Court pointed out the FCC had repeatedly said Internet service alters content in significant ways as opposed to a telecommunications service that simply transports voice traffic. Altering content made Internet access an information service, not a telecommunications service. In the *Brand X* case that went to the Supreme Court in 2005, the FCC won the right to treat any bundle of services that included Internet service as an information service not subject to common carrier regulation.⁶ The D.C. Court also cited its previous decision in the *Comcast vs. FCC* decision to strike down the FCC's attempt to prevent Comcast from throttling peer-to-peer traffic, which according to Comcast was causing network congestion. The D.C. Court ruled in 2010 that the FCC did not have the right to use "ancillary" powers to order network providers to stop throttling or blocking certain types of traffic.⁷ As a result, the Chairman of the FCC decided in its 2015 Report and Order Protecting and Promoting the Open Internet (Order) to reclassify Internet traffic from being an information service to a telecommunications service. To make the case, the FCC had to show Internet transport has become like plain old telephone

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service, that is, network providers do not alter the content of transmitted voice or data.

The FCC's rationale for reclassifying broadband Internet access service (BIAS) as a telecommunication services hinges on a basic change in transport technology. In the past, telecommunications networks had built-in intelligence for bundling and splitting off traffic to the voice network and the Internet. According to the FCC, the packet revolution has transformed broadband networks into a web of dumb pipes that carry traffic without altering its content. Application providers now supply the software that allow smartphones, for example, to deliver all sorts of services to end users that were previously offered exclusively by network providers.⁸ Following this logic, the FCC could now reclassify BIAS as a common carrier telecommunications service subject to Title II rules of the Telecommunications Act of 1996 (1996 Act).⁹ These rules would give the FCC legal grounding to challenge carrier practices that work against the government's mandate to have an Open Internet.

The FCC realizes that redefining Internet access service as a telecommunications service could cause unexpected market jolts. All of the Commissioners recognize that no one understands the workings of the Internet or how it will evolve, so the Order stresses that the FCC will dispense with many of the obligations of a common carrier so that, for the most part, Internet operations will be business as usual. The new rules would be simple, "bright lines" that clearly mark the limits of proper conduct by network providers offering broadband Internet access services. To keep the rules simple, to give regulation a "light touch," the FCC chose to forbear many of the rules that require a common carrier of telecommunications services to set prices using prescribed methods and to prove that its prices and practices are reasonable. However, the FCC reserved the right to review pricing and other practices if there were complaints against a carrier. In effect, these residual powers to review business decisions serves the same purpose as a "shot across the bow" to prevent abusive behavior. Recognizing that implementing rules, even bright line ones, are sometimes costly to implement, the FCC exempted small carriers with fewer than 100,000 customers from the new prescriptive rules for BIAS.

Big carriers like AT&T and Verizon fear these residual powers give the FCC too much power. From their perspective, the FCC now can strike down any business model it deems is unreasonable on a "know it when I see it" case-by-case basis. In effect, the FCC has become a not-so-silent partner in their business decisions.

The Dispute in Context

The battle line forming has features of other public policy battles such as national health care and environmental protection where ideology, framing, self-interests, and fears all come into play. The parties in the D.C. Court have different answers to basic questions such as: What are the limits of FCC rule-making? When does the FCC have to ask Congress for authority for rule-making? Does the 1996 Act allow the FCC to set basic ground rules for network provider behavior? Can it extend its rule-making reach to other Internet participants such as Content Delivery Networks that store files often downloaded so that they don't have to travel across the Internet? What about regulating application providers? Should the FCC retain residual power to impose additional rules if it judges certain practices are not in the public interest, and by what process would the FCC add rules? Should the process depend on specific disputes or Internet performance measures such as investment growth, new applications, or social objectives such as a reduction in public complaints or an improvement in universal service and civic engagement? How reliable would any performance measure be when the market and the underlying technology are changing so rapidly?

The battle over FCC rule-making authority is going on within the FCC itself. Only three of the five FCC commissioners approved the new approach, and the two dissenters had sharp words about the final product. Commissioner Pai, in particular, challenged the FCC's legal authority and the process itself for determining new rules. He said five unelected Commissioners have overstepped their authority and operated beyond their competences. In Pai's view, the 1996 Act states clearly that Congress intended the Internet to be free of federal regulation, and FCC chairmen since then, both Republican and Democrat, reaffirmed this goal – until now, when Chairman Wheeler moved to regulate the Internet as a telecommunications service. In Pai's opinion, Congress should have acted if such a dramatic change in Internet rules was necessary. He claims the Obama administration pressured the Commission to make broadband Internet access a telecommunications service just before the Commission issued its Order. As a result, the public was not consulted by this turn in policy. He predicts American broadband deployment and innovation will be cut back and prices will rise as a result of utility-style regulation. He cites as proof broadband is more widely available here and at higher speeds than in Europe where the Internet is treated as a public utility.¹⁰

The other dissenter, Commissioner O'Reilly said, he could not support "the insertion of the Commission into every aspect of the Internet... [T]he Commission pursued an ends justified the means approach to subject broadband providers to a new Title II regime without a shred of evidence that

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it is even necessary, solely to check the boxes on a partisan agenda. Even worse, the order punts authority to FCC staff to review current and future Internet practices under vague standards such as just and reasonable, unreasonable interference or disadvantage, and reasonable network management. This is a recipe for uncertainty, [and] delegat[es] vast authority to staff to make critical decisions or set policy.”¹¹

Naturally, Chairman Wheeler and the two other commissioners who voted for the Order disagree with Pai. Wheeler believes the historical network clearly shows that “both human nature and economic opportunism act to encourage network owners to become gatekeepers that prioritize their interests above the interests of their users.”¹² To guard against abuse of power, the FCC introduced a few, very specific rules of conduct for network providers that would protect users of the network, such as requiring billing transparency or not allowing fast lanes that divide the Internet into “haves” and “have-nots.” This is not utility-style regulation where the government prescribes a broad range of prices and requires a showing of the reasonableness of prices. The FCC believes it is prudent to reserve the power to intervene when it clearly sees behavior that hurts the social and economic performance of the Internet.

Besides the likelihood that ideological differences lead to policy clashes, the battle spills over into imagery. One of the flash points surrounds the image of the Internet as a superhighway. Even a superhighway has limited lanes, has rules of the road, and because it is public, only has fast lanes when they somehow promote civic behavior such as commuter lanes. This method of framing the problem favors Chairman Wheeler, who is against Internet fast-lanes, but is it a fair rendering of reality? Should the Internet be likened to a railway network that has bullet trains for those willing to pay a premium for speed or comfort and commuter trains for those who want a lower fare? Should it be likened to first-class and business-class cars on the same train? Or is the transport analogy wrong because the Internet can expand its lanes by adding network capacity? When lanes can easily increase and have custom features, Pai’s position becomes much more tenable.

Self-interest usually lurks behind high-blown statements of belief. Many groups use the Internet and all of them want to be the gateway to the customer. Cable companies represented by the National Cable & Telecommunications Association, AT&T, Verizon, and CenturyLink, big network providers that were formerly telephone companies, application providers such as Google and equipment providers such as Apple, wireless networks represented by the wireless association CTIA, rural telephone companies represented by the National Telecommunications Cooperative Association, and the different levels of government, federal, state, and local

– all have vested interests. For example, small telephone companies may want federal protection to prevent large network providers from dictating how they can connect to the Internet. Naturally, large carriers believe they have a right to set or at least negotiate the terms and conditions for other networks to connect to them. The FCC wants its rules to apply to large network carriers only. The big carriers don't want to be handicapped in a market they believe is highly competitive. They don't want smaller networks, application providers, and other Internet participants that store and process data to get a free ride at the large carriers' expense. The big wireless carriers are especially concerned that the FCC will set similar standards for network management for landline and wireless carriers even though wireless carriers have much lower capacity networks.

The fear factor looms large for big network providers because political pressure may force the FCC to get heavy-handed. No one knows how important comedian John Oliver's comedy sketch was in rousing the public and the Administration to prevent fast lanes being sold by network providers. His June 2014 half-serious comedy routine that lambasted the government for not enforcing net neutrality has almost 10.5 million hits on YouTube. It caused a buzz in government circles according to Bloomberg News.¹³ Naturally, the big network providers are afraid of the "camel's nose under the tent" effect. Once the FCC starts regulating the Internet, even if it is lightly done at the start, the camel will push its way under the tent, pushed there by interested parties. Right now the FCC's focus is on consumer protection, but it is not hard for a big network provider to imagine the FCC expanding its oversight to behavior in other market segments such as the interconnection agreements among networks, agreements with large specialized customers, agreements among other entities that offer transport to the public.

The battle for consumer protection is already underway. The FCC is being pushed to enact privacy rules that could hamper the ability of big network providers to gather, process, and sell data. The Open Technology Institute at New America urges the FCC to "shield the sensitive information that a common carrier learns about customers." The big Internet Service Providers (ISPs) have a unique access to their customers and "can therefore build a comprehensive picture of users' online activities, ranging across time, across different sites, services, and devices—from their streaming video habits on Netflix, to the frequency with which they request online banking services, to the times of day they are most active on Facebook and other websites."¹⁴ In a letter to Commissioner Wheeler, a long list of consumer advocate organizations said that proposed rules should also provide for notice of data breaches, and hold broadband providers accountable for any failure to take suitable precautions to protect personal data collected from users.¹⁵

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Large carriers expect the FCC will assess universal service charges on Internet traffic to subsidize social policy programs such as Internet service for low-income and rural-area citizens. The current funding source is a charge on long distance voice service. The base demand for this service is eroding. It is not hard to imagine the FCC tapping a much larger source of revenue associated with Internet service.

The other big carrier fear is that the FCC lacks the competency to react properly to changes in technology and market conditions. The Internet is more than a network of networks that interconnect to deliver digital services to the public. The Internet of today is not like the Internet of twenty or even ten years ago. It carries voice and video traffic when it once transported data and emails. Specialized private networks are growing rapidly that tap into the Internet. The Internet is now truly global in scope. Rules set in the United States are international policy statements and impose conditions on providers that want to connect to the United States. Myopic rule-making could hurt America's competitiveness in the global marketplace.

Christian Dippon and Jonathan Falk of NERA, a consulting company, state that "Because regulatory mechanisms create delays and increase risks and costs in bringing an innovation to market and establishing a foothold, prospective investors have to factor in the delay, the cost of regulatory compliance, and the uncertainty of regulatory approval." They ask, "Are you an ISP? Is a practice reasonable network management? An obvious example is a practice, which has as its true genesis an entirely innocuous traffic management protocol, that now requires, in advance of implementation, a legal opinion as to whether the practice is reasonable, which in turn depends not on what the practice is intended to do but how it might be judged in a subsequent regulatory inquiry." ¹⁶

On their side, the Commissioners in the majority fear inaction may embolden Internet providers with market power to pick winners in the market, to bait and switch customers by offering much and delivering little, and to exploit customer data without letting customers have a say in its use. Now that the Internet is a core delivery network for basic services, is it in the public's interest for the government to stay aloof when even seemingly reasonable behavior could create massive economic and social dislocations like the 2008 financial meltdown? If the government doesn't have expertise to oversee the Internet, it will not have the capability to intervene in a crisis.

The Stakes

The legal battle will continue whatever the ruling of the D.C. Court until it reaches the Supreme Court, and even after that, many law suits will involve interpretation of specific rulings and class action suits against network

providers. The legal costs, by themselves, do not suggest the FCC's approach was wrong. It simply means that the disagreements are deep and long-lasting. As with many "big issue" debates, it will be hard to determine which side is right because of the lack of experimental data and a lack of understanding of how the Internet evolves. It is a great opportunity for the academic community to develop cross-discipline studies to gauge the effects of technological, economic, and behavioral changes the Internet continues to produce.

The investment in understanding the conflict may be large but Commissioner Pai and others believe a great deal is at stake. Pai said the future of the Internet depends on how government defines its role. Commissioner O'Reilly, the other dissenter, agrees with him. Certainly Wheeler and his supporters believe the Internet will not flourish without basic regulations in effect.

Others agree with the stakes involved. "It will probably have the biggest impact on the American communications regulatory scheme, certainly for wireline and wireless data services, for any case you can think of," said Earl W. Comstock of Eckert Seamans Cherin & Mellott LLC.¹⁷

Examining the Order

Instead of picking sides, the first objective is to show why the legal battles will continue by examining specific features of the Order, and to examine likely business disputes that will occur while the FCC's new rules are in effect. The second objective is to suggest business strategies for coping with legal uncertainty.

The starting point is a brief summary of the FCC's Order. In the Order, the FCC defined BIAS as a "mass-market retail service by wire or radio that provides the capability to transmit data to and receive data from all or substantially all Internet endpoints ... or ... a functionally equivalent service."¹⁸

Bright-Line Rules

The new prescriptive "bright-line" rules limiting network provider behavior are associated with BIAS defined as a mass-market retail service by wire or radio.

- *No blocking* of content, applications, services, or non-harmful devices subject to reasonable network management
- *No throttling* of lawful Internet content on the basis of Internet content, application, or service, or use of non-harmful devices subject to reasonable network management

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- *No paid prioritization* where the broadband provider accepts payments to manage its network in a way that benefits particular content, applications, services or devices. No fast lanes.
 - Paid prioritization refers to directly or indirectly favoring some traffic over other traffic using such techniques as traffic shaping, prioritization, resource reservation or other forms of traffic management either in exchange for consideration (monetary or otherwise) or to benefit an affiliated entity.
 - No room for exceptions where customer permission is buried in a service plan.
- *Enhanced transparency* to assure a Broadband Internet Access Service (BIAS) provider publicly discloses network management practices, performance, and commercial terms so that customers can make informed decisions.
- *Reasonable network management* encompasses practices that achieve legitimate network management processes. Cutting speed of heavy users to push them into higher priced plans is not legitimate.

Telecommunications Services and Entities Excluded Bright-Line Regulation:

- The FCC excludes enterprise services, virtual private network services, hosting or data storage services, or services of premises operators.
- Also excluded are facilities based services such as Voice over Internet Protocol (VoIP) or cable services that do not travel over BIAS.
- In general, the FCC exempts any other services chosen by end users because the rationale for regulation is to promote customer freedom of choice with a nondiscriminatory proviso.
 - Any person engaged in the provision of BIAS shall not unreasonably disadvantage [an] end user's ability to select, access, and use broadband service or lawful Internet applications, services, or devices of their choice.¹⁹
- Interconnection services between network providers is not covered by the Order because of lack of historical record.
- The FCC Exempted small network providers with fewer than 100K customers from its new rules to limit administrative burdens on them.

Light-Touch Regulation

The FCC used its forbearance powers extensively in the Order to tailor its rules to meet its specific BIAS objectives. Forbearance is invoked when regulations are deemed not necessary to ensure that charges, practices, classifications, and regulations in connection with telecommunications services are just and reasonable; and enforcement of the regulation is not

necessary for the protection of the consumer and is consistent with the public interest. In the Order, the FCC forbore from Title II regulations that prescribed specific rules for pricing and interconnection and unbundling network elements that could be leased from a telecommunications carrier, and from universal service contributions -- at least temporarily.

“Know It When I See It” Residual Powers

The FCC’s residual powers big network providers fear stem from the common carrier rules the FCC wants to maintain. It did not forbear from requiring common carriers to establish physical connections, where reasonable, with other carriers at just and reasonable rates (Section 201 of the Act). It is unjust to discriminate among customers in charges, practices, regulations, facilities, and services ... by any means that give undue preference to a particular party (Section 202 of the Act). A common carrier is subject to liabilities for damages to persons injured (Section 206 of the Act). The Commission can award damages and direct the carrier to pay the injured parties (Section 209 of the Act). In addition, every telecommunications carrier has the duty to protect the confidentiality of proprietary information to other carriers, equipment manufacturers, and customers. It cannot use proprietary customer information for its own marketing purposes. It can use it for telecommunications services (Section 222 of the Act). However, the FCC forbore from network providers gathering web browsing data. Utilities that are owners of poles, ducts, conduits, and rights of way must ensure that cable operators, telecommunication carriers obtain access at just and reasonable and nondiscriminatory rates, terms, and conditions (Section 224 of the Act). The FCC intends to use its residual powers to settle disputes not covered by the bright-line rules on a case-by-case basis.

Framing Business Strategy

Network providers are not sure how the FCC’s bright line regulations and residual powers will affect their ability’ to respond to market needs. Building an effective business plan to navigate in this unsettled legal environment is crucial to success both in court and the marketplace. A good starting point is to assume the FCC is looking for a “smoking gun” that will validate its own regulatory strategy. It is also reasonable to assume the FCC is very sensitive to criticisms that it has overstepped the bounds of its powers.

Big network providers will likely follow a three-pronged business strategy to control their destiny. They will continue to present evidence to the public and policy-makers that regulating the Internet will harm the nation. They will offer retail and wholesale services that will have a high probability of success in the marketplace and avoid ones that with less potential, especially

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if they invite FCC scrutiny. They will engage academics to perform a variety of studies aimed at showing the FCC's approach to regulation is already out-of-date.

Smaller landline network providers will comply with the spirit of the FCC's rules even though they were exempted from them. They will work with FCC staff to promote fair interconnection arrangements with larger network providers and will press for continued government support to assure that rural customers enjoy comparable services at comparable prices to their urban counterparts.

Smaller wireless providers have to grow to stay relevant in the high-speed broadband market. They will test FCC rules and fight vigorously against them if they threaten their long-term survival. Wireless providers that lack market power, such as T-Mobile, are likely to seek exemption from Internet regulations despite having more than 100K customers by arguing that it would be suicidal for them to offer service packages that would hurt customers.

Table 1 summarizes a general plan for large and small network providers. It is based on the historical record and likely accommodations to the FCC's new set of rules.

Managing New Transmission Services in the Unsettled Regulatory Environment

The most likely sources of disputes in the near term with the FCC will center on the "bright-line" rules applied to mobile services. The reason is that mobile carriers have much more limited transport capacity than landline carriers that use fiber optics to transport data. A major question is what type of new services are worth testing the FCC's new regulations. A look back to the time when voice was king helps answer the question. Customers then strongly preferred a flat monthly bill to measured service where the bill included charges per call.²⁰ They also strongly preferred toll-free calling, where a business paid when they called it.²¹ A good bet is that customer preferences haven't changed: keep the bill simple and let others pay, if possible.

Avoid New Measured-Service Plans

Consider two case studies where the "bright lines" may be blurry. The first one is a Smart Data Pricing (SDP) system devised at Princeton University. It is a version of measured service that uses sophisticated software to make economic theory work in real time. This is the type of service to avoid because it is unlikely to win many customers but could draw FCC fire.

Table 1. Implications of FCC Decisions for Large and Small Network Providers

Stakeholders of Market Participants	Big Network Providers	Small Network Providers
Policy Makers	Push for deregulation. Support Universal Service funded out of general tax revenue. Encourage use of common law and statutes for defining lawful behavior of network providers of Internet services. Seek a level playing field in data monetization.	Define obligations and support. Support universal services funded by broadband customers. Small mobile carriers that are not exempt from FCC regulations will seek exemption based on lack of market power.
FCC	For BIAS, comply with bright line regulations for basic landline Internet packages. Test FCC regulations for mobile services when customers will support them.	Landline carriers comply with FCC regulations while supporting exemption given to them on cost grounds. Small mobile carriers will test FCC regulations to introduce innovative services that are likely to build market share Show where Interconnection with other networks is costly and creating bottlenecks
Large Wholesale and Retail Customers	Back away from unilaterally redesigning Internet interconnection arrangements. Work cooperatively with industry standards groups to facilitate interconnection.	Introduce high-speed services that match those of big network providers. Work with large network providers and industry standards groups through consortiums to limit costs.
Academics	Encourage studies of 1) Internet performance 2) data monetization and privacy standards 3) different approaches to rule-making methods, 4) wireless technical challenges, and 5) universal service funding strategies, including the funding mechanism	Encourage studies of rural markets that show the importance of universal service programs

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The objective of SDP is to offer customers price credits for voluntarily time-shifting Internet requests from congested periods to non-congested periods. To avoid the decision cost, a customer can allow the network provider to shift the customer's traffic based on an algorithm that learns from previous customer decisions when time-shifting is acceptable and by how much. The time shifting itself could be as short as a few milliseconds or as long as shifting the traffic to a different part of the day. The network provider benefits by avoiding customer complaints about slow speeds during peak usage periods and by using existing capacity more efficiently, which reduces the need for investing in bigger pipes to accommodate traffic peaks. Consumers benefit because the network provider guarantees a lower monthly bill for the same traffic than under a standard data plan.²²

Sounds like a win-win service, but how does this plan fare under the new BIAS rules?

It seems to pass muster with intent of the Order. It passes the customer freedom and choice goals. Customers know they are trading off cost savings for time shifting content, so it meets the transparency requirement. It allows network providers to manage capacity efficiently. The Order specifically says a network provider may offer data plans with different speed tiers, and any data selected plan with reduced speeds must comply with the transparency rule, which it does.²³

Now consider potential conflicts that may arise. SDP will require complicated bills to explain when price credits were given and how much they were. As a result, billing disputes are more likely because customers will not be sure if they were billed correctly. They may also complain that slow performance may not simply be due to time shifting but to traffic throttling.

The FCC has two tests for improper prioritization and throttling. Although SDP passes the test that this type of paid prioritization does promote efficient cost recovery, SDP may alter consumer choices for content and edge providers (par. 103). Video services providers may claim their products are being time shifted more often than other services.

Suppose the customer opts for the network provider to do the time shifting automatically. The network provider will have to install software that learns the customer's behavior. This will likely require deep packet inspection – basically examining the contents of packets. Although the network provider would not be able to market this information because it could only be used to transport traffic efficiently, some customers may not realize how invasive this method is and when they do, could complain to the FCC.

Introduce 800-Like Services

An actual impending case involves T-Mobile's Binge On service plan bears a technical resemblance to SDP, but differs in an important respect: It is the broadband equivalent of toll-free 800 service. Customers are allowed to stream unlimited video services to twenty-four selected video sites such as Netflix, HULU, and NOW without using a "drop" of their data plan. In exchange, T-Mobile can shape the data stream to manage transport cost. On the surface, it looks like a free lunch and the FCC said these types of tie-ins are permissible if they benefit consumers (par 152). Bear in mind T-Mobile is in a highly competitive struggle with Verizon, AT&T, and Sprint for market share, so the company does not have much market power and does not want to displease customers.

The Electronic Frontier Foundation (EFF) performed speed tests on T-Mobile Binge On service. According to EFF. It turns out T-Mobile has reduced downloaded and streaming speed for all video services to 1.5 Mbps even if the Smart Phone is capable of higher speeds. EFF claims T-Mobile is violating the FCC's transparency rule, and it questions whether T-Mobile is violating net neutrality by zero-rating selected video providers. Even if it is permissible, reduced video speed should apply only to the zero-rated video services. Naturally, T-Mobile disagrees with EFF's assessment.²⁴

These two cases suggest the Order's bright line rules may not be so sharp in practice, but the 800 service is worth pressing, especially if customers demand it.

Large Network Providers and Small Wireless Providers Will Press for Deregulation

On a second front, large network providers and smaller mobile providers will continue to push for deregulation. Commissioner Pai built his case for deregulation on a University of Pennsylvania study written by law professor Christopher Yoo. He found that US consumers had more access to high-speed internet than their European counterparts.²⁵ A more recent study published in Harvard Business Review written by Larry Downes's project director at the Georgetown Center for Business and Public Policy reinforces Professor Yoo's conclusions.²⁶ He said that because the Internet was not regulated, the U.S. has seen nearly a trillion and a half dollars in private investments for cable, mobile, fiber, and next-generation copper/fiber hybrid services. This has helped contribute to the development of innovative Internet-based businesses, where 11 of the top 15 Internet businesses, most started in the last decade, are U.S.-based, with the rest coming from China. Another study produced by UStelecom an advocacy organization for large

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network providers shows a tremendous increase in bandwidth and high-speed Internet customer penetration in the United States.²⁷

Future studies of this type will be clouded because of the FCC's new regulations. A new line of inquiry should focus on showing the FCC's perception of the Internet and broadband services in general are out-of-date. The Internet of the future will need quality of service rules – akin to fast lanes -- because video now dominates the transmission market. Cisco predicts by 2019, 90% of Internet traffic will be video.²⁸ Besides video, big enterprises are now demanding high quality broadband channels that don't ride over the Internet.²⁹ Customers like Vonage will continue to use network providers' facilities to offer competing services. CDNs will offer storage to cut transmission costs.

All network providers will want to show the FCC's desire to protect the public's privacy by imposing rules on network providers is also myopic. Many companies are monetizing data, and many new sources are cropping up.^{30, 31} Without too much effort, a digital profile can be built from existing data sources.³² Broad policy is necessary because the information market has pervaded the American economy. Singling out network providers for special treatment, will likely bias information gathering and processing. Instead, Congress needs to develop a strategy that defines a level playing field for all market participants. A multi-disciplinary set of studies are needed to examine the ethics and efficiency of different approaches to monetizing data while protecting the public's privacy.

Network Providers will Continue Building a Coalition

The large network providers will need the support of the small network providers so that the industry can present a united front to policymakers. Large network providers must assure them that they will not be dictated to on interconnection arrangements. A step in the right direction is to continue to show that their transiting prices are continuing to fall. These are prices charged to other network providers for using their network to reach a destination point. In 2008, for example, the price was \$12 per megabit per month. By 2015, the price dropped to \$.63 per megabit per month.³³

Large network providers need to de-emphasize plans to reduce unilaterally geographic interconnections locations with smaller network providers to just eight nationwide, making the interconnections costly for small providers.³⁴ They should also stress they are working cooperatively with network providers of all sizes to solve the quality of service issue.³⁵

Funding of Universal Service Obligation will be a touchy issue. Small network providers favor a special assessment on broadband services that does not require Congressional approval. Large network providers would

want to tax the public in order to spread the cost of the obligation to all Internet users.

Winning over application providers will require a targeted strategy. A business plan must consider the implication of the new regulations for Internet startups and large data platform providers such as Google. Will banning paid prioritization – banning fast lanes, the cornerstone of the net-neutrality debate -- level the playing field for new application developers? The answer is by no means clear. If the new application relies on video streaming, a bandwidth hog, the answer is yes. The transport costs would be shared by all customers because all traffic goes over common backbone pipes. It is not surprising that Netflix, for example, once a small video provider that grew large quickly, supports net neutrality because it is a significant cost saver for the company. Other applications providers not linked to video streaming may also favor net neutrality because they fear companies like Google or Amazon could spend large sums to set up fast lanes for themselves to improve the end user experience.³⁶

Often overlooked in the discussion, however, is the role of Content Delivery Networks (CDNs). If Netflix or Google, or Amazon wants to gain a market edge by reducing delay and video jitter, they can already store their content close to their customers using Content Delivery Networks, basically server farms located strategically to reduce the distance video has to travel. In effect, strategic storage is another way of developing a “fast lane” to the customer. The issue then becomes whether the FCC should regulate CDNs. The answer so far is no, but pressure from application providers and perhaps network providers could change the FCC’s stance.

Even if network providers do unite and win certain groups of applications providers to their side, they still must have the public on their side. The Internet superhighway image has to be changed. The new imagery must picture digital frontiers expanding outwards at increasing speed – and everyone is along for the ride.

Conclusion: A Successful Business Strategy Requires Anticipation and Framing

Regulation of BIAS as a telecommunications service will cause market uncertainty. A successful network provider will try to anticipate what types of business offerings and plans will trigger an FCC investigation. The examples were meant to suggest any new offering that has zero-rated tie-in services or complicated billing requirements have the highest risk of generating disputes. Any major network redesign that big network providers impose either directly or indirectly on smaller network providers will be challenged. Any major change in network capacity growth or allocation of

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bandwidth to non-Internet broadband services will be seen as anti-Open Internet.

The court battles will continue, and they will be expensive. Formally, the courts will decide which side is right based on the legal record. It would not surprise anyone, however, if the legal rulings were shaped to some extent by public pressure, and that is where network providers need to invest resources. They need to build coalitions and frame the dispute using different imagery. If you watch the John Oliver sketch, you will hear a legal advisor for Verizon saying that the ability to introduce paid prioritization of traffic creates a fast lane for everybody and a hyper-speed lane for others. He has already conceded that the Internet is a public conveyance with limited capacity. The lawyer's comments drew laughs from Oliver's audience and derogatory comments from Oliver.³⁷ Network providers need to invest in developing new imagery that the public will accept as fair.

In the meantime, big network providers and their allies need to keep up enough pressure to assure that the FCC exercises restraint while its rules are in effect. As for the FCC, it must pick its cases carefully to conserve resources and send clear messages that reinforce its "bright line" style of regulation.

As for small application providers, the most logical near-term strategy is to support net neutrality. But they need to remain alert about alternatives to fast lanes. Their next target should be CDNs.

As for the FCC, they should plan for having enough resources to settle disputes they haven't even imagined.

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