

Lies, Damn Lies and Statistics: *Developing a Clearer Assessment of Market Penetration and Broadband Competition in the United States*

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ABSTRACT

This paper examines United States broadband penetration and pricing statistics with a critical eye, in light of other contradictory compilations by organizations other than the Federal Communications Commission and the National Telecommunications and Information Administration. The paper also compares and contrasts the FCC's identification of broadband options in the author's home zip code with what actual options the author could identify.

The paper concludes that the U.S. government has overstated broadband penetration and affordability by using an overly generous and unrealistic definition of what qualifies as broadband service, by using zip codes as the primary geographic unit of measure, and by misinterpreting available statistics.

The paper concludes that credible calculations, using better-calibrated measures, show a mixed outcome based on a more granular geographical and cost focus. The paper provides suggestions on how the FCC could stimulate next generation network deployment.

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I. INTRODUCTION

Depending on the source, one can conclude that U.S. businesses and residents enjoy access to a robustly competitive and nearly ubiquitous marketplace for inexpensive broadband Internet access, or they suffer the consequences of a tightly concentrated industry offering inferior service at high rates. On one hand, the Federal Communications Commission (FCC or Commission),¹ the National Telecommunications and Information Administration (NTIA),² and some researchers³ offer a quite sanguine outlook.⁴

On the other hand, different statistical compilations and interpretations show the

¹ FCC, FCC 08-88, FIFTH REPORT, INQUIRY CONCERNING THE DEPLOYMENT OF ADVANCED TELECOMMUNICATIONS CAPABILITY TO ALL AMERICANS IN A REASONABLE AND TIMELY FASHION, AND POSSIBLE STEPS TO ACCELERATE SUCH DEPLOYMENT PURSUANT TO SECTION 706 OF THE TELECOMMUNICATIONS ACT OF 1996 ¶ 1 (2008), available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-08-88A1.pdf [hereinafter Fifth Broadband Report to Congress].

² NAT’L TELECOMMS. & INFO. ADMIN., U.S. DEP’T OF COMMERCE, NETWORKED NATION: BROADBAND IN AMERICA 2007 (2008), available at <http://www.ntia.doc.gov/reports/2008/NetworkedNationBroadbandinAmerica2007.pdf> [hereinafter Networked Nation].

³ See, e.g., Scott Wallsten, *Everything You Hear About Broadband in the U.S. is Wrong*, THE PROGRESS & FREEDOM FOUNDATION, June 13, 2007, <http://www.pff.org/issues-pubs/pops/pop14.13wallstenOECDbroadband.pdf>.

⁴ The Government Accountability Office, an investigative unit reporting to Congress, offers a contrasting and less favorable assessment. TELECOMMS. REP. TO CONG. COMMS., U.S. GOV’T ACCOUNTABILITY OFFICE, GAO-06-426, BROADBAND DEPLOYMENT IS EXTENSIVE THROUGHOUT THE UNITED STATES, BUT IT IS DIFFICULT TO ASSESS THE EXTENT OF DEPLOYMENT GAPS IN RURAL AREAS 15 (2006), available at <http://www.gao.gov/new.items/d06426.pdf>.

United States behind in terms of market penetration, available bitrate,⁵ and affordability,⁶ even trailing some nations that have similarly unfavorable geographic and demographic characteristics.⁷ In light of the extraordinary global success achieved by domestic ventures in information and communications technology (ICT), it would appear counterintuitive for some current broadband statistics to show the United States lagging other nations in terms of access to next generation networks and adoption of broadband services. Likewise, in countless deregulatory policy pronouncements and orders, the FCC assumes as unassailable the existence of robust facilities-based competition for wireline,⁸ wireless,⁹ and other telecommunications market segments.¹⁰

⁵ Bitrate refers to the number of bits a broadband network can deliver in a period of time. Typically the bitrate for broadband networks range from a few hundred bits per second to several million bits per second. Another term, throughput, refers to the actual amount of data transmitted, a rate sometimes significantly below the theoretical maximum bitrate.

⁶ See ROBERT D. ATKINSON, DANIEL K. CORREA & JULIE A. HEDLUND, EXPLAINING INTERNATIONAL BROADBAND LEADERSHIP (2008), <http://www.itif.org/index.php?id=142>; COMM. FOR INFO., COMPUTER AND COMM. POLICY, DIRECTORATE FOR SCI., TECH. AND INDUS., ORG. FOR ECON. CO-OPERATION AND DEV. (OECD), BROADBAND GROWTH AND POLICIES IN OECD COUNTRIES (2008), <http://www.oecd.org/dataoecd/32/57/40629067.pdf>; DANIEL K. CORREA, INFO. TECH. AND INNOVATION FOUND., ASSESSING BROADBAND IN AMERICA: OECD AND ITIF BROADBAND RANKINGS (2007), <http://www.itif.org/files/BroadbandRankings.pdf>; DIRECTORATE FOR SCI., TECH. AND INDUS., OECD, OECD BROADBAND PORTAL, http://www.oecd.org/document/54/0,3343,en_2649_33703_38690102_1_1_1_1,00.html; INFO. TECH. AND INNOVATION FOUND., 2008 ITIF BROADBAND RANKINGS (2008), <http://www.itif.org/files/2008BBRankings.pdf>; INT'L TELECOMM. UNION, ITU BROADBAND STATISTICS FOR 1 JANUARY 2006 (2006), <http://www.itu.int/osg/spu/newslog/ITU+Broadband+Statistics+For+1+January+2006.aspx>; S. Derek Turner, *Broadband Reality Check II: The Truth Behind America's Digital Decline*, FREE PRESS, Aug. 2006, http://www.freepress.net/files/broadband_report.pdf.

⁷ The OECD ranks the United States 15th and Canada 10th in terms of broadband subscribers per 100 inhabitants. OECD, BROADBAND STATISTICS, BROADBAND SUBSCRIBERS PER 100 INHABITANTS BY TECH. (2007), <http://www.oecd.org/dataoecd/21/35/39574709.xls>.

⁸ See, e.g., FCC, FCC 04-248, ORDER ON RECONSIDERATION, IN THE MATTER OF REVIEW OF SECTION 251 UNBUNDLING OBLIGATIONS OF INCUMBENT LOCAL EXCHANGE CARRIERS, IMPLEMENTATION OF THE LOCAL COMPETITION PROVISIONS OF THE TELECOMMUNICATIONS ACT OF 1996, DEPLOYMENT OF WIRELINE SERVICES OFFERING ADVANCED TELECOMMUNICATIONS CAPABILITY (2004) [hereinafter FCC 04-248] (concluding that incumbent carriers do not have to unbundle and provide competitors access to fiber to the curb loops in addition to a previous decision to provide such unbundling relief to fiber to the home loops); FCC, FCC 04-254, MEMORANDUM OPINION AND ORDER, IN THE MATTERS OF PETITION FOR FORBEARANCE OF THE VERIZON TELEPHONE COMPANIES PURSUANT TO 47 U.S.C. § 160(c), SBC COMMUNICATIONS INC.'S PETITION FOR FORBEARANCE UNDER 47 U.S.C. § 160(c), QWEST COMMUNICATIONS INTERNATIONAL INC. PETITION FOR FORBEARANCE UNDER 47 U.S.C. § 160(c), BELL SOUTH TELECOMMUNICATIONS, INC. PETITION FOR FORBEARANCE UNDER 47 U.S.C. § 160(c) (2004) [hereinafter FCC 04-254] (eliminating unbundling requirements for unbundling obligations to the broadband elements, including FTTH loops, FTTC loops, the packetized functionality of hybrid loops, and packet switching).

⁹ FCC, FCC 08-28, TWELFTH REPORT, IMPLEMENTATION OF SECTION 6002(B) OF THE OMNIBUS BUDGET RECONCILIATION ACT OF 1993, ANNUAL REPORT AND ANALYSIS OF COMPETITIVE MARKET CONDITIONS WITH RESPECT TO COMMERCIAL MOBILE SERVICES (2008) [hereinafter Twelfth Report] (“Using the various data sources and metrics discussed above, we have met our statutory requirement to analyze the competitive market conditions with respect to commercial mobile services, and conclude that the CMRS marketplace is effectively competitive.”).

¹⁰ See, e.g., WIRELINE COMPETITION BUREAU, FCC, DA 07-656, STAFF REPORT, 2006 BIENNIAL REGULATORY REVIEW (2007); INTERNATIONAL BUREAU, FCC, DA 07-675, STAFF REPORT, 2006 BIENNIAL REGULATORY REVIEW (2007); FCC, FCC 07-181, REPORT, SECTION 257 TRIENNIAL REPORT TO CONGRESS

The FCC has undertaken an aggressive deregulatory campaign based on its assumptions and statistical compilations that support an inference of robust market penetration and competition in broadband markets. Advocates for even more deregulation regularly cite the Commission's statistics as evidence that the unfettered marketplace can achieve broadband access and affordability goals as well as foreclose the need for internet regulation.¹¹ Both the Commission and many stakeholders assume the frequently cited statistics present a true picture of the marketplace. A recent NTIA document concludes that the United States has achieved the goal of "universal, affordable access for broadband technology by the year 2007" articulated by President Bush in 2004.¹² The FCC has corroborated that conclusion with a finding "that advanced telecommunications capability is being deployed to all Americans in a reasonable and timely fashion."¹³

This paper will examine the U.S. broadband penetration and pricing statistics with a critical eye, in light of other contradictory compilations by credible organizations including the International Telecommunication Union and the Organization for Economic Co-operation and Development (OECD). Additionally, the paper will compare and contrast the FCC's single numerical count of broadband options in the author's home zip code with actual identified service options.

The paper concludes that the FCC and NTIA have overstated broadband penetration and affordability by using an overly generous and unrealistic definition of what qualifies as broadband service, by using zip codes as the primary geographic unit of measure, by failing to require measurements of actual as opposed to theoretical bitrates, and by misinterpreting available statistics. Additionally, the Commission emphasizes broadband accessibility and not affordability in its failure to consider cross-elasticity between services that substantially vary in terms of price, bitrate and actual throughput.

IDENTIFYING AND ELIMINATING MARKET ENTRY BARRIERS FOR ENTREPRENEURS AND OTHER SMALL BUSINESSES (2007).

¹¹ "We note that opponents of net neutrality regulation have pointed to evidence on a national scale that (1) access speeds are increasing, (2) prices (particularly speed-adjusted or quality adjusted prices) are falling, and (3) new entrants, including wireless and other competitors, are poised to challenge the incumbent cable and telephone companies. We note, too, that statistical research conducted by the FCC has tended to confirm these general trends." FTC, BROADBAND CONNECTIVITY COMPETITION POLICY, FTC STAFF REPORT, 8 (2007), available at <http://www.ftc.gov/reports/broadband/v070000report.pdf>. However, this report did acknowledge that "[b]ecause alternative broadband providers are not perfect substitutes for cable or DSL broadband providers, the mere counting of providers using new technologies does not answer the question of whether or not they are effective competitive alternatives to cable and DSL." *Id.* at 104; see also J. Gregory Sidak, *A Consumer-Welfare Approach to Network Neutrality Regulation of the Internet*, 2 J. COMPETITION L. & ECON. 349 (2006); The Trouble with Broadband Deployment Statistics, <http://www.cabletechtalk.com/news-items/2008/02/06/the-trouble-with-broadband-deployment-statistics/> (Feb. 6, 2008, 9:42).

¹² PRESIDENT GEORGE W. BUSH, THE WHITE HOUSE, PROMOTING INNOVATION AND ECONOMIC SECURITY THROUGH BROADBAND TECHNOLOGY (2004), http://georgewbush-whitehouse.archives.gov/infocus/technology/economic_policy200404/chap4.html.

¹³ Fifth Broadband Report to Congress, *supra* note 1, at ¶1.

While the FCC belatedly proposes to use a more granular approach¹⁴ which would replace zip codes with census tracts and require carriers to report broadband penetration for several different levels of throughput, the data collection process remains lacking in transparency and cost of access comparisons.

In light of its keen interest in concluding that successful broadband market penetration has occurred, the FCC has agreed to treat as confidential¹⁵ trade secrets the raw information submitted in compliance with a statutory mandate. Access to such data might provide the basis for challenging the FCC's optimistic statistical interpretations, because carriers can hide lack of success in providing ubiquitous broadband access. Ironically, some carriers that willingly display maps touting their wireless services argue against the FCC providing analogous information about broadband penetration to the public.

The paper concludes that credible calculations, using better-calibrated measures, show a mixed outcome based on real world factors such as location, price per unit of capacity, adoption rates by income, actual throughput speeds, and degree of facilities-based competition. Some U.S. residents, particularly in urban locales, enjoy excellent and competitive broadband service, while some rural residents may have ample access options, albeit at comparatively high prices in light of limited price competition. The paper concludes that the absence of robust price competition among facilities-based broadband operators in many areas of the nation challenges several of the assumptions built into recent FCC policy initiatives that seek to abandon consumer safeguards. The paper also concludes that a statutory mandate to promote universal access to advanced telecommunications capability requires the FCC to collect and disseminate credible statistics on next generation network deployment without obscuring the data by invoking a trade secret exemption to full disclosure.

¹⁴ FCC, FCC 08-89, REPORT AND ORDER AND FURTHER NOTICE OF PROPOSED RULEMAKING, DEVELOPMENT OF NATIONWIDE BROADBAND DATA TO EVALUATE REASONABLE AND TIMELY DEPLOYMENT OF ADVANCED SERVICES TO ALL AMERICANS, IMPROVEMENT OF WIRELESS BROADBAND SUBSCRIBERSHIP DATA, AND DEVELOPMENT OF DATA ON INTERCONNECTED VOICE OVER INTERNET PROTOCOL (VOIP) SUBSCRIBERSHIP (2008), available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-08-89A1.doc; see also Martin H. Bosworth, *FCC Releases Broadband Report, Admits Data is Faulty*, CONSUMERAFFAIRS.COM, Mar. 21, 2008, http://www.consumeraffairs.com/news04/2008/03/fcc_broadband.html; Anne Broache, *FCC Approves New Method for Tracking Broadband's Reach*, CNET NEWS, Mar. 19, 2008, http://news.cnet.com/8301-10784_3-9898118-7.html?hhTest=1&%2520part=rss&subj=news&tag=2547-1_30-20.

¹⁵ "Filers may submit a request that information in a Form 477 submission not be made routinely available for public inspection by so indicating in item (9) of the filer identification information for that submission." FCC, OMB NO: 3060-0816, FCC FORM 477, INSTRUCTIONS FOR MARCH 1, 2009 FILING (OF DATA AS OF 12/31/2008), available at <http://www.fcc.gov/Forms/Form477/477instr.pdf>. See also 47 C.F.R. §§ 0.457, 0.459, 1.7001(d), 43.11(c); FCC, FCC 98-184, REPORT AND ORDER, EXAMINATION OF THE CURRENT POLICY CONCERNING THE TREATMENT OF CONFIDENTIAL INFORMATION SUBMITTED TO THE COMMISSION (1998).

II. THE ROLE OF STATISTICS IN FCC DECISION MAKING

Lacking the resources to compile independently much of any data about the industries it regulates, the FCC relies on compulsory reports filed by specific companies.¹⁶ The FCC acknowledges that “to carry out its obligation under section 706 of the Telecommunications Act of 1996 to ‘determine whether advanced telecommunications capability is being deployed to all Americans in a reasonable and timely fashion,’” the Commission needs to collect data on broadband service subscriptions.¹⁷ More broadly, the FCC uses statistics to corroborate assumptions about the marketplace and to provide empirical evidence to support its decisions. If statistics support an inference of robust competition, then the Commission can more easily justify its pursuit of a deregulatory agenda, generate rationales for approving controversial mergers,¹⁸ and demonstrate to Congress that the Commission has appropriately executed legislative mandates.¹⁹ Lacking supporting statistics, the Commission runs the risk of basing its decisions only on assumptions about how competitive a market has become and engaging in indefensible results-driven decision making.

III. A PREDISPOSITION TO ASSUME ROBUST COMPETITION EXISTS

Evidence of competition provides strong validation that the FCC can reduce or eliminate its regulatory oversight and rely increasingly on market-driven self-regulation. Adam Smith’s concept of an invisible hand refers to the ability of the marketplace to respond to consumer requirements and to reach an optimal equilibrium that matches supply and demand. This ideal type of competition occurs when two or more ventures

¹⁶ A complete list of currently required FCC forms is available at <http://www.fcc.gov/formpage.html>.

¹⁷ FCC 08-89, *supra* note 14. “Good data, as you quickly learn serving at the FCC, is the bedrock of good policy. And creating good data is really a core function of government.” *Id.* at 9764 (statement of Commissioner Michael J. Copps, Approving in Part, Concurring in Part).

¹⁸ For example, in approving AT&T’s acquisition of BellSouth, the FCC cited its arguably questionable statistics to conclude “that there is substantial competition in the provision of Internet access services. Broadband penetration has increased rapidly over the last year with more Americans relying on high-speed connections to the Internet for access to news, entertainment, and communication. Increased penetration has been accompanied by more vigorous competition. Greater competition limits the ability of providers to engage in anticompetitive conduct since subscribers would have the option of switching to alternative providers if their access to content were blocked or degraded. In particular, cable providers collectively continue to retain the largest share of the mass market high speed, Internet access market. Additionally, consumers have gained access to more choice in broadband providers. Moreover cable modem service and DSL service are facing emerging competition from deployment of cellular, Wi-Fi, and Wi-Max-based competitors, and broadband over power line (BPL) providers. Commission statistics indicate that satellite and wireless broadband lines more than sextupled between December 2004 and December 2005, from 549,621 to 3,809,247, with BPL lines increasing 20 percent between June 2005 and December 2005. Given these alternatives, if the merged entity sought to discriminate against competing content or service providers, it would risk losing customers to competing broadband service providers. Thus, we find that the strong and increasing competition for mass market high-speed Internet access services will limit the incentives and ability of the merged entity to discriminate.” FCC, FCC 06-189, MEMORANDUM OPINION AND ORDER, AT&T INC. AND BELL SOUTH CORPORATION APPLICATION FOR TRANSFER OF CONTROL (2007).

¹⁹ *See, e.g.*, FCC 07-181, *supra* note 10; TWELFTH REPORT, *supra* note 9.

have invested in facilities and equipment available to provide service. Such facilities-based competition, also known as intermodal competition,²⁰ means that two or more ventures operate separate networks that can provide a standalone service without requiring cooperation between competitors. For example, a consumer of video programming can access ample content from either the satellites owned and operated by DIRECTV or by EchoStar, as well as alternative terrestrial networks provided by the local cable television operator and increasingly by incumbent telephone companies. Neither competitor needs to access the other's network, or inventory of programming.

But even if intermodal competition exists in ICT markets, light-handed regulation may remain necessary, as the public interest, convenience, and necessity may require the regulator to ensure that competitors cooperate on certain essential matters. Normally, competitors do not have to cooperate with each other, nor should they. Consumers want competitors to compete aggressively and to work tirelessly to acquire the market share currently held by a competitor. But in some ICT markets, such as telecommunications, the regulator may have to ensure that subscribers of carrier A can access the subscribers of carrier B. Such compulsory cooperation constitutes part of what it means to be a common carrier and the existence of competition makes no difference whether the FCC has statutory authority to require such cooperation and to monitor how such cooperation occurs.

Pro-market advocates might make the argument that competing carriers A and B would voluntarily cooperate and provide interconnection between their networks, even in the absence of a statutory or regulatory mandate. Connectivity between the networks that make up the Internet corroborates this view. But the issue of whether network operators will agree to interconnect, does not address how they will interconnect, nor does it guarantee that they also will agree to do so on fully transparent, non-discriminatory, and reasonable terms and conditions.²¹ Additionally, there have been instances where the public might want connectivity between networks, but for any of a number of commercial and strategic reasons, the carriers have refused to interconnect. For example, an Internet messaging network operator such as AOL or MSN might not want to facilitate interoperability, even though it would enhance the reach, utility, value, and convenience of the messaging process for users.

In its policy pronouncements and statistical compilations, the FCC has concluded that robust competition exists throughout the ICT marketplace with the exception of cable television and some services to rural areas, such as voice telephone service. When the

²⁰ Intramodal competition occurs when two operators of the same technology offer services in the same market, such as Direct Broadcast Satellite service provided by DIRECTV and EchoStar.

²¹ For example, Internet Service Providers typically do not make available the terms and conditions under which they agree to interconnect and accept traffic. The carriers execute comprehensive Non Disclosure Agreements that foreclose public access. "The two Internet Networks must enter into a Mutual Non-Disclosure Agreement and an Interconnection Agreement." Verizon Small Business Center, Verizon Policy for Settlement-Free Interconnection with Internet Networks (2009) http://www22.business.verizon.net/SMBPortalWeb/appmanager/SMBPortal/smb?_nfpb=true&_pageLabel=SMBPortal_page_pol_main&page_id=51.

FCC can identify a competitive market, credibly or not, the Commission can act on its predisposition to reduce or eliminate regulations. Concluding that robust competition exists serves the twin objectives of confirming that the Commission made the right call in previously reducing the scope of its oversight and in pursuing further deregulation going forward. Credible evidence of competition refutes the view that market failure exists, i.e., that the Commission must intervene to remedy a situation where the price, quantity, quality, or availability of a service lies at a level below what the Commission considers adequate.

Ironically, the FCC used to be accused of regulatory lag, i.e., the failure to modify or eliminate regulations in light of changed circumstances.²² Sponsored researchers used regulatory lag and the prospect of future competition to claim that “contestable markets”²³ obligated the FCC to start the administrative process for deregulation, or streamlined regulation in anticipation of future, increased competition. Now the FCC assumes that because competition exists with few barriers to market entry the Commission should further reduce its oversight.²⁴ In this current deregulatory environment, the FCC can state that because competition already exists, the Commission need not take steps to promote market entry.

²² “Regulatory lag creates the danger that restrictions will persist long after the conditions that justified their imposition have dissipated.” Christopher Yoo, *Beyond Network Neutrality*, 19 HARV. J.L. & TECH. 1, 11 (2005). Furthermore, regulatory lag may benefit regulated ventures when delays in regulatory adjustments allow firms to accrue excessive profits through “the inevitable delay that regulation imposes in the downward adjustment of rate levels that produce excessive rates of return and in the upward adjustments ordinarily called for if profits are too low.” 2 ALFRED E. KAHN, *THE ECONOMICS OF REGULATION: PRINCIPLES AND INSTITUTIONS* 48 (MIT Press, 1988) (1971).

²³ See WILLIAM J. BAUMOL, JOHN C. PANZAR & ROBERT D. WILLIG, *CONTESTABLE MARKETS AND THE THEORY OF INDUSTRY STRUCTURE* (Harcourt Brace Jovanovich 1982). Deregulation advocates adopted this concept that more narrowly addresses the role of sunk costs and the prospects for market entry and competition. “In economic theory, a contestable market is one in which there are no sunk costs. A sunk cost is an initial investment that cannot be recovered if the firm decides to leave the market. In a contestable market, the mere threat of entry is sufficient to prevent monopolistic behavior—actual entry need not occur. Broadband access markets are not contestable because entrants must make substantial investments that may never be recovered. The mere possibility of entry, therefore, is unlikely to control market power fully. Instead, such control must occur as a result of actual entry, a credible investment-backed commitment to enter, or the possibility of entry by a competitor possessing some advantage over the incumbents.” Jerry Brito & Jerry Ellig, *A Tale of Two Commissions: Net Neutrality and Regulatory Analysis*, 16 *COMMLAW CONSPECTUS* 1, 22 (2007).

²⁴ In reality, the converging telecommunications and information markets require substantial investment and service integration: “From the current perspective, it appears that stand-alone CLECs [competitive local exchange carriers offering only first and last kilometre access to local telecommunications services] without a wide product offering cannot succeed in the U.S. marketplace. Consumers and businesses are not attracted to new carriers offering little more than their existing voice/data service, and those subscribers who switch to the new entrants are sufficiently few and generate too little revenue to allow the CLECs to operate profitably. To compete, a carrier must offer a wide array of services, including long-distance and local voice services, broadband Internet, and perhaps even video services.” Robert W. Crandall and Leonard Waverman, *The Failure of Competitive Entry Into Fixed-Line Telecommunications: Who Is At Fault?* 2 J. COMPETITION L. & ECON. 113, 124 (2006), available at <http://jcle.oxfordjournals.org/cgi/reprint/2/1/113>.

In application, this means the FCC will consider acceptable whatever market penetration and competition statistics it compiles. Assuming the existence of ample competition provides the Commission with a credible rationale for not having to undertake any affirmative effort to stimulate more competition and market entry.²⁵ For example, in the wireless market, the FCC has abandoned caps on spectrum acquisition by any single firm²⁶ even though this allows incumbents to acquire more spectrum that might have provided the medium for competitive wireless services.²⁷ Fourth generation wireless services offer the promise of true broadband Internet access, but instead of promoting competition by making additional spectrum available only to newcomers, the

²⁵ “Today, now that competition has taken root in many areas of the country, we initiate this proceeding to consider whether our pricing methodology is working as intended and, in particular, whether it is conducive to efficient facilities investment. To the extent that the application of our TELRIC pricing rules distorts our intended pricing signals by understating forward-looking costs, it can thwart one of the central purposes of the Act: the promotion of facilities-based competition. While our UNE pricing rules must produce rates that are just, reasonable and nondiscriminatory, consistent with the Act’s goal of promoting sustainable competition, they should not create incentives for carriers to avoid investment in facilities.” FCC, FCC 03-224, NOTICE OF PROPOSED RULEMAKING, REVIEW OF THE COMMISSION’S RULES REGARDING THE PRICING OF UNBUNDLED NETWORK ELEMENTS AND THE RESALE OF SERVICE BY INCUMBENT LOCAL EXCHANGE CARRIERS, at 18947 (2003); “[T]he characteristics of the broadband market, as well as evidence that facilities-based wireline carriers have incentives to make, and indeed already make, broadband transmission capacity available to ISPs, absent regulation, are factors that influence our analysis in determining whether such regulation is still necessary. Moreover, this regulation can have a significant impact on the ability of wireline platform providers to develop and deploy innovative broadband capabilities that respond to market demands. The record shows that the additional costs of an access mandate diminish a carrier’s incentive and ability to invest in and deploy broadband infrastructure investment. We find this negative impact on deployment and innovation particularly troubling in view of Congress’ clear and express policy goal of ensuring broadband deployment, and its directive that we remove barriers to that deployment, if possible, consistent with our other obligations under the Act. It is precisely this negative impact on broadband infrastructure that led the Commission to eliminate other broadband-related regulation over the past two years.” FCC, FCC 05-150, REPORT AND ORDER AND NOTICE OF PROPOSED RULEMAKING, IN THE MATTERS OF APPROPRIATE FRAMEWORK FOR BROADBAND ACCESS TO THE INTERNET OVER WIRELINE FACILITIES, UNIVERSAL SERVICE OBLIGATIONS OF BROADBAND PROVIDERS, REVIEW OF REGULATORY REQUIREMENTS FOR INCUMBENT LEC BROADBAND TELECOMMUNICATIONS SERVICES, COMPUTER III FURTHER REMAND PROCEEDINGS: BELL OPERATING COMPANY PROVISION OF ENHANCED SERVICES, 1998 BIENNIAL REGULATORY REVIEW – REVIEW OF COMPUTER III AND ONA SAFEGUARDS AND REQUIREMENTS, CONDITIONAL PETITION OF THE VERIZON TELEPHONE COMPANIES FOR FORBEARANCE UNDER 47 U.S.C. § 160(c) WITH REGARD TO BROADBAND SERVICES PROVIDED VIA FIBER TO THE PREMISES, PETITION OF THE VERIZON TELEPHONE COMPANIES FOR DECLARATORY RULING OR, ALTERNATIVELY, FOR INTERIM WAIVER WITH REGARD TO BROADBAND SERVICES PROVIDED VIA FIBER TO THE PREMISES, CONSUMER PROTECTION IN THE BROADBAND ERA, at 14877-78 (2005), *aff’d*, *Time Warner Telecom v. FCC*, 507 F.3d 205 (3d Cir. 2007).

²⁶ Under the spectrum cap, no entity could control more than 45 megahertz of cellular, broadband PCS, and SMR spectrum in any single urban metropolitan area, or more than 55 megahertz in rural locales. In November 2001, however, the Commission decided to raise the spectrum cap to 55 megahertz in all markets effective February 13, 2002, and to eliminate the restriction entirely effective January 1, 2003. See FCC, FCC 01-328, REPORT AND ORDER, 2000 BIENNIAL REGULATORY REVIEW SPECTRUM AGGREGATION LIMITS FOR COMMERCIAL MOBILE RADIO SERVICES (2001).

²⁷ “[A]ll the FCC’s 700-megahertz auction really seems to have accomplished has been to concentrate still more power in the hands of the two largest carriers in the country.” Tech.view, *Going, Going, Gone*, ECONOMIST, Mar. 28, 2008, available at http://www.economist.com/research/articlesBySubject/displaystory.cfm?subjectid=894408&story_id=10927854.

FCC has allowed incumbents to acquire most wireless broadband spectrum.²⁸

Accordingly, companies with dominant market share in both the wireless and wireline telecommunications services can calibrate their broadband services in each industry segment to forestall significant cannibalization of revenue streams. In other words, companies such as AT&T and Verizon will offer true wireless broadband in ways that do not harm the companies' wireline broadband services, nor generate robust intermodal competition between wireline and wireless services.²⁹

IV. THE SORRY STATE OF THE FCC'S BROADBAND DATA COLLECTION

The FCC's methodology for collecting broadband market penetration data guarantees a distorted and overly optimistic picture. Section 706 of the Telecommunications Act of 1996³⁰ requires the FCC and the states to encourage the deployment of advanced telecommunications capability to all Americans.³¹ In conjunction with this objective, Congress instructed the FCC to conduct regular inquiries concerning the availability of advanced telecommunications capability. In response, the FCC seeks input from interested parties as well as compulsory reporting of statistical data.³² Had the FCC intended to make the process transparent and fair, the Commission

²⁸ "According to an analysis by The Associated Press, the two telecom companies bid more than \$16 billion, constituting the vast majority of the overall \$19.6 billion that was bid in the FCC auction. With Verizon Wireless and AT&T dominating the auction so completely, hopes that the auction would allow for the creation of a new nationwide wireless service provider were dashed." W. David Gardner, *Verizon, AT&T Big Winners In 700 MHz Auction*, INFORMATIONWEEK, Mar. 20, 2008, <http://www.informationweek.com/news/mobility/showArticle.jhtml?articleID=206905000>; see also Saul Hansell, *Verizon and AT&T Win Big in Auction of Spectrum*, N.Y. TIMES, Mar. 21, 2008, <http://www.nytimes.com/2008/03/21/technology/21auction.html>; FCC, Auction 73, 700 MHz Band, Fact Sheet, Mar. 20, 2008, http://wireless.fcc.gov/auctions/default.htm?job=auction_factsheet&id=73.

²⁹ For example, AT&T will allow iPhone subscribers to make Internet-mediated telephone calls via services and software provided by Skype, when they have Wi-Fi Internet access, currently available in various standalone "islands" such as coffee shops, libraries, hotels, offices, and residences. However, once a subscriber no longer has Wi-Fi access, the iPhone contains programming that blocks access to Skype via the AT&T wireless network. Brad Stone, *Skype, the Web Phone Giant, Brings Cheap Calls to Cellular*, N.Y. TIMES, March 29, 2009, available at <http://www.nytimes.com/2009/03/30/technology/internet/30skype.html>.

³⁰ Telecommunications Act of 1996, Pub. L. No. 104-104, 110 Stat. 56 (1996), reprinted in 47 U.S.C. § 157 note.

³¹ "[A]dvanced telecommunications capability" is defined "without regard to any transmission media or technology, as high-speed, switched, broadband telecommunications capability that enables users to originate and receive high-quality voice, data, graphics, and video telecommunications using any technology." See *id.* § 706(c) (redesignated at 47 U.S.C. § 1302(d)).

³² See FCC, FCC 07-21, NOTICE OF INQUIRY, INQUIRY CONCERNING THE DEPLOYMENT OF ADVANCED TELECOMMUNICATIONS CAPABILITY TO ALL AMERICANS IN A REASONABLE AND TIMELY FASHION PURSUANT TO SECTION 706 OF THE TELECOMMUNICATIONS ACT OF 1996 (2007) [hereinafter *Advanced Telecommunications Capability Fifth Notice of Inquiry*], available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-07-21A1.doc; Fifth Broadband Report to Congress, *supra* note 1; FCC 08-89, *supra* note 14; FCC, FCC 08-148, ORDER ON RECONSIDERATION, IN THE MATTER OF DEVELOPMENT OF NATIONWIDE BROADBAND DATA TO EVALUATE REASONABLE AND TIMELY DEPLOYMENT OF ADVANCED SERVICES TO ALL AMERICANS, IMPROVEMENT OF WIRELESS BROADBAND SUBSCRIBERSHIP DATA, AND

staff would have constructed a questionnaire, or similar data request with an eye toward acquiring data sufficient for the Commission to determine the actual national, regional and local market penetration by broadband service providers (such as incumbent telephone and cable television firms that offer Digital Subscriber Line and cable modem access respectively). A credible assessment would emphasize actual adoption rates by subscribers segmented by various demographic criteria and measured throughput speeds. By focusing on broadband accessibility, the FCC ignores differences in actual adoption rates, costs, and data transmission speeds available in urban versus rural locales and between wealthy and poor residents. A Pew Internet & American Life Project survey conducted in the spring of 2008 notes that while overall broadband adoption shows a healthy increase in the United States, significantly lower or declining penetration has occurred in specific localities and among specific economic segments, including a reduction from 28 percent to 25 percent among adults who live in households whose annual incomes are less than \$20,000 annually.³³

The FCC's data request and compilation appear intentionally designed to overstate market penetration and to thwart comprehensive statistical analysis, particularly in light of the Commission's decision to treat the collected data as trade secrets protected from public disclosure.³⁴ The FCC has received justly deserved criticism for the way in which it has compiled statistics of broadband market penetration and the inferences it has derived from the collected data.³⁵ For example, the Commission uses zip codes as the geographical measure of broadband penetration and considers the entire zip code served if one user exists, regardless of the circumstances and prices paid. This measure overstates the degree of real competition for broadband services, particularly in light of the Commission's own data showing cable modem and DSL carriers having a national

DEVELOPMENT OF DATA ON INTERCONNECTED VOICE OVER INTERNET PROTOCOL (VOIP) SUBSCRIBERSHIP (2008) (requiring wired, terrestrial fixed wireless, and satellite broadband service providers to report, for each Census Tract and each speed tier in which the provider offers service, the number of subscribers and the percentage of subscribers that are residential); *see also* FCC, 09-31, NOTICE OF INQUIRY, IN THE MATTER OF A NATIONAL BROADBAND PLAN FOR OUR FUTURE (2009), *available at* http://www.fcc.gov/Daily_Releases/Daily_Business/2009/db0408/FCC-09-31A1.pdf (seeking comment to inform the development of a national broadband plan for our country).

³³ JOHN B. HERRIGAN, PEW INTERNET & AMERICAN LIFE PROJECT, HOME BROADBAND ADOPTION 2008 (2008), http://www.pewinternet.org/~media/Files/Reports/2008/PIP_Broadband_2008.pdf (finding that fifty five percent of adult Americans reported having a high-speed internet connection at home).

³⁴ *Ctr. for Pub. Integrity v. FCC*, 505 F. Supp. 2d 106 (D.D.C. 2007).

³⁵ *See, e.g.*, Posting of Jeff Campbell to High Tech Policy, http://blogs.cisco.com/gov/comments/long_past_due_for_broadband_maps/ (Oct. 27, 2007, 15:03) ("During the years that we all have been debating whether we have enough broadband or fast enough broadband, one interesting little detail has always been true—we really don't know where broadband is available nor do we know what speeds are available. Remarkably, we've been flying blind in analyzing broadband policy in the absence of this basic data. Although the FCC provides some data on broadband availability, it is universally recognized—even by the FCC itself—that the data is inadequate. The FCC data does not specifically identify locations where broadband is not available, nor does it differentiate based on the speed of services."); S. Derek Turner, *'Shooting the Messenger' Myth vs. Reality: U.S. Broadband Policy and International Broadband Rankings*, FREE PRESS, July 2007, http://www.freepress.net/files/shooting_the_messenger.pdf.

market share of more than 80 percent.³⁶ The Commission also considers broadband to constitute any service that operates at 200 kilobits per second broadband or higher.³⁷

To acquire a better sense of whether and how Americans access broadband services, the FCC issued a Fifth Notice of Inquiry,³⁸ to assess whether advanced telecommunications capability is being deployed to all Americans in a reasonable and timely fashion.³⁹ As in each of the four prior Inquiries, the Commission poses questions about: (1) how it should define “advanced telecommunications capability”; (2) whether all Americans have access to advanced telecommunications capability; (3) whether the current level of deployment is reasonable and timely; and (4) what actions, if any, the Commission should undertake to accelerate deployment.⁴⁰

³⁶ Statistics compiled by the FCC shows that cable modem and DSL Internet access serves approximately 80% of the market for broadband services exceeding 200 kilobits per second. “Of the 80.2 million lines which were faster than 200 kbps in *both* directions, 45.1% were cable modem, 31.5% were ADSL, 1.1% were SDSL or traditional wireline, 2.3% were fiber to the end user premises, and 20.1% used other technologies.” INDUSTRY ANALYSIS AND TECHNOLOGY DIVISION, WIRELINE COMPETITION BUREAU, FCC, HIGH-SPEED SERVICES FOR INTERNET ACCESS: STATUS AS OF DECEMBER 31, 2007, 3 (Jan. 2009), available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-287962A1.pdf. [hereinafter “HIGH-SPEED SERVICES FOR INTERNET ACCESS”]. “Incumbent LECs or their affiliates reported 97.1% of ADSL connections, 90.9% of fiber-to-the-premises connections, 81.5% of the mobile service subscribers whose wireless device is capable of operating on a high-speed mobile wireless network,” the primary ways broadband subscribers access the Internet. *Id.*

The FCC has received justly deserved criticism for the way in which it has compiled statistics of broadband market penetration and the inferences it has derived from the collected data. The Commission frames its statistics with an eye toward overstating the scope of market penetration and competition by defining broadband as any service operating at 200 kilobits per second in one direction and by counting competitors on the basis of whether one subscriber exists within the geographical area represented by a postal zip code.

The FCC’s statistics provide the basis for the Commission, stakeholder and outside researchers to conclude that a vibrant and robustly competitive broadband market exists. *See, e.g.,* Sidak, *supra* note 11 (using FCC statistics and claiming dial up telephone service constitutes a competitive alternative to broadband services to conclude that a robustly competitive Internet access marketplace exists).

³⁷ “We use the term ‘high-speed’ to describe services that provide the subscriber with transmissions at a speed in excess of 200 kilobits per second (kbps) in at least one direction. ‘Advanced services,’ which provide the subscriber with transmission speeds in excess of 200 kbps in each direction, are a subset of high-speed services.” HIGH-SPEED SERVICES FOR INTERNET ACCESS, *supra* note 36, at n.1.

³⁸ Advanced Telecommunications Capability Fifth Notice of Inquiry, *supra* note 32.

³⁹ “In section 706, Congress directed the Commission and the states to encourage the deployment of advanced telecommunications capability to all Americans. In conjunction with this objective, Congress instructed the Commission to conduct regular inquiries concerning the availability of advanced telecommunications capability.” *Id.* ¶ 2.

⁴⁰ *Id.* ¶ 11. The Commission also issued a Notice of Proposed Rulemaking seeking comment on ways to improve its acquisition of information about broadband and interconnected Voice over the Internet Protocol (“VoIP”) market penetration, particularly in rural and other hard-to-serve areas, including tribal lands. FCC, FCC 07-17, NOTICE OF PROPOSED RULEMAKING, IN THE MATTER OF DEVELOPMENT OF NATIONWIDE BROADBAND DATA TO EVALUATE REASONABLE AND TIMELY DEPLOYMENT OF ADVANCED SERVICES TO ALL AMERICANS, IMPROVEMENT OF WIRELESS BROADBAND SUBSCRIBERSHIP DATA, AND DEVELOPMENT OF DATA ON INTERCONNECTED VOICE OVER INTERNET PROTOCOL (VOIP) SUBSCRIBERSHIP (2007), available at http://fjallfoss.fcc.gov/edocs_public/openAttachment.do?link=FCC-07-17A1.doc [hereinafter Broadband and VoIP Data NPRM].

The Commission offered some acknowledgement that its statistical compilations may overstate the true level of access, particularly in rural locales:

In sparsely populated rural Zip Codes this could mean that a given provider has just one broadband subscriber who is located in a small town or at some other location convenient to telephone or cable facilities. Broadband “availability” could be non-existent for that carrier’s other customers located a few blocks or many miles away from that single customer. In other words, and notwithstanding the value of data currently submitted on the Form 477, there is more precise information that we could gather to give us a more accurate picture of current broadband deployment.⁴¹

This mild acknowledgement never gained much traction because whenever possible the FCC, and other parties benefiting from a finding of robust competition and market penetration, heralded the overall findings. Despite ample evidence to the contrary,⁴² the Commerce Department⁴³ stated unequivocally that the United States has achieved the mission of cheap and ubiquitous broadband access articulated by President Bush in 2004.⁴⁴ Of course, the Commerce Department used the FCC’s flawed statistics to confirm its “mission accomplished” conclusion. Had the Commerce Department chosen to subject the FCC’s findings to critical review, ample evidence would have challenged the FCC’s findings.⁴⁵ But evidence to the contrary only provided fleeting dissonance to the message that the United States retains superiority in next generation network market penetration.

The FCC’s statistics provide the basis for interested parties to file comments with the FCC corroborating the Commission’s view that competition exists, and the deregulatory process should continue. Remarkably, the mere presence of conflicting statistics triggered official U.S. government opposition. Both the National Telecommunications and Information Administration and the State Department challenged as flawed, statistics that were compiled by staff of the OECD.⁴⁶

⁴¹ Broadband and VoIP Data NPRM, *supra* note 40, ¶ 10.

⁴² *See, e.g.*, Turner, *supra* note 9.

⁴³ NETWORKED NATION, *supra* note 2.

⁴⁴ “This country needs a national goal for...the spread of broadband technology. We ought to have...universal, affordable access for broadband technology by the year 2007, and then we ought to make sure as soon as possible thereafter, consumers have got plenty of choices when it comes to [their] broadband carrier.” PRESIDENT GEORGE W. BUSH, THE WHITE HOUSE, PROMOTING INNOVATION AND ECONOMIC SECURITY THROUGH BROADBAND TECHNOLOGY (2004), http://georgewbush-whitehouse.archives.gov/infocus/technology/economic_policy200404/chap4.html.

⁴⁵ *See* ITU BROADBAND STATISTICS FOR 1 JANUARY 2006, *supra* note 6; OECD BROADBAND PORTAL, *supra* note 6.

⁴⁶ The State Department made the issue something of a diplomatic affront to the United States. *See* Letter from Ambassador David A. Gross, U.S. Coordinator, Int’l Comm’ns and Info. Policy, to Angel Gurria, Secretary-General, OECD, Paris, France (Apr. 24, 2007), *available at* http://www.ntia.doc.gov/ntiahome/press/2007/State_OECD_042407.pdf. For an explanation by the NTIA of why the scope of broadband access in places such as government offices and coffee shops mean that the OECD ranking underestimates market penetration, see NTIA, U.S. DEP’T OF COMMERCE, FACT SHEET: UNITED STATES

Apparently, it matters little that the FCC has belatedly recognized the need to achieve a more granular and locality-specific assessment of broadband penetration. In 2008, the FCC proposed improvements in its broadband data collection with an eye toward increasing the precision and quality of broadband subscribership data collected.⁴⁷ Rather than generally report on market penetration by any broadband service that offers 200 kilobits per second in one direction, the FCC expanded the number of broadband reporting speed tiers to capture more precise information about upload and download broadband speeds. The Commission also will require broadband providers to report numbers of broadband subscribers by census tract, broken down by speed tier (but not by actual throughput subscribers achieve) and technology type, instead of the much larger geographical region represented by a zip code. Additionally, the Commission expects to improve the accuracy of information it gathers about mobile wireless broadband deployment and VoIP subscribership.

In a Further Notice of Proposed Rulemaking, the FCC initiated the administrative process for establishing rules that would require Internet access providers to report data in a manner that would enable the Commission to map actual market penetration. The Commission sought advice on how to “effectively capture information about actual, delivered speeds of broadband Internet access services, and about prices of broadband services,”⁴⁸ in a manner that “preserve[s] confidentiality when sharing the information collected on Form 477.”⁴⁹ Even with this belated recognition of the need for better data, the FCC and other interested parties have relied on the current statistics as proof positive that the United States has not lost its competitive edge in ICT infrastructure.

Competition, like beauty, lies in the eye of the beholder. In many instances where the FCC sees a political or public relations benefit, the Commission will assume competition exists with limited empirical proof or rely on internal statistics for which the Commission has offered little evidence to confirm the veracity of its findings. The FCC readily ignores that competition depends on more than the number of potential competitors. For example, the fact that the Internet offers a lot of news does not guarantee that a variety of news sources compete. In rejecting some of the FCC’s decisions to relax media concentration rules, an appellate court noted that while the Internet and cable television supplement viewpoint diversity, they do not constitute complete substitutes for viewpoints provided by newspapers and broadcast stations, nor do these options absolutely provide independent local news:

With respect to the Internet, while record evidence indicates a negative correlation between respondents’ reliance on broadcast television and the Internet as news sources (suggesting that people who use the Internet for local news do so at the expense of television), the Internet is also limited

MAINTAINS INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) LEADERSHIP AND ECONOMIC STRENGTH (2007), http://www.ntia.doc.gov/ntiahome/press/2007/ICTleader_042407.html (last visited Apr. 13, 2009).

⁴⁷ FCC 08-89, *supra* note 14.

⁴⁸ *Id.* ¶ 4.

⁴⁹ *Id.*

in its availability and as a source of local news. Therefore, it seems that the degree to which the Commission can rely on cable or the Internet to mitigate the threat that local station consolidations pose to viewpoint diversity is limited.⁵⁰

Competition occurs when two or more service providers offer functionally equivalent services and use price and other enhancements to acquire market share. Using this definition, competition might not exist even if the FCC identifies a dozen potential competitors, particularly if they do not operate standalone networks and instead simply repackage the services of another carrier or content provider. If these ventures engage in price fixing or “consciously parallel” conduct, consumers would have little benefit accruing from the ability to select from twelve operators all offering service on the same terms and conditions. So price, or in the economics vernacular, cross-elasticity, matters in a competition assessment. On the other hand, a market might be robustly competitive with only two facilities-based operators who regularly lower prices, introduce new services, and innovate.

The FCC simply counts the number of Internet access providers without acknowledging that some ventures target different types of consumers and have different price points for varying bitrate speeds. In the real world, broadband service segments by price and bitrates. For example, consumers typically opt for satellite-delivered service only when cheaper terrestrial options such as DSL and cable modem service do not exist. However, in the FCC’s results driven world, the Commission can infer competition from a technology few would choose if cheaper and faster alternatives exist. Satellite-delivered Internet access and most terrestrial wireless options do not provide a competitive alternative, but serve as carriers of last resort in regions where DSL and cable modem service does not exist, or when subscribers require mobile access, regardless of available bitrate.

The FCC typically concludes that competition exists when it can count two or more competitors, or when it can generally identify two or more submarkets whose operators arguably compete for the same consumer. As a result, for broadband Internet access the FCC can attempt to corroborate its robust competition conclusion with a reference to the fact that these services compete with other services and technologies. However, it comes across as a stretch to infer competition from the observation that Internet consumers might consider as a partial substitute the content available from broadcasting, television, newspapers, magazines, DVDs, and books, and that consumers do not differentiate Internet access by price and bitrate speeds.

V. RESPONSES TO CHALLENGES

The FCC has made no official statement that acknowledges that the United States has failed to evidence global best practices in broadband access. In its reports to Congress on the subject, the Commission offers nothing but breathless optimism about

⁵⁰ Prometheus Radio Project v. FCC, 373 F.3d 372, 415 (3d Cir. 2004).

technological, deregulatory, and marketplace improvements that have already delivered broadband “in a reasonable and timely fashion.”⁵¹ The Commission’s Fifth Broadband Report to Congress identifies numerous technologies that can offer broadband services as well as spectrum allocations whose licensees have the option of providing such services.

Additionally, the Report showcases deregulatory initiatives that create incentives for next generation investment, e.g., abandoning requirements that incumbent carriers unbundle network facilities and make them available to competitors at favorable, below market rates,⁵² classifying broadband access as an information service,⁵³ imposing deadlines on consideration of franchise applications by cable television competitors,⁵⁴ and requiring incumbent local exchange carriers to offer market entrants access to wholesale service.⁵⁵

Reading the FCC’s Fifth Broadband Report to Congress, one can easily conclude that all of the technologies, spectrum allocations, and deregulatory initiatives identified by the FCC have achieved a direct and positive impact on broadband access. In reality, the Commission has identified several blue sky technologies that might provide additional broadband services in the future, e.g., broadband over powerline, but which currently constitute no competitive alternative.⁵⁶ Likewise, the Commission has identified numerous spectrum allocations whose licensees do not provide broadband services and who would face extraordinary opposition at the Commission and in the courts if they tried to offer competitive, retail broadband services. The FCC also conveniently fails to disclose that incumbent carriers have acquired the vast majority of prime spectrum suitable for broadband services, including former UHF television bandwidth made available for new uses after the conversion to digital television broadcasting.⁵⁷

⁵¹ Fifth Broadband Report to Congress, *supra* note 1, ¶ 76.

⁵² FCC 04-248, *supra* note 8; FCC 04-254, *supra* note 8.

⁵³ FCC 05-150, *supra* note 25; see also Rob Frieden, *What Do Pizza Delivery and Information Services Have in Common? Lessons From Recent Judicial and Regulatory Struggles with Convergence*, 32 RUTGERS COMPUTER & TECH. L.J. 247 (2006).

⁵⁴ FCC, FCC 06-180, REPORT AND ORDER AND FURTHER NOTICE OF PROPOSED RULEMAKING, IN THE MATTER OF IMPLEMENTATION OF SECTION 621(A)(1) OF THE CABLE COMMUNICATIONS POLICY ACT OF 1984 AS AMENDED BY THE CABLE TELEVISION CONSUMER PROTECTION AND COMPETITION ACT OF 1992 (2007).

⁵⁵ CHIEF, WIRELINE COMPETITION BUREAU, FCC, DA 07-709, MEMORANDUM OPINION AND ORDER, IN THE MATTER OF TIME WARNER CABLE REQUEST FOR DECLARATORY RULING THAT COMPETITIVE LOCAL EXCHANGE CARRIERS MAY OBTAIN INTERCONNECTION UNDER SECTION 251 OF THE COMMUNICATIONS ACT OF 1934, AS AMENDED, TO PROVIDE WHOLESALE TELECOMMUNICATIONS SERVICES TO VOIP PROVIDERS (2007).

⁵⁶ A well regarded telecommunications business analyst has expressed doubt whether any other broadband technology will offer a competitive alternative to DSL and cable modem service. “Prospects for the long-heralded ‘third pipe’ appear dim and dimming.” Blair Levin, Stifel Nicolaus *quoted in* Ed Gubbins, *Broadband Competition: Is This as Good as it Gets?*, TELEPHONY ONLINE, Aug. 21, 2008, <http://telephonyonline.com/broadband/news/broadband-competition-0821/>.

⁵⁷ See FCC, Auctions, 700 MHz Band, http://wireless.fcc.gov/auctions/default.htm?job=auCTION_summary&id=76 (providing information on winners of auctions 31, 33, 38, 44, 49 and 60).

VI. DISPUTING NEGATIVE RANKINGS

In its Fifth Broadband Report to Congress, the FCC joined the ranks of carriers and researchers who have disputed broadband subscribership rankings that place the United States in a comparatively mediocre position. Rather than examine the findings with a critical eye toward refining broadband policy to remedy deficiencies, the Commission offers a few explanations why one should not reach conclusions of mediocre performance. For example, the Commission emphasizes that “[g]eographical factors, such as terrain, and demographic factors, such as the way population is dispersed, can affect the cost of deployment and thus the take-up rate.”⁵⁸ It follows that large countries with a large rural hinterland would achieve lower market penetration statistics than smaller, more densely populated countries such as Japan, Iceland, and Korea.

However, the OECD, a major compiler of global broadband penetration statistics, ranked Canada tenth and the United States fifteenth respectively. The FCC attempts to dismiss the fact that a country of equal size has achieved a comparatively better performance on grounds that two-thirds of Canadian residents live near the United States border. Proximity to the United States matters only if most available broadband connections are similarly limited to this small portion of the nation. However, “[v]irtually all Canadian households in urban centres and 78% of households in rural areas were within the broadband footprint in 2006” regardless of proximity to the United States border.⁵⁹ Similarly, the FCC has nothing to say about the fact that Canada has achieved greater broadband penetration for quite rural, non-densely populated communities located north of the Arctic Circle than what most non-urban localities in Alaska have.⁶⁰

The FCC also emphasizes how residents in most United States zip codes have access to at least two broadband platform technologies, DSL and cable modem service. Arguably such inter-modal competition would enhance market penetration by stimulating price competition and innovation, but the OECD data shows the United States having a middle ranking in terms of average monthly subscription prices,⁶¹ advertised broadband

⁵⁸ Fifth Broadband Report to Congress, *supra* note 1, ¶ 67.

⁵⁹ CANADIAN RADIO-TELEVISION AND TELECOMMUNICATIONS COMMISSION (CRTC), CRTC TELECOMMUNICATIONS MONITORING REPORT, STATUS OF COMPETITION IN CANADIAN TELECOMMUNICATIONS MARKETS, DEPLOYMENT/ACCESSIBILITY OF ADVANCED TELECOMMUNICATIONS INFRASTRUCTURE AND SERVICES § 4.4 (2007), <http://www.crtc.gc.ca/eng/publications/reports/PolicyMonitoring/2007/tmr2007.htm>. The OECD reports that Canada has a population density of 3.3 inhabitants per square kilometer and the United States has a greater density of 32 inhabitants per square kilometer. DIRECTORATE FOR SCI., TECH. AND INDUS., OECD, OECD BROADBAND STATISTICS tbl.3a (2007), <http://www.oecd.org/dataoecd/21/60/39574903.xls>.

⁶⁰ See Industry Canada, Maps of Broadband Distribution in Canada, <http://www.broadband.gc.ca/maps/index.html>; see also Industry Canada, Broadband for Rural and Northern Development Pilot Program, <http://www.broadband.gc.ca/pub/program/nsi/index.html>; National Satellite Initiative, <http://www.broadband.gc.ca/pub/program/nsi/index.html>.

⁶¹ OECD BROADBAND STATISTICS, *supra* note 59, at tbl.4c (showing the range of broadband prices for a monthly subscription).

speed,⁶² cost per megabit of service,⁶³ penetration rate per 100 inhabitants,⁶⁴ percentage of broadband service provided via fiber connections,⁶⁵ and net year-over-year increase and broadband penetration using a Gross Domestic Product per capita measure.⁶⁶ The Commission notes that United States residents have greater access to Wi-Fi hotspots without identifying what percentage of the comparatively larger number of sites are available to the public freely or at a price. The Commission also notes the proliferation of wireless mobile technologies, but fails to acknowledge that the actual bitrate speeds currently available to most subscribers rarely exceeds 500 kbps.⁶⁷

Based on realistic and unbiased measures of ICT infrastructure installation and market penetration, the United States lags behind many developed and even developing nations using credible measures such as market penetration, cost, correlation with per capita Gross Domestic Product, annual growth, deployment of fiber optic links, and average speed.⁶⁸ These shortcomings provide a telling case study in how politicized, distracted, and ineffectual government ICT policy making has become, and how effectively ICT ventures can deflect complaints about performance, price, and business practices. While the United States falters, other nations recognize how a robust ICT infrastructure can “prime the pump” in many aspects of commerce and social interaction.⁶⁹

⁶² *Id.* at tbl.5a (showing the average advertised broadband download speed, by country in Mbit/s).

⁶³ *Id.* at tbl.4d (showing the range of broadband prices per Mbit/s).

⁶⁴ *Id.* at tbl.1d (showing OECD Broadband subscribers per 100 inhabitants).

⁶⁵ *Id.* at tbl.11 (showing the percentage of fiber connections in total broadband among countries reporting fiber subscribers).

⁶⁶ *Id.* at tbl.1k (showing OECD broadband penetration and GDP per capita).

⁶⁷ See Walter S. Mossberg, *Newer, Faster, Cheaper iPhone 3G*, WALL ST. J., July 9, 2008 at D1 (discussing tests of the cutting edge Apple iPhone 3G, measuring actual data speeds in the 200-500 kbps range).

⁶⁸ See JOHN WINDHAUSEN JR., A BLUEPRINT FOR BIG BROADBAND, 19-25 (2008), available at <http://net.educause.edu/ir/library/pdf/EPO0801.pdf>; DIRECTORATE FOR SCI., TECH. AND INDUS., OECD, OECD BROADBAND PORTAL (2008), <http://www.oecd.org/sti/ict/broadband>.

According to the Pew Internet and American Life Project, 55 percent of adults have high-speed internet connections at home as of early 2008, an increase of 8 percentage points from a year earlier. However the report also notes no subscription improvement for persons with low income and African-Americans. HERRIGAN, *supra* note 33. “38% of those living in rural American now have broadband at home, compared with 31% who said this in 2007, or a growth rate of 23% from 2007 to 2008. By comparison, 57% of urban residents have high-speed connections at home now and 60% of suburban residents have such connections.” *Id.* at ii.

More optimistic assessments are available. See, e.g., UNITED NATIONS CONFERENCE ON TRADE AND DEVELOPMENT, THE DIGITAL DIVIDE REPORT: ICT DIFFUSION INDEX 2005 (2006) (ranking the United States second in ICT connectivity). Some assessments rely primarily on FCC statistics. See NAT’L TELECOMMS. & INFO. ADMIN. (NTIA), U.S. DEP’T OF COMMERCE, NETWORKED NATION: BROADBAND IN AMERICA 2007 (2008), available at <http://www.ntia.doc.gov/reports/2008/NetworkedNationBroadbandinAmerica2007.pdf>; Wallsten, *supra* note 3.

⁶⁹ See UNITED NATIONS CONFERENCE ON TRADE AND DEVELOPMENT, INFORMATION ECONOMY REPORT 2007-2008 (2008), available at http://www.unctad.org/en/docs/sdteecb20071_en.pdf; PARTNERSHIP ON MEASURING ICT FOR DEVELOPMENT, THE GLOBAL INFORMATION SOCIETY: A STATISTICAL VIEW (2008), available at http://www.unctad.org/en/docs/LCW190_en.pdf; Rob Frieden,

The United States has developed a long and successful record of blending government incentive creation and commercial entrepreneurship to ensure near ubiquitous access to basic infrastructure such as canals, turnpikes, roads, electricity, water, and communications services including telephones, broadcasting, and video program delivery. In the telecommunications sector, the United States has established a costly subsidy program to improve access by the poor, rural residents, people with disabilities, schools, clinics, and libraries.⁷⁰ Despite these subsidies and a record of successful infrastructure development, the United States has failed to keep pace with other nations in terms of next generation network installation and access.

Instead of conscientiously examining this shortcoming, both the United States government and the major broadband service providers deny a problem exists. In fact the Departments of State and Commerce have attempted to discredit market penetration studies performed by the OECD as underestimating United States levels by, for example, failing to include widespread broadband availability in business locations and libraries. On the other hand, public and private officials regularly cite unquestionably flawed FCC studies on broadband market penetration to support the premise that robust facilities-based competition obviates the need for most regulations.

John Kneuer, Assistant Secretary for Communications and Information and Administrator at the Commerce Department's National Telecommunications and Information Administration claims the United States "[has] the most effective multiplatform broadband in the world."⁷¹ If one were to measure broadband effectiveness in terms of penetration per one hundred residents, price, bitrate, and number of facilities-based competitors the United States surely does not demonstrate best practices, much less most effective practices.

Having one or two broadband options does not trigger the kind of competition, downward pressure on rates, service diversification, and consumer focus as would occur if a real third or fourth option became available. The FCC and others can tout statistics claiming to show one-half dozen or more broadband providers in a particular region corresponding to a single zip code, but the true level of price and service competition typically does not correspond to the reported number of competitors. Far too many players find it beneficial to cite the FCC's "official" statistics regardless of whether the actual scope of competition corroborates the collected data. Therefore, the policymaking process and public relations machines can state without reservation that the United States enjoys a robustly competitive market place for broadband, cellular telephone⁷² and other

Lessons from Broadband Development in Canada, Japan, Korea and the United States, 29 TELECOMM. POLICY 595 (2005); Bridging the Digital Divide, <http://www.bridgethedigitaldivide.com/>.

⁷⁰ See Rob Frieden, *Killing with Kindness: Fatal Flaws in the \$6.5 Billion Universal Service Funding Mission and What Should be Done to Narrow the Digital Divide*, 24 CARDOZO ARTS & ENT. L.J. 447 (2006).

⁷¹ Stephen Levy, *True or False: U.S.'s Broadband Penetration is Lower Than Even Estonia's*, NEWSWEEK, July 9, 2007, available at <http://www.newsweek.com/id/33456>.

⁷² "ONE of the dirtiest tricks played on American consumers is the way their country's mobile-phone companies force them to use phones sold through the companies' stores, then lock them into two-year

advanced telecommunications services.

VII. BROADBAND DATA AS A TRADE SECRET

Despite a congressional mandate to track and report progress in achieving widespread access to advanced telecommunications capabilities, including broadband, the FCC has aggressively supported carrier arguments that much of the data the Commission collects constitutes a trade secret. In *Center for Public Integrity v. FCC*, the District Court for the District of Columbia accepted the FCC's argument that having to disclose the identity of broadband service providers operating in specific zip codes would result in "substantial harm to the competitive position of the person from whom the information was obtained."⁷³

Notwithstanding the Commission's newfound interest in mapping broadband availability, and wireless carriers' aggressive marketing efforts to show the breadth of their service availability, in the broadband environment, evidence of limited availability constitutes a trade secret warranting suppression. A reasonable alternative perception considers evidence of limited market penetration an important identifier for localities where the FCC and possibly Congress may have to introduce new incentives to stimulate broadband infrastructure investment.⁷⁴ Identifying locations where a specific carrier does not operate provides little, if any, potential financial harm to a carrier that already has determined that service there does not make financial sense. Likewise, identifying locations where little if any broadband competition exists would subject a carrier to competition, an outcome one would think both Congress and the FCC would like to promote.

In light of a congressional mandate to determine whether and how the FCC should promote broadband access, it makes no sense to claim that disclosure of broadband penetration data would harm competition and individual competitors. On the contrary, such disclosure would provide much needed transparency as to what type of carrier provides what kinds of services in a specific zip code or census tract. Using current data, analysts have nothing more than the FCC's determination that a specific number of ventures operate somewhere within the geographical area corresponding to a zip code. The Commission's future plans to offer statistics using census tracts does nothing to change the basic strategy to count service providers regardless of whether they

contracts with punitive cancellation fees. Asians and Europeans—who can take their mobiles from one provider to another, and use them on different networks around the world—shake their heads in amazement at Americans' meek acceptance of such anti-competitive practices." *Going, Going, Gone*, *supra* note 27.

⁷³ *Ctr. for Pub. Integrity*, *supra* note 34, at 112 (quoting National Parks & Conservation Ass'n v. Morton, 498 F.2d 765, 770 (D.C. Cir. 1974)).

⁷⁴ "New Yorkers are a diverse bunch, but when it comes to broadband connections at home, there are two distinct groups: The haves and the have-nots. According to a report released today by the city's Broadband Advisory Committee, 26 percent of low income households have broadband connections at home compared to 54 percent in moderate-to-high income households." Ken Belson, *Big Divide Found in Internet Access*, N.Y. TIMES, July 30, 2008, available at <http://cityroom.blogs.nytimes.com/2008/07/30/report-finds-big-divide-in-internet-access/>.

provide a broadly or narrowly attractive competitive alternative to each other.

The FCC's single raw number reports of broadband access offer scant evidence that a locality actually enjoys significant facilities-based competition. For example, if an e-rate contractor provides broadband service to a school, library, clinic, or hospital then the FCC can inflate the raw number report to include such site-specific service. A single raw number provides no evidence of price competition, nor offers assurance that the United States has little need to develop a national broadband promotion strategy or to revamp universal service funding to include broadband access. A single raw number, often in double digits, offers no proof that ubiquitous broadband access exists.

However, the FCC's current zip code raw number collection does provide incumbent wireline and wireless carriers with some justification to press for greater deregulation. Taking an offensive posture, incumbents can argue that broadband statistics prove the virtue of marketplace resource allocation, competition, and deregulation.⁷⁵ When countervailing statistics spoil the positive scenario, incumbent carriers and their sponsored researchers have to take a more defensive posture that explains any deficit in light of negative demographic and computer literacy, or inadequate efforts by Congress and the FCC to create even more incentives for infrastructure investment.⁷⁶

VIII. A CASE STUDY FOR ZIP CODE 16870

The FCC reports that the author's residential zip code (16870 in Pennsylvania) has access to eight broadband service providers, down from nine providers in 2006.⁷⁷ This zip code covers a large geographical area west and south of State College, Pennsylvania and Penn State University. In light of the FCC's decision to treat the specific identities of the eight service providers as a trade secret, one can only speculate the identity of the eight reporting carriers.

An educated guess would include the following candidates: 1) Verizon, offering DSL service at about \$22 a month for service up to 786 kilobits per second (kbps) downstream and up to 128 kbps upstream; 2) Comcast, offering cable modem service from \$24.95 for up to 768 kbps downstream and up to 128 kbps upstream to \$42.95 for

⁷⁵ See, e.g., Posting of Link Hoewing to PolicyBlog, <http://policyblog.verizon.com/PolicyBlog/Blogs/policyblog/LinkHoewing9/464/More-Americans-Getting-More-and-Better-Broadband.aspx> (May 14, 2008, 09:31 EST).

⁷⁶ See, e.g., GEORGE S. FORD, THOMAS M. KOUTSKY, & LAWRENCE J. SPIWAK, PHOENIX CENTER FOR ADVANCED LEGAL AND ECONOMIC PUBLIC POLICY STUDIES, PHOENIX CENTER POLICY PAPER NO. 33, THE BROADBAND EFFICIENCY INDEX: WHAT REALLY DRIVES BROADBAND ADOPTION ACROSS THE OECD? (2008), <http://www.phoenix-center.org/pcpp/PCPP33Final.pdf>; GEORGE S. FORD, THOMAS M. KOUTSKY, & LAWRENCE J. SPIWAK, PHOENIX CENTER FOR ADVANCED LEGAL AND ECONOMIC PUBLIC POLICY STUDIES, PHOENIX CENTER POLICY PAPER NO. 31, THE DEMOGRAPHIC AND ECONOMIC DRIVERS OF BROADBAND ADOPTION IN THE UNITED STATES (2007), <http://www.phoenix-center.org/pcpp/PCPP31Final.pdf>.

⁷⁷ See FCC, NUMBER OF HOLDING COMPANIES REPORTING HIGH-SPEED SUBSCRIBERS BY ZIP CODE AS OF JUNE 30, 2007 (2007), available at http://www.fcc.gov/Bureaus/Common_Carrier/Reports/FCC-State_Link/IAD/hzip0607.pdf.

up to 6 Megabits per second (Mbps) downstream and up to 1.5 Mbps upstream, with discounts available to customers of Comcast cable television and telephone service; 3) and 4) Verizon Wireless and AT&T Wireless, each offering service available for as low as \$26.95 for 10 Mbps plus about \$10 in surcharges and fees (no throughput specified, but GPRS and Edge do not come close to wireline speeds) and up to \$59.95 (one-two year service commitment, 5 GB quota) for throughput of up to 600 kbps – 1.4 Mbps and at claimed average upload speeds of 500 kbps – 800 kbps; 5) Wild Blue satellite service offering service for as low as \$54.95 for up to 512 kbps downstream and up to 128 kbps upstream, plus a 24 month equipment lease fee of \$5.95; \$69.95 for up to 1.0 Mbps downstream and up to 200 kbps upstream, plus the equipment lease fee, and \$89.95 for up to 1.5 Mbps downstream and up to 256 kbps upstream, plus the equipment lease fee. Options six through eight may include additional wireless carriers, including Sprint, Nextel, and T-Mobile, as well as resellers such as Virgin Mobile.

The monthly base price options generally available for subscribers in this zip code range from \$22.95 to more than \$100. Accordingly, price and subscriber elasticity to price is important in determining what options constitute actual competitive alternatives. Put another way, a large disparity in price and available bitrate (theoretical or actual) will have a significant impact on whether a consumer would even consider using a particular service. In a largely rural zip code such as 16870, the market for broadband divides into three categories: 1) Non-mobile residents and business proprietors who can access cable and possibly DSL service; 2) Users wanting mobile access; and 3) Non-mobile rural residents lacking access to cable modem or DSL service.

In category 1), users with two broadband platform options have at least two facilities-based alternatives. However, even for these potential subscribers service rates do not vary significantly, with slow-speed 768 kbps broadband offered at between \$22 and \$25 and higher-speed broadband offered at about double the slow-speed rate. Category 2) subscribers will have to pay double the wireline price for bitrates that may constitute less than one-half the wireline alternative.⁷⁸ Category 3) subscribers clearly have fewer than the FCC-identified eight alternatives and accordingly have to pay the highest rates for the slowest speeds, viz. satellite service exceeding \$50 a month, factoring in \$368.95 in hardware, installation and activation fees.

Even with a cursory assessment of actual competitive alternatives for zip code 16870, one should conclude that the FCC's raw number calculation of eight constitutes a best case scenario both in terms of actual accessibility and cross-elasticity based on price and service features, such as mobile access, bitrate and cost of equipment needed for access.⁷⁹ Unless and until the FCC recalibrates its geographic measure for broadband, as well as its decision not to disclose the identity of service providers and service costs, the Commission's statistics offer little if any helpful disclosure of real broadband options. At the very least, the FCC cannot conclude with confidence that all Americans currently

⁷⁸ Zip code 16870 does not yet have one Mbps or higher wireless service.

⁷⁹ The author located closest to State College and Penn State cannot access DSL service, making cable modem service the only option offering adequate bitrates and service rates.

have access to affordable broadband service that truly meets a reasonable definition of service performance and affordability.

Even if one accepts the FCC's premise that most if not all zip codes currently have broadband access, the current statistics offer no data about affordability, actual service performance, and reasons why prospective subscribers opt out. When researchers turn their attention to these topics, access means more than a raw number of service providers, or even per capita penetration rates. Instead, the following issues require analysis: ownership of, or access to a computer, ability to operate computers effectively, cost per offered or delivered throughput, and total monthly cost matter. At the very least, the FCC's current statistics do not confirm as mission accomplished the goal of achieving true broadband accessibility, affordability, and parity between urban and rural locales.

IX. CONCLUSIONS AND RECOMMENDATIONS

The FCC's data collection and dissemination process constitutes one small, but significant aspect of a large problem characterized by a reluctance to acknowledge any ongoing need for public-interest-driven government oversight in the ICT sector. The Commission appears to have bought the notion that the ICT marketplace already has become sufficiently competitive, or that many aspects of this marketplace qualifies for exemption from regulation based on their classification as information services.⁸⁰ Regardless of the true state of broadband competition and the veracity of the Commission's estimates, the United States can no longer claim to have global best in class next generation networks. Nor can the United States government claim to have adopted and implemented the most effective broadband deployment strategy *vis-à-vis* other nations such as Canada, Korea, and Japan.⁸¹ Treating broadband market statistics as a trade secret constitutes just one glaringly poor conceptualization of what the FCC thinks it should do to satisfy the congressional mandate to promote ubiquitous access to advanced telecommunications capabilities.

Both the Obama Administration and a majority in Congress consider broadband development, especially in rural areas, an important element in a national strategy to spur

⁸⁰ The FCC treats DSL, cable modem, broadband over power line, and wireless broadband Internet access as information services. See *Nat'l Cable & Telecomms. Ass'n v. Brand X Internet Servs.*, 545 U.S. 967 (2005) (affirming the FCC's decision to treat cable modem access as an information service and therefore subject to limited regulation); FCC 05-150, *supra* note 25; FCC, FCC 06-165, MEMORANDUM OPINION AND ORDER, IN THE MATTER OF UNITED POWER LINE COUNCIL'S PETITION FOR DECLARATORY RULING REGARDING THE CLASSIFICATION OF BROADBAND OVER POWER LINE INTERNET ACCESS SERVICE AS AN INFORMATION SERVICE (2006); FCC, FCC 07-30, DECLARATORY RULING, IN THE MATTER OF APPROPRIATE REGULATORY TREATMENT FOR BROADBAND ACCESS TO THE INTERNET OVER WIRELESS NETWORKS (2007).

⁸¹ See Frieden, *supra* note 69. Some nations have established national broadband strategies and executed policies designed to achieve specific goals. See, e.g., GOV'T OF CHILE, DIGITAL DEVELOPMENT STRATEGY 2007-2012, available at <http://www.agendadigital.cl/>; GOV'T OF NEW ZEALAND, DIGITAL STRATEGY 2.0, available at <http://www.digitalstrategy.govt.nz/Digital-Strategy-2/>; LIBRARY AND ARCHIVES CANADA, CANADIAN DIGITAL INFORMATION STRATEGY app. 2, available at <http://collectionsCanada.ca/cdis/012033-1010-e.html>.

economic development. The American Recovery and Reinvestment Act of 2009 allocates \$4.7 billion to the National Telecommunications and Information Administration (“NTIA”) and \$2.5 billion to the Agriculture Department’s Rural Utilities Service program to encourage investment in and use of broadband services by awarding grants, loans or loan guarantees.⁸²

NTIA, in consultation with the FCC, will administer the Broadband Technology Opportunities Program (“BTOP”) with a mandate to facilitate the access to broadband service to consumers residing in unserved areas of the U.S. Additional goals include improving access to, and use of, broadband service by public safety agencies; stimulating the demand for broadband, economic growth, and job creation; and providing broadband education, awareness, training, access, equipment, and support to schools, libraries, medical and healthcare providers, community colleges and other institutions of higher education, as well as other community support organizations. While most of the allocated funds do not have specific earmarks, the law authorizes n less than \$200 million for competitive grants to expand public computer center capacity, primarily at community colleges and public libraries. An additional sum not less than \$250 million is allocated for competitive grants proposing innovative programs to encourage sustainable adoption of broadband service. The law also includes funds for auditing and oversight of the funds allocates as well as up to \$350 million for the purposes of developing and maintain a inventory map of national broadband penetration.

The Agriculture Department’s \$2.5 billion will support a Distance Learning, Telemedicine and Broadband Program with financial grants, loans, or loan guarantees. The law requires that 75% of the area to be served by a project receiving financial support shall be in a rural area without sufficient access to high speed broadband service to facilitate rural economic development, as determined by the Secretary. of Agriculture. The law establishes a priority for projects that provide service to the highest proportion of rural residents that do not have access to broadband service and that offer end users a choice of more than one service provider. This program also establishes priority access for the telephone and cable television companies that currently have telecommunications loans or have previously borrowed money under the RUS program. Additionally funds from the Agriculture department’s allocation cannot support any project already receiving funding under the NTIA Program.

The law also requires the FCC, no later than 1 year after enactment, to provide a Report to Congress containing a national broadband plan. The plan should seek to ensure that all people of the U.S. have access to broadband capability and should specify benchmarks for meeting that goal. The plan also must include an analysis of the most effective and efficient ways to ensure broadband access using a detailed strategy to

⁸² American Recovery and Reinvestment Act of 2009, Pub. L. No. 111-5, 123 Stat. 115, 116, 128 (2009), available at http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=111_cong_bills&docid=f:h11enr.txt.pdf.

ensure affordability including evaluation of ongoing project and grants. The law also requires NTIA to develop and maintain a web-based, comprehensive nationwide inventory map of existing broadband service capability and availability in the U.S. with specific information about the geographic reach of specific commercial networks provider or public provider throughout each State. However, nothing in the law overturns the FCC's trade secret classification of broadband penetration data.

The final version of the law lacks definitions for such key words as "unserved," "underserved," "broadband," and "high-speed broadband." This means that the involved government agencies, in consultation with the states and grant seekers, will have to establish baseline criteria that could easily include underserved urban areas in addition to remote locales. The law also does not establish a preference for any type of broadband technology, nor does it favor public sector over commercial ventures, except for the preference for existing or previous REA program borrowers.

The prospect of broadband infrastructure funding may motivate carriers to rethink their policies favoring trade secret defense of where the carriers have and have not installed facilities. Declaring the marketplace robustly competitive and the infrastructure well deployed might disqualify a carrier from government funding. Similarly, the potential exists for carriers to receive government funding for projects carriers might consider necessary even in the absence of a subsidy.

For the United States federal government to become serious and conscientious about its obligation to promote next generation network development, agencies must depoliticize their policymaking process and acknowledge the need for oversight and stewardship in the face of both market and regulatory failure. Recognizing the need to collect credible, verifiable, and transparent statistics about the current state of broadband deployment constitutes one major step toward that goal. Toward that end, the FCC should require broadband service providers to disclose actual delivered throughput speeds by census tract, and the price for all service options. The Commission should make this raw data available in the same sorts of statistical compilations it compiles for wireline and wireless telephone services. If the Commission does not consider such telephone market penetration statistics to constitute trade secrets, then similar broadband statistics should not do so either, despite evidencing shortfalls in the FCC's conclusion that ubiquitous broadband access exists.

Other strategies for promoting actual improvements in broadband access and affordability could include revamping universal service funding to include broadband network deployment by capping government project funding to a percentage of total cost. The FCC could create incentives for demand aggregation by users, offering one time project funding rather than recurring discounts. The Commission also could promote innovation and creativity in projects, including technologies that provide greater efficiency and lower recurring costs, e.g., wireless. Additionally the FCC could auction

off subsidies⁸³ rather than pay to carriers their self-serving estimates of service costs.

At the very least, the United States Government has more to do in terms of promoting widespread access to broadband networks before it can deem the mission accomplished. Best practices in broadband network development blend government stewardship and vision with financial incentives for private stakeholders to pursue infrastructure investments.

⁸³ The FCC has begun to consider whether a reverse auction of universal service funding would promote efficiency. “In a reverse auction, support generally would be determined by the lowest bid to serve the auctioned area. Auctions have potential merit in that they allow direct market signals to be used as a supplement to, and possible replacement of, cost estimates made from either historical cost accounting data or forward-looking cost models, as is done under the current high-cost support programs. In an auction, bids would reflect each bidding ETC’s cost estimates for serving the relevant geographic area. If a sufficient number of bidders compete in the auction, the winning bid might be close to the minimum level of subsidy required to achieve the desired universal service goals. In contrast, a support mechanism based on either a carrier’s embedded costs or on a forward-looking cost model provides no incentives for ETCs to provide supported services at the minimum possible cost. In addition, an auction could provide a fair and efficient means of eliminating the subsidization of multiple ETCs in a given region. We tentatively conclude that reverse auctions offer several potential advantages over current high-cost support distribution mechanisms, and that the Commission should develop an auction mechanism to determine high-cost universal service support.” In the Matter of High-Cost Universal Service Support, Notice of Proposed Rulemaking, 23 FCC Rcd. 1495, 1500 (2008) (internal citation omitted).