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**Public Interest Comment on
Broadband Connectivity Competition Policy¹**

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The Regulatory Studies Program (RSP) of the Mercatus Center at George Mason University is dedicated to advancing knowledge of the impact of regulation on society. As part of its mission, RSP conducts careful and independent analyses employing contemporary economic scholarship to assess rulemaking proposals from the perspective of the public interest. Thus, this comment in response to the Federal Trade Commission's (FTC's) request for comments on Broadband Connectivity Competition Policy does not represent the views of any particular affected party or special interest group, but is intended designed to assist FTC staff in evaluating the effects of alternative proposals on overall consumer welfare.

I. Introduction

The FTC held a workshop to explore competition policy issues related to broadband connectivity on February 13 and 14, 2007. The vast majority of discussion focused on the pros and cons of various forms of "net neutrality."

Part of the difficulty involves defining precisely what "net neutrality" means. The most commonly offered definitions at the workshop revolved around the treatment of data packets. Traditionally, Internet providers have transported data packets on a "best efforts" basis, with no priority given to particular packets. But Internet service providers could do a variety of things differently if they could treat different packets differently.

Based on the identity of the sender, recipient, or content, packets could simply be blocked. In that case, users could not download particular applications, access certain web sites, or receive e-mail from particular sources. Alternatively, particular packets could be singled out for either preferential or degraded quality of service. Pricing is also an issue; a particular sender's packets could receive different levels of service depending on the sender's willingness to pay. An Internet access provider could seek to accomplish these objectives directly by examining packets or streams of packets and then treating

¹ Prepared by Jerry Ellig, senior research fellow, Mercatus Center at George Mason University. This comment is one in a series of Public Interest Comments from Mercatus Center's Regulatory Studies Program and does not represent an official position of George Mason University.

different packets differently.² Or it could seek to achieve them indirectly, by terminating users whose usage patterns imply that they are likely downloading content that the Internet service provider would like to treat in a discriminatory fashion.³

To many participants in the debate, “net neutrality” appears to mean that the Internet service provider cannot “provide or sell to Internet content, application or service providers ... any service that privileges, degrades, or prioritizes any packet transmitted” over the provider’s facilities “based on its source, ownership, or destination.”⁴ This is the “net neutrality” commitment AT&T made as a condition for FCC approval of its merger with BellSouth. Some would add an additional provision from the FCC’s 2005 Policy Statement: consumers have the right to attach to the network any legal device that does not harm the network.⁵

Proponents argue that, in the absence of such requirements, broadband providers could diminish consumer welfare by exploiting market power, diminish privacy by inspecting packets, and diminish the free flow of communication over the Internet by censoring or imposing prices on certain types of speech. Opponents argue that Internet access providers must have the option to treat some traffic differently in order to manage the network, prevent specific users from using most of the transmission capacity, ensure high-quality service for quality-sensitive applications, and charge prices that allow them to earn a return on their investment in the network.

The net neutrality issue has generated a great deal of strident debate. The FTC’s calm, analytical perspective is a sorely-needed addition to the discussion.

Although the Federal Communications Commission (FCC) has regulatory jurisdiction over broadband, the Federal Trade Commission enforces both consumer protection and competition laws affecting broadband Internet access service. The Supreme Court’s 2005 *Brand X Internet Services* decision upheld the FCC’s determination that cable modem service is an information service.⁶ In September 2005, the FCC reclassified wireline

² For a much more technically proficient explanation, see the Feb. 13 presentation by Jon M. Peha.

³ Tim Wu, WIRELESS NET NEUTRALITY: CELLULAR CARTERPHONE AND CONSUMER CHOICE IN MOBILE BROADBAND, New America Foundation Working Paper #17 (Feb. 2007) at 13-14.

⁴ Robert W. Quinn, Jr., Notice of Ex Parte Communication, *In the Matter of Review of AT&T Inc. and BellSouth Corp. Application for Consent to Transfer of Control*, WC Docket No. 06-74 (Dec. 28, 2006) at 8, available at http://www.fcc.gov/ATT_FINALMergerCommitments12-28.pdf.

⁵ FCC, POLICY STATEMENT, *In the Matters of Appropriate Framework for Broadband Access to the Internet over Wireline Facilities (et. al.)*, CC Docket No. 02-33 (Released Sept. 23, 2005), at 3, available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-05-151A1.pdf. On February 20, 2007, Skype filed a petition asking the FCC to “ensure that consumers have the right to run the applications of their choosing and attaché all non-harmful devices to the wireless network.” See *In the Matter of Skype Communications S.A.R.L., Petition to Confirm a Consumer’s Right to Use Internet Communications Software and Attach Devices to Wireless Networks* (February 20, 2007).

⁶ *National Cable & Telecommunications Ass’n v. Brand X Internet Services*, 125 S. Ct. 2688 (2005). Technically, the Supreme Court clarified that the FCC has the ultimate authority to determine whether broadband is an information service, a telecommunications service, or a cable service. See Jerry Ellig and Alastair Walling, *Regulatory Status of VoIP in the Post-Brand X World*, 23 SANTA CLARA COMPUTER &

broadband Internet access as an information service.⁷ In November 2006, the FCC determined that broadband offered over powerlines is an information service.⁸ These decisions ensure that the FTC has jurisdiction over most broadband Internet access for antitrust and consumer protection purposes.⁹

In her speech announcing the formation of the FTC's Internet Access Task Force, FTC Chair Deborah Platt Majoris noted several points that should be considered before a "comprehensive scheme" of net neutrality is enacted: demonstrated harm, regulatory costs, self-correcting market forces, and existing agency oversight.¹⁰ Her opening remarks at the workshop noted that the FTC's Internet Task Force will likely issue a report on the issues addressed in the workshop.¹¹ This comment suggests how the FTC might proceed in the wake of the workshop. It identifies the most significant issues raised in the workshop, proposes an analytical framework for a study that systematically addresses the concerns outlined by Chairman Majoris, offers specific suggestions relevant to the FTC's analysis of competition policy issues, and recommends actions the FTC could take to promote the welfare of broadband users.

The FTC could significantly improve the quality of the net neutrality debate by producing a report that:

- conducts a thorough regulatory analysis: defining specific outcomes that broadband policies are supposed to produce, assessing evidence of market failure, identifying the uniquely federal role, comparing the effectiveness of alternative policies, examining the costs of alternative policies, and comparing costs with outcomes;
- assesses the likely speed and effects of entry in the absence of government-imposed entry barriers;

HIGH TECH L.J. 101, available at http://www.mercatus.org/repository/docLib/MC_RSP_2006RPVoIP_060217.pdf.

⁷ *Appropriate Framework for Broadband Access to the Internet over Wireline Facilities, Report and Order and Notice of Proposed Rulemaking*, 20 F.C.C.R. 14853 (2005).

⁸ *In the matter of United Power Line Council's Petition for Declaratory Ruling Regarding the Classification of Broadband over Power Line Internet Access as an Information Service, Memorandum Opinion and Order*, WC Docket No. 06-10 (Adopted Nov. 3, 2006), available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-06-165A1.pdf.

⁹ The regulatory classification of broadband Internet access affects the FTC's jurisdiction, because if broadband Internet access is a telecommunications service, then it is subject to common carrier regulation. The FTC lacks jurisdiction over common carriers. See *Testimony of the Honorable William E. Kovacic, Commissioner, Federal Trade Commission, before the United States Senate Committee on the Judiciary* (June 14, 2006), at 1, available at http://judiciary.senate.gov/print_testimony.cfm?id=1937&wit_id=5415.

¹⁰ *The Federal Trade Commission in the Online World: Promoting Competition and Protecting Consumers*, Luncheon Address, Progress & Freedom Foundation's Aspen Summit (Aug. 21, 1006), available at <http://www.ftc.gov/speeches/majoras/060821pffaspenfinal.pdf>.

¹¹ *Opening Remarks, FTC Workshop on Broadband Connectivity Competition Policy* (Feb 13, 2007), p. 7, available at <http://www.ftc.gov/speeches/majoras/070213broadbandworkshopremarks.pdf>.

- takes account explicitly of the effects of dynamic competition when assessing the competitiveness of broadband access markets;
- conducts a thorough analysis of the effects of alternative policies on consumer welfare; and
- includes an evidence-based economic analysis of the effects of alternative policies on other important values articulated by stakeholders in the net neutrality debate.

In addition, the FTC should aggressively pursue research and advocacy initiatives that would remove barriers to entry into broadband access markets. Such initiatives would be worthwhile regardless of whether the FTC finds that entry is a sufficient solution to any problems in the broadband market or just part of the solution. Potential projects include:

- **Spectrum policy:** Assess the effects on consumer welfare of freeing significantly more spectrum for provision of wireless communications services; conduct research and competition advocacy relevant to the FCC's recent proposal to grant a single, nationwide spectrum license for public safety communications; and analyze the effects of allowing federal users of spectrum to lease that spectrum to others.
- **Cable franchising:** Support the recently-approved FCC rules that reduce the barrier to entry created by local cable franchising; analyze the effects on both cable and broadband consumers of recent state reforms of cable franchising; and engage in competition advocacy to inform future reform efforts at the state level.
- **Broadband over powerlines:** Supply expert analysis to state legislatures and public utility commissions that are working to establish a regulatory framework authorizing and governing broadband over powerlines.

II. Major Issues and Dimensions of the Net Neutrality Debate

Workshop participants identified a variety of significant issues:

Vertical business practices: If the Internet access provider treats different packets of information differently, it could either improve or reduce consumer welfare. Blocking packets allows the network operator to block viruses or other security threats, but it also allows the operator to block content that consumers might want to receive. Assigning different priorities to different types of packets could ensure the quality of services that are heavily dependent on transmission quality (such as VoIP or high-definition video), but it could also let the access provider degrade the quality of services that compete with services it might want to sell.¹²

Charging different prices based on a packet's sender or receiver creates the potential for two types of price differences: tiering of service and price discrimination. Tiering occurs when the access provider charges different prices for different speeds or quality of service. Price discrimination occurs when network owners charge different customers different prices based on different users' sensitivity to price. Both tiering and price

¹² For a more extensive list of pros and cons, see the February 13 presentation by Jon M. Peha.

discrimination let the network owner cover the costs of fixed investments in a way that least discourages people from using the Internet, because low-cost options are available to those who are only willing to pay a low price. On the other hand, if the network owner has market power, price discrimination may simply let the owner extract more revenues from network users who value the service highly, thus generating monopoly profits. This can reduce consumer welfare even if it generates no loss of economic efficiency.

Terminating access monopoly: As long as each customer subscribes to only one Internet access provider, at any given time the access provider has a monopoly over access to its customers even if the market for Internet access is competitive. If the Internet access provider can charge other parties (such as content or applications providers) when they send data packets to its customers, it may be able to collect monopoly profits.¹³

Consumer information: Consumers may not know or understand all of the terms of service. Examples proffered at the workshop include maximum connection speeds (which consumers might mistake for average or typical speeds), limitations on certain types of downloads in Internet access plans that advertise unlimited usage, and the potential effects of “deep packet inspection” on consumer privacy.¹⁴

Privacy: Several panelists argued that treating packets differently based on the sender, receiver, or content might violate consumers’ privacy.¹⁵

Competitiveness: Several panelists cited international statistics on broadband penetration to suggest that the United States is “falling behind” the rest of the world. Others questioned the relevance of such comparisons.¹⁶

Public discourse: This term refers to the values enunciated by panelists who used terms such as “free speech,” “First Amendment issues,” or “political speech.” The basic idea is that public policy should protect an individual’s ability to communicate on the Internet at low cost and without censorship by the network owner, even if that involves the sacrifice of some consumer welfare.¹⁷

As this list suggests, the net neutrality debate has a much broader scope than the typical antitrust debate. In addition to the range of issues under discussion, the debate is broader along several other dimensions:

¹³ This issue was first raised in the economists’ panel on February 13 and mentioned in several subsequent panels.

¹⁴ See generally, presentations and discussion in the Consumer Protection panel on February 14; and Wu, *supra*. note 3, at 14.

¹⁵ Presentation by Jeannine Kenney on February 14, and presentation by Ronald B. Yokubaitis on February 14.

¹⁶ Presentation by Harold Feld on February 14, and presentation by Scott Wallstein on February 14.

¹⁷ Harold Feld made this point most explicitly in his presentation on February 14.

Competition policy vs. antitrust policy. The competition issues of concern may not just be conduct that violates the antitrust laws, but also behavior that affects competition even if it is not an antitrust violation. “Conscious parallelism” by firms and barriers to entry created by government are perhaps the most obvious examples. In addition, many of the relevant decision makers are outside the FTC. The FCC, Congress, state legislatures, and state public utility commissions could also have a significant effect on competition policy affecting broadband. For these reasons, the FTC should strive to produce analysis that will inform all competition policy pertaining to broadband, not just antitrust enforcement.

Dynamic competition. Broadband is still a relatively new service subject to significant innovation. This implies that economic analysis of this industry needs to consider dynamic competition. By far, the most prominent dynamic concept of competition is associated with economist Joseph Schumpeter.¹⁸ Schumpeter argued that “competition from the new commodity, the new technology, the new source of supply, the new type of organization—competition which commands a decisive cost or quality advantage and which strikes not at the margins of the profits and the output of existing firms, but at their foundations and their very lives” triggers the most significant advances in human wellbeing.¹⁹ In addition to Schumpeter, a variety of other scholars have also developed dynamic theories of competition.²⁰ In “evolutionary” competition theories, different firms have different abilities, novelty constantly arises, innovation occurs as firms learn, and there are limits to the amount of information decision makers can acquire and process. Competition is an open-ended process of innovation, experimentation, and feedback.²¹ The purpose of competition is to reveal what services, costs, and prices are possible. The firms that survive and grow are those that do a better job than others of anticipating what consumers want and finding the best way to produce it.²² Finally, strategic management scholars explicitly view competition as a continual striving to cost-effectively develop superior capabilities to serve consumers.²³ In a dynamically competitive market, some of the most important capabilities are the ability to innovate, to change business strategy rapidly, to drop and add services in response to customer needs, to upgrade products with new technology and features, and to change prices as market conditions change.

¹⁸ Indeed, two members of the economists’ panel on February 14—Alfred Kahn and Thomas Lenard—explicitly noted the importance of Schumpeterian competition.

¹⁹ Joseph A. Schumpeter, *CAPITALISM, SOCIALISM AND DEMOCRACY* 84 (New York: Harper & Row, 1942).

²⁰ For an extensive summary of dynamic competition theories and references, see Jerry Ellig and Daniel Lin, *A Taxonomy of Dynamic Competition Theories*, in Jerry Ellig (Ed.), *DYNAMIC COMPETITION AND PUBLIC POLICY* 16-44 (New York: Cambridge University Press, 2001).

²¹ Richard R. Nelson, *The Tension Between Process Stories and Equilibrium Models: Analyzing the Productivity-Growth Slowdown of the 1970s*, in Richard N. Langlois, ed., *ECONOMICS AS A PROCESS: ESSAYS IN THE NEW INSTITUTIONAL ECONOMICS* (Cambridge: Cambridge University Press, 1986).

²² Friedrich Hayek, *Competition as a Discovery Procedure*, in Hayek, *NEW STUDIES IN PHILOSOPHY, POLITICS, AND ECONOMICS* 179-90 (Chicago: University of Chicago Press, 1978); Israel Kirzner, *The Perils of Regulation: A Market Process Approach*, in *DISCOVERY AND THE CAPITALIST PROCESS* 119-49 (Chicago: University of Chicago Press, 1985); Kirzner, *COMPETITION AND ENTREPRENEURSHIP* (Chicago: University of Chicago Press, 1973).

²³ Jay Barney, *Competence Explanations of Economic Profits in Strategic Management: Some Policy Implications*, in Ellig, (Ed.), *DYNAMIC COMPETITION AND PUBLIC POLICY* 45-64 (2001).

The widely-accepted concepts and methods of antitrust economics are undoubtedly key tools that the FTC should use to analyze net neutrality issues. The FTC should take special care to ensure that this analysis includes an explicit assessment of the effects of dynamic competition.

Multiple values. An analysis of net neutrality that addresses the full panoply of concerns raised by major stakeholders involves other important values in addition to consumer welfare. Participants in the workshop voiced concerns about values such as the First Amendment, political participation, and low-cost communication generally. The FTC may be tempted to avoid these issues because they might appear to be outside the FTC's areas of expertise. On the contrary, the FTC's staff possesses an extremely valuable capability that is usually in short supply when policy debates address "values." The FTC staff's capability for rigorous, disciplined thinking can play an indispensable role in transforming these "values" debates from a shouting match into a more thoughtful consideration of alternatives and tradeoffs. In some cases, the policies advocated by some stakeholders may not, in fact, effectively further the values they espouse; careful analysis can help identify the most effective means. In many cases, effective competition policy can also promote values other than consumer welfare, and it would be useful to know when this can be expected to occur. Where tradeoffs between consumer welfare and other values must be made, the FTC's analysis can still inform the debate by helping participants understand how much of some other value can be achieved and at what cost in terms of forgone consumer welfare.²⁴

These dimensions imply that the appropriate analytical framework is broader than that traditionally employed in antitrust enforcement. All three of these dimensions can be accommodated by employing well-established principles of regulatory analysis. The framework outlined below is not new; indeed, most of its elements are articulated in Executive Order 12866 and the Office of Management and Budget's Circular A-4, which guides executive agencies' regulatory analyses.²⁵ Others are implicit in initiatives to improve the management and performance of federal agencies, such as the Government

²⁴ See, for example, the FTC's comment on the Environmental Protection Agency's Staff White Paper on boutique fuels: "An analysis of how different regulatory alternatives would likely affect competition and market efficiency—i.e., the likely impact of regulatory alternatives on competition in economically relevant markets—would assist the EPA in evaluating how best to maintain or improve environmental benefits, while also benefiting consumers through increased flexibility of the fuels distribution infrastructure, improved fungibility, and added gasoline market liquidity." *Study of Unique Gasoline Fuel Blends ("Boutique Fuels"), Effects on Fuel Supply and Distribution and Potential Improvements*, EPA 420-P-01-004, Public Docket No. A-2001-20, Comments of the Staff of the General Counsel, Bureaus of Competition and Economics, and the Midwest Region of the Federal Trade Commission (Jan. 30, 2002), at 1-2, available at <http://www.ftc.gov/be/v020004.pdf>.

²⁵ See *Executive Order 12866 of September 30, 1993, as amended by E.O. 13258 of February 26, 2002 and E.O. 13422 of January 18, 2007*, available at http://www.whitehouse.gov/omb/inforeg/eo12866/eo12866_amended_01-2007.pdf, and *Circular A-4, Regulatory Analysis* (Sept. 17, 2003), available at <http://www.whitehouse.gov/omb/circulars/a004/a-4.pdf>.

Performance and Results Act and OMB’s Program Assessment Rating Tool.²⁶ Thus, the proposed framework is largely an extrapolation from existing federal policies and procedures.

III. Analytical Framework

Effective decision making requires two things: knowledge of the consequences of alternative courses of action and value judgments that allow the decision maker to determine which consequences are the most desirable. Regulatory analysis provides the first component, but not the second.

In policy debates, an analyst who points out beneficial aspects of a regulation often gets labeled “pro-regulatory.” An analyst who points out undesirable consequences gets labeled “anti-regulatory.” Those who glibly apply the labels fundamentally misunderstand the nature and purpose of regulatory analysis. The purpose of analysis is to provide decision makers with a realistic understanding of the consequences of alternative courses of action.

Regulatory analysis is a tool for understanding causation—what *is* and what *would likely* happen as a result of various policy initiatives. To decide what *should be done*, decision makers must combine the results of regulatory analysis with value judgments that reflect their assessment of what is worth doing.

But just as analysis is not a substitute for judgment, values are not a substitute for understanding reality. Values determine what outcomes decision makers would want to pursue, but values alone do not provide the cause-and-effect analysis necessary to determine how those outcomes can be accomplished most effectively. Without the firm grounding in reality provided by regulatory analysis, decision makers are flying blind.

²⁶ For an explanation of the Program Assessment Rating Tool, see www.expectmore.gov. For its application to the FTC’s programs, see <http://www.whitehouse.gov/omb/expectmore/summary/10003816.2006.html>.

Six Key Steps in Regulatory Analysis

1. Identify the desired outcomes

(Figure out what you're trying to do and how you'll know you did it.)

2. Assess evidence of market failure or other systemic problem

(Figure out whether government needs to do something, and if so, why.)

3. Identify the uniquely federal role

(Figure out what the federal government needs to do.)

4. Assess effectiveness of alternative approaches

(Think about different ways to do it and find the one that works best.)

5. Identify costs

(Figure out what you have to give up to do whatever you're trying to do.)

6. Compare costs with outcomes

(Weigh pros and cons.)

1. Identify the desired outcomes

“If you don't know where you're going, any road will take you there.”

—George Harrison

An outcome is the benefit to the public produced, or harm avoided, as a result of a government action. For the purposes of regulatory analysis, an outcome may satisfy the economist's definition of a net “benefit,” or it may simply be some result that policymakers deem worthwhile. In either case, decision makers need to define the outcome they are trying to affect or achieve.

It is widely acknowledged that the outcome associated with competition and consumer protection policy is consumer welfare—a concept quite rigorously defined in the economics literature.²⁷ Analysis of vertical issues, terminating access monopoly, and consumer disclosure should focus on identifying the effects of net neutrality—or lack thereof—on consumer welfare.

The outcomes associated with other values mentioned by some panelists are less carefully defined. Competitiveness and economic development, for example, may be linked to consumer welfare, in which case the desirable outcome is the level of competitiveness

²⁷ See, e.g., Dennis W. Carleton and Jeffrey M. Perloff, *MODERN INDUSTRIAL ORGANIZATION*, 2D. ED. (1994) at 102-107.

and/or economic development that maximizes long-term consumer welfare. Some stakeholders, however, may feel that the desirable amount of growth and development differs from the amount that is optimal from a consumer welfare perspective; perhaps “more” is always “better.” If the FTC chooses to address competitiveness issues, it should identify whether competitiveness outcomes differ from consumer welfare, and if so, how. Only a careful definition of desired outcomes will clarify whether competitiveness is meant to be a means of promoting long-term consumer welfare or an alternative value that may require some sacrifice of consumer welfare.

The outcomes associated with the “public discourse” values have not been very well-defined either. This makes it difficult to identify what policies will best promote these values. If the desired outcome is that anyone willing to pay the monthly price for Internet access can communicate with others at some minimum speed, then a policy that promotes “neutral” treatment of everyone on the network may be appropriate. But if the desired outcome is to have as many people as possible connected to the Internet so they can speak if they so choose, then a different policy, aimed at reducing the consumer’s total cost of Internet access as well as usage, may be most effective, even if it does not mandate “neutrality.” Identifying the most effective approach involves making testable conjectures about the effects of different business practices and government policies on some specific, defined outcome and then examining the facts to find out which conjectures are right. By defining outcomes—or at least highlighting the need for more precise definition—the FTC can help advance the discussion of “public discourse” values from a shouting match to a cogent exploration of cause and effect.

2. Assess evidence of market failure

“First, do no harm.”

—Hippocratic Oath

Regulatory economists generally accept that government action can enhance consumer welfare in the case of a clear “market failure” that cannot be addressed adequately by other means.²⁸ Market power and poor consumer information are the classic market failures that competition and consumer protection policies aim to address. Some forms of “market failure” may arise as a result of poor incentives or other constraints on private parties created by previously-existing policies. While such policy-driven problems are not technically “market” failures, the problems are likely to persist in the absence of some additional government action. The fundamental solution is to correct the original policy.

²⁸ The term “market failure” is perhaps an unfortunate piece of economics jargon, because to most people the term “market” implies some form of commercial, for-profit business activity. Market failure then presumably refers to any situation in which commercial activity fails to solve a perceived problem. For many economists, however, the term “market” often has a much broader meaning, referring to any type of voluntary interaction in which people mutually coordinate their activities rather than take directions from a higher (governmental) authority. We use the term in this broader sense. A “market failure” occurs when voluntary activity fails to direct resources to the uses that people value most.

A theory of market failure, accompanied by evidence that indicates whether the theory is actually true, should guide diagnosis of competition, consumer protection, and (probably) competitiveness issues. If there is no market failure, government action is unlikely to improve consumer welfare.

When outcomes are defined in terms of values other than consumer welfare, responsible analysis should still articulate a systematic economic theory explaining why voluntary market behavior does not achieve the desired outcome. Such a theory should be accompanied by evidence that permits evaluation of whether the theory is actually true.

There are two reasons why government actions should explicitly recognize a market failure or identify some other systemic problem underlying the need for action. If in fact there is no market failure or other systemic problem, then government action will likely do more harm than good. If there is a market failure or other systemic problem, then government action can more effectively correct the problem if it has been accurately identified and understood.

3. Identify the uniquely federal role

“If this was easy, it wouldn’t be so hard.”

—Yogi Berra

The fact that a market failure or other systemic problem prevents the achievement of desired policy outcomes does not automatically mean that the federal government will provide the most effective remedy. The interstate—indeed, international—nature of the Internet suggests there are strong reasons to believe that the federal government should play the major role. In any event, court and FCC decisions have virtually guaranteed that the federal government will take the lead.²⁹

The federal role, however, should not just be limited to enacting laws, writing regulations, and engaging in enforcement activities. Other levels of government have legal authority to make certain decisions that could have a significant effect on broadband competition. The FTC has a unique opportunity to affect their decisions via research and competition advocacy. In addition to federal actors, such as Congress and the Federal Communications Commission, key issues and decision makers include:

- State legislatures. In recent years, state legislatures have considered legislation on issues such as liberalized cable franchising, municipal involvement in providing broadband Internet access, and electric utility provision of broadband over power lines.

²⁹ See, e.g., *Vonage Holdings Corp. v. Minn. Pub. Utilities Comm’n*, 290 F. Supp. 2d 993, 995 (D. Minn. 2003).

- State public utility commissions. State commissions often have responsibility for implementing legislative initiatives in the above areas, may have some authority to initiate reforms on their own, and have often taken the lead on consumer protection issues involving telecommunications.
- Local governments. Local cable franchising authorities can be friendly or hostile to new competition, and local governments make significant competition policy decisions when they consider taking a direct role in provision of broadband service.

All of these decision makers can have significant effects on broadband access markets. The FTC can play a salutary, and perhaps unique, role by developing analysis and recommendations that would assist these other levels of government.

4. Assess effectiveness of alternative approaches

“Steer, don’t row.”

—David Osborne and Ted Gaebler³⁰

A finding that market failure justifies *some* federal role does not mean that *any conceivable* federal role will do. Government has a wide variety of options to influence outcomes in the broadband marketplace. These include direct provision of broadband service by government, various public-private partnerships, performance-based regulation, command-and-control regulation, information disclosure regulations, antitrust enforcement, removal of entry barriers, commercial law, tort law, and contract law. For any postulated outcome and market failure, the FTC should assess which alternative is likely to achieve the goal most effectively.

Suppose, for example, the FTC determines that broadband access providers have market power and discriminatory treatment of others’ content or applications would allow them to exercise that power in ways that harm consumers. That identifies a problem, but there are several alternative solutions. Lawmakers or regulators could adopt rules that explicitly prohibit certain practices. Alternatively, the FCC could “jawbone” broadband providers to observe net neutrality principles and use its existing authority to prosecute specific practices as they arise. The FTC could conduct enforcement under the FTC Act, where many practices alleged to violate net neutrality would be analyzed under the antitrust rule of reason. (Such enforcement might be accompanied by issuance of guidelines to increase certainty and warn about the practices that the FTC believes are most problematic.) Another potential solution would be for government at all levels to

³⁰ The phrase, popularized by David Osborne and Ted Gaebler, precisely captures the idea that government’s main role is to articulate outcomes and find the most effective way of accomplishing them, rather than treating any particular means as sacrosanct. See David Osborne and Ted Gaebler, *REINVENTING GOVERNMENT: HOW THE ENTREPRENEURIAL SPIRIT IS TRANSFORMING THE PUBLIC SECTOR* (Boston: Addison-Wesley, 1992).

vigorously promote new entry, thus eliminating opportunities for firms to engage in anticompetitive behavior.

New entry of facilities-based competitors is likely to be the most effective remedy for any market power that may exist, assuming such entry is timely. This is a direct implication of the well-established principle, often noted by antitrust officials and regulators alike, that “[C]ompetition generally produces the best results for consumers over time”³¹ and “Competition—not regulation—best leads to better services and lower prices.”³²

Panelists offered two principal arguments against relying upon new entry as the primary solution:

(1) Entry into broadband access takes large investments and significant time, so even if government-imposed barriers are removed, entry may not occur quickly enough to prevent anticompetitive discrimination.³³

(2) Some significant forms of new entry, such as wireless, are not close enough substitutes for DSL and cable to constrain anticompetitive behavior.³⁴

Both of these arguments rest on hypotheses that may or may not be true. Fortunately, these kinds of factual issues are well within the FTC’s analytical expertise. One of the most significant contributions the Internet Task Force report could make would be to assess the likely speed and effects of entry in the absence of government-imposed entry barriers. These could then be compared to the likely speed and effects of more aggressive government remedies to determine which alternative, or blend of alternatives, is most likely to promote consumer welfare or accomplish other desired policy outcomes.

Economic analysis is useful for assessing the effectiveness of proposed solutions even when the desired outcome is something other than consumer welfare, such as the public discourse values.

Consider, for example, the financial incentives of a profit-maximizing Internet access provider who considers blocking or degrading political speech over its network. If many individuals purchase Internet access because they want to engage in political speech, then Internet access providers have a strong financial incentive to avoid hampering political speech on the Internet. They get more customers and revenues if the customers are confident that they can use the Internet for political speech. Technology may give

³¹ Majoris, *supra* note 10, at 17.

³² *Remarks of FCC Chairman Kevin Martin, Georgetown University McDonough School of Business’s Center for Business and Public Policy* (Nov. 30, 2006), at 1, available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-268774A1.pdf.

³³ When asked at what point competition in the “last mile” would be sufficient to overcome broadband providers’ incentive to discriminate, panelist Gigi Sohn responded that broadband access markets are “so far from competitive that it isn’t worth talking about.”

³⁴ Presentation by Harold Feld (February 14).

companies the ability to block or “censor” political speech, but they would pay a financial price for doing so. This does not mean that the profit motive will guarantee “net neutrality” for political speech, but it does suggest that Internet service providers would prevent their customers from sending or receiving political speech only in extraordinary circumstances. Identifying those circumstances would allow regulators to craft a more targeted remedy that would focus enforcement resources on the most significant problems likely to occur.

Economic analysis can also help identify how differential pricing options offered by Internet access providers might affect the degree of public participation in political speech via the Internet. Suppose, for example, an Internet service provider charges content or applications providers for access to its customers as part of a “Ramsey pricing” scheme, which recovers fixed costs with higher markups or prices on services whose demand is less sensitive to price.³⁵ The price of using some content or applications will likely be higher than it would otherwise be, but the price of Internet access will likely be lower than it would otherwise be. As a result, more people would decide to get Internet access. Overall public participation in political speech on the Internet could increase, because more people would actually be using the Internet. Thus, non-neutral treatment of some traffic might actually improve public participation.³⁶

These examples are testable theories, based on fundamental economic principles, which imply that net neutrality might not be the most effective means of promoting important public discourse values espoused by many panelists. Net neutrality cannot be rejected based on these theories alone. But if public discourse values are important, net neutrality should not be accepted until decision makers actually know, based on coherent theory and evidence, whether it is the most effective means of promoting specific outcomes derived from these values. Economic analysis can help address the questions of cause and effect that must be answered in order to identify the most effective means.

5. Identify costs

“Everyone is entitled to his own opinion, but not his own facts.”

—Sen. Daniel Patrick Moynihan

³⁵ The name of the concept originated with Frank P. Ramsey, *A Contribution to the Theory of Taxation*, 37 *ECON J.* 47 (1927). Carlton and Frankel explicitly note the parallels between analysis of optimal taxation descended from Ramsey’s theory and the pricing issues in “two-sided markets,” where an intermediary serves two groups of customers and the value of the network to each group depends on how many of the other group are in the network: “Therefore, in a two-sided market, fee allocation among the various groups becomes an interesting problem similar to optimal taxation. This allocation issue is separate from (though related to) that of determining the total fee amount.” See Dennis W. Carlton and Alan S. Frankel, *Transaction Costs, Externalities, and “Two-Sided” Payment Markets*, 2005 *COL. BUS. L. REV.* 617 (2005) at 627.

³⁶ Christopher Yoo mentioned this possibility explicitly in his presentation on February 14.

The accurate measure of the cost of any government action is its opportunity cost: what did we as a society give up in order to devote resources to taking the action? Government and private expenditures only partially measure the forgone benefits associated with a particular course of action. Sound regulatory analysis also identifies hidden and indirect costs that are less obvious than direct expenditures.

One of the great advantages of antitrust “rule of reason” analysis is that it explicitly accounts for benefits that a suspect business practice might generate for consumers, as well as the harms. The benefits consumers might forego if the practice is prohibited are the opportunity cost of prohibiting the practice. Though very real, this cost would be overlooked if the analyst focused only on the federal expenditures associated with the enforcement action!

Unlike antitrust analysis, the regulatory process contains no “automatic” assessment of costs. Executive agencies must identify the costs—including opportunity costs—of proposed regulations. The principal federal regulatory agency affecting broadband, however, is the Federal Communications Commission—an independent agency that (like the FTC) is not explicitly obligated to identify the overall consumer costs of its regulatory decisions. The FTC can, therefore, play a critical role by assessing the cost to consumers of various proposals for “net neutrality” regulation.

6. Compare costs with outcomes

“It’s impossible to maximize both X and Y.”

—Scott Wallstein, Workshop Panelist

Cost information cannot be considered in isolation. A costly regulation may nevertheless create significant positive outcomes that are valuable to policymakers and citizens. Information on outcomes and costs can be combined in a variety of ways to aid decision making, such as analysis of cost-effectiveness or comparison of costs and benefits.

Comparing costs and benefits does not automate decisions, because different decision makers may ascribe different values to the benefits. Even when benefits can be expressed in monetary terms, the dollar amounts usually reflect the value of the benefits to the “average” or “typical” person. Cost-benefit analysis may mask significant diversity in the value that different people attach to the benefits. Two different decision makers, armed with the same information about cost effectiveness or the same cost-benefit comparisons, can still reasonably disagree about what to do based on their values. Consumer welfare is an important value, but it need not be the only value of interest to decision makers.

Responsible decisions, however, require a clear understanding of the terms of the tradeoffs. How much consumer welfare gets sacrificed to promote competitiveness or public discourse? How much public political participation gets sacrificed if consumer welfare becomes the overriding goal? Decision makers need to know when reality requires these tradeoffs and whether they are large or small. Accountability in

government requires that citizens have a transparent accounting of the tradeoffs. Regulatory analysis provides the tools necessary to provide that accounting. And the FTC has the capabilities to conduct this analysis.

IV. Competition Analysis

The foregoing discussion suggests that the FTC should undertake a comprehensive and wide-ranging analysis of the net neutrality issue. Even if the FTC does not undertake such a comprehensive analysis, as the title of the workshop indicates, competition issues are important in any analysis it does undertake. Competition concerns fall into two categories: vertical business practices and terminating access monopoly.

A. Vertical business practices

For these issues, a traditional antitrust “rule of reason” analysis of restrictive business practices should suffice to identify any market failure. First, define the relevant market. Second, determine whether there is significant market power. Third, if there is market power, determine whether the business practice harms consumers. Fourth, if the business practice harms consumers, determine whether it creates any offsetting benefits to consumers, and evaluate the net effect.

A full-scale antitrust analysis is outside the scope of this comment. But I would like to offer several observations that might inform such an analysis by the FTC.

Product market definition. The FCC’s definition of high-speed Internet service (200 kbps) has been widely criticized. Nevertheless, for broadband users who essentially just want something somewhat faster than dialup, the FCC definition may be quite accurate, and all of the providers offering speeds faster than 200 kbps might be part of the relevant market. Many broadband users, however, could well desire a particular minimum or average speed, such as 500 kbps, 1 mbps, 5 mbps, etc. For those users, some of the slower broadband offerings might not be part of the relevant market. Definition of the relevant market should not be based on some arbitrary decision about the speed that some observers (even consumer advocates) believe consumers should, or ought to, want or have. Rather, it should depend on actual evidence demonstrating which services consumers are likely to regard as substitutes. Depending on the evidence, consumers might possibly be segmented into multiple product markets. A full assessment of “non-neutral” business practices would then need to examine whether the practice is likely to arise in each market, and if so, whether it would create net harm for consumers in each market.

Geographic market definition. The FCC’s practice of gathering data on the number of providers by zip code has also been widely criticized. A major criticism derives from the observation that if a broadband provider has a customer in a zip code, that does not mean the provider’s service is available to all consumers in that zip code. (For example, even in many suburban areas where DSL is available, some homes cannot receive DSL because

they are too far from the phone company's switching office.³⁷) The implication of this criticism is that the zip code data should be rejected because the relevant geographic market is smaller than the zip code.

However, given the way the broadband companies price their product, this inference is incorrect. Cable companies usually offer cable modem service for the same price and speeds across the service territory. Phone companies usually offer DSL at the same price and speeds across their entire service territory. Satellite broadband providers offer uniform national pricing plans at various speeds. For this reason, broadband companies with a significant degree of overlap are likely to constrain each other's prices, even if every consumer in each one's service area cannot receive service from every provider.³⁸ Therefore, the FCC's zip code based data may well present a fairly accurate picture of the state of competition in relevant geographic markets—at least in urban and suburban areas. Indeed, the relevant geographic market may well be much larger than the zip code in these areas. Rural areas where a zip code covers a large geographic area may require a different treatment if multiple broadband providers typically serve completely non-overlapping areas within zip codes.

Market power and concentration: If firms lack significant market power, then it is unlikely that restrictive vertical arrangements, discriminatory treatment of packets, or price discrimination harm consumers. Monopoly, duopoly, and oligopoly all end in the suffix “-poly,” but the suffix does not imply any automatic relationship between market structure and consumer welfare. Oligopoly theory unequivocally shows that when the number of competitors ranges between two and a small number, anything can happen, depending on the circumstances.

Recent studies on the relationship between concentration and prices have produced a wide variety of results that depend on the facts and circumstances in the industry studied. Some empirical research on railroads, for example, finds that two competitors are sufficient to produce the results one would expect in a competitive market.³⁹ Across a variety of industries, a number of studies find a positive relationship between concentration and prices, but not all do.⁴⁰ Laboratory experiments find that four sellers are usually enough to produce a competitive market outcome.⁴¹ In general, the results seem to vary across industries and with the type of information buyers and sellers have.

³⁷ Panelist Gary Bachula mentioned that his home in McLean, Virginia, cannot get DSL for this reason. Neither can my home in Falls Church, Virginia.

³⁸ In the past, cable television companies may have engaged in targeted predatory pricing, or at least significant price discrimination, when local franchising authorities forced potential entrants to disclose which areas the entrants intended to serve first. See Thomas W. Hazlett, *Predation in Local Cable TV Markets*, 40 ANTITRUST BULL. 609, 616-17 (1995). Since local franchising authorities do not have regulatory authority over broadband, this possibility is much less likely for broadband.

³⁹ Paul A. Pautler, *Evidence on Mergers and Acquisitions*, 48 ANTITRUST BULL., 181-82 (2003), and references cited therein.

⁴⁰ *Id.* at 189-95.

⁴¹ *Id.* at 200-01.

The DOJ/FTC Merger Guidelines reflect the fact that there is no simple or mechanical relationship between the number of competitors and the competitiveness of the market. The guidelines indicate that mergers in more concentrated markets face a heightened level of review, but such mergers can still be legal.⁴² The antitrust agencies try to take into account all relevant facts and circumstances in determining whether a merger would reduce competition and harm consumers.

A possible danger of oligopoly is that the firms might collude on prices or other terms of service. Thus far, experience with duopoly in cable TV, broadband, and telephone service suggests that even just two competitors often compete vigorously. Two decades of economic research find that the presence of a second wireline video competitor reduces rates by 15 percent or more. Competition from satellite and a second cable provider also prompted cable firms to increase the number of channels, upgrade plant to provide digital service, and otherwise improve the quality of service. A Government Accountability Office case study found that markets in which new broadband service providers compete with the existing cable and phone companies tend to have rates for video, Internet, and telephone service that are often lower than similar markets without such competition.⁴³

The idea that two broadband firms would compete vigorously makes some sense because the costs of these networks are largely fixed. The firms face strong pressures to cut prices, increase channel capacity, or offer other inducements to acquire or retain customers.

Multi-margin competition: Competition is not just about price, and in some cases price may be a much less important factor than various aspects of quality or performance. Performance, rather than price, might be the relevant attribute for identifying whether different service providers are in the same market or determining whether a firm has market power.⁴⁴

Competitive businesses seek to continually improve performance—or even develop new aspects of performance that were not previously thought capable of improvement. Cheap, or even free, service may not be a good deal if performance is inferior to alternatives that either exist now or may develop in the near future. For broadband, performance includes factors like:

⁴² See Section 1.5, Concentration and Market Shares. A copy of the guidelines is available at http://www.usdoj.gov/atr/public/guidelines/horiz_book/toc.html.

⁴³ Cable franchising issues are examined in great detail in Jerry Brito and Jerry Ellig, *Video Killed the Franchise Star: The Consumer Cost of Cable Franchising and Proposed Policy Alternatives*, 5 J. ON TELECOMM. & HIGH TECH. L. 199 (2006) and Thomas W. Hazlett, *Cable TV Franchises as Barriers to Video Competition*, 11 VIRGINIA J. LAW & TECH. (2006), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=889406. For information on Broadband Service Providers, see Government Accountability Office, TELECOMMUNICATIONS: WIRE-BASED COMPETITION BENEFITED CONSUMERS IN SELECTED MARKETS (2004).

⁴⁴ Christopher Pleatsikas and David Teece, *New Indicia for Antitrust Analysis in Markets Experiencing Rapid Innovation*, in Ellig (ed.), DYNAMIC COMPETITION AND PUBLIC POLICY 95-137 (2001).

- How fast is it?
- Do speeds slow if more users are on the system?
- How fast is the upload speed?
- How safe is my computer from intrusions by other network users?
- Can communications be intercepted?
- How effective are parental controls or other technologies customers might use to limit access?
- Does the presence of parental controls or filtering for other customers inhibit my ability to access what I want?
- Does the system have any features that protect copyrighted material?
- How good is the tech support, and what form does it take (phone, e-mail, Web, Internet chat, 24/7)?
- Is it wired or wireless?
- If wireless, can I receive the signal everywhere I want to use it, in all kinds of weather?
- What is the wireless range?
- Is the quality good enough to support voice?

In assessing market power, the FTC should consider whether price, performance, and/or some type of price/performance ratio best represents the most relevant margin(s) on which competition occurs.

Speed is perhaps the most measurable aspect of performance, and it illustrates the complexities of taking performance into account. The Appendix to this comment lists posted prices and maximum download speeds of various broadband services in 2005-06. Tremendous variation exists—from the 128 kbps offered by the slower wireless systems to the 30 mbps offered by some fiber and cable systems. Prices range from \$10/month to \$179/month. The price/performance ratio—price per kilobit of transmission speed—also varies greatly. Except for the relatively slow “entry level” DSL offerings, the phone companies’ DSL costs one or two cents per kilobit. Cable modem costs the same or less, and fiber optic service costs tenths of a cent per kilobit. Most of the wireless services cost between 5 and 15 cents per kilobit. In many cases, different services look like close substitutes, depending on whether one considers price, speed, or price/speed.

Contestability. Several panelists asserted that broadband access markets are “contestable.”⁴⁵ They appear to mean that the market is open to anyone who is willing to make the necessary investments.

In economic theory, a contestable market is one in which there are no “sunk costs.” A sunk cost is an up-front 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

⁴⁵ Presentation of Walter B. McCormick, Jr., Feb. 13, and presentation of Joseph W. Waz, Jr., Feb. 14.

monopolistic behavior; actual entry need not occur.⁴⁶ Broadband access markets are clearly not contestable, as this term is normally understood by antitrust and regulatory economists, because entrants must make substantial investments that they may not be able to recover. The mere possibility of entry, therefore, is unlikely to control market power fully. Instead, such control would have to 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.

Dynamic competition and entry. Dynamic competition has the potential to reduce the significance of sunk costs as a barrier to entry. The economic theory that identifies sunk costs as entry barriers assumes that incumbents and potential entrants all have access to the same technology so that all can produce at the same total cost. In dynamically competitive markets with heterogeneous firms, innovation allows new entrants to overcome some of the incumbent's sunk cost advantage. If a new entrant can provide service comparable to the incumbent's at a lower total cost, or if the entrant can offer new performance features that are valuable to consumers, then entry can occur even in the presence of sunk costs.

Some evidence indicates that dynamic competition may have reduced the significance of sunk costs as a barrier to entry in broadband. In many cases, the first firms to offer high-speed lines were cable companies selling cable modem service. They initially acquired a very high market share, but this market share corresponded to a tiny penetration rate as not many people subscribed. Cable modem's 60 percent market share at the end of 2004 corresponded to a penetration rate of only about 18 percent.⁴⁷

Phone companies offering DSL service were usually the second or third market entrants, and they gradually built a respectable market share. Phone companies had much lower broadband market shares than the cable companies enjoyed in the early years. In 2005, new DSL subscriptions (5.7 million) exceeded new cable modem subscriptions (4.2 million) for the first time.⁴⁸ This trend continued for the first half of 2006, which saw 3.1 million additional DSL lines compared to 2 million additional cable modems.⁴⁹ This was likely due to the substantial price reductions offered on DSL. DSL had a market share of 35 percent at midyear 2006.⁵⁰

⁴⁶ See William J. Baumol et. al., *CONTESTABLE MARKETS AND THE THEORY OF INDUSTRY STRUCTURE* (1982).

⁴⁷ Michael J. Balhoff and Robert C. Rowe, *MUNICIPAL BROADBAND: DIGGING BENEATH THE SURFACE* (2005), at 22. Since the first quarter of 2003, the percentage of households using DSL more than doubled, from 6 percent to 13.8 percent. The percentage using cable modem increased from 10.5 percent to 18.3 percent.

⁴⁸ Federal Communications Commission, Wireline Competition Bureau, Industry Analysis and Technology Division, *HIGH-SPEED SERVICES FOR INTERNET ACCESS: STATUS AS OF DECEMBER 31, 2005* (July 2006), at 2, available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-266596A1.pdf.

⁴⁹ Federal Communications Commission, Wireline Competition Bureau, Industry Analysis and Technology Division, *HIGH-SPEED SERVICES FOR INTERNET ACCESS: STATUS AS OF JUNE 30, 2006* (January 2007), at 2.

⁵⁰ Calculated from data *Id.*, Table 1.

Wireless enjoyed substantial growth in 2005 and the first half of 2006. The number of mobile wireless subscribers rose from 380,000 in June 2005 to 3.1 million by December 2005 and then to 11 million in June 2006.⁵¹ The FCC did not report mobile wireless subscribership in previous years, but by way of comparison, total subscribers to all wireless and satellite numbered 550,000 in 2004. Mobile wireless had a market share of 6.2 percent at the end of 2005 and 17 percent at midyear 2006.⁵² This is the principal reason cable modem's share fell to 44.1 percent. Wireless firms that plan to expand their broadband offerings after acquiring additional spectrum in the Advanced Wireless Service auction may be the next major players to offer a significant cost or quality improvement.

Entry prohibitions by government, on the other hand, can still deter entry by a firm that has a cost or quality advantage over the incumbent. DSL often sells at a lower price than cable modem, but the cable companies enjoyed a substantial lead over the phone companies due to uncertainty over the regulatory status of DSL service.⁵³ Since there are several significant government-erected entry barriers—most notably cable franchising and federal spectrum allocation for wireless services—it is not clear that dynamic competition has had as strong an effect on entry as it could have in the absence of these other barriers.

Dynamic competition and rivalry: When dynamic competition is possible, firms have additional reasons to engage in rivalry rather than collusion. In dynamic competition, the firm that first introduces a cost-reducing or quality-enhancing technology, feature, or service can temporarily earn higher profits, until its success is imitated. Broadband exhibits significant progress in price and speed, suggesting that dynamic competition is strong and collusion is weak.

Substantial price reductions have occurred in recent years. Between 2004 and 2005, Bellsouth cut the monthly price of 1.5 mb DSL from \$39.95 to \$32.95, a 17 percent drop. Qwest dropped its promotional price from \$26.99 to \$19.99 and extended the term from three months to a year. SBC cut its promotional price, good for a year, from \$26.95 to \$14.95.⁵⁴ Verizon Wireless reduced the monthly fee for wireless broadband service using a PC card by 25 percent, from \$79.99 to \$59.99.⁵⁵

Another indicator of dynamic performance competition in broadband is the rate at which maximum speeds have increased. In its first report on the extent of broadband deployment, the FCC noted that the maximum speeds were 3 mbps for cable modem

⁵¹ *Id.*, Table 1.

⁵² Calculated from figures *Id.*

⁵³ Thomas W. Hazlett et al., U.S. CHAMBER OF COMM., SENDING THE RIGHT SIGNALS: PROMOTING COMPETITION THROUGH TELECOMMUNICATIONS REFORM (2004) at 94-99, available at http://www.uschamber.com/NR/rdonlyres/et3cydgjplrxcg7goxb5tflazo2tw5hghhyplt7cu6wooge3bcnpqzx4bjeqb7ws5xqmgohikgclahl77gydqmnvb/0410_telecommstudy.pdf.

⁵⁴ Balhoff and Rowe, *supra* note 47, at 23.

⁵⁵ <http://www.verizonwireless.com/b2c/mobileoptions/broadband/index.jsp?action=broadbandAccess>.

service, 1.5 mbps for DSL, and under 500 kbps for satellite.⁵⁶ Speeds have obviously improved greatly since then. Between 2004 and 2005, a number of major broadband providers increased the speed of their service. SBC increased the upload speed of its DSL service threefold, from 128k to 384k. Cablevision increased its download speed from 5 mb to as much as 10 mb. Comcast increased its download speed from 3 mb to 4 mb and its upload speed from 256k to 384k. Time Warner increased download speed from 3 mb to as much as 8 mb.⁵⁷ These changes represent performance improvements of between 25 percent and 200 percent—in one year. In 2006, company web pages indicated further improvement in maximum speeds. Comcast offered a maximum download speed of 6 mb, Cox offered 15 mb, and Cablevision offered 30 mb.⁵⁸

Dynamic competition and profits: Successful competitors appear to earn “rents,” payments that exceed the opportunity cost of the resources the firm uses.⁵⁹ The prospect of earning these rents, however, is the prize that motivates firms to strive for superior performance. Profits that appear to be “mere rents” after the competitive process has revealed which competitors are successful may actually be a risk premium or a return to the firm’s investment in unique capabilities. Restrictive or discriminatory business practices may be the most effective means of generating these rents. As a result, business practices, which at first glance appear “merely” to transfer wealth from consumers to broadband firms, may actually be the means by which the firm collects its reward for successful innovation. Dynamic competition theory suggests that such practices should be given the benefit of the doubt if they do not demonstrably reduce economic efficiency.

B. Terminating access monopoly

The economists’ panel on Day 1 of the workshop raised a market power issue potentially distinct from the vertical issues discussed above. In the economics of telecommunications, this is called the “terminating access monopoly.”

1. The problem defined

At any point, the local phone company that provides the individual subscriber with access to the rest of the telephone network has a monopoly over access to that individual. An unregulated company could exploit this position by charging all other carriers high rates to terminate calls to its customers. Competition may not curb this practice because the callers ultimately paying the termination charges are not customers of the network that is imposing the charges.⁶⁰ A customer who initiates a long-distance call, for example, is the customer of the long-distance company, which pays an access charge to the call

⁵⁶ FCC, BROADBAND REPORT 1999, CC Docket No. 98-146 (January 28, 1999).

⁵⁷ Balhoff and Rowe, *supra* note 47, at 23.

⁵⁸ See Appendix for statistics and data sources.

⁵⁹ Harold Demsetz, *Industry Structure, Market Rivalry, and Public Policy*, 16 J. LAW & ECON. 1 (1973).

⁶⁰ Jerry Ellig, *Intercarrier Compensation and Consumer Welfare*, 2005 U. ILL. J.L. TECH & POL’Y 97 (2006), available at

http://www.mercatus.org/repository/docLib/MC_RSP_RPTJIntercarrierComp_060303.pdf.

recipient's local phone company. The recipient does not see this access charge, and so the recipient has little incentive to select a local phone company that imposes low access charges.

Economic theory suggests several ways in which terminating access monopoly can ultimately harm consumers. First, an established incumbent firm facing an entrant that initially serves only a small portion of the market can find it profitable to charge a very high access price that effectively curbs the entrant's ability to compete, thus cornering the market.⁶¹ Second, access charges can facilitate collusion on retail prices when networks charge customers per call or by another unit of usage.⁶² Third, access charges could end up increasing the price of a service whose demand is very price-sensitive while reducing the price of a service whose demand is not very sensitive to price. This reduces overall consumer welfare, because the cost to consumers who cut back on the purchase of the price-sensitive services is much larger than the gains to consumers who buy more of the service whose demand is not sensitive to price. Historically, access charges on long-distance phone service have had precisely this effect.⁶³

One solution to this problem advocated by many telecommunications economists is mandatory interconnection at a zero price, also known as "bill and keep." Phone companies would have to interconnect, but they could not impose access charges on each other or on each others' customers; each company's revenues would come solely from its own customers.⁶⁴

2. Is Internet access analogous to telecommunications?

The economists' panel discussion suggested that Internet access may suffer from an analogous problem, with an analogous solution. If broadband Internet access providers can charge content or applications providers when customers download their content or applications, they are similar to local phone companies that impose access charges. Since consumers see only the price of Internet access—not the charges imposed on the content or applications providers—they may have little incentive to shop for an access provider who charges content or applications providers the most competitive rates. Instead, the costs of these access charges are spread among all the customers of the content or applications providers. If the Internet access provider happens to sell some similar content or applications, it may even find itself in a position to raise its rivals' costs by charging them for access to its customers.⁶⁵ Mandatory interconnection, coupled with a

⁶¹ Jean-Jacques Laffont, Patrick Rey, & Jean Tirole, *Network Competition: I. Overview and Nondiscriminatory Pricing*, 29 RAND J. ECON. 1, 19–20 (1998).

⁶² Jean-Jacques Laffont, Patrick Rey, & Jean Tirole, *Competition Between Telecommunications Operators*, 41 EUR. ECON. REV. 701, 704–05 (1997).

⁶³ See Jerry Ellig, *Costs and Consequences of Federal Telecommunications Regulation*, 58 FED. COMM. L.J. 37, 52–56 (2006), and references cited therein, available at http://www.mercatus.org/repository/docLib/MC_RSP_RPTJTelecomCostsandConseq_060307.pdf.

⁶⁴ The author of this comment has in fact advocated "bill and keep" as the appropriate policy to govern interconnection of telephone networks. For a more extensive analysis, see Ellig, *supra* note 60.

⁶⁵ Joseph Farrell raised this possibility in his presentation on Feb. 13.

“bill and keep” policy that prevents Internet access providers from charging anyone other than their own customers, could curb the terminating access monopoly. This looks a lot like many of the net neutrality proposals.

Despite seeming similarities, the analogy is inapposite. Broadband Internet contrasts markedly with the economic environment and institutional structure in telecommunications. In telecommunications, “bill and keep” would remedy a problem created by the historical legacy of pre-existing price regulation and incumbent local phone companies’ “provider of last resort” obligations. Basic local telephone service is still subject to regulation that holds prices below some measure of long-run incremental cost for many customers.⁶⁶ Competitive local carriers must also hold their prices for local service artificially low, because they are competing with incumbents who are required by regulation to sell basic local phone service at prices that are often below cost. Usage-based access charges from long-distance service, which exceed the costs of switching, help cover the costs of the local network that local rates do not cover.⁶⁷ Since demand for local phone service is not very sensitive to price, but demand for long-distance minutes is, bill-and-keep pushes the regulated price structure in the direction that maximizes consumer welfare.

Bill-and-keep counteracts additional perverse incentives created by law and regulation that are unique to telecommunications. Laws and regulations that prevent itemized pass-through of termination charges inhibit market-based solutions to terminating access monopoly. The situation facing long-distance carriers illustrates the general problem. Federal law and regulation require that interexchange carriers offer rural customers the same rates as urban customers and charge the same rates in all states.⁶⁸ These requirements force long-distance carriers to average access charges over all customers. Thus, the access charge regime concentrates benefits on local phone companies that collect high access charges while dispersing costs among all long-distance customers.

In the absence of such requirements, the long-distance companies could flow excessive terminating access charges to the customer who receives each call. Competition between local phone companies would help keep terminating access charges low for that segment of customers who desire low terminating access charges. When laws and regulations prevent consumers from seeing the full price associated with their choice of local telephone company by averaging access charges across all of the long-distance company’s customers, it should be no surprise that excessive access charges emerge.

⁶⁶ Robert W. Crandall & Leonard Waverman, WHO PAYS FOR UNIVERSAL SERVICE?: WHEN TELEPHONE SUBSIDIES BECOME TRANSPARENT (2000), at 109-127; Robert W. Crandall & Jerry Ellig, Tex. Pub. Policy Found., TEXAS TELECOMMUNICATIONS: EVERYTHING’S DYNAMIC EXCEPT THE PRICING (2005), at 38, available at <http://www.texaspolicy.com/pdf/2005-01-telecom.pdf>.

⁶⁷ See, e.g., Billy Jack Gregg, *A Survey of Unbundled Network Element Prices in the United States*, THE NAT’L REG. RES. INST. tbl. 2 (July 2003) (showing in column G of Table 2A that cost-based unbundled network element switching rates are usually in tenths of a cent per minute).

⁶⁸ See Federal Communications Commission, *Developing a Unified Inter-carrier Compensation Regime, Further Notice of Proposed Rulemaking*, 20 F.C.C.R. 4685 para. 83 (2005).

No similar regulations exist in the market for Internet service. If an Internet access provider imposes a fee on content or applications providers, the content or applications providers can choose to pass this cost directly to the users of their services who subscribe to that particular Internet access provider. The consumer would see the full price charged by the Internet access provider and could respond accordingly. Competition in the Internet access market then becomes the key to preventing exploitation of the terminating access monopoly.

3. Is Internet access a “two-sided” market?

If Internet access providers could charge application or content providers to reach their customers, then the economics literature on “two-sided markets” may become relevant. Like net neutrality, the concept of a two-sided market has varying definitions. In general, a two-sided market is one in which an intermediary connects two different groups of customers, and the value of the service to each customer depends on how many and what type of customers are on the “other” side of the market. Dating services, newspapers, stock exchanges, computer operating systems, Internet search engines, and credit card networks are commonly-cited examples of two-sided markets.⁶⁹

Evaluating market power in a two-sided market requires assessment of both sides of the market. If the Internet access market is competitive, for example, it is difficult to understand why any rents the access providers might earn from charges on content or applications providers would not be rebated to consumers in the form of lower prices for Internet access.⁷⁰ Evans and Noel outline the issue:

Suppose that in a market without multihoming [i.e., each Internet user connects via only one access provider], there is limited competition on side A because customers cannot easily switch between vendors on that side, but there is intense competition on side B because customers can and do switch between vendors based on price and quality. If competitors on side B cannot differentiate their products and otherwise compete on an equal footing, then the ability to raise prices on side A will not lead to an increase in profits. Any additional profits on side A will be wiped away by competition on side B.⁷¹

Competition in Internet access might not prevent access providers from charging content or applications providers from access to their customers. But it should help ensure that such charges will occur only when they improve consumer welfare. Charges imposed by Internet access providers on content or applications providers might improve consumer welfare, for several reasons.

⁶⁹ David S. Evans and Michael Noel, *Defining Antitrust Markets When Firms Operate Two-Sided Platforms*, 2005 COL. BUS. L. REV. 667 (2005), at 674-84.

⁷⁰ See presentation by Marius Schwartz, Feb. 13.

⁷¹ Evans and Noel, *supra* note 69, at 695.

The simplest is demand-sensitive pricing to cover fixed costs. In the presence of fixed costs that must be covered via a markup over marginal costs, the pricing structure that maximizes consumer welfare is one which imposes a higher markup over marginal cost on services whose demand is less sensitive to price.⁷² This is also, in general, the more profitable pricing strategy for the firm. In two-sided markets, a similar type of pricing arrangement occurs: “[T]he side with less elastic demand will typically face the higher price, because raising the price for those with more elastic demand will lead to more lost sales.” In addition, the side of the market that pays the lower price tends to be whichever side creates the most value for the other side when it uses more of the service.⁷³ Therefore, if customers who use Internet content or applications are more price-sensitive, and if an increase in subscription by this group tends to create a lot of value for content and applications providers, then an Internet access provider would likely want to reduce prices or offer other inducements that increase subscription if it gained the ability to charge applications or content providers.

Whether a higher price for some content or applications, coupled with a lower price for Internet access, would improve consumer welfare, is an empirical question. However, studies that estimate the elasticity of demand for broadband service are suggestive. Several studies find that the elasticity of demand for DSL broadband service exceeds -1; that is, a 1 percent change in price leads to a greater than 1 percent change in subscribership.⁷⁴ Most attempts to measure the overall elasticity of demand for broadband—not just DSL—have found that it is highly elastic, ranging from -1.5 to -3.76.⁷⁵ If elasticities of demand for at least some content or applications are lower than this, then allowing Internet access providers to charge content or applications providers could increase consumer welfare simply by recovering more of the fixed costs from the less price-sensitive services.

There are additional opportunities to improve consumer welfare if some content or applications function better when their data packets receive a higher priority of service. Charging a premium for better service allows the Internet service provider to cover the costs associated with such service and allocate scarce capacity to uses that consumers value more highly. Consumers might have to pay higher prices for content or applications if the provider has to pay the Internet service provider a fee for priority service.

⁷² See Ramsey, *supra* note 35.

⁷³ Timothy J. Muris, *Payment Card Regulation and the (Mis)Application of the Economics of Two-Sided Markets*, 2005 COL. BUS. L. REV. 515 (2005), at 519. The principal difference between Ramsey pricing and elasticity-sensitive pricing in two-sided markets is that, unlike Ramsey pricing, optimal pricing in two-sided markets may not be related to marginal cost. One side of the market may even receive a “subsidy” due to the value it creates for the other side.

⁷⁴ Robert W. Crandall, J. Gregory Sidak, and Hal J. Singer, *The Empirical Case Against Asymmetric Regulation of Broadband Internet Access*, 17 BERKELEY TECHNOLOGY LAW JOURNAL (Summer 2002) at 973-74; Robert W. Crandall, Robert W. Hahn, and Timothy J. Tardiff, *The Benefits of Broadband and the Effect of Regulation*, in Robert W. Crandall and James H. Alleman (eds.), *BROADBAND* (Washington, DC: The Brookings Institution, 2002) at 301 and references cited therein.

⁷⁵ Austan Goolsbee, *Subsidies, the Value of Broadband, and the Importance of Fixed Costs*, in Crandall and Alleman at 283-84.

Competition among content and applications providers helps ensure that the higher-priced service will survive only if the additional value to consumers exceeds the additional cost.

The two-sided markets literature may hold many other complex implications for the study of net neutrality.⁷⁶ But one familiar point is clear: if the Internet is a two-sided market, competition in the market for Internet access plays a key role in safeguarding overall consumer welfare.

V. Recommendations

The FTC has much to contribute to the net neutrality debate. One of the most productive contributions would be a report on net neutrality that employs the regulatory analysis framework widely used in other agencies throughout the federal government. The report should:

- conduct a thorough regulatory analysis: defining specific outcomes that broadband policies are supposed to produce, assessing evidence of market failure, identifying the uniquely federal role, comparing the effectiveness of alternative policies, examining the costs of alternative policies, and comparing costs with outcomes;
- assess the likely speed and effects of entry in the absence of government-imposed entry barriers;
- take account explicitly of the effects of dynamic competition when assessing the competitiveness of broadband access markets;
- conduct a thorough analysis of the effects of alternative policies on consumer welfare; and
- include an evidence-based economic analysis of the effects of alternative policies on other important values articulated by stakeholders in the net neutrality debate.

In addition, the FTC should aggressively pursue research and advocacy initiatives that would remove barriers to entry into broadband access markets. Enhanced competition is the one policy option that appears to have the potential to simultaneously advance most if not all of the different values enunciated by the stakeholders represented at the workshop.⁷⁷ Not a single panelist argued that more competition would be a bad thing. The principal point of disagreement was not whether removal of entry barriers would be salutary, but whether increased competition would on its own be sufficient to safeguard consumer welfare and other values.⁷⁸

⁷⁶ Especially enlightening in this regard is the 2005 symposium published in the *COLUMBIA BUSINESS LAW REVIEW* and the economic analyses cited therein.

⁷⁷ Panelist Simon Wilkie, for example, noted that cell phone companies restrict the video content users can access, but the real source of this problem is scarcity of spectrum.

⁷⁸ Panelists skeptical that competition could solve the problems they saw in broadband markets in the near future included Jeannine Kenney, Gigi Sohn, and Paul Misener.

Promotion of competition would be consistent with the FTC's core mission and the historic thrust of its competition advocacy program. The FTC has already taken the first step with its report on municipal provision of wireless Internet service.⁷⁹ The report effectively addresses the subtle and difficult competition policy issues that accompany government provision or encouragement of a service. Other topics for research or advocacy include spectrum policy, cable franchising, and broadband over powerlines.

A. Spectrum

Before any competitor can offer wireless Internet services, it must acquire a license to use some specific portion of the electromagnetic spectrum. Federal policy determines how much spectrum can be used for various purposes, such as broadcasting or wireless communications. The FCC then allocates spectrum licenses to specific users. In the case of commercial wireless services, such as cell phones or Internet services, the FCC uses auctions to allocate spectrum licenses.

The federal government affects the price of wireless telephone and Internet services by determining how much spectrum these services can use. The fact that the commercial wireless companies must now purchase licenses through auctions does not increase the prices consumers pay for wireless services; auctions merely allow the government to collect some of the profit from the firms using the spectrum.⁸⁰ But by creating an artificial scarcity of spectrum, a critical input, regulators increase the prices that wireless firms can charge consumers by reducing the supply of wireless services. These price increases and resulting consumer welfare losses would occur regardless of whether the FCC awarded licenses through auctions, hearings, or lotteries.⁸¹

The explosive growth of wireless service in the 1990s demonstrates how spectrum policy can have large effects on consumer welfare. In the 1980s, the federal government licensed only two cellular providers in each market.⁸² In 1993, Congress directed the FCC to auction some additional spectrum for wireless communications services, and the FCC responded by auctioning almost twice as much spectrum as it had already allocated to cell phone service, effectively making room for six wireless providers.⁸³ Between 1984 and 1995, when there were just two cell phone companies per market, inflation-adjusted rates fell by an average of between 3 and 4 percent annually.⁸⁴ Entry of new competitors

⁷⁹ MUNICIPAL PROVISION OF WIRELESS INTERNET, FTC STAFF REPORT (Sept. 2006), available at <http://www.ftc.gov/os/2006/10/V060021municipalprovwirelessinternet.pdf>.

⁸⁰ See Evan Kwerel, FCC, SPECTRUM AUCTIONS DO NOT RAISE THE PRICE OF WIRELESS SERVICES: THEORY AND EVIDENCE (2000), available at <http://wireless.fcc.gov/auctions/data/papersAndStudies/SpectrumAuctionsDoNotRaisePrices.pdf>.

⁸¹ In economic terminology, federal spectrum policy shifts the supply curve of wireless services downward (to the left).

⁸² Robert W. Crandall & Jerry A. Hausman, *Competition in U.S. Telecommunications Services: Effects of the 1996 Legislation*, in DEREGULATION OF NETWORK INDUSTRIES: WHAT'S NEXT? (Sam Peltzman & Clifford Winston eds., 2000), at 102.

⁸³ *Id.* at 102–03.

⁸⁴ *Id.* at 103.

prompted price reductions averaging 17 percent annually between 1995 and 1999.⁸⁵ The value that wireless telephone service has created for consumers is truly staggering. One estimate suggests that consumers valued the first generation of cell phone service at \$50 billion per year.⁸⁶ Economic studies find that allocating additional spectrum for commercial wireless services would generate enormous increases in consumer welfare. A 2004 study estimated that reallocating up to 200 MHz of spectrum to mobile wireless services—slightly more than double the amount allocated to these services at the time—would generate an increase in consumer welfare of \$77.4 billion per year.⁸⁷

A truly market-based approach would allow market transactions to allocate spectrum. Potential users could buy or lease spectrum, then choose how to use it. Market transactions and users' decisions rather than regulatory proceedings would determine the amount of spectrum allocated to wireless telephone, broadcasting, broadband, and other services. As Ronald Coase noted in 1959:

Certainly, it is not clear why we should have to rely on the Federal Communications Commission rather than the ordinary pricing mechanism to decide whether a particular frequency should be used by the police, or for a radiotelephone, or for a taxi service, or for an oil company for geophysical exploration, or by a motion-picture company to keep in touch with its film stars or for a broadcasting station. Indeed, the multiplicity of these varied uses would suggest that the advantages to be derived from relying on the pricing mechanism would be especially great in this case.⁸⁸

Empirical studies using international data find countries that treat spectrum more like property have more spectrum available for wireless service, less market concentration, lower prices, and greater output of wireless services.⁸⁹ Many countries allocate much more “flexible use” spectrum via auctions than the United States does.⁹⁰ Indeed, the United Kingdom in December 2006 announced plans to auction an additional 400 MHz of spectrum that could be used for any purpose.⁹¹ Short of the Coasean ideal, the federal

⁸⁵ *Id.*

⁸⁶ See Jerry A. Hausman, *Valuing the Effect of Regulation on New Services in Telecommunications*, in 1997 BROOKINGS PAPERS ON ECONOMIC ACTIVITY. MICROECONOMICS 2 (Martin N. Baily et al. eds., 1998), available at http://econ-www.mit.edu/faculty/download_pdf.php?id=470.

⁸⁷ See Thomas W. Hazlett et al., *SENDING THE RIGHT SIGNALS: PROMOTING COMPETITION THROUGH TELECOMMUNICATIONS REFORM* (Washington, DC: U.S. Chamber of Commerce, 2004) at 69, available at http://www.uschamber.com/NR/rdonlyres/et3cydgiplrxcg7goxb5tlflazo2tw5hghhyplt7cu6wooge3bcnpqzx4bjeqb7ws5xqmgohikgclahnl77gydqmnvb/0410_telecommstudy.pdf.

⁸⁸ Ronald H. Coase, *The Federal Communications Commission*, 2 J.L. & ECON. 1, 16 (1959).

⁸⁹ See, e.g., Thomas W. Hazlett, Giancarlo Ibárgüen S, and Wayne A. Leighton, *Property Rights to Radio Spectrum in Guatemala and El Salvador: An Experiment in Liberalization*, Manuscript (Oct. 3, 2006); Thomas W. Hazlett and Robert E. Munoz, *What Really Matters in Spectrum Allocation Design* (AEI-Brookings Joint Center for Regulatory Studies, Working Paper No. 04-16, 2004), available at http://mason.gmu.edu/~thazlett/pubs/What%20really%20matters_hazlett.pdf; Thomas W. Hazlett, *Property Rights and Wireless License Values 4* (AEI-Brookings Joint Center for Regulatory Studies, Working Paper No. 04-08, 2004), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=519602.

⁹⁰ *Id.*

⁹¹ See <http://www.techliberation.com/archives/041444.php>.

government could increase the flexibility of spectrum allocation, thus increasing the amount of spectrum that could be available for wireless services, including broadband Internet service. FTC initiatives that could further this goal might include:

- A definitive study assessing the effects on consumer welfare of making more spectrum available for wireless services. Such a study could project the likely effects of the recently-concluded auction of spectrum for advanced wireless services. But it should also evaluate the additional benefits of making more spectrum available for wireless services. Both licensed and unlicensed spectrum could be considered. Indeed, the study could be especially valuable if it sheds light on the relative merits of licensed vs. unlicensed spectrum.
- Research and advocacy relevant to the FCC's recent proposal to grant a single, nationwide spectrum license for public safety communications services to a nonprofit entity.⁹² This proposal raises multiple competition policy issues that the FTC has unique expertise to address. The new communications network would be the only seller of communications services to public safety agencies that would have a nationwide spectrum license, raising potential monopoly concerns. In addition, the network could sell wireless communications services to non-public safety users (who would have a lower level of priority) in competition with commercial providers. Since the public safety agencies will control the nonprofit entity, it looks like a government-owned enterprise that holds a monopoly in one market and competes with commercial businesses in other markets.⁹³ Research and advocacy on this topic would continue an FTC tradition that stretches from the 2006 municipal wireless report all the way back to advocacy comments on the U.S. Postal Service's proposed E-Comm service.⁹⁴
- Research on the consumer welfare effects of allowing federal spectrum users to lease their spectrum to other users.⁹⁵ Currently, federal agencies get to use their spectrum for free, and they cannot sell or lease this valuable asset. As a result,

⁹² FCC, *In the Matter of Implementing a Nationwide, Broadband, Interoperable Public Safety Network in the 700 MHz Band*, PS Docket No. 06-229, NINTH NOTICE OF PROPOSED RULEMAKING (Dec. 20, 2006), available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-06-181A1.pdf.

⁹³ For an analysis of the public safety interoperability problem the FCC is trying to solve, see Jerry Brito, *Sending Out an S.O.S.: Public Safety Communications Interoperability as a Collective Action Problem*, ___ FED. COMM. LAW J. (forthcoming 2007), available at http://www.mercatus.org/repository/docLib/20061211_SENDING_OUT_AN_S.O.S._-Brito.pdf. The Mercatus Center and Information Economy Project of the National Center for Technology and Law at the George Mason University School of Law sponsored a symposium on public safety communications interoperability on December 8, 2006 that explored the issues in depth; papers are available at http://www.mercatus.org/Events/eventID.408.cfilter.0/event_detail.asp.

⁹⁴ The generic issue is addressed in David E. M. Sappington and J. Gregory Sidak, *Incentives for Anticompetitive Behavior by Public Enterprises*, 22 REV. IND. ORG. 183 (2003).

⁹⁵ The National Telecommunications and Information Administration is studying whether federal spectrum users can lease their spectrum to others and whether federal users should be charged user fees for the spectrum they use. See Charles H. Kennedy, *United States: Communications Law Bulletin, December 2006/January 2007*, available at <http://www.mondaq.com/article.asp?articleid=45990&lastestnews=1>.

they face few incentives to use spectrum efficiently. Similarly, public safety agencies receive their spectrum free of charge, and they cannot lease unused spectrum to others. Spectrum that might be used to produce very valuable services for consumers is instead locked into possibly low-value government uses, or used very little. Leasing could make some of this spectrum available for consumer-oriented wireless services.

B. Cable franchising

Cities, counties, and other local franchising authorities control entry into cable television service because they control access to the public rights-of-way. Federal law requires that “cable operators” must acquire a local franchise before they can provide service.⁹⁶ Local franchising impedes entry into wireline video service. A Government Accountability Office case study of new competitive broadband service providers, which offer both video and Internet service, identified several factors that influence these new entrants’ decisions to compete in a given market.⁹⁷ Among other factors, the entrants said they tend to choose cities where local officials actually welcomed competition and made the franchising process easy. Key barriers identified by the competitors include lengthy processing times for franchise applications, franchise fees, the cost of construction permits, and state “level playing field” laws, which require new franchisees to agree to terms and conditions at least as onerous as those imposed on the incumbent.⁹⁸ Cities eager to see new competition have approved franchise agreements in as little as 120 days, whereas competitors have abandoned their applications in other cities after waiting two and one-half years.⁹⁹ Even seemingly symmetric requirements can actually disadvantage competitors. For example, requiring a competitor to meet the same buildout schedule in the entire service area as the incumbent ignores the fact that the incumbent likely fulfilled this requirement when the metropolitan area was smaller, and then gradually added facilities as population grew.¹⁰⁰ At the very least, entrants view restrictive franchising as one significant factor that discourages market entry.

Economic studies estimate that widespread wireline video competition would increase consumer welfare by between \$6.5 billion and \$14 billion annually.¹⁰¹ Not all of these benefits would instantaneously materialize if franchising were removed, and other factors may also impede wireline video entry. Nevertheless, the magnitude of the numbers suggests that the franchising barrier to entry deserves careful examination.

⁹⁶ 47 U.S.C. § 541(b) (2000).

⁹⁷ GOVERNMENT ACCOUNTABILITY OFFICE, TELECOMMUNICATIONS: WIRE-BASED COMPETITION BENEFITED CONSUMERS IN SELECTED MARKETS 20-21 (2004).

⁹⁸ *Id.*

⁹⁹ *Id.*

¹⁰⁰ *Id.* at 25.

¹⁰¹ *See* Brito and Ellig, *supra* note 43, at 223-29.

Cable franchising also impedes entry into markets for broadband Internet access, because many new entrants seek to offer a “triple play” of voice, Internet, and video services. The most notable new entrants into video are the incumbent telephone companies. However, the “triple play” originated with smaller “broadband service providers,” which sprung up after the Telecommunications Act of 1996.¹⁰² If a provider cannot offer video services due to cable franchising, it must cover the costs of its network by selling only voice and Internet service, in competition with cable companies that can sell all three.

Cable franchising presents several research and advocacy opportunities:

- The Communications Act states that a local franchise authority “may not grant an exclusive franchise and may not unreasonably refuse to award an additional competitive franchise.”¹⁰³ The FCC recently adopted rules to clarify what types of behavior by franchise authorities constitute an “unreasonable” refusal.¹⁰⁴ Almost immediately, cities claimed that the FCC exceeded its authority under the Communications Act and will likely appeal the FCC’s rules.¹⁰⁵ The FTC should vigorously support the FCC’s rules, which reduce the barrier to entry posed by local franchising.
- Several states (including California and Texas) have adopted simplified state-level cable franchising systems that provide an alternative to local franchising authorities. Other states, such as Virginia, have adopted other reforms intended to prompt local governments to grant franchises more expeditiously. States thus provide cross-sectional variation that the FTC could use to study the effects of different cable franchise reforms, both in the market for video and for Internet access. Useful questions to address would include how quickly competitors enter after franchise liberalization, how entry affects prices and quality for both video and Internet services, and the differential impact of different types of reforms. The results of such a study should be of great interest to states that are considering franchise reform. At a minimum, the FTC could engage in competition advocacy in favor of franchise reform, based on 20 years’ worth of existing empirical studies that document the positive effects of cable competition on consumer welfare.¹⁰⁶

C. Broadband over powerlines

¹⁰² RCN, which operates in the Washington, DC, area, is one such broadband service provider. See www.rcn.com.

¹⁰³ 47 U.S.C. § 541(a)(1) (2000).

¹⁰⁴ *FCC Adopts Rules to Ensure Reasonable Franchising Process for New Video Market Entrants*, press release (Dec. 20, 2006), available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-269111A1.pdf.

¹⁰⁵ Associated Press, “Local Governments Oppose FCC on Cable Rules” (Jan. 28, 2007), available at <http://www.msnbc.msn.com/id/16859967/>.

¹⁰⁶ These studies are summarized in Brito and Ellig, *supra* note 43, at 208-12.

States exercise significant influence over an electric utility's decision to offer broadband over powerlines. The Texas legislature, for example, authorized electric utilities to offer broadband over powerlines through affiliates or agreements with unaffiliated entities, established a regulatory framework governing broadband over powerlines, and insulated the framework from municipal regulation.¹⁰⁷ In California, the Public Utilities Commission issued an order establishing a regulatory framework to govern broadband over powerlines in 2006. Topics addressed include affiliate relationships, pole attachment fees, additional lease payments to the utility, and mechanisms for sharing these payments with utility ratepayers.¹⁰⁸

As these two examples show, states are grappling with two types of issues in regard to broadband over powerlines that lie squarely within the FTC's expertise. First is the general consumer welfare interest in removing entry barriers that might discourage broadband over powerlines. Second is the delicate balance that must be struck when a regulated monopoly enters competitive businesses. Promotion of overall consumer welfare requires that the monopoly must be prevented from subsidizing its competitive businesses. Regulatory policies that attempt to make broadband over powerline consumers subsidize monopolized services must also be resisted. Saddled with requirements to subsidize other services, broadband over powerlines would be a less potent competitive threat to other broadband providers. In addition, forcing a service whose demand is price-sensitive (broadband) to subsidize a service whose demand is not very price-sensitive (electricity) would likely diminish overall consumer welfare. The FTC has significant expertise relevant to state decisions affecting broadband over powerlines, and it should not be shy about bringing that expertise to the attention of state legislators and public utility commissions.

IV. Conclusion

"If not us, who? If not now, when?"
—Ronald Reagan

The FTC should be commended for providing a forum for critical analysis of all sides' arguments on the net neutrality issue. The FTC could significantly improve the quality of the net neutrality debate by producing a report that:

- conducts a thorough regulatory analysis: defining specific outcomes that broadband policies are supposed to produce, assessing evidence of market failure, identifying the uniquely federal role, comparing the effectiveness of alternative policies, examining the costs of alternative policies, and comparing costs with outcomes;
- assesses the likely speed and effects of entry in the absence of government-imposed entry barriers;

¹⁰⁷ See Texas Senate Bill 5, enacted in 2005.

¹⁰⁸ California Public Utilities Commission, Rulemaking 05-09-006, OPINION IMPLEMENTING POLICY ON BROADBAND OVER POWERLINES (Decision 06-04-070, April 27, 2006).

- takes account explicitly of the effects of dynamic competition when assessing the competitiveness of broadband access markets;
- conducts a thorough analysis of the effects of alternative policies on consumer welfare; and
- includes an evidence-based economic analysis of the effects of alternative policies on other important values articulated by stakeholders in the net neutrality debate.

In addition, the FTC should aggressively pursue research and advocacy initiatives that would remove barriers to entry into broadband access markets. Such initiatives would be worthwhile regardless of whether the FTC finds that entry is a sufficient solution to any problems in the broadband market, or just part of the solution. Potential projects include:

- **Spectrum policy:** Assess the effects on consumer welfare of freeing significantly more spectrum for provision of wireless communications services; conduct research and competition advocacy relevant to the FCC's recent proposal to grant a single, nationwide spectrum license for public safety communications; and analyze the effects of allowing federal users of spectrum to lease that spectrum to others.
- **Cable franchising:** Support the recently-approved FCC rules that reduce the barrier to entry created by local cable franchising; analyze the effects on both cable and broadband consumers of recent state reforms of cable franchising; and engage in competition advocacy to inform future reform efforts at the state level.
- **Broadband over powerlines:** Supply expert analysis to state legislatures and public utility commissions that are working to establish a regulatory framework authorizing and governing broadband over powerlines.

The net neutrality issue offers the FTC an historic opportunity to leave a lasting legacy of sound, reasoned analysis on a highly visible issue with significant effects on consumer welfare. Because no particular policy has yet been set in stone (or legislation), now is the most propitious time for a thorough examination of alternatives.

Appendix: Broadband Prices and Speeds

Government Systems			Download Speed (kilobits/sec.)	Price/ Kilobit
Location	Name	Monthly Fee		
Wireless				
Cupertino, CA	MetroFi	\$19.95	1000	\$0.020
Rochelle, IL	Rochelle Muni. Utils.	\$74.95	256	\$0.293
		\$94.95	512	\$0.185
		\$39.95	1000	\$0.040
Richmond, IN	Richmond Pwr. & Lt.	\$39.95	1000	\$0.040
Scottsburg, IN	Scottsburg C3bb	\$35.00	512	\$0.068
		\$70.00	1000	\$0.070
		\$29.95	384	\$0.078
Tell City, IN	Tell City Elec. Dept.	\$44.95	768	\$0.059
		\$84.95	1540	\$0.055
		\$37.00	512	\$0.072
Western Kansas	Wheatland Electric	\$37.00	512	\$0.072
Owensboro, KY	Owensboro Muni. Utils.	\$87.00	1000	\$0.087
		\$29.99	512	\$0.059
Vivian, LA, and Linden, TX	Fastline Internet	\$10.00	64	\$0.156
Alexandria, MN	Alex. Bd. of Pub. Wks.	\$60.00	1000	\$0.060
		\$29.95	128	\$0.234
Buffalo, MN	Buffalo Muni. Util.	\$39.95	512	\$0.078
		\$9.99	192	\$0.052
Chaska, MN	City-owned ISP	\$16.00	1000	\$0.016
Grand Haven, MI	Ottawa Wireless	\$15.00	100	\$0.150
		\$45.00	512	\$0.088
Carthage, MO	Ecarthage.com	\$39.95	1000	\$0.040
Marshall, MO	Marshall Muni. Utils.	\$30.00	250	\$0.120
		\$70.00	500	\$0.140
		\$105.00	750	\$0.140
Rio Rancho, NM	Azulstar	\$20.00	256	\$0.078
		\$40.00	1500	\$0.027
		\$80.00	4000	\$0.020
Floresville, TX	Floresville Elec. Lt. & Power	\$49.95	128	\$0.390
		\$59.95	256	\$0.234
		\$69.95	384	\$0.182
		\$89.95	512	\$0.176
		\$105.95	768	\$0.138
		\$155.95	1024	\$0.152
Benton County, WA	Maverick Wireless	\$199.95	1536	\$0.130
		\$19.95	128	\$0.156
		\$34.95	512	\$0.068
Southeast WA	Columbia Rural Electric	\$49.95	1000	\$0.050
		\$40.00	256	\$0.156
Sun Prairie, WI	Sun Prairie Wtr./Lt.	\$260.00	1500	\$0.173
		\$35.00	768	\$0.046

Government Systems

Location	Name	Monthly Fee	Download Speed (kilobits/sec.)	Price/Kilobit
Cable Modem				
Opp, AL	Opp Cablevision	\$24.95	256	\$0.097
		\$34.95	512	\$0.068
		\$44.95	1024	\$0.044
Scottsboro, AL	Scottsboro Elec Pwr Bd	\$31.00	512	\$0.061
		\$43.00	1500	\$0.029
		\$58.00	3000	\$0.019
Ketchikan, AK	Ketchikan Pub Util	\$47.95	512	\$0.094
		\$59.95	1000	\$0.060
		\$99.95	1500	\$0.067
Conway, AR	Conway Corp.	\$39.95	2048	\$0.020
		\$59.95	3084	\$0.019
Paragould, AR	Parag. Lt., Wtr. & Cable	\$25.95	NA	
		\$39.95	NA	
		\$59.95	NA	
Alameda, CA	Alameda Pwr & Teleco	\$29.99	1000	\$0.030
		\$49.99	3000	\$0.017
		\$52.99	4000	\$0.013
Elberton, GA	City	\$50.00	500	\$0.100
Monroe, GA	Monroe Utilities	\$39.95	6000	\$0.007
Algona, IA	Algona Muni. Utils.	\$49.95	1000	\$0.050
		\$69.95	1500	\$0.047
Alta, IA	City of Alta	\$44.95	256	\$0.176
		\$54.95	512	\$0.107
Cedar Falls, IA	Cedar Falls Utilities	\$24.95	168	\$0.149
		\$40.00	3920	\$0.010
Harlan, IA	Harlan Muni. Utils.	\$37.50	1540	\$0.024
Laurens, IA	Laurens Muni. Comm.	\$49.95	1000	\$0.050
Muscatine, IA	Muscatine Power	\$21.95	128	\$0.171
		\$39.00	1000	\$0.039
		\$59.95	3000	\$0.020
Orange City, IA	Orange City Communic.	\$39.95	3000	\$0.013
Osage, IA	Osage Muni. Utils.	\$45.95	256	\$0.179
		\$59.95	512	\$0.117
		\$79.95	768	\$0.104
		\$99.95	1000	\$0.100
Spencer, IA	Spencer Muni. Utils.	\$34.95	6000	\$0.006
		\$64.95	10000	\$0.006

**Government
Systems**

Location	Name	Monthly Fee	Download Speed (kilobits/sec.)	Price/ Kilobit
<i>Cable Modem (contd.)</i>				
Sanborn, IA	The Community Agency	\$26.95	128	\$0.211
		\$39.95	512	\$0.078
		\$69.95	1000	\$0.070
Bardstown, KY	Bardstown Cable TV	\$27.95	512	\$0.055
		\$32.95	1000	\$0.033
		\$42.95	3000	\$0.014
		\$52.95	6000	\$0.009
Frankfort, KY	Frankfort Elec. & Water	\$19.00	128	\$0.148
		\$23.00	256	\$0.090
		\$29.00	512	\$0.057
Glasgow, KY	Glasgow Elec. Board	\$25.95	1000	\$0.026
Murray, KY	Murray Electric	\$29.95	256	\$0.117
		\$40.95	500	\$0.082
		\$48.95	1000	\$0.049
		\$59.95	4000	\$0.015
Easton, MD	Easton Utils. Comm.	\$24.95	128	\$0.195
		\$39.95	5000	\$0.008
Braintree, MA	Braintree Elec. Light	\$39.00	5000	\$0.008
Poplar Bluff, MO	City of Poplar Bluff	\$29.95	256	\$0.117
		\$34.95	512	\$0.068
Lebanon, OH	City/GO Concepts	\$45.95	5000	\$0.009
		\$74.95	10000	\$0.007
Wadsworth, OH	Elec. & Comm. Dept.	\$22.45	128	\$0.175
		\$29.95	256	\$0.117
Brookings, SD	Brookings Muni. Utils.	\$34.95	512	\$0.068
Columbia, TN	Columbia Pwr. & Water	\$32.95	384	\$0.086
		\$41.95	640	\$0.066
		\$47.95	1500	\$0.032
		\$57.95	2000	\$0.029
		\$77.95	3000	\$0.026
Fayetteville, TN	Fayetteville Electric	\$44.95	256	\$0.176
Greenville, TX	Greenville Elec. Util.	\$37.95	6000	\$0.006
Tacoma, WA	Click/Advanced Stream	\$29.90	1000	\$0.030
		\$39.90	3000	\$0.013
		\$59.90	6000	\$0.010

**Government
Systems**

Location	Name	Monthly Fee	Download Speed (kilobits/sec.)	Price/ Kilobit
<i>Fiber</i>				
Sylacauga, AL	Sylacauga Util. Board	\$120.00	1000	\$0.120
Ashland, OR	Ashland Fiber Network	\$44.00	5000	\$0.009
Bristol, VA	Bristol Virginia Utilities	\$26.36	1000	\$0.026
		\$35.16	3000	\$0.012
		\$39.56	5000	\$0.008
		\$29.95	1000	\$0.030
Sallisaw, OK	Sallisaw DiamondNet	\$39.95	2000	\$0.020
		\$59.95	4000	\$0.015
		\$149.95	10000	\$0.015
Kutztown, PA	Hometown Utilicom	\$15.00	1000	\$0.015
		\$20.00	1000	\$0.020
		\$25.00	1000	\$0.025
		\$30.00	1000	\$0.030
		\$40.00	1000	\$0.040
Reedsburg, WI	Reedsburg Util. Comm.	\$24.95	128	\$0.195
		\$34.95	1000	\$0.035
		\$39.95	3000	\$0.013
<i>DSL/ISDN</i>				
Gainesville, FL (ISDN)	GRUCom	\$24.95	128	\$0.195
Richmond, IN	Rich. Pwr. & Lt.	\$39.95	3000	\$0.013
Barnesville, MN	Barnesville Muni. Tel.	\$41.90	128	\$0.327
		\$48.85	256	\$0.191
		\$57.85	384	\$0.151
		\$74.85	512	\$0.146

Private Systems			Download Speed (kilobits/sec.)	Price/ Kilobit
Location	Name	Monthly Fee		
DSL				
Regional	Bellsouth	\$24.95	256	\$0.097
		\$32.95	1500	\$0.022
		\$37.95	3000	\$0.013
		\$46.95	6000	\$0.008
Regional	Qwest	\$31.99	256	\$0.125
		\$24.99	1500	\$0.017
		\$34.99	5000	\$0.007
Regional	SBC	\$14.99	1500	\$0.010
		\$21.99	3000	\$0.007
		\$49.99	6000	\$0.008
Regional	Verizon	\$14.95	768	\$0.019
		\$29.95	3000	\$0.010
Cable Modem				
Regional	Cablevision	\$49.95	10000	\$0.005
		\$64.90	30000	\$0.002
Alexandria, VA	Comcast	\$57.95	4000	\$0.014
Fairfax, VA	Cox	\$67.95	6000	\$0.011
		\$54.95	5000	\$0.011
Philadelphia, PA	Time Warner	\$69.95	15000	\$0.005
		\$54.95	3000	\$0.018
Washington, DC	RCN	\$84.95	6000	\$0.014
		\$16.95	768	\$0.022
		\$52.95	5000	\$0.011
		\$77.95	10000	\$0.008
Fiber				
Select cities	Verizon Fios	\$34.95	5000	\$0.007
		\$44.95	15000	\$0.003
		\$179.95	30000	\$0.006
Satellite				
National	Directway	\$99.99	700	\$0.143
		\$109.99	1000	\$0.110
Mobile Wireless				
Major cities	Verizon	\$59.00	700	\$0.084
National network	Verizon	\$59.00	144	\$0.410
	T-Mobile	\$49.99	56	\$0.893
EDGE	Cingular	\$59.99	135	\$0.444
GPRS	Cingular	\$59.99	40	\$1.500

Data source: Jerry Ellig, *A Dynamic Perspective on Government Broadband Initiatives*, Reason Foundation Policy Study No. 349 (Nov. 2006), available at <http://www.reason.org/ps349.pdf>.