



## **To Regulate; or Not to Regulate: Where is the Broadband Market Failure?**

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Economic regulations have historically been rationalized as efforts to facilitate the operation of markets (laws of contract, property rights, torts, etc.) or to address market “failures” (antitrust laws, utility regulation, consumer protections, etc.). In addition to protecting the broad “public interest” economic regulations in practice are often imposed on suppliers as means to redistribute real income (a form of taxation via regulation) or to (re)distribute business growth opportunities among different private interests. The case put forth for regulating broadband network access appears to be in the latter category. Net neutrality advocates cite market failure as the basis for government intervention, but a fair assessment of historical conduct and performance of the broadband network access sector compels analysts to look elsewhere for the impetus to regulate.

The basic arguments for regulating market conduct of broadband network access providers – “network neutrality,” “openness,” “fairness,” “level playing fields” and the like – are largely rhetorical and essentially non refutable. Nothing about markets or government action is “neutral.” All private or public actions create benefits for some and impose costs for others. Rules being proposed in the name of “net neutrality” or related notions will create winners and losers on both the demand and supply sides of the market, and among different classes of consumers and suppliers. One’s sense of the broad public interest depends on what criteria are judged most important (jobs, net neutrality, investment, economic growth, universal access at low cost, etc.) and how they are weighted. Policy making is ultimately about balancing among competing goals and distributing costs or value among contending private stakeholders.

### **Sources of Market Failure**

Welfare economists have identified several sources of potential failure of markets – failure in the sense of the inability of markets to achieve so-called optimality or maximum efficiency. Externalities, market power, imperfect information, and public goods aspects are the main culprits identified by welfare economists as sources underlying failure of markets in the abstract to achieve maximum efficiency.<sup>1</sup> While there are numerous, clear instances in which these “classical welfare economics” bases for regulation obtain, most government interventions have different explanations. So it is in the case of the proposed regulations to preserve “net neutrality.”

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<sup>1</sup> Richard O. Zerbe, Economic Efficiency in Law and Economics, especially chapter 7, “The Failure of Market Failure”, Edgar Elgar (pub) Northampton, MA, 2001.

While net neutrality advocates address, more or less, two of these sources of failure – market power and imperfect information – the core of their argument does not have historical, empirical or theoretical referents. Maintenance of neutrality, preservation of openness, consistency with founding network principles and related goals of the net neutrality brief are uniquely applicable to current controversies over market conduct of owners of broadband networks and their behavior toward applications and content providers or others in the Internet supply chain. As the main indicator of market failure, net neutrality advocates have referred to elements of the structure of network owner/operator markets, their conduct and their performance.

Concentrated Market Structure. Net neutrality advocates cite high concentration of sales revenue shared by two providers – cable and telephone networks – in most local markets in which consumers make choices. Use of the term “cozy duopoly” is a frequent and popular substitute for analyzing what really matters to consumers – rates and service quality currently and over time. One advocate went so far as to declare: “...when a market has fewer than the equivalent of six equal-sized competitors, the market just doesn’t function properly.”<sup>2</sup> This economic nonsense has been cited repeatedly. By this standard, there is market failure and the basis for economic regulation nearly everywhere.

Google advised the FCC that the broadband problem “...is the market itself, rather than in a roster of actual and potential ‘bad acts.’ In other words, the flaw is structural, not behavioral.”<sup>3</sup> Variations on this structural theme of market failure have been repeated numerous times, generally without much in the way of supporting analysis, by Free Press, Public Knowledge, Consumer Federation of America, bloggers and other advocates of regulation.

The absence of analysis regarding the sufficiency of market concentration as a rationale for public intervention is understandable. There is not much there. My review of six different analytical perspectives on duopoly turned up negligible support for the *market structure/market failure/need for regulation* train of logic. The literature review and search for evidence that duopoly is per se an indicator of market failure and sufficient to warrant utility type regulation focused on six different perspectives.<sup>4</sup> These included: 1) the neoclassical industrial organization view of the relations between structure, conduct and performance; 2) duopoly models of game theorists; 3) outcomes from experimental economics focused on duopoly; 4) evidence from other sectors served by two dominant firms;<sup>5</sup> 5) conclusions from competition

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<sup>2</sup> Testimony of Mark Cooper, Director of Research, Consumer Federation of America before the United States Senate Committee on Commerce, Science and Transportation Regarding Competition and Convergence March 30, 2006, p. 4.

<sup>3</sup> Comments of Google Inc., In the Matter of Broadband Industry Practices, FCC WC Docket No. 07-52, June 15, 2007, 10.

<sup>4</sup> See, Remarks of Dr. Larry F. Darby, “How ‘Cozy’ is the BB Duopoly?” delivered at the Progress and Freedom Congressional Seminar: “Broadband Competition: Is the Glass Half Empty or Half Full?” June 12, 2009. Available online at: <http://www.theamericanconsumer.org/2009/10/22/remarks-of-dr-larry-f-darby-how-cozy-is-the-broadband-duopoly/>.

<sup>5</sup> These included: Moodys and S&P; Fed Ex and UPS; Pepsi and Coke; Home Depot and Lowes; Kodak and Fuji Film; MCI and AT&T in the early days of interexchange telephone competition; Lexis/Nexis and WestLaw; Dish Network and Direct TV; Air Canada and Westjet in the Canadian air transport market; Gillette and Wilkinson Sword; and, AirBus and Boeing. Competition is imperfect in these cases, but

policymakers and analysts in general; and 6) facts about the historical and current price, service and investment performance broadband providers. While each perspective recognized that competition was imperfect, none found the basis for concluding that duopoly markets are not workably or effectively competitive or that duopoly, not otherwise analyzed, warrants imposition of economic regulation.

Existing concentration in broadband markets is not the product of monopoly conduct. It stems from the fundamental technological and economic character of broadband networks and markets. Fixed costs are high relative to variable costs; there are substantial economies of scale relative to the size of the market; costs are in substantial part sunk; and marginal costs are well below average costs. Each of these plays a role in constraining the feasible, efficient number of sellers. Each of the two main current broadband network platforms (cable and wireline telco) was once regarded as natural monopolies. They now compete because of digitization of their networks which allows each to provide voice, video and data services while serving more generally as Internet access platforms.

Net neutrality advocates' fascination with the epithet "cozy duopoly" masks the fact that an appreciable number of Internet subscribers have three, four or more alternative providers.<sup>6</sup> The negative characterization ignores as well growing consumer use of wireless networks and devices for "broadband" communications. Indeed, the anticipated growth of wireless, unless hampered by government action or inaction, promises a third path into most households in the foreseeable future.<sup>7</sup>

Competition among broadband networks is far from the textbook model. But, merely citing sound bites and talking point characterizations about market structure says absolutely nothing germane about the efficacy of current market operations, consumer welfare, the need for economic regulation, nor the type of regulation needed. Advocates must look elsewhere. The Scotch Verdict applies: "Case not proven!"

Broadband Market Conduct. If the structural case for regulation not compelling, indications of the need for regulation based on the market conduct of broadband network providers is even less so. Advocates almost invariably cite two episodes – one by a wireline telephone carrier (Madison River) and the other by a cable network operator. Both involved blocking network use to selected subscribers. However, in both instances, the offensive conduct was discontinued in the context of existing regulations.<sup>8</sup>

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vigorous and arguably effective in the sense that extensive economic regulation has not been warranted or imposed.

<sup>6</sup> Jeffrey A. Eisenach, "Broadband Policy: Does the U.S. Have It Right After All?". Progress and Freedom Foundation, Progress on Point Release 15.14 September 2008.

<sup>7</sup> Sources and extent of future wireless growth, and the need for adequate spectrum to accommodate it, are detailed in Rysavy Research, *Mobile Broadband Spectrum Demand*, December 2008 esp. sections 2 and 3, online at: [www.rysavy.com/Articles/2008\\_12\\_Rysavy\\_Spectrum\\_Demand.pdf](http://www.rysavy.com/Articles/2008_12_Rysavy_Spectrum_Demand.pdf). For an excellent accounting of handset and network innovation and its impact on wireless services growth see Gerald R. Faulhaber and David J. Farber, *Innovation In The Wireless Ecosystem: A Customer-Centric Framework*, at: [http://www.att.com/Common/about\\_us/public\\_policy/fcc\\_wireless\\_noi/Paper-Faulhaber\\_Farber.pdf](http://www.att.com/Common/about_us/public_policy/fcc_wireless_noi/Paper-Faulhaber_Farber.pdf).

<sup>8</sup> The applicability of existing regulation and the ability of the FCC to estop the practice is undergoing Court review. Details of the legal status of the FCC Internet Principles are outside my purpose here.

The claimed anticompetitive conduct basis for broadband regulation is almost exclusively prospective and conjectural. Put differently, little of great consequence has happened yet, but in the view of advocates: “It might!” And, in their view, ex ante regulation is needed to make certain that it does not occur. Distinguishing between actual market failure and conjectural or prospective market failure is not merely a debating point. The briefs for imposing regulation are notable for their conditional, rather than factual, orientation. Most of the discussion about the need for regulation includes conjectures about what might happen in absence of regulation rather than facts about anticompetitive conduct or poor performance. Coherent economic analysis is missing.

New Pricing Conduct. One aspect of potential network operator market conduct is seldom mentioned by regulatory advocates, but as a practical matter clearly underlies most of the concern about what broadband network providers might do in the future.

The source of concern, by applications providers – Google and others – is that network providers might in the future be inclined to adopt so-called “two-sided” pricing models, the essence of which would relieve the demand side, subscribers to Internet access, of part of the cost burden and shift it to advertisers or applications or content providers or some other service that harvests value from use of broadband networks. Two-sided markets have two discrete groups of customers.<sup>9</sup> Thus, credit card companies charge both users and merchants; information suppliers – newspapers, magazines, cable television, and others – charge both subscribers and advertisers; software companies serve both developers and end users, and so on. Firms that derive value from broadband networks may well be seeking protection from regulators to make certain that all network costs are recovered by broadband suppliers from their Internet subscribers and none are assigned for recovery from applications or content providers.

Market Performance. Advocates of regulation tend to discount or ignore the facts of what is happening in terms of broadband prices (they are falling); average bandwidth or rate of throughput (they are increasing); the rate of capital expenditure (it is substantial and accounts for an extraordinary share of broadband network operators’ cash flow from operations); jobs created (broadband operators create more than the average number of jobs per dollar of revenue derived from consumers compared to the S&P 500 or large Internet applications

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<sup>9</sup> Larry F. Darby, “Consumer Welfare, Capital Formation and Net Neutrality: Paying for the Next Generation Broadband Networks,” Darby Associates, June 6, 2006. “Multisided markets wherein central economic platforms of various sorts create value for multiple stakeholders are increasingly the rule rather than the exception in the US economy. Similar characteristics can be found in Yellow Pages directories (businesses, readers), publication software like Adobe Acrobat (authors, readers), Internet backbones and search engines (sites, surfers), shopping malls (shops, consumers), credit card platforms (end users and cooperating merchants derive value therefrom); matching and employment agencies, auction houses, service vouchers networks, payment systems, all kinds of communication networks, videogame consoles, scientific journals, Internet search engines (which provide value for searchers, “searchees,” and advertisers); broadcast platforms (which create value for end users, production assets, advertisers and content providers); to name a few.” Available online at: <http://www.theamericanconsumer.org/2006/06/06/consumer-welfare-capital-formation-and-net-neutrality-paying-for-next-generation-broadband-networks>.

providers.)<sup>10</sup> These facts and trends are of fundamental analytical importance in discussions of broadband market failure, but they typically yield in the briefs of net neutrality advocates to catch-words and out of context anecdotes.

Pro-regulatory critics' of broadband suppliers favorite "indicator" of US market performance comes in large part from the results of reports from Europe showing the US behind other countries in broadband development – ranked variously around number 15 in the world. Pro-market critics of these critics correctly call attention to a) well known infirmities of any inter-country comparisons, b) biases stemming from selection of indicators of broadband performance, c) superior US rankings using alternative metrics and d) clear dominance of US sector in network investment. There is an inescapable impression that differences over the interpretation of various US rankings resemble somewhat a Rorschach Ink Blot Test. Their meaning is very much in the eye and mind of the beholder. What we see depends on us individually – our frames of references, our biases and our policy preferences.

Beyond their ambiguity, the major limitation of international comparisons of broadband performance is that they tell us nothing about the causes of the gap, nor more importantly what might or should be done to close it. Too little work has been done to identify successful strategies that might be imported from other countries. Notably in the present context of discussions of regulatory offsets to alleged market failures, there is nothing in the experience of other countries to suggest that government regulations imposed in the name of "net neutrality" will have a positive impact on closing the gap. Nor is there any suggestion that emulating other countries might be costly. Indeed, the whole debate about international rankings finesses the question of the costs or benefits of government efforts, economic regulation in particular, to improve economic performance – a topic to which I now turn.

### **Government Conduct: Imperfections in Regulation**

Critics citing our international broadband rank do so for the most part as part of an argument favoring government intervention to impose "net neutrality" based regulations on broadband network operators. This despite the lack of evidence that the absence of regulation is the source of any gap, real or imaginary,<sup>11</sup> and without regard to a) the ability of government to elevate our ranking via economic regulation or b) the costs at the margin of imposing regulations to offset alleged costs in markets. Regulatory advocates refer mainly to imposing various constraints on broadband network suppliers, despite the fact that reputable, reliable consumer surveys indicate that while network access prices and availability and services quality matter, more than half of respondents cite demand side factors – lack of computers, lack of computer savvy, lack of interest, etc. – as the reason for not subscribing to available broadband services.<sup>12</sup> Clearly, imposing economic regulation on grounds of imperfections in supply does nothing to address these major sources of lagging broadband subscription. But, the story does

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<sup>10</sup> See, Presentation of Dr. Larry F. Darby to PFF Hill Panel, "How Cozy is the Broadband Duopoly", especially Table 1. On line at: <http://www.theamericanconsumer.org/2009/10/22/remarks-of-dr-larry-f-darby-how-cozy-is-the-broadband-duopoly>.

<sup>11</sup> For discussion of some possible reasons for reports of a US lag, see Robert D. Atkinson, Daniel K. Correa and Julie A. Hedland, Explaining Broadband Leadership, May 1, 2008. Available online at: <http://www.itif.org/index.php?id=142>.

<sup>12</sup> See John Horrigan, Pew Internet and American Life Project, *Home Broadband Adoption 2009*, June 2009, available online at <http://www.pewinternet.org/~media/Files/Reports/2009/Home-Broadband-Adoption-2009.pdf>.

not end there. Critics also ignore the potential costs of substituting public for private decision makers in the supply of broadband networks and services.

Markets are imperfect, but so too are government regulatory processes. While the case for markets has been exhaustively researched and expressed in both empirical and theoretical terms, the infirmities of government regulation have gotten less analytical attention and are often merely implied or mentioned in passing in terms of unanticipated or unintended consequences. To be sure, economic analysts have cited regulatory lag, imperfect or asymmetric information, the absence of regulatory commitment, regulatory capture by vested interest groups, and, particularly relevant in the current context, the simple inability of well-meaning and well informed government officials reliably to forecast the impact of regulatory constraints in a dynamic market setting. Fixing markets is like shooting at a moving target. Markets solve imperfections through private contract, but also create new ones as technology evolves, consumers tastes change and market strategies mature. While many of the consequences of imposing one or another element net neutrality based regulation on network suppliers can be reasonably and reliably foretold, many cannot. The unintended, unanticipated consequences will not be trivial.

We must consider the possibility, some say likelihood, of the appearance of some forms of government failure in processes put in place to “fine tune” markets. In this context, no less an authority than Professor Joseph Stiglitz, Nobel prize-winner and formerly Chairman of the President’s Council of Economic Advisors recently wrote:

*Anyone who has watched the U.S. government in the last seven years is well aware not only of the possibility of government failure but also of its reality. In some cases it is a matter of incompetence, in others of corruption, in still others it is a result of ideological commitments that preclude taking appropriate actions...Government programs can be subverted.*<sup>13</sup>

We take recent remarks of FCC Chairman Genachowski as in substantial agreement with the need to take a realistic view of not only market imperfections, but of government imperfections as well. The Chairman recently emphasized the importance when considering new regulations of “getting it right,” while also being candid about the Commission’s mixed history of doing so: “The Commission’s history in this area holds great examples of success...But there are also examples of failures...In short, at times the Commission has gotten it right, and at times it has gotten it wrong.”<sup>14</sup>

### **Concluding Observations**

Market structure in the current debate is a red herring. It provides no reasoned basis, and certainly none from consumer welfare analysis, for imposing conduct constraints on

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<sup>13</sup> Joseph E. Stiglitz, “Government and Markets: Toward a New Theory of Regulation”, Government Failure vs. Market Failure: Principles of Regulation, Edward Balleisen and David Moss, Eds., The Tobin Project, (Forthcoming November, 2009), at page 17. Available online at: <http://www.tobinproject.org/twobooks>.

<sup>14</sup>Prepared Remarks of FCC Chairman Julius Genachowski, “Preserving a Free and Open Internet: A Platform for Innovation, Opportunity, and Prosperity”, September 21, 2009. Online at: [http://hraunfoss.fcc.gov/edocs\\_public/attachmatch/DOC-293568A1.pdf](http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-293568A1.pdf).

broadband network providers. Nor for that matter do factual assessments in the context of traditional economic welfare analyses of conduct and performance reveal compelling signs of market failure. Misconduct appears limited to isolated events, while profits (the traditional sign of market power) of broadband network providers are modest by any standard. The telcos and cable companies providing broadband networks earned roughly half the return on capital over the past five years of that earned by the average of the S&P 500 companies (10.7%) and about a quarter of the return on capital earned by Google (19.7%) over the same period.<sup>15</sup> The impetus for regulation must lie elsewhere.

The recent FCC NPRM to extend the net neutrality principles is suggestive. Paragraph 106 of that NPRM will very likely attract a lot of attention as a potential alternative motivation of the new rules.

*We understand the term 'nondiscriminatory' to mean that a broadband Internet access service provider may not charge a content, application, or service provider for enhanced or prioritized access to the subscribers of the broadband Internet access service provider...[t]his rule would not prevent a broadband Internet access service provider from charging subscribers different prices for different services.<sup>16</sup>*

No matter how you read this declaration, the language makes clear that the purpose of the new “nondiscrimination” rule is not to protect subscribers (consumers), but to prevent two-sided market pricing by broadband network operators. Specifically, the language would forbid broadband network operators from charging other Internet firms (“content, application, or service providers”) and applying the proceeds to defray common costs that will otherwise necessarily be borne by consumers.

It is not clear how this proposed rule contributes to timely achievement of universal broadband availability.

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<sup>15</sup> Calculated from company 10 K SEC filings and from financial information available online at: <http://moneycentral.msn.com/investor/invsub/results/compare.asp?Page=InvestmentReturns&Symbol=GOOG>.

<sup>16</sup> Notice of Proposed Rulemaking, *In the Matter of Preserving the Open Internet: Broadband Industry Practices*, (GN Docket No. 09-191 and WC Docket No. 07-52NPRM) October 22, 2009 at paragraph 106.