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Defining relevant markets for mergers and acquisitions involving communications services

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I. Introduction and Background

Over the past 20 years, the Federal Communications Commission (“FCC” or “Commission”), often in coordination with the Department of Justice (“DoJ”), has reviewed dozens of mergers and acquisitions involving companies offering various forms of communications services, and many offering various forms of wireless services.¹ To approve license transfers and other regulatory authorizations associated with each of these mergers and acquisitions, the FCC issues an order in which it often discusses antitrust issues including a definition of a “relevant product market” to assess the likely competitive effect of the merger.²

Defining the relevant product market is a standard step in the antitrust review of mergers and acquisitions.³ A relevant product market is one in which a hypothetical monopolist could profitably raise prices of that product for a non-transitory period of time, usually determined by a “hypothetical monopolist test.”⁴ That test is a quantitative examination of how demand for a product of a hypothetical monopolist would change as the

¹ For a list of such mergers and acquisitions, see FCC web site at <http://www.fcc.gov/mergers>. In this paper, we are not addressing either likely impropriety of the FCC review of such mergers or of the coordination between the FCC and DoJ. For a review of those issues, see H. Furchtgott-Roth, *A Tough Act to Follow*, AEI Press, 2006.

² The FCC rarely provides a detailed analysis of the relevant market but will often cite a prior merger as the foundation for the relevant market. Unless it challenges the parties in court, the DoJ does not issue a formal document defining the relevant market associated with the proposed merger.

³ See U.S. Department of Justice & FTC, *Horizontal Merger Guidelines* (2010), available at <http://www.ftc.gov/opa/2010/08/hmg.shtm>, and U.S. Department of Justice & FTC, *Horizontal Merger Guidelines* (1992), available at <http://www.justice.gov/atr/hmerger/11251.htm>.

⁴ See, e.g., 2010 *Horizontal Merger Guidelines* at Section 4.1.

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monopolist increases prices for the product and customers substitute away from it. The test usually involves measuring both own-price elasticities and cross-price elasticities of demand or diversion indexes.⁵ The examples given by the DoJ and FTC in the *Horizontal Merger Guidelines* are quantitative, not qualitative, analyses.⁶ If raising prices of the product would be profitable, the product is potentially a relevant market. If raising prices by a hypothetical monopolist would be unprofitable, as customers would curtail purchases and substitute other products, the product is too narrow to be a relevant market. Only with a relevant market definition can the FCC or any government agency meaningfully address concepts useful in evaluating the competitive effect of a merger or acquisition such as the following: concentration, market power, entry, coordinated effects, unilateral effects, and diversion.

Given the large number of mergers in various communications industries in recent years, a reasonable observer might assume that the FCC and the DoJ have conducted many quantitative analyses for “hypothetical monopolist tests” to define with some precision the boundaries of relevant markets for various communications services. Perhaps such quantification studies have been conducted informally and internally by agencies.

Surprisingly, such quantitative analyses, particularly involving wireless services, are not publicly released or cited by either the FCC or the DoJ in merger-related decisions. Even in a publication partly directed at examining competition in various communications industries, DoJ does not rely on a specific analysis to conclude that wireline and wireless

⁵ Ibid.

⁶ Ibid. It does not necessarily follow that DoJ and the FTC use quantitative analyses in public documents for actual cases.

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services are not substitutes or in the same antitrust market.⁷ The FCC has also encountered relevant market issues with respect to forbearance petitions, but has not offered specific analyses to support decisions to treat wireline and wireless markets as separate.⁸ Stated differently, these agencies have not conducted a quantitative analysis, at least publicly, of the effects of a hypothetical monopolist raising prices for any combination of services—such as segments of wireless services, wireline services, or satellite services. The agencies have no quantitative foundation to determine whether the relevant market consists of a single service, or multiple services, possible within a differentiated service market.⁹

Since 2004 in a series of mergers involving wireless companies the FCC has qualitatively—but not quantitatively—defined a relevant market only twice. In the first instance, the FCC defined a market consisting of “mobile telephony services”¹⁰ in the merger of AT&T Wireless and Cingular; in the second instance, the FCC defined the combined “mobile telephony/broadband services”¹¹ in the merger of Verizon Wireless and Alltel. In both instances the FCC examined only mobile services offered directly by commercial carriers as part of the relevant market. The FCC did not provide any empirical evidence to support these or any other product market definition.

⁷ U.S. Department of Justice, Voice, Video and Broadband: The Changing Competitive Landscape and Its Impact on Consumers (November 2008), at 66 and 88.

⁸ See, e.g., FCC, 10-113, Memorandum Opinion and Order, Petition of Qwest Corporation for Forbearance Pursuant to 47 U.S.C. § 160(c) in the Phoenix, Arizona Metropolitan Statistical Area, Released June 22, 2010.

⁹ 2010 *Horizontal Merger Guidelines* at 6.1.

¹⁰ This term was used in merger reviews between 2004 and 2008. See FCC, 04-255, WT Docket 04-70, WT Docket 04-254, WT Docket 04-04-323, Memorandum, Opinion, and Order, released October 26, 2004, at 57 – 94, at http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-04-255A1.doc.

¹¹ This term has been used in merger reviews since 2008. See FCC, 08-258, WT Docket 08-95, Memorandum, Opinion, and Order and Declaratory Ruling, released November 10, 2008, at 44 – 74, http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-08-258A1.doc.

Below, we examine in more detail the following:

1. Few if any relevant market tests for wireless or other communications services are available at the FCC or DoJ;
2. Although not employed in FCC merger reviews, much empirical evidence suggests substitution between wireline and wireless services; and
3. Even if the FCC and the antitrust agencies had in the past presented empirical analyses to support narrow definitions of separate wireless and wireline markets, recent changes in the market for various services might render prior studies obsolete.

II. Few if any relevant market tests for wireless or other communications services are available at the FCC or DoJ

One might reasonably assume that relevant market tests would be common and the subject of discussions in merger-related proceedings at the FCC. After all, once a merger is proposed, the following steps take place:

1. The proposed merging parties submit a petition to the FCC to transfer licenses and other necessary regulatory approvals. As part of the petition, the proposed merging parties typically submit various “public interest” documents, often including statements from economists about the likely competitive effect of the proposed merger, potentially including a determination of the relevant market with a “hypothetical monopolist test.”

2. The FCC then opens a public proceeding in which anyone can offer comments about the proposed merger and the FCC's role in the proposed merger. Parties are allowed to submit information on such topics as the relevant market definition.
3. The FCC staff receives and reviews the public comments. The FCC staff can conduct its own "hypothetical monopolist test," but rarely does. Only after the FCC staff has reviewed the record, and after at least some of the FCC commissioners have reviewed the proposed agreement, does the FCC present the proposed merging parties with an opportunity to "volunteer" to certain "public interest" conditions. These merger conditions often reflect the market definition adopted by the FCC staff.
4. If the DoJ is reviewing the proposed merger, the DoJ may conduct its own "hypothetical monopolist test" and determine the relevant market. A market definition constructed by DoJ staff would be used in a court challenge to the proposed merger, as it was in the proposed AT&T-T-Mobile merger.

A brief review of the FCC dockets of mergers involving firms in the wireless services yields few if any quantitative "hypothetical monopolist tests" and little substantial controversy surrounding relevant market definitions. Most of the disputes surrounded whether wireless voice and data were in the same market.¹² The analyses, both from outside parties and from the FCC, are qualitative without clear empirical foundation.

¹² The FCC discusses the issue of combining mobile voice and data in the 2004 AT&T/Cingular case, but the results were largely inconclusive due to data constraints and uncertainty about future technological changes. See FCC, 04-255, WT Docket 04-70, WT Docket 04-254, WT Docket 04-04-323, Memorandum,

The market definition that the FCC has adopted for mergers and acquisitions, “mobile telephony/broadband services,” is not critically examined in merger proceedings. Such mobile services are not well defined, and they likely consist of many different, identifiable services. Rarely do the FCC or outside parties discuss in the context of mergers and acquisitions the possibility of separate narrower product markets within “mobile telephony/broadband services” that the FCC identifies in its annual wireless competition reports such as prepaid wireless services,¹³ wholesale wireless services,¹⁴ facilities-based wireless service markets,¹⁵ narrowband markets,¹⁶ mobile satellite services markets,¹⁷ prepaid wireless services market,¹⁸ postpaid wireless service market,¹⁹ spectrum markets,²⁰ infrastructure facilities markets,²¹ backhaul facilities markets,²² mobile application markets,²³ local area network markets,²⁴ or handsets.²⁵ These and other narrower market concepts are familiar to the FCC and commonly discussed in various Commission documents including wireless competition reports. Yet the

Opinion, and Order, released October 26, 2004, at 71-78, at http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-04-255A1.doc

¹³ See FCC, WT Docket 11-186, Sixteenth Competition Report, released March 21, 2013, at http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-13-34A1.pdf, particularly at paragraph 29-36.

¹⁴ Ibid.

¹⁵ Ibid., at 25-28.

¹⁶ Ibid., at 37.

¹⁷ Ibid., at 38-41.

¹⁸ Ibid., at 159-174.

¹⁹ Ibid., at 138-158.

²⁰ Ibid., at 85-135. The FCC does occasionally look at spectrum separately for purposes of spectrum screen tests. The FCC, however, does not apply a hypothetical monopolist test to spectrum.

²¹ Ibid., at 317-328.

²² Ibid., at 329-338.

²³ Ibid., at 351-353.

²⁴ Ibid., at 369-382.

²⁵ Ibid., at 339-350. Obviously, handsets are often examined separately from wireless services, but for many wireless service providers, handset costs are implicitly part of the price of service.

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Commission provides little or no analysis, empirical or qualitative, to determine whether any of these or similar narrower concepts supports a hypothetical monopolist test.

The examination of each of these potential market definitions is important for many reasons. The antitrust analysis is in the context of a specific proposed merger or acquisition involving two firms. In some potential relevant markets, the two firms may each have substantial market positions; in others, their positions may be far less pronounced or non-existent. Although the DoJ can review mergers for any of these potential relevant market definitions, the FCC's regulatory authority varies substantially. The FCC, for example, has little authority over local area networks or handsets.

Similarly, rarely is the possibility of a combined wireline and wireless market even considered. For instance, the FCC only once considered the notion of a combined wireless and wireline market, in its discussion of the 2004 AT&T/Cingular case. The FCC concluded that, although consumers might substitute wireless services for wireline, they would not do the opposite, at least in voice services.²⁶ This untested claim established a precedent for defining wireless and wireline markets separately that remains standard practice in most recent cases.²⁷ The FCC provided no empirical evidence for the conclusions it reached about market definitions in its analysis.

²⁶ See FCC, 04-255, WT Docket 04-70, WT Docket 04-254, WT Docket 04-04-323, Memorandum, Opinion, and Order, released October 26, 2004, at 72-74 and at Footnote 267, at http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-04-255A1.doc.

²⁷ Even as recently as the 2011 AT&T/T-Mobile merger case, the FCC accepted applicants' arguments that consumers would not substitute wireless services for wireline services, for mobility reasons. See the applicants' Second Amended Complaint, at 12, at <http://www.justice.gov/atr/cases/f275700/275756.pdf>. Also, note the FCC's accepted market definition of a separate wireless market in the same case. See WT Docket 11-65 Staff Analysis and Findings, at 29, at http://hraunfoss.fcc.gov/edocs_public/attachmatch/DA-11-1955A2.pdf.

In its wireless competition reports, the FCC claims to present measures of market concentration such as the Herfindahl-Hirschman Index as if it has already determined exactly the relevant product market on which to measure concentration.²⁸ That relevant market, without any quantitative analysis much less a hypothetical monopolist test, is “facilities-based mobile wireless providers,”²⁹ a concept that again is different from that used in each FCC merger analysis. The FCC HHI index is based on the raw number of customers allocated in an unclear manner across economic areas (EAs). In brief, the FCC provides no empirical or analytical explanation of market definition, and no foundation for its specific measure of concentration even if the market definition were correct.

Why are there few if any quantitative measures of the market definition in FCC dockets? Below we give some possible explanations.

Incentives of outside parties

Outside parties to the FCC in merger reviews are interested more in particular regulatory outcome than in an abstract academic answer about relevant market definition. Parties to a proposed merger have an incentive to have the FCC approve the merger with as little delay and with as few conditions as possible. Sometimes parties do not even comment on market definition, leaving it to the FCC to decide.³⁰ The most expeditious path to an FCC decision is to have the FCC adopt the same market definition that it has used in the past,

²⁸ FCC, WT Docket 11-186, Sixteenth Competition Report, at 51-61.

²⁹ *Ibid.*, at 55.

³⁰ See, e.g., WT Docket 11-64, Declaration of D. W. Carlton, A. Shampine, and H. Sider, Redacted for Public Inspection, April 20, 2011, available at <http://apps.fcc.gov/ecfs/document/view?id=7021240428>.

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whether that definition once was accurate and whether that definition remains accurate. To have the FCC change the precedent of market definition will require the FCC to document its decision carefully to avoid challenges, a time-consuming exercise. For the FCC to adopt the market definition in a prior decision requires little more than a footnote. Parties to a merger also have an incentive to disclose as little sensitive company-specific information as possible, particularly to the FCC which is primarily a transparent agency, with its documents subject either to immediate disclosure or the possibility of future disclosure under Freedom of Information Act (“FOIA”) requests. To support prior FCC market definitions usually requires the release of no new company-specific information.

Parties opposed to a merger might seem more inclined, at least facially, to dispute market definitions, yet such disputes are rare. Here’s why. First, if one party is supporting FCC precedent in a market definition, it is difficult for a different party to argue that the FCC precedent is wrong. The burden of proof is strong, and the FCC might reasonably be inclined to use its precedent.

Second, the most compelling analysis would be based on an empirical analysis of a “hypothetical monopolist test.” If the merging parties do not submit information for such a test, it may be difficult for other parties to obtain the same or similar information. If one of the opposing parties is in the same industry as the merging parties, that party could hypothetically provide its own company-sensitive information for the FCC to consider. But such a decision would be unlikely. If the merging parties are unwilling to release company-specific information to support an alternative product market definition, how

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much more unwilling will be a party outside the merger to release its own company-specific information. Such a party runs the risk of revealing company-specific information to its rivals with little assurance of any regulatory outcome.

Third, if company-specific information were made available, the “hypothetical monopolist test” might result in market definitions that are more favorable to the merger than not.

Incentives of the FCC

The FCC has its own reasons for clinging to precedents. First, administratively, it is much simpler for the FCC to use precedent. A simple citation to a prior decision suffices.

Second, even if changing relevant market definitions were administratively simple, the consequences of such a change are not easily foreseen. A different relevant market in one merger might create a precedent for relevant market definitions in future mergers that might discomfort the Commission. A different relevant market definition might also affect other FCC proceedings unrelated to mergers in unpredictable ways.

Third, a change in relevant market definition gives opponents of an FCC decision regarding the merger a potential avenue to challenge the decision in court. Such a challenge might have little chance of success, but defending the FCC decision would require the Commission to dedicate scarce legal resources.

Fourth, the FCC is quite reasonably concerned about preserving the boundaries of its jurisdictions with other government agencies. A hypothetical change in broadening a relevant market might include services outside the FCC’s jurisdiction, such as online

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information providers, electronic games, newspapers and other publications, motion picture studios, or even delivery services such as the U.S. Postal system. A finding of a relevant product market that extends beyond the FCC's jurisdiction would reveal the frailty of the entire FCC merger review process.

Fifth, the FCC is also sensitive to jurisdictional lines within its administrative structure. For example, the FCC has separate wireless, wireline, and international bureaus. Perhaps not coincidentally, the FCC has maintained market definitions for mergers involving wireless carriers that remain largely within the jurisdiction of the Wireless Bureau. Market definitions that span different bureaus could require additional staff, lengthier review, and more complicated coordination within the Commission.

Market definitions that make little sense

The FCC, and even the DoJ, sometimes uses market definitions in the communications sector that are out-of-date, if they ever made any sense. The consequences of bad market definitions can be severe. As but one of many possible examples, in 2000 the DoJ blocked the merger of WorldCom and Sprint because of concern about concentration in the “‘Tier One’ Internet Backbone Services Market,” “Mass Market Domestic Long-Distance Telecommunications Services” market, “Mass Market International Long-Distance Telecommunications Services” market, “International Private Line Services” market, “Markets for InterLATA Private Line Services and InterLATA x.25, ATM, and Frame Relay Data Network Services,” “InterLATA Data Network Services Market,” and

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“Custom Network Services Market.”³¹ The DoJ provided no “hypothetical market test,” or any analysis, to define any of these markets. WorldCom entered bankruptcy just two years later.

Many of the DoJ market definitions would have been as unfamiliar and incomprehensible in 1990 as they are in 2013. Although it is theoretically possible that a temporal set of markets such as DoJ described temporarily emerged and then disappeared, it is perhaps more likely that the separate markets were a mirage. The DoJ market definitions not only had no empirical evidence to support them in 2000, the concepts, to say nothing of the separable markets, largely disappeared within a few years. To give but one example, a hypothetical monopolist of the “Mass Market Domestic Long-Distance Telecommunications Service” could not have raised prices in 2005; the long-distance concept had largely disappeared, swallowed by bundles of service by local telephone companies and by wireless service competitors. In 2005 SBC acquired AT&T, and in 2006 Verizon acquired MCI.

In each instance, the conceptual markets identified by DoJ were almost certainly too narrow. A hypothetical monopolist of the so-called markets could not have raised prices because customers would have flocked elsewhere.

Inconsistency of merger review market definitions with FCC definitions on telecommunications and other services

³¹ See United States District Court for the District of Columbia, Complaint, *The United States v. WorldCom and Sprint*, June 26, 2000, at <http://www.justice.gov/atr/cases/f5000/5051.htm>. See also, FCC, CC Docket 99-333, Order, August 4, 2000, at http://hraunfoss.fcc.gov/edocs_public/attachmatch/DA-00-1771A1.pdf.

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The terms, “mobile telephony services” and “mobile telephony/broadband services” are not ordinarily used by the FCC, except for the specific purpose of merger reviews. In its annual wireless competition reports, the FCC applies an entirely different set of terms to describe markets, repeatedly using the term “mobile wireless services,”³² which presumably excludes satellite-based services that “mobile telephony/broadband services” might include. For a narrower term, the FCC sometimes uses “facilities-based mobile wireless service providers.”³³ Each of these, and various other, terms that the FCC has used to describe markets has a different meaning for the services that are included and excluded.

Perhaps the greatest inconsistency is between market definitions used by DoJ and the use of terms by the FCC. For example, in challenging the AT&T – T-Mobile merger, the DoJ used as a relevant market “mobile wireless telecommunications services.”³⁴ Those words may reflect one concept at DoJ, but at the FCC those words would likely exclude most data services and much of the traffic carried by wireless carriers. The FCC has a long history of distinguishing “telecommunications” services from other services, such as broadband services.³⁵ Courts have upheld the FCC’s distinction that various forms of broadband services are not necessarily telecommunications services subject to Title II

³² See FCC, WT Docket 11-186, Sixteenth Competition Report, released March 21, 2013, at http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-13-34A1.pdf.

³³ Ibid.

³⁴ See U.S. District Court for the District of Columbia, *United States of America v. AT&T Inc., T-Mobile USA, Inc., and Deutsche Telekom AG*, Complaint, Case 1:11-cv-01560, August 31, 2011, at paragraphs 11-13.

³⁵ See, e.g., FCC 02-77, Declaratory Ruling and Notice of Proposed Rulemaking, released March 15, 2002, at 34-59; FCC 05-150, Report and Order and Notice of Proposed Rulemaking, released September 23, 2005, at 6 and 10-60.

regulation.³⁶ The DoJ market definition using the term “telecommunications” is narrower and inconsistent with the FCC market definition in antitrust reviews.

III. Although not employed in FCC merger reviews, much empirical evidence suggests the possibility of a broader market definition than wireless services

Some empirical studies find substantial own-price elasticities of demand for wireless services

The first step in determining whether the relevant product market is broader than wireless services only is to examine whether a hypothetical monopolist could profitably raise the prices of wireless services. Economists examine two components: (1) the shift in consumer demand for wireless services in response to a non-transitory higher price, usually measured with the own-price elasticity of demand for wireless services; and (2) the change in cost structure as a result of lower demand resulting from higher prices. If the elasticity of demand is small, a hypothetical monopolist could, and presumably would, profitably raise prices. Some empirical studies, including those of Ingraham and Sidak³⁷ and Caves,³⁸ over the past decade have found relatively large own-price elasticities of demand. Although additional information on cost structure would be necessary to determine whether wireless services and wireline services together form an antitrust market, the high own-price elasticity of demand is suggestive of wireless not being a separate antitrust market.

³⁶ See, e.g., *National Cable & Telecommunications Association et al. v. Brand X Internet Services et al.*, 545 U.S. 967 (2005). *Comcast Corporation v. FCC and USA*, No. 08-1291, D.C. Circ., (2010).

³⁷ A. Ingraham & J. G. Sidak find an elasticity from -1.12 and 1.29, at “Do States Tax Wireless Services Inefficiently? Evidence on the Price Elasticity Of Demand,” *Virginia Tax Review* 23 (2003), at 249-261.

³⁸ K.W. Caves finds an elasticity of -2.11, “Quantifying price-driven wireless substitution in telephony.” *Telecommunications Policy*, Volume 35 Issue 11, December, 2011, Pages 984-998.

Other studies focus on whether wireless services discipline prices for wireline services, but few of these studies address whether wireline services discipline prices for wireless services.³⁹ Still other studies find smaller own-price elasticities of demand.⁴⁰ A survey of econometric demand analyses for communications services over the past decade, many rather dated, does not necessarily find high own-price elasticities of demand.⁴¹

Research finds substitution between wireline and wireless services

Many academic studies have examined demand for wireline and wireless services and found substitutability between the two. For example, several papers at conferences in Washington, DC in 2009 and in Berkeley, CA in 2010 generally found substitution between wireline and wireless services, particularly for more recent technologies.⁴² Other academic studies find similar results.⁴³ The concept that wireline and wireless services may well be substitutes is familiar to economists both inside and outside government.

³⁹ See, e.g., W. E. Taylor and H. Ware, "[The Effectiveness of Mobile Wireless Service as a Competitive Constraint on Landline Pricing: Was the DOJ Wrong?](#)," NERA Economic Consulting, December 11, 2008, S.B. Pociask, "[Wireless Substitution and Competition](#)," Competitive Enterprise Institute, 2004.

⁴⁰ See, e.g., J. T. Macher, J. W. Mayo, O. Ukhaneva, and G. Woroch, "[Demand in a Portfolio-Choice Environment: The Evolution of Telecommunications](#)," Georgetown McDonough School of Business Research Paper No. 2012-19, 2012, at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2133424.

⁴¹ See I. Vogelsang, "The relationship between mobile and fixed-line communications: A survey," *Information Economics and Policy*, Volume 22, Issue 1, March 2010, Pages 4–17.

⁴² See "Wireless Technologies: Enabling Innovation and Economic Growth," Georgetown University McDonough School of Business, April 17, 2009 at http://www.gcbpp.org/files/Wireless41909/Wireless_Agenda_41909.pdf. See also, "Mobile Impact," University of California, Berkeley, Institute for Business Innovation, April 16, 2010, at http://businessinnovation.berkeley.edu/Mobile_Impact/special_issue.html.

⁴³ See, e.g., K.W. Caves, "[Quantifying price-driven wireless substitution in telephony](#)," *Telecommunications Policy*, Volume 35 Issue 11, December, 2011, Pages 984-998. W. E. Taylor and H. Ware, "[The Effectiveness of Mobile Wireless Service as a Competitive Constraint on Landline Pricing: Was the DOJ Wrong?](#)," NER Economic Consulting, December 11, 2008, S.B. Pociask, "[Wireless Substitution and Competition](#)," Competitive Enterprise Institute, 2004., J. T. Macher, J. W. Mayo, O.

Of course, substitution alone does not create a single market. An antitrust market analysis would look at the likely effect of small, non-transitory price increase on consumer behavior and the profitability of such a price increase. Much if not all of the information from academic studies has been available to the FCC. Such analyses are rarely cited in the FCC merger reviews. If employed in constructing “hypothetical monopolist tests,” the available empirical evidence might support broader, rather than narrower, product market definitions. It is surprising that the FCC and the DOJ do not include this information to perform “hypothetical monopolist tests” in their various merger analyses.

Federal agencies, including the FCC have found substitution between wireline and wireless services

Various federal agencies collect information that reveals substitution between wireline and wireless services. For example, the FCC collects, organizes, and reports substantial data on the structure and evolution of communications services in the United States. The FCC has a web page on data with various links,⁴⁴ a list of dozens of databases,⁴⁵ and more than 150 data sets.⁴⁶

Many FCC reports implicitly suggest strong cross-price elasticities of demand. For example, although the FCC does not often specifically suggest a combined wireline and

Ukhaneva, and G. Woroch, “[Demand in a Portfolio-Choice Environment: The Evolution of Telecommunications.](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2133424)” Georgetown McDonough School of Business Research Paper No. 2012-19, 2012, at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2133424.

⁴⁴ See <http://www.fcc.gov/data>.

⁴⁵ See <http://www.fcc.gov/data/search-gallery>.

⁴⁶ <http://www.fcc.gov/data/download-fcc-datasets>.

wireless market definition, it has for more than a decade repeatedly presented evidence of such a broader market. In each of its wireless competition reports, the FCC reports on “Intermodal competition” and consumer migration from wireline to wireless services.⁴⁷ For years, the FCC has documented the persistent migration from wireline to wireless services for millions of Americans. In its most recent report, the FCC found that more than one third of American households were wireless only.⁴⁸ The Centers for Disease Control has been monitoring the migration of consumers from wireline to wireless in an appropriately titled survey, “Wireless Substitution.”⁴⁹ The results show that 38.2% of American homes had wireless phones only and an additional 15.9 percent of American home received all or almost all phone calls on wireless telephones despite having landline phones.⁵⁰ Thus, according to the CDC, well over half of American homes rely primarily or exclusively on wireless phones.

The Bureau of Labor Statistics maintains information on the prices of communications services. Over the past ten years, the overall price index for telecommunications services has been relatively flat.⁵¹ In contrast, the producer price index for wireless services has declined by approximately 33% over the same period.⁵² The substitution of wireless for wireline services has paralleled price declines for the former relative to the latter. This

⁴⁷ Ibid., at 25-26.

⁴⁸ Ibid.

⁴⁹ Stephen J. Blumberg and Julian V. Luke, *Wireless Substitution: Early Release of Estimates from the National Health Interview Survey, July- December 2012*, National Center for Health Statistics, Centers for Disease Control, June 2013, available at

<http://www.cdc.gov/nchs/data/nhis/earlyrelease/wireless201306.pdf>.

⁵⁰ Ibid.

⁵¹ See Producer Price Index for telecommunications services, NAICS 517, at http://data.bls.gov/timeseries/PCU517---517---?data_tool=XGtable. Quite likely, this price index does not fully capture price declines associated with much higher quality services.

⁵² See Producer Price Index for wireless telecommunications services, NAICS 51721, at <http://data.bls.gov/timeseries/PCU517210517210>. Quite likely, this price index does not fully capture price declines associated with much higher quality services.

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result strongly suggests that the two are substitutes for one another and reasonably belong in the same market. Yet in its merger reviews, the FCC has never determined that the two are in the same market.

FCC reports also reveal rapidly falling prices and rapidly expanding services, even in the presence of substantial mergers and acquisitions over the past two decades. The FCC reports do not document either the substantial number of bankruptcies and other market exits. Nor do the FCC reports capture the uncountable number of small startups that never get off the ground. The broader communications industry is constantly churning with businesses entering and exiting. These are signs of a competitive market, not one beset with substantial exercise of market power.

IV. Even if the FCC and the antitrust agencies had in the past presented empirical analyses to support narrow definitions of separate wireless and wireline markets, recent changes in the market for various services might render prior studies obsolete

In the past, the FCC has argued that wireless services are a separate market, and that wireline services could not discipline wireless prices. A hypothetical monopolist of wireless services, according to the FCC and DoJ, could profitably raise prices. However, in the 2004 AT&T/Cingular merger review, the FCC argued that, although consumers might substitute wireless services for wireline, they would not do the opposite, at least in voice services.⁵³ No empirical evidence was cited. In subsequent mergers, the FCC

⁵³ The FCC concurred with the merger applicants' claim that wireline-wireless substitution would be unlikely, especially in voice services. However, it did not provide any evidence from its hypothetical monopolist test to support its claim. See FCC, 04-255, WT Docket 04-70, WT Docket 04-254, WT Docket

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accepted separate markets for wireline and wireless without further discussion, instead citing the 2004 definition.

To the extent it ever made sense, the FCC's argument of a separate wireless market undisciplined by wireline services is becoming increasingly obsolete. The reason is WiFi, a service ultimately based on wireline networks that has dramatically altered the way consumers use wireless devices and the way wireless carriers offer services.

WiFi is a service that wireless devices access wireline networks through unlicensed spectrum not controlled by wireless carriers. WiFi networks can be found in private residences, office buildings, schools, commercial establishments, and many public spaces. The WiFi networks are connected to wireline networks, and as the price of wireless data increases, more wireless traffic is offloaded onto the WiFi/wireline network. Many if not most wireless devices search for WiFi networks facilitating WiFi connections over wireless network connections. Just as wireless services over the past 10 or 15 years have provided a convenient substitute for wireline services, so too are WiFi-enabled wireline services now providing a useful substitute for wireless services.

One reason for the increased popularity of WiFi as a substitute for wireless service is an increased range of consumer devices that support WiFi functionality. Since Apple pioneered the use of WiFi technology in consumer electronics with its 1999 iBook,⁵⁴ consumers around the world have acquired tens of millions of WiFi-capable devices,

04-04-323, Memorandum, Opinion, and Order, released October 26, 2004, at 72-74 and at Footnote 267, at http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-04-255A1.doc.

⁵⁴ See "A Brief History of Wi-Fi," The Economist, July 2004, at <http://www.economist.com/node/2724397>.

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ranging from laptops to TVs, digital cameras, and printers.⁵⁵ WiFi has also become a regular feature in handheld mobile devices, providing consumers with alternative means for accessing the Internet on smartphones and tablets, in addition to cellular data plans.

Furthermore, while initially only available for private home and workplace networks, WiFi access has become prevalent in public areas via free public hotspots.⁵⁶ Many companies, from coffee shops to grocery stores, have incorporated hotspot provision into their businesses models to satisfy increasing WiFi demand from customers.

Given the increasing number of WiFi capable devices and WiFi hotspots, it is unsurprising that the use of WiFi on devices, particularly mobile handhelds, has grown more popular. According to a 2012 Cisco survey, given the choice between using WiFi and cellular data services, consumers perceive WiFi as superior to cellular networks in the areas of speed, cost, security, reliability, and ease of use. On the other hand, they view cellular networks as better only in terms of coverage.⁵⁷

In the past few years, WiFi services have provided substantial opportunities for consumers to avoid mobile data charges.⁵⁸ For instance, smartphone users can use WiFi

⁵⁵ Ibid.

⁵⁶ ABI Research estimates that global hotspots have increased from 4.9 to 6.3 million from 2012 to 2013. See T. Parker, "Worldwide carrier Wi-Fi hotspots to number 6.3M by year's end," June 2013, at <http://www.fiercewireless.com/tech/story/report-worldwide-carrier-wi-fi-hotspots-number-63m-years-end/2013-06-12>.

⁵⁷ Based on a 2012 Cisco survey of a sample of 1079 U.S. mobile users; see S. Taylor, A. Young, and A. Noronha, "What Do Consumers Want from Wi-Fi," Cisco, May 2012, at p.6, at http://www.cisco.com/web/about/ac79/docs/sp/SP_Wi-Fi_Consumers.pdf.

⁵⁸ See, e.g., M. Reardon, "Can you ditch your smartphone plan for WiFi?" CNET, November 28, 2012 at http://news.cnet.com/8301-1035_3-57555091-94/can-you-ditch-your-smartphone-data-plan-for-wi-fi/; H. waters, "Cheap, wifi-based cell phone plan could challenge large providers," at SmartPlanet.com, February

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to access no-fee communication services, which function as alternatives to conventional voice conversations. Skype, Snapchat, and texting are but a few examples of communication apps increasingly used over WiFi rather than wireless networks. By accessing the growing array of internet-based services via a WiFi connection, consumers can even avoid data plans entirely.⁵⁹ Consumers choose to avoid data charges because they are costly, and any efforts by carriers to increase those charges would presumably encourage further WiFi substitution.

Upcoming changes to electronic communications services will likely only increase the prevalence of WiFi substitution. The FCC has initiated a docket on the transition of communications networks to internet protocol (IP).⁶⁰ Most of the focus of the docket thus far is on transition for wireline networks, but the transition has implications for wireless as well. After the transition, the distinction between wireline and wireless services, all data, will be further blurred.

Both today and in the future, WiFi facilitates IP services for both wireline and wireless users. As such, WiFi is not viewed by wireless carriers purely as a competitive threat.

Without WiFi, wireless carriers would not have the capacity to carry all traffic, and carriers specifically include WiFi in their plans to accommodate future traffic.⁶¹ Some

5, 2012, at <http://www.smartplanet.com/blog/smart-takes/cheap-wifi-based-cell-phone-plan-could-challenge-large-providers/22454>.

⁵⁹ See, e.g., S. Higginbotham, "Who's your new mobile carrier? How 'bout Wi-Fi," GigaOm, August 27, 2013, at <http://gigaom.com/2013/08/27/whos-your-new-mobile-carrier-how-bout-wi-fi/>; E. Kain, "Will Consumers start ditching expensive smart phones for cheap tablets?" Forbes August 21, 2012, at <http://www.forbes.com/sites/erikkain/2012/08/21/will-consumers-start-ditching-expensive-smartphones-for-cheap-tablets>.

⁶⁰ FCC Docket 13-5.

⁶¹ See, e.g., T. Parker, "AT&T: Wi-Fi will be in all of our small cell deployments," FierceWirelessTech,

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new wireless services are even commercially relying primarily on WiFi services.⁶² IP traffic is growing rapidly both on fixed networks and on mobile networks, but some of the fastest growth is on WiFi networks, often used to offload data from mobile networks.⁶³

The presence of WiFi disciplines the prices for which wireless carriers can offer service. Any effort by a wireless carrier in isolation, or even in coordination with another carrier, to raise data rates would lead some consumers to substitute WiFi services. Even a hypothetical monopolist of all wireless services would have substantial limitations in price increases.

WiFi is but one example of rapidly changing technologies that likely render past market definitions increasingly obsolete and that support a move towards broader market definitions.

V. Conclusion: Look more carefully at product market definitions in future mergers

Mergers in the communications industries are not uncommon, and they will likely continue to be reviewed by the FCC. The FCC should use the empirical information that it has at its disposal to conduct defensible “hypothetical monopolist tests” to determine

January 9, 2013, at <http://www.fiercewireless.com/tech/story/att-wi-fi-will-be-all-our-small-cell-deployments/2013-01-09#ixzz2jpi1thEl>.

⁶² See Republic Wireless at Republicwireless.com.

⁶³ See S. Taylor, “A New Chapter for Mobile? How WiFi will change the mobile industry as we know it,” Cisco Business Internet Solutions Group, November 2011, at <http://www.cisco.com/web/about/ac79/docs/sp/New-Chapter-for-Mobile.pdf>.

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the contours of product markets. The contours of those markets are likely changing rapidly with expanded use of WiFi and other services. Those contours, at least for services that include wireless services, are likely to be broader than the “mobile telephony/broadband” service the FCC has adopted since the Verizon Wireless – Alltel merger. The relevant market likely includes both wireless and wireline services. The consequences of defining the wrong product market are substantial.