Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

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In the Matter of	)	
	)	
Implementation of the Local Competition Provisions in the Telecommunications Act of 1996	)	CC Docket No. 96-98
	)	
Interconnection between Local Exchange Carriers and Commercial Mobile Radio Service Providers	)	CC Docket No. 95-185

AFFIDAVIT OF

JERRY A. HAUSMAN AND J. GREGORY SIDAK

IN RESPONSE TO

SECOND FURTHER NOTICE OF PROPOSED RULEMAKING

INTRODUCTION

Jerry A. Hausman and J. Gregory Sidak declare as follows:

1. We have been asked by the United States Telephone Association (USTA) to submit expert testimony, in response to this *Second Further Notice of Proposed Rulemaking*,[1] that reconciles the "necessary" and "impair" standards of section 251(d)(2) of the Telecommunications Act[2] with the economic principles that provide the basis for the economic analysis of competition and antitrust analysis. In January 1999, both Justice Scalia's majority opinion and Justice Breyer's separate opinion in *AT&T Corp. v. Iowa Utilities Board*[3] alluded to essential facilities and market power analysis in antitrust jurisprudence and invited the Federal Communications Commission (FCC) to consider that body of law as a possible approach to determining when a network element would satisfy the "necessary" and "impair" standards of section 251(d)(2). Responding to that invitation by the Justices, this affidavit explains how economic analysis and antitrust jurisprudence would inform the Commission's statutory interpretation of section 251(d)(2).

2. We propose a five-part "impairment" test that focuses on whether competition can be effective in the end-user services market rather than whether a particular competitor can earn profits. Our test thus is concerned with consumer welfare, not competitor welfare. The essential facilities doctrine in antitrust law provides four necessary but not sufficient conditions for

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1. Implementation of the Local Competition Provisions in the Telecommunications Act of 1996 and Interconnection Between Local Exchange Carriers and Commercial Mobile Radio Service Providers, Second Further Notice of Proposed Rulemaking, CC Dkt. Nos. 96-98, 95-185 (released Apr. 16, 1999) [hereinafter *SFNPRM*].

2. 47 U.S.C. § 251(d)(2).

3. AT&T Corp. *v.* Iowa Utils. Bd., 119 S. Ct. 721 (1999).

defining "impairment" under section 251(d)(2). The complete set of necessary and sufficient conditions includes a fifth requirement, responsive to the explicit text of section 251(d)(2), to address whether the denial of access to a particular network element at a regulated TELRIC price would impair competition at the end-user level. Once the CLEC has demonstrated that the UNE meets the four existing requirements of the essential facilities doctrine, the CLEC must then demonstrate that an ILEC could exercise market power in the provision of telecommunications services to end-users in the relevant geographic market by restricting access to the requested network element. We recommend that "necessary" be interpreted to mean that competition in end-user services would be impossible unless the requested element were unbundled at TELRIC prices. This heightened standard will protect the economic incentives to create the intellectual property embodied in elements that are proprietary in nature. Our impairment test yields standards that accord with traditional antitrust analysis. Those standards should be assessed with temporal and geographic specificity. We find that switches should not be unbundled in any geographic market, while loops may be unbundled in specific geographic markets where AT&T or another major cable-telephony provider has yet to enter.

QUALIFICATIONS

3. Our professional qualifications for submitting this expert affidavit are as follows.

4. My name is Jerry A. Hausman. I am the MacDonald Professor of Economics at the Massachusetts Institute of Technology (MIT). I received an A.B. degree from Brown University and B.Phil. and D.Phil. (Ph.D.) degrees in economics from Oxford University, where I was a Marshall Scholar.

5. My academic and research specialties are econometrics, the use of statistical models and techniques on economic data, and microeconomics, the study of consumer behavior and the behavior of firms. I have published over 100 papers, including about twenty papers in the areas of telecommunications and regulation. I teach a course entitled "Competition in Telecommunications" to graduate students in economics and business at MIT each year. I am also the director of MIT's Telecommunications Economics and Business Research Program. I was a member of the editorial board of the *RAND Journal of Economics* (formerly the *Bell Journal of Economics*) for thirteen years. The *RAND Journal of Economics* is the leading economics journal of applied microeconomics and regulation. In December 1985, I received the John Bates Clark Award of the American Economic Association, awarded every other year for the most "significant contributions to economics" by an economist under forty years of age. I have received numerous other academic and economic society awards, including the Frisch Medal from the Econometrics Society in 1980.

6. I have done significant amounts of research in the telecommunications industry. My first experience in this area was in 1969, when I studied the Alaskan telephone system for the Army Corps of Engineers. Since that time, I have studied the demand for local measured service, the demand for intrastate toll service, consumer demands for new types of telecommunications technologies, marginal costs of local service, costs and benefits of different types of local services, including the effect of higher access fees on consumer welfare, and consumer demand for new types of pricing options for long-distance service. I have also studied the effect of new entry on competition in paging markets, telecommunications equipment markets, and interexchange markets. Other areas of telecommunications in which I have recently done research

include the cellular telephone industry and the information services industry. I have also edited two books on telecommunications, *Future Competition in Telecommunications* (Harvard Business School Press 1989) and *Globalization, Technology and Competition in Telecommunications* (Harvard Business School Press 1993). My most recent papers in telecommunications are "Taxation By Telecommunications Regulation," *Tax Policy and the Economy (*1998); "Economic Welfare and Telecommunications Welfare: The E-Rate Policy for Universal Service Subsidies," *Yale Journal on Regulation* (1999), with Howard A. Shelanski; and "Regulation by TSLRIC: Economic Effects on Investment and Innovation," *MultiMedia und Recht* (1999).

7. I have submitted affidavits and declarations in numerous federal and state proceedings regarding telecommunications regulation. For example, I have testified on numerous occasions before the California Public Utilities Commission about its Alternative Regulatory Frameworks for local exchange carriers. In 1998 I testified before the CPUC on economically correct methods to set prices for unbundled elements. I also submitted numerous affidavits to Judge Harold Greene in various proceedings regarding revisions of the Modification of Final Judgment in *United States v. AT&T*. In 1997, I submitted an affidavit and a reply affidavit before the Federal Communications Commission on behalf of BellSouth Corporation in support of its petition to be allowed to offer in-region, interLATA services in Louisiana according to the procedures set forth in section 271 of the Telecommunications Act of 1996.[4] I have also submitted declarations to the FCC regarding the unbundling of network elements, and I

4. 47 U.S.C. § 271.

participated in the FCC's forum on interconnection regulation in May 1996 and submitted declarations on behalf of USTA in the FCC's interconnection proceeding, CC Docket No. 95-185, which culminated in the Commission order that the Supreme Court reviewed in *AT&T Corp. v. Iowa Utilities Board*.

8. My name is J. Gregory Sidak. I am the F. K. Weyerhaeuser Fellow in Law and Economics at the American Enterprise Institute for Public Policy Research (AEI) in Washington, D.C., where I direct AEI's Studies in Telecommunications Deregulation. I am also a senior lecturer at the Yale School of Management, where I teach a course on telecommunications regulation and strategy with Professor Paul W. MacAvoy. In addition to holding those two academic positions, I am a managing director in LECG, Inc., an economic consulting services firm.

9. I have worked in the federal government on three occasions. From 1987 to 1989, I was deputy general counsel of the FCC. From 1986 to 1987, I was senior counsel and economist to the Council of Economic Advisers in the Executive Office of the President. From 1981 to 1982, I served as a law clerk to Chief Judge Richard A. Posner during his first term on the U.S. Court of Appeals for the Seventh Circuit. In addition to having worked in government, I have previously worked, as an attorney in private practice, on numerous antitrust cases and federal administrative, legislative, and appellate matters concerning telecommunications and other network industries.

10. My academic research concerns regulation and strategy in telecommunications and other network industries, antitrust policy, and constitutional law issues concerning economic regulation. I am the co-author of four books concerning pricing, costing, competition, and

investment in regulated network industries: *Deregulatory Takings and the Regulatory Contract: The Competitive Transformation of Network Industries in the United States* (Cambridge University Press 1997), with Daniel F. Spulber; *Toward Competition in Local Telephony* (MIT Press & AEI Press 1994), with William J. Baumol; *Transmission Pricing and Stranded Costs in the Electric Power Industry* (AEI Press 1995), also with Professor Baumol; and *Protecting Competition from the Postal Monopoly* (AEI Press 1996), also with Professor Spulber. I am also the author of a fifth book, *Foreign Investment in American Telecommunications* (University of Chicago Press 1997), and of more than thirty scholarly articles in law reviews and economics journals. Some of those articles are directly relevant to this proceeding,[5] including "Essential Facilities," published in the May 1999 issue of the *Stanford Law Review*.[6] I am the editor of *Is the Telecommunications Act of 1996 Broken? If So, How Can We Fix It?* (AEI Press 1999), *Competition in International Telecommunications* (AEI Press forthcoming 1999), and *Telecommunications Deregulation in Germany and the United States* (AEI Press forthcoming 1999).

11. I have testified before the U.S. Senate and House of Representatives. My writings have been cited by the Supreme Court, including Justice Breyer's opinion in the 1999 decision in *AT&T Corp. v. Iowa Utilities Board*. My writings also have been cited by the lower federal and state supreme courts and by state and federal regulatory commissions.

12. I have been a consultant on regulatory and antitrust matters to the Antitrust Division of the U.S. Department of Justice, to the Canadian Competition Bureau, and to more

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5. *See* J. Gregory Sidak & Daniel F. Spulber, *The Tragedy of the Telecommons: Government Pricing of Unbundled Network Elements Under the Telecommunications Act of 1996*, 97 COLUM. L. REV. 1081 (1997); J. Gregory Sidak & Daniel F. Spulber, *Givings, Takings, and the Fallacy of Forward-Looking Costs*, 72 N.Y.U. L.

than thirty companies in the telecommunications, electric power, natural gas, mail and parcel delivery, broadcasting, newspaper publishing, and computer software industries in North America, Europe, Asia, and Australia.

13. From Stanford University, I earned A.B. (1977) and A.M. (1981) degrees in economics and a J.D. (1981) in law. I was a member of the *Stanford Law Review.*

14. We file this affidavit in our individual capacities and not on behalf of the Massachusetts Institute of Technology, the American Enterprise Institute, or the Yale School of Management.

SUMMARY OF CONCLUSIONS

15. The Telecommunications Act of 1996 sets forth, in sections 251 and 252, provisions to unbundle the local telecommunications network to encourage the development of a competitive market for local telephony.[7] In this proceeding, the FCC must devise a limiting principle for the "necessary" unbundling of proprietary network elements. In its 1996 *Local Competition First Report and Order*,[8] the FCC had no limiting principle, such that it deemed any

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REV. 1068 (1997).

6. Abbott B. Lipsky, Jr. & J. Gregory Sidak, *Essential Facilities*, 51 STAN. L. REV. 1185 (1999).

7. *See* 47 U.S.C. §§ 251-52. For detailed discussions of this open-access regulation, see J. GREGORY SIDAK & DANIEL S. SPULBER, DEREGULATORY TAKINGS AND THE REGULATORY CONTRACT: THE COMPETITIVE TRANSFORMATION OF NETWORK INDUSTRIES IN THE UNITED STATES (Cambridge University Press 1997); ALFRED E. KAHN, LETTING GO: DEREGULATING THE PROCESS OF DEREGULATION, OR: TEMPTATION OF THE KLEPTOCRATS AND THE POLITICAL ECONOMY OF REGULATORY DISINGENUOUSNESS (Institute of Public Utilities and Network Industries, Michigan State University 1998); Robert G. Harris & C. Jeffrey Kraft, *Meddling Through: Regulating Local Telephone Competition in the United States*, 11 J. ECON. PERSP. 93 (1997).

8. Implementation of the Local Competition Provisions in the Telecommunications Act of 1996 and Interconnection Between Local Exchange Carriers and Commercial Mobile Radio Service Providers, First Report and Order, CC Dkt. Nos. 96-98, 95-185, 11 F.C.C. Rcd. 15,499 (1996) [hereinafter *Local Competition First Report and Order*], *rev'd in part and affirmed in part sub nom.* Iowa Utils. Bd. *v.* FCC, 120 F.3d 753 (8th Cir.

technically feasible unbundling of proprietary network elements to be "necessary." Similarly, the Commission found that an incumbent local exchange carrier (ILEC) had to unbundle any nonproprietary network element if, in the absence of such mandatory unbundling, a telecommunications carrier seeking to offer a service would suffer even the slightest degree of "impairment" in its ability to do so. The Supreme Court, in *Iowa Utilities Board*, rejected those approaches and strongly suggested that the economic analysis of antitrust law provided the Commission with a useful model for interpreting section 251(d)(2).[9]

16. That is not to say that the Commission's interpretation of section 251(d)(2) must incorporate by reference all of antitrust law. Rather, to place the issue within the context of an agency interpretation of a newly enacted statute, the Court identified two disparate points along a continuum. Only a portion of that continuum, however, constitutes a zone of reasonable statutory interpretations for purposes of the *Chevron* doctrine.[10] The FCC's *Local Competition First Report and Order* was, in the Court's determination, plainly outside the zone of reasonable interpretations of "necessary" and "impair" that could have been chosen along the continuum. In contrast, one must read Justices Scalia and Breyer to imply that the essential facilities doctrine and related economic analysis of demand and supply substitution would produce definitions of "necessary" and "impair" that would safely fall within the zone of reasonable interpretations of section 251(d)(2).

1997), *rev'd in part and affirmed in part sub nom.* AT&T Corp. *v.* Iowa Utils. Bd., 119 S. Ct. 721 (1999).

9. AT&T Corp. *v.* Iowa Utils. Bd., 119 S. Ct. 721 (1999).

10. Chevron U.S.A. Inc. *v.* Natural Resources Defense Council, Inc., 467 U.S. 837 (1984).

17. It does not follow, however, that the Commission should pick any point that lies in the zone of reasonableness along the continuum of possible statutory interpretations. Rather, the Commission should adopt an interpretation that represents its best efforts to identify the *optimal* point along the continuum, where "optimality" for that purpose depends primarily on consumer-welfare maximization. The same is true if the continuum is recast as a measure of "impairment," running from blatant foreclosure of a more efficient competitor, at one extreme, to explicit subsidization of a less efficient competitor, at the other extreme. For purposes of section 251(d)(2), the public interest is, and should be interpreted as being, primarily determined by consumer welfare, which is determined by competition rather than competitor welfare.[11] The question, under *Chevron*, can thus be cast as whether the FCC now has a reasonable basis for interpreting section 251(d)(2) in a manner that more resembles its former approach in the *Local Competition First Report and Order* (which was outside the zone of reasonableness entirely and therefore clearly could not be optimal) than the antitrust jurisprudence on demand and supply substitutability (which plainly would be within the zone of reasonableness and therefore clearly could be optimal). Moreover, at a more pragmatic level, to maximize its likelihood of being affirmed on the inevitable appeal of its report and order in this proceeding, the Commission should accept the invitation of Justices Scalia and Breyer to incline its interpretation of section

11. Our previous writings have emphasized this equivalence between the public interest standard and the consumer welfare standard. *See* JERRY HAUSMAN, TAXATION BY TELECOMMUNICATIONS REGULATION: THE ECONOMICS OF THE E-RATE 4 (AEI Press 1998); SIDAK & SPULBER, *supra* note 7, at 309–10, 340; WILLIAM J. BAUMOL & J. GREGORY SIDAK, TOWARD COMPETITION IN LOCAL TELEPHONY 26–27 (MIT Press & AEI Press 1994); Jerry Hausman & Howard A. Shelanski, *Economic Welfare and Telecommunications Welfare: The E-Rate Policy for Universal Service Subsidies*, 16 YALE J. ON REG. 19 (1999); Jerry Hausman, *Valuing the Effect of Regulation on New Services in Telecommunications*, BROOKINGS PAPERS ON ECON. ACTIVITY: MICROECONOMICS, 1997; J. Gregory Sidak, *Telecommunications in Jericho*, 81 CALIF. L. REV. 1209, 1234–38 (1993).

251(d)(2) toward established antitrust principles. The purpose of this affidavit is to explain how the Commission can successfully put that advice into practice.

18. In Part I of this affidavit, we examine the reasoning with which Justices Scalia and Breyer analyzed the "necessary" and "impair" standards of section 251(d)(2). Readers who already are familiar with the relevant statutory language and the *Iowa Utilities Board* decision can proceed to Part II. Our analysis begins with the proposition that Congress did not create through its enactment of the Telecommunications Act a conflict in objectives between that statute and the existing body of antitrust jurisprudence. Antitrust law seeks to maximize the well-being of consumers.[12] Similarly, Congress stated that the purpose of the Telecommunications Act of 1996 is to "promote competition and reduce regulation in order to secure lower prices and higher quality services for American telecommunications consumers and encourage the rapid deployment of new telecommunication technologies."[13] Both antitrust law and the Telecommunications Act seek to promote and protect the competitive process, not particular competitors or particular market structures. Both seek to protect the legitimate returns to private investment. Although the Commission has the discretion under *Chevron* to promulgate rules predicated on reasonable interpretations of the Telecommunications Act, it would not be reasonable in light of *Iowa Utilities Board* for the agency to interpret section 251(d)(2) in a manner that diverged from essential facilities and market power principles in antitrust law. The FCC, in short, could not

12. This principle is well established in antitrust law. *See, e.g.*, National Collegiate Athletic Ass'n. *v.* Board of Regents of Univ. of Okla., 468 U.S. 85, 107 (1984); Reiter *v.* Sonotone Corp., 442 U.S. 330, 343 (1979) (citing ROBERT H. BORK, THE ANTITRUST PARADOX: A POLICY AT WAR WITH ITSELF 66 (Free Press 1978)). For special application of the consumer-welfare criterion to industries undergoing deregulation, see Stephen G. Breyer, *Antitrust, Deregulation, and the Newly Liberated Marketplace*, 75 CALIF. L. REV. 1005 (1987).

13. Telecommunications Act of 1996, Pub. L. No. 104–104, 110 Stat. 56, 56 (preamble).

dismiss such economic analysis as irrelevant to interpretation of the Telecommunications Act without also dismissing consumer-welfare maximization as the rightful objective of the 1996 legislation.

19. In Part II, we use economic analysis to explain why it is necessary for the FCC to enunciate limiting principles for the mandatory unbundling of network elements. First, unbundling rules should emphasize consumer welfare and competition rather than competitor welfare. Second, the issue is not whether the ILECs will unbundle their network elements for use by competitive local exchange carriers (CLECs), but whether the government will compel the ILECs to do so at regulated prices set on the basis of total element long-run incremental cost (TELRIC). Third, the social costs of a particular unbundling regime may outweigh the gains. Fourth, the "necessary" and "impair" standards should not rely on an economic misconception of sunk costs in local telecommunications. Fifth, the apparent justification for mandatory unbundling can be endogenously distorted by the FCC's own policies, particularly inefficient and uncompensatory pricing of unbundled network elements.[14]

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14. Three years before passage of the Telecommunications Act of 1996, Professor William J. Baumol and one of the present authors wrote:

> [R]egulators considerably influence the firm's demand elasticity by their decisions and policies that affect the firm's actual or potential competitors. Clearly, severe constraint of firms' entry and pricing will somewhat immunize each enterprise from the competitive pressures of others. That immunity from competition will reduce the elasticity of each supplier's demand—that is, it will reduce the loss of business that results from a rise in its prices. The firm's price elasticity of demand thus must be said to be endogenously determined by the regulatory process itself. . . .
>
> It appears especially clear in telecommunications that a firm's price elasticity of demand is endogenously determined by its regulatory environment.

BAUMOL & SIDAK, *supra* note 11, at 40–41 (citing William E. Landes & Richard A. Posner, *Market Power in Antitrust Cases*, 94 HARV. L. REV. 937, 945 (1981)).

20. In Part III, we examine the limiting principles that are inherent in the essential facilities doctrine and in the competitive analysis of demand and supply substitution that informs traditional antitrust analysis of market power. On the basis of antitrust learning, we present economic definitions for "necessary" and "impair." One immediate lesson is that sound economic analysis counsels the FCC to interpret section 251(d)(2) to impose geographic and temporal limitations on mandatory unbundling. That conclusion flows directly from an established body of antitrust jurisprudence on market definition and the assessment of market power. Before it will be able to conclude with any degree of confidence that its order of mandatory unbundling would serve the public interest and enhance consumer welfare, the Commission—or, preferably, the state public utilities commissions—would be well advised to make market-power determinations in each relevant geographic market for each network element for which the agency proposes to mandate unbundling. That market-power analysis should be based on a specified time horizon, after which time the requirement of unbundling for that network element should sunset unless the access seeker successfully carries the burden of proving that consumer welfare would suffer without the Commission's continuation of such mandatory unbundling.

21. Second, the definitions of "necessity" and "impairment" should be refined in terms of demand and supply substitution. The "necessity" of unbundling a proprietary network element, and the extent to which competition would be "impaired" if a nonproprietary element were not unbundled, depend on of the respective price elasticities of demand and supply in both the input (unbundle network element) and output (end-user access) markets. Our recommended approach comports with the analysis of unilateral effects in the 1992 *Merger Guidelines* adopted

by the Federal Trade Commission and Antitrust Division of the U.S. Department of Justice.[15] Antitrust jurisprudence has long incorporated such techniques for measuring market power,[16] including the rules of derived demand, first enunciated by one of the pioneers of modern microeconomic theory, Alfred Marshall,[17] and subsequently exposited by the late Nobel laureate George Stigler.[18] The necessity of unbundling an element, or the likelihood that a failure to order mandatory unbundling of a particular element would impair competition, should be assessed in light of the existence of competition among different bundles of end services. With respect to its impairment test, section 251(d)(2) is even more emphatic that the focus shall be on the ability of the telecommunications carrier to provide *services*. Congress's choice of statutory language accords with correct economic analysis of competition. Thus, the interpretation of "impair" with respect to loops, for example, should reflect the existence of substitution among bundles of services that use different access technologies (such as cable television's coaxial and fiber-optic infrastructure to provide local access for voice telephony, or the wireless one-rate plans that encompass "free" roaming and long-distance calling).

22. The existing essential facilities doctrine sets forth necessary but not sufficient conditions for defining "impairment" under section 251(d)(2). The complete set of necessary

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15. Department of Justice and Federal Trade Commission, Horizontal Merger Guidelines (1992) [hereinafter *Merger Guidelines*].

16. The classic article is Landes & Posner, *supra* note 14, at 944–45.

17. *See* ALFRED MARSHALL, 5 PRINCIPLES OF ECONOMICS ch. 6 (Macmillan Publishing Co. 1922). For other explications of Marshall's rules of derived demand, see RICHARD G. LAYARD & ALAN A. WALTERS, MICROECONOMIC THEORY 259–72 (McGraw Hill, Inc. 1978). Derived demand is similar to, but distinguishable from, residual demand in the sense that the latter focuses on the demand for the end product and is calculated for any given firm by subtracting the supply of other firms from the market demand. *See* DENNIS W. CARLTON & JEFFREY M. PERLOFF, MODERN INDUSTRIAL ORGANIZATION 100 (Harper Collins 2d ed. 1994).

18. *See* GEORGE J. STIGLER, THE THEORY OF PRICE 252–55 (Macmillan Publishing Co. 4th ed. 1987).

and sufficient conditions includes a fifth requirement, responsive to the explicit text of section 251(d)(2), to address whether the denial of access to that network element at TELRIC prices would impair competition at the end-user level. Once the CLEC has demonstrated that the network element meets the four requirements already contained in the essential facilities doctrine, the CLEC must then demonstrate that an ILEC could exercise market power in the provision of telecommunications services to end-users in the relevant geographic market by restricting access to the requested network element. Our five-part test is as follows:

The FCC shall mandate unbundling of a network element if and only if

> (1) it is technically feasible for the ILEC to provide the CLEC unbundled access to the requested network element in the relevant geographic market;
>
> (2) the ILEC has denied the CLEC use of the network element at a regulated price computed on the basis of the regulator's estimate of the ILEC's total element long-run incremental cost;
>
> (3) it is impractical and unreasonable for the CLEC to duplicate the requested network element through any alternative source of supply;
>
> (4) the requested network element is controlled by an ILEC that is a monopolist in the supply of a telecommunications service to end-users that employs the network element in question in the relevant geographic market; and
>
> (5) the ILEC can exercise market power in the provision of telecommunications services to end-users in the relevant geographic market by restricting access to the requested network element.

The fifth-element is operationalized by computing the "critical share" of customers that the ILEC must lose in order to deter the ILEC from exercising market power in the end-user service market. It is immediately clear that the FCC's requirement of any "technically feasible" unbundlings, articulated in the *Local Competition First Report and Order,* is subsumed within our five-part framework and hence exposed as being necessary but not sufficient. While our impairment of competition standard is based on the ability of an ILEC to exercise significant market power for a service in the absence of unbundling, in the case of a proprietary element based on intellectual property we recommend a standard that provides for unbundling only if competition is impossible in the absence of unbundling.

23. In Part IV, we apply our impairment test to determine whether a particular network element in a particular geographic market requires unbundling. Demand-side constraints on the exercise of market power, such as voice telephony over cable television networks and wireless telephony, affect all unbundled network elements (UNEs) equally. By contrast, we examine supply-side constraints at a UNE-specific level. A major conclusion to emerge is that network elements with low fixed costs in geographically dense areas should not likely be subject to mandatory unbundling at TELRIC prices. We conclude that switches should not be unbundled on the basis of supply-side substitution possibilities alone, while the same ruling on loops would require demand-side substitution opportunities to be incorporated in the analysis. The major advantage of a consumer-welfare standard over an efficient-competitor standard is that the former focuses attention on the end-user services market and thus allows one to incorporate demand-side substitution possibilities.

24. In Part V, we discuss efficient procedures for administering the impairment test. First, we explain why the CLEC should bear the burden of proving that mandatory unbundling of a particular network element is justified in a particular geographic market. Second, we explain why any order of mandatory unbundling should automatically sunset within two years of the first

unbundling decision. Third, we explain why the state public utilities commissions should administer a market power test that is both location-specific and fact-intensive.

I. JUSTICES SCALIA AND BREYER ON "NECESSARY" AND "IMPAIR"

25. Nearly three years after Congress enacted the Telecommunications Act of 1996,[19] the Supreme Court, in *AT&T Corp. v. Iowa Utilities Board*,[20] struck down as arbitrary and capricious the FCC's implementation of the network element unbundling provisions contained in section 251(c)(3) of that new legislation.[21] Specifically, the Court vacated section 51.319 of the FCC's rules,[22] which the FCC had promulgated in its *Local Competition First Report and Order* in August 1996.[23] The FCC's 1996 order announced, among other things, the minimum list of network elements that incumbent local exchange carriers must offer to other telecommunications carriers on an unbundled basis pursuant to the newly enacted sections 251(c)(3) and 251(d)(2). The Court found that the FCC's unbundling rule, also known simply as Rule 319, erroneously interpreted the "necessary" and "impair" standards of section 251(d)(2).[24] Specifically, the Court directed the FCC, on remand, to "determine on a rational basis which network elements must be made available taking into account the objectives of the 1996 Act and giving some substance to the 'necessary' and 'impair' requirements."[25]

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19. Pub. L. No. 104-104, 110 Stat. 56.
20. 119 S. Ct. at 721.
21. 47 U.S.C. §§ 151 *et seq.*
22. 47 C.F.R. § 51.319.
23. *See Local Competition First Report and Order*, *supra* note 8. The Court, however, affirmed other aspects of the order, including provisions relating to the pricing of unbundled network elements.
24. 119 S. Ct. at 733–36.
25. *Id.* at 736.

26. We review here the statutory framework of the "necessary" and "impair" standards, including the objectives of the Telecommunications Act of 1996. Next, we review the FCC's interpretation of those standards. We then analyze Justice Scalia's opinion for the Court and Justice Breyer's separate opinion, which concurred in the Court's ruling that the FCC had imparted an unreasonable statutory interpretation to the terms "necessary" and "impair." Finally, we analyze the dissenting opinion of Justice David Souter and show that the reasoning that he employed, and that a majority of the Court rejected, helps to clarify the definitions of "necessary" and "impair" that would reduce consumer welfare and hence be impermissible for the FCC to adopt. Readers who are already familiar with the relevant statutory language and the *Iowa Utilities Board* decision can proceed to Part II of this affidavit.

A. The Statutory Framework

1. The Objectives of the Telecommunications Act of 1996

27. One cannot construe "necessary" and "impair" for purposes of section 251(d)(2) without first enunciating the larger objective of the Telecommunications Act of 1996. The preamble to the Telecommunications Act states that its purpose is to "promote competition and reduce regulation in order to secure lower prices and higher quality services for American telecommunications consumers and encourage the rapid deployment of new telecommunication technologies."[26] In the legislative history, Congress reiterated that the objectives of the Tele-

26. Telecommunications Act of 1996, Pub. L. No. 104-104, 110 Stat. 56, 56 (preamble).

communications Act are "to provide for a pro-competitive, deregulatory national policy framework designed to accelerate rapidly private sector deployment of advanced telecommunications and information technologies and services to all Americans by opening all telecommunications markets to competition . . . ."[27]

2. The "Necessary" and "Impair" Requirements

28. Section 251(c)(3) requires any ILEC (other than certain rural carriers[28]) to offer to competitors access to the ILEC's network elements on an unbundled basis.[29] In turn, section 251(d)(2) requires the FCC to consider, when determining whether to mandate the unbundling of an ILEC's network elements under section 251(c)(3),

> at a minimum, whether—(A) access to such network elements as are proprietary in nature is necessary; and (B) the failure to provide access to such network elements would impair the ability of the telecommunications carrier seeking access to provide the services that it seeks to offer.[30]

Together, those two subsections are known as the "necessary" and "impair" requirements.

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27. *See* H.R. REP. NO. 458, 104th Cong., 2d Sess. 1 (1996).
28. *See* 47 U.S.C. § 251(f).
29. Section 251(c)(3) provides that "[i]n addition to the duties contained in subsection [251(b)], each incumbent local exchange carrier" has certain other duties, including:

> (3) Unbundled access.—The duty to provide, to any requesting telecommunications carrier for the provision of a telecommunications service, nondiscriminatory access to network elements on an unbundled basis at any technically feasible point on rates, terms, and conditions that are just, reasonable, and nondiscriminatory in accordance with the terms and conditions of the agreement and the requirements of this section and section 252. An incumbent local exchange carrier shall provide such unbundled network elements in a manner that allows requesting carriers to combine such elements in order to provide such telecommunications service.

47 U.S.C. § 251(c)(3).
30. *Id.* at § 251(d)(2).

29. By the plain language of section 251(c)(3), the "necessary" standard applies only to "such network elements as are proprietary in nature."[31] But neither section 251(d)(2) nor any other section of the Telecommunications Act of 1996 defines "proprietary" for purposes of the ILEC's duty to unbundle network elements. In the practice, the "necessary" standard of section 251(d)(2) may ultimately prove to have less frequent application than the "impair" standard if, under whatever legal definition is adopted, an ILEC is deemed to have few or no network elements that are "proprietary in nature." One way to view the "necessary" standard is that the "impairment" standard sets necessary but not sufficient conditions for the mandatory unbundling of an element that is "proprietary in nature."

B. The FCC's Interpretation of the "Necessary" and "Impair" Requirements

30. The FCC promulgated its statutory interpretations of "proprietary," "necessary," and "impair" in its August 1996 *Local Competition First Report and Order*. The FCC concluded that proprietary network elements include "those elements with proprietary protocols or elements containing proprietary information."[32] An ILEC's signaling protocols that adhere to Bellcore standards, however, were not proprietary in the FCC's view because they use industry-wide protocols.[33]

31. The FCC defined "necessary" to mean "an element is a prerequisite for competition."[34] The agency ruled that "in some instances, it will be 'necessary' for requesting carriers to

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31. *Id.* at § 251(d)(2)(A).
32. *Local Competition First Report and Order*, 11 F.C.C. Rcd. at 15,641 ¶ 282.
33. *Id.* at 15,739 ¶ 481.
34. *Id.* at 15,641–42 ¶ 282.

obtain access to proprietary elements (*e.g.*, elements with proprietary protocols or elements containing proprietary information), because without such elements the ability of requesting carriers to compete would be significantly impaired or thwarted."[35] The FCC noted that ILECs "have economies of density, connectivity, and scale . . . [that must] be shared with entrants."[36]

32. The FCC, relying on a literal dictionary definition, ruled in the *Local Competition First Report and Order* that "impair" means "to make or cause to become worse; diminish in value."[37] The FCC further ruled that

> generally . . . an entrant's ability to offer a telecommunications service is "diminished in value" if the quality of the service the entrant can offer, absent access to the requested element, declines and/or the cost of providing the service rises.[38]

To effectuate its statutory interpretation of "necessary" and "impair," the FCC ordered, through its promulgation of Rule 319, that an ILEC make seven UNEs available to a requesting telecommunications carrier: local loops; network interface devices (NIDs); local switching; interoffice transmission facilities; signaling networks and call-related databases; operations support systems (OSS); and operator services (OS) and directory assistance (DA).[39]

33. On appeal, the U.S. Court of Appeals for the Eighth Circuit affirmed Rule 319 as a reasonable agency interpretation, under the *Chevron* doctrine,[40] of the "necessary" and "impair" standards of section 251(d)(2).[41] The Supreme Court granted certiorari on that and

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35. *Id.* at 15,641 ¶ 282.
36. *Id.* at 15,508–09 ¶ 11.
37. *Id.* at 15,643 ¶ 285 (quoting RANDOM HOUSE COLLEGE DICTIONARY 665 (rev. ed. 1984)).
38. *Id.* at 15,643 ¶ 285.
39. *Id.* at 15,683 ¶ 366 (codified at 47 C.F.R. § 51.319).
40. Chevron U.S.A. Inc. *v.* Natural Resources Defense Council, Inc., 467 U.S. 837 (1984).
41. Iowa Utils. Bd. *v.* FCC, 120 F.3d 753, 808–10 (8th Cir. 1997). *See generally* STEPHEN G. BREYER,

other questions.[42] The Court subsequently reversed the Eighth Circuit (and hence the FCC) on the interpretation of "necessary" and "impair," vacated Rule 319, and remanded the case to the FCC for further proceedings.[43]

C. Justice Scalia's Opinion for the Court

34. Writing for the Court, Justice Scalia regarded the unbundling provisions of the Telecommunications Act of 1996 as reflecting Congress's skepticism that local telephony is not a "natural monopoly" and that "[t]echnological advances . . . have made competition among multiple providers of local service seem possible."[44] But from that congressional concern, however, it did not follow that the Telecommunications Act gave the FCC unlimited authority to compel ILECs to share their facilities with competitors.

35. The Court ruled that section 251(d)(2) imposes "clear limits" on the FCC's authority to determine whether an ILEC must unbundle a particular network element pursuant to section 251(c)(3) and that Rule 319 exceeded the bounds of those clear limits.[45] Justice Scalia wrote for the Court that "the FCC did not adequately consider the 'necessary and impair' standards when it gave blanket access to these network elements, and others, in Rule 319."[46] The Court considered, but did not rule on, the relevance of the essential facilities doctrine in antitrust

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RICHARD B. STEWART, CASS R. SUNSTEIN & MATTHEW L. SPITZER, ADMINISTRATIVE LAW AND REGULATORY POLICY: PROBLEMS, TEXT, AND CASES 256 (Aspen Law & Business 4th ed. 1999) (explaining *Chevron*).

42. 118 S. Ct. 683 (1998).
43. 119 S. Ct. at 733-36.
44. *Id.* at 726.
45. *Id.* at 738.
46. *Id.* at 734.

law as a limiting principle for the FCC's correct interpretation of the "necessary" and "impair" standards. Justice Scalia wrote:

> The incumbents argue that § 251(d)(2) codifies something akin to the "essential facilities" doctrine of antitrust theory, opening up only those "bottleneck" elements unavailable elsewhere in the marketplace. We need not decide whether, as a matter of law, the 1996 Act requires the FCC to apply *that* standard; it may be that some other standard would provide an equivalent or better criterion for the limitation upon network-element availability that the statute has in mind. But we do agree with the incumbents that the Act requires the FCC to apply *some* limiting standard, rationally related to the goals of the Act, which it has simply failed to do.[47]

The Court found that Rule 319 lacked such a limiting principle, either with respect to "necessary" or "impair."

36. With respect to "necessary," Justice Scalia observed that "the Commission announced that it would regard the 'necessary' standards as having been met regardless of whether 'requesting carriers can obtain the requested proprietary element from a source other than the incumbent,' since 'requiring new entrants to duplicate unnecessarily even a part of the incumbent's network could generate delay and higher costs for new entrants, and thereby impede entry by competing local providers and delay competition, contrary to the goals of the 1996 Act.'"[48] Justice Scalia did not pause to elaborate on the fallacy of the FCC's reasoning.

37. Rather, he immediately proceeded to explain why, with respect to "impair," it was erroneous for the FCC to

> regard the "impairment" standard as having been met if "the failure of an incumbent to provide access to a network element would decrease the quality, or increase the financial or administrative cost of the service a requesting carrier

47. *Id.* at 734–35 (citing 3A PHILLIP E. AREEDA & HERBERT HOVENKAMP, ANTITRUST LAW ¶¶ 771–73 (Little Brown & Co. 1996) (emphasis in original) (citation omitted)).

48. *Id.* at 735 (quoting *Local Competition First Report and Order*, 11 F.C.C. Rcd. at 15,642 ¶ 283).

> seeks to offer, compared with providing that service *over other unbundled elements in the incumbent LEC's network*,"—which means that comparison with self-provision, or with purchasing from another provider, is excluded.[49]

In the Court's assessment, the FCC had created a tautology: "Since any entrant will request the most efficient network element that the incumbent has to offer, it is hard to imagine when the incumbent's failure to give access to the element would not constitute an 'impairment' under this standard."[50] Moreover, in the process, the FCC had assigned to potential entrants the critical determination that Congress had delegated to the agency through its enactment of section 251(d)(2):

> The Commission asserts that it deliberately limited its inquiry to the incumbent's own network because no rational entrant would seek access to network elements from an incumbent if it could get better service or prices elsewhere. That may be. But that judgment allows entrants, rather than the Commission, to determine whether access to proprietary elements is necessary, and whether the failure to obtain access to nonproprietary elements would impair the ability to provide services.[51]

In seeking to implement the unbundling provisions of the 1996 legislation, the FCC had created a process that would, in effect, be controlled by the access seekers themselves.

38. The Court also criticized, on two grounds, the economic reasoning underlying the FCC's interpretation of "necessary" and "impair." Those two errors of economic logic translated into two reversible legal errors in the agency's interpretation of section 251(d)(2). First, the FCC ignored the relevance of supply substitutability. The Court found that, in determining the list of elements that ILECs must provide on an unbundled basis pursuant to

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49. *Id.* (quoting *Local Competition First Report and Order*, 11 F.C.C. Rcd. at 15,643 ¶ 285) (emphasis added by the Court).
50. *Id.*

sections 251(c)(3) and 251(d)(2), the FCC must consider the availability of network elements outside the incumbent's network:

> The Commission cannot, consistent with the statute, blind itself to the availability of elements outside the incumbent's network. That failing alone would require the Commission's rule to be set aside.[52]

Second, Justice Scalia emphasized that the "impairment" standards must embody some threshold of materiality. Otherwise, "impairment" could be said to result from the slightest difference between what the ILEC implicitly paid itself for use of a particular network element and what the requesting carrier would pay for it as a UNE. "Impairment" similarly could be said to result from any difference in the quality of the network element:

> [T]he Commission's assumption that *any* increase in cost (or decrease in quality) imposed by denial of a network element renders access to that element "necessary," and causes the failure to provide that element to "impair" the entrant's ability to furnish its desired services is simply not in accord with the ordinary and fair meaning of those terms. An entrant whose anticipated annual profits from the proposed service are reduced from 100% of investment to 99% of investment has perhaps been "impaired" in its ability to amass earnings, but has not *ipso facto* been "impaired . . . in its ability to provide the services it seeks to offer"; and it cannot realistically be said that the network element enabling it to raise its profits to 100% is "necessary."[53]

In articulating that legal and economic reasoning for the Court, Justice Scalia responded to Justice Souter's dissent, which would have found that the common usage of the words "necessary" and "impair" made Rule 319 a reasonable agency interpretation of section 251(d)(2), to which the Court should defer under *Chevron*.[54]

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51. *Id.*
52. *Id.*
53. *Id.* (emphasis in original).
54. *Id.* at 739 (Souter, J., dissenting).

39. Justice Scalia's response to Justice Souter made two important points, one concerning an incumbent's cost advantage over entrants, and the other concerning whether an entrant was entitled to expect anything more than a reasonable opportunity to earn a competitive return:

> Justice Souter points out that one can say his ability to replace a light bulb is "impaired" by the absence of a ladder, and that a ladder is "necessary" to replace the bulb, even though one "could stand instead on a chair, a milk can, or eight volumes of Gibbon." True enough (and nicely put), but the proper analogy here, it seems to us, is not the absence of a ladder, but the presence of a ladder tall enough to enable one to do the job, but not without stretching one's arm to its full extension. A ladder one-half inch taller is not, "within an ordinary and fair meaning of the word," "necessary," nor does its absence "impair" one's ability to do the job.[55]

Justice Scalia also emphasized for the Court that the statutory right of competing telecommunications carriers to receive unbundled access to an ILEC's network element under the "impairment" standards was not a guarantee of supracompetitive profits:

> We similarly disagree with Justice Souter that a business can be impaired in its *ability* to provide services—even impaired in that ability "in an ordinary, weak sense of impairment"—when the business receives a handsome profit but is denied an even handsomer one.[56]

Stated differently, Justice Scalia reasoned that, if a telecommunications carrier does not need to lease a particular UNE to earn a normal economic profit after entering a particular market, then that carrier cannot claim to have been "impaired" in its ability to supply telecommunications services to consumers simply because its lease of the UNE in question might have enabled the carrier to earn a supracompetitive profit. Consistent with the view that the unbundling rules exist

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55. *Id.* at 735 n.11 (Scalia, J., for the Court) (quoting *id.* at 739 (Souter, J., concurring in part and dissenting in part) (citation omitted)).

56. *Id.* (Scalia, J., for the Court) (quoting Souter, J., dissenting) (emphasis in original) (citation omitted).

to enhance consumer welfare rather than competitor welfare, Justice Scalia seemed to say that a CLEC could have *at most* a legally cognizable claim under the "necessary" and "impair" standards *only if* it would be denied, by an ILEC's refusal to offer the desired UNE, a reasonable opportunity to earn a competitive return on capital, or what is called *zero economic profit*.[57] The mandatory unbundling provisions of section 251(d)(2) do not grant an entrant any legally cognizable right to earn a supracompetitive return, or what is called *economic rent*.[58] Nor would the FCC have a legitimate rationale under the public interest standard for ordering an ILEC to ensure that a telecommunications carrier requesting UNEs pursuant to an order of mandatory unbundling could earn economic rent as a windfall or entry subsidy. "In a world of perfect competition," wrote Justice Scalia, "in which all carriers are providing their service at marginal cost, the Commission's total equating of increased cost (or decreased quality) with 'necessity' and 'impairment' might be reasonable; but it has not established the existence of such an ideal world."[59] Justice Scalia saw no statutory basis for the distortions that Rule 319 would create in an imperfect world—let alone the distortions that the FCC would create by ensuring that entrants would earn windfall profits if they chose to lease, at a TELRIC price, any network element for which the FCC had found it to be technically feasible to order mandatory unbundling.

57. "Economic profits are zero when total revenues equal total costs, inclusive of a competitive return on capital." SIDAK & SPULBER, *supra* note 7, at 313; *see also* CARLTON & PERLOFF, *supra* note 16, at 340.

58. Economic rent is a return to a factor of production in excess of the payment that is necessary to prevent that factor from being redeployed to an alternative use. *See, e.g.*, PAUL MILGROM & JOHN ROBERTS, ECONOMICS, ORGANIZATION AND MANAGEMENT 269 (Prentice-Hall, Inc. 1992); Armen A. Alchian, *Rent*, *in* 4 THE NEW PALGRAVE: A DICTIONARY OF ECONOMICS 141 (John Eatwell, Murray Milgate & Peter Newman eds., Macmillan 1987).

59. 119 S. Ct. at 735.