Exhibit 3

PRINCIPLES OF COMPETITION AND REGULATION FOR THE DESIGN OF TELECOMMUNICATIONS POLICY

By

Dennis L. Weisman
Department of Economics
Kansas State University

And

Timothy J. Tardiff

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I. QUALIFICATIONS AND PROFESSIONAL BACKGROUND

1. My name is Dennis L. Weisman. I am employed by Kansas State University as a Professor of Economics. My business address is Department of Economics, Waters Hall, Kansas State University, Manhattan, Kansas 66506-4001. I received a B.A. in economics and mathematics from the University of Colorado; an M.A. in economics from the University of Colorado; and a Ph.D. in economics from the University of Florida with a specialization in industrial organization and regulation. I have testified in numerous regulatory proceedings to the economic and social impacts of regulatory policies and have served as an advisor to telecommunications firms, electric power companies and regulatory commissions on economic pricing principles, the design of incentive regulation plans and competition policies.

2. My primary research interests are in strategic behavior and government regulation. I have authored or co-authored more than 85 articles, books and book chapters. My research has appeared in the Antitrust Bulletin, Economics Letters, the Journal of Regulatory Economics, the Yale Journal on Regulation, the Journal of Policy Analysis and Management, the Southern Economic Journal and the Federal Communications Law Journal. My research has also been cited by the U.S. Supreme Court in Verizon v. FCC, both majority and dissenting opinions. I am the co-author of Designing Incentive Regulation for The Telecommunications Industry, published by the MIT Press and the AEI Press in 1996, and The Telecommunications Act of 1996: The "Costs" of Managed Competition, published by Kluwer in 2000. I am also the author of Principles of Regulation and Competition Policy for the Telecommunications Industry - A Guide for Policymakers, published by The Center for Applied Economics at the University of Kansas, School of Business in 2006. I currently serve on the editorial boards of the Journal of Regulatory Economics, Information Economics and Policy and The Review of Network Economics.

3. My name is Timothy J. Tardiff. My business address is 11 Morton Street, Newton, MA 02459. I am an economic consultant in private practice. I have specialized in telecommunications policy issues for over 25 years. I received a B.S. degree from the California Institute of Technology in mathematics (with honors) in 1971 and a Ph.D. in Social Science from the University of California, Irvine in 1974. My research has included studies of the demand for telephone services, such as local measured service and toll; analysis of the market potential for new

telecommunications products and services; assessment of the growing competition for telecommunications services; and evaluation of regulatory frameworks consistent with the growing competitive trends. I have published articles in the regulatory economics literature, which in recent years have focused on policies for the increasingly competitive telecommunications industry.

4. I participated in numerous legal and regulatory proceedings on issues of telecommunications economics and regulation. Since the passage of the Telecommunications Act of 1996, I have participated in interconnection arbitrations, unbundled element proceedings, universal service investigations, applications by incumbent local exchange carriers for authorization to provide interLATA long-distance, and implementation of the Triennial Review Order rules for unbundling network elements in over 25 states and before the Federal Communications Commission ("FCC"). My international research and consulting experience includes studies and expert reports on telecommunications competition and interconnection issues in Canada, Japan, New Zealand, Peru, Thailand, Australia, and Trinidad and Tobago.

II. PURPOSE AND ORGANIZATION OF PAPER

5. This paper has four primary objectives. The first objective is to develop a clear understanding of the metamorphosis that has taken place in telecommunications markets and its implications for the scope of regulatory oversight. The second objective is to develop a set of high-level competition and regulation principles that may be used constructively to inform the Commission's future decision-making on a broad range of issues, including forbearance from unbundling obligations, price

regulation of special access, perceived market failures in the provision of broadband and the need for network-neutrality mandates. The third objective is to reconcile the objectives of the 1996 Telecommunications Act with the Commission's regulatory decisions and the rationale put forth by the Commission to explain those decisions. The final objective is to identify some of the pitfalls that encumbered the transition to competition in long-distance markets so as to avoid similar problems in transitioning to competition in local telephone service markets.

6. The outline for the remainder of this paper is as follows. The complete set of competitive and regulatory principles is provided as a reference for the reader in Section III. Section IV provides a set of macro themes that characterize the paradigm shift in telecommunications markets—recognizing the interplay between technological and market forces and its implications for the scope of economic regulation. A set of fundamental competition and regulation principles grounded in the law and economics literature is developed in Section V. Section VI provides a brief summary and concludes.

III. THE PRINCIPLES

7. The competition and regulatory principles developed in this paper are reproduced immediately below to serve as both a convenient reference for the reader and also to foreshadow the key concepts employed in the analysis.

THE PRINCIPLES

Principle 1. The optimal regulatory policy should recognize the tradeoffs between static and dynamic efficiency and its implications for consumer welfare.

Principle 2. The optimal regulatory policy should balance Type I errors (regulating when market forces provide sufficient competitive discipline) and type II errors (not regulating when market forces provide insufficient competitive discipline) so as to minimize the expected social cost of error.

Principle 3. The optimal regulatory policy should be platform-neutral and competitor-neutral in that it should serve to protect the integrity of the competitive process rather than individual competitors.

Principle 4. Market share tests are inherently problematic in regulated industries and the Commission should not rely upon them to draw inferences about market power.

Principle 5 Any dearth of competition in retail telecommunications markets is likely an artifact of regulatory-rate distortions that served to suppress competition.

Principle 6. Historical ratemaking polices in telecommunications that diverge from the competitive standard can lead regulators astray in applying standard market definition guidelines.

Principle 7. The cost structure for wireline providers (i.e., pronounced scale/scope economies) and the corresponding high price-cost margins required for financial viability implies that relatively modest levels of competition may be sufficient to impose the requisite pricing discipline.

Principle 8. The purpose of mandatory unbundling is not to control market power *per se*, but rather to enable competition that would not be possible otherwise.

Principle 9. Wholesale markets are relevant to the implementation of the 1996 Telecommunications Act only insofar as they are required for competition in retail markets.

Principle 10. Policymakers have recognized that (i) subscription to both wireless and wireline does not imply that the two services are complements, and (ii) wireless provides competitive discipline on wireline prices.

IV. THE PARADIGM SHIFT IN TELECOMMUNICATIONS MARKETS

8. The primary objective of this section is to develop a set of general themes that characterize the paradigm shift in telecommunications markets—recognizing the interplay between technological and market forces and its implications for the scope of economic regulation on a going forward basis. The paramount question to be addressed concerns how the metamorphosis in the telecommunications marketplace, including issues of technological convergence, endogenously changes the scope, methods and objectives of the regulatory authority on a going-forward basis.

9. Some twenty-five years ago, Professor Alfred Kahn wrote an article entitled *The Uneasy Marriage of Regulation and Competition*. In this article, Professor Kahn observed that there is "no rational half-way house between thorough regulation and free competition."[1] In an important sense, the positions of the opposing parties appearing before the Commission on matters of regulation, competition policy and forbearance metrics underscore the wisdom inherent in Professor Kahn's observation.

10. Proponents of additional regulation would have the Commission look backward to the policies it instituted immediately upon passage of the 1996 Telecommunications Act when facilities-based competition was barely visible on the horizon and pervasive unbundling was the policy default. These parties argue that there is a dearth of real competition, that barriers to entry are too high and their

[1] Alfred E. Kahn, "The Uneasy Marriage of Regulation and Competition." *Telematics*, Vol. 1, Number 5, 1984, p. 8.

success in the marketplace depends on the Commission maintaining "accommodative entry" policies through pervasive, mandatory unbundling.

11. We believe that it is essential for the Commission to look forward and recognize the market forces that have been unleashed through competing technological platforms. The competitive dynamics that are irreversibly reshaping the industry are not measured by a snapshot of the marketplace at a given point in time, but rather through a comprehensive understanding of industry trends, technological innovations and changes in market share over time. Hence, in many ways, the Commission stands at the half-way house of which Professor Kahn spoke. Telecommunications is no longer the regulated monopoly of yesteryear, but perhaps, in the view of some parties, not vigorously competitive in all markets either. To look forward – or to look back, that is the question. The seminal theme developed in the discussion that follows is that sound public policy requires the Commission to take a forward-looking perspective in designing optimal policies for the telecommunications marketplace.

12. Professor Kahn followed his above observation with another no less poignant one - "Between regulated monopoly and unregulated competition, regulated competition represents the worst of both possible worlds."[2] On this point, it should not be forgotten that this Commission has previously recognized that network

[2] Id., p. 2.

"unbundling is one of the most intrusive forms of economic regulation – and one of the most difficult to administer . . ."[3]

13. Consider the fact that at any given point in time across the economy there will likely exist opportunities in which forced sharing would serve to place downward pressure on current prices. Nonetheless, as a matter of competition policy, we do not observe pervasive forced sharing obligations and for good reason. In practice, the consumer-welfare gains expected from forced sharing are likely to pale in comparison with the consumer-welfare losses due to dampened incentives to invest in research and innovation that gives rise to new products and services.

14. The rapid rate of technological change in the telecommunications industry over the last decade has fundamentally transformed the industry's market structure. The multiplicity of competitive platforms, including broadband and wireless, represents a metamorphosis of seemingly unprecedented proportion.[4] This paradigm shift necessarily calls for a reexamination and recalibration of the industry's regulatory institutions (and forms of governance) to conform to the changes in market structure that the emergence of these technologies has wrought.

15. For example, how should the scope of network unbundling change in response to these market developments? How does pervasive network unbundling affect the speed and types of facilities-based competition that emerge? Does pervasive network unbundling create a problem of path-dependence in which

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[3] See Federal Communications Commission, *In the Matter of Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers*, CC Docket No. 01-338, Report and Order and Order On Remand and Further Notice of Proposed Rulemaking ("TRO"), Released August 21, 2003, ¶ 141.
[4] See, for example, Jonathan E. Neuchterlein and Philip J. Weiser, *Digital Crossroads, American Telecommunications Policy in the Internet Age*. Cambridge MA: The MIT Press, 2005.

"accommodative entry" policies become self-fulfilling prophecies? Finally, should these changes in market structure change the regulatory default from one that currently favors a policy of pervasive, mandatory unbundling to one that dutifully recognizes that "unbundling is one of the most intrusive forms of economic regulation." Hence, the use of unbundling should be exceptional in nature—a policy instrument reserved for market conditions in which competition is infeasible any other way.[5]

16. The term "regulator" probably describes fairly accurately what was traditionally asked of public utility commissioners.[6] The primary objective was to "keep the trains running on time" — to ensure that consumers had reliable access to public services (e.g., electric power, natural gas, telephone and water) of acceptable quality at reasonable prices. The centripetal model of command-and-control regulation of yesteryear that put in place strict rules to elicit a uniformity of market outcomes is increasingly at odds with what is likely now required: a centrifugal model of regulation in which the regulator becomes less of a controller and more of an enabler.

17. The regulatory challenge is to facilitate competing technological platforms that are increasingly capable of providing the requisite discipline from within — competitive discipline of the real kind rather than a surrogate fashioned at the hand

[5] An expert on cross-country comparisons of regulatory regimes testified in a recent Canadian proceeding that the Europeans have "cable envy" with respect to North America. The point being that the more liberal use of unbundling in Europe should be viewed as a default policy driven, in large part, by the absence of a robust cable industry. See Testimony of Peter Waters, Transcripts of Proceedings Before the Canadian Radio-Television and Telecommunications Commission, Review of Regulatory Framework for Wholesale Services and Definition of Essential Service, CRTC 2006-14, October 12, 2007, Volume 4, pp. 1144-46.

[6] This discussion borrows from Dennis L. Weisman and Glen O. Robinson. "Lessons for Modern Regulators from Hippocrates, Schumpeter and Kahn," In NEW DIRECTIONS IN COMMUNICATIONS POLICY., ed. by Randolph J. May, Durham, NC: Carolina Academic Press, 2009, pp. 3-37.

of the regulator.[7, 8] This entails a corresponding shift in regulatory oversight from one of controlling market power (static efficiency) to one of unleashing the power of markets (dynamic efficiency).[9]

V. KEY COMPETITION AND REGULATION PRINCIPLES

18. In this section, we develop a set of key competition and regulation principles designed to assist the Commissions with its decision-making on a wide range of policy questions. These policy questions include, but are not limited to, the following. What criteria should determine whether forbearance from unbundling obligations is warranted? Is there a need to reinstitute price regulation for special access? Are there market failures in the provision of broadband that necessitate a change in policy? Should network-neutrality principles be imposed on network providers as a matter of regulatory decree, or can the market be expected to provide the requisite discipline?

Principle 1. The optimal regulatory policy should recognize the tradeoffs between static and dynamic efficiency and its implications for consumer welfare.

19. Static efficiency entails both allocative and productive (technical) efficiency. Allocative efficiency refers to the relationship between the price of the service and the underlying marginal (incremental) cost of the service at any given point in

[7] Professor Kahn observes that "the single most widely accepted rule for the governance of the regulated industries is regulate them in such a way as to produce the same results as would be produced by effective competition, if it were feasible." Alfred E. Kahn, *The Economics of Regulation: Principles and Institutions.* Vol. I, New York: John Wiley and Sons, 1970, p. 17.

[8] Professor Bonbright observes that "Regulation, then, as I conceive it, is indeed a substitute for competition; and it is even a partly imitative substitute." James C. Bonbright, *Principles of Public Utility Rates.* New York: Columbia University Press, 1961, p. 107.

[9] See Dennis L. Weisman, "On Market Power and the Power of Markets: A Schumpeterian View of Dynamic Industries." The Free State Foundation, *Perspectives from FSF Scholars*, February 26, 2008, Vol. 3(5). http://www.freestatefoundation.org/images/Power_of_Markets.pdf.

time. Productive (technical) efficiency is concerned with production at the lowest possible cost.[10] Dynamic efficiency is concerned with the optimal investment over time in capital formation, cost-reducing innovation and product innovation. Dynamic efficiency is particularly critical in infrastructure industries that serve as key drivers of economic growth. Professor James Bonbright, a leading authority in the field of public utility regulation, explains the relationship between these various efficiency measures in the following passage.

> Under unregulated competition, the price system is supposed to function in two ways with respect to the relationship between the price of the product and the cost of production. In the first place, the rate of output of any commodity will so adjust itself to the demand that the market price will tend to come into accord with production costs. But in the second place, competition will impel rival producers to strive to reduce their own production costs in order to maximize profits and even in order to survive in the struggle for markets. This latter, dynamic effect of competition has been regarded by modern economists as far more important and far more beneficent than any tendency of "atomistic" forms of competition to bring costs and prices into close alignment at any given point of time.[11]

20. Writing more than 60 years ago Professor Joseph Schumpeter struck a similar chord in rebuking what he termed the "*modus operandi* of competition" in which economists focused almost exclusively on price competition or static efficiency. He argued that, in reality, "the competition that matters arises not from additional shops of the same type . . ."[12] and that

> [I]n capitalist reality as distinguished from its textbook picture, it is not that kind of competition which counts, but the competition from the new commodity, the new technology, the new source of supply, the new type of organization . . . competition which commands a decisive cost or quality

[10] A firm is technically efficient if it (i) uses the minimum possible amount of inputs to produce its output; or, equivalently, (ii) produces the maximum possible amount of output from any given quantity of inputs.
[11] James C. Bonbright, *Principles of Public Utility Rates.* Columbia University Press: New York, 1961, p. 53.
[12] Joseph A. Schumpeter, *Capitalism, Socialism and Democracy*. New York: Harper Torchbooks, 1975 (originally published in 1942), p. 85.

> advantage and which strikes not at the margins of the profits and the outputs of the existing firms but at their foundations and their very lives.[13]

21. In enacting the 1996 Telecommunications Act, the government indicated that express purpose of the Act was:

> 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 telecommunications technologies.[14]

22. Given the objectives of the Act as articulated in the above passage, it is clear that the Congress harbored both dynamic efficiency and static efficiency objectives. A key question concerns the policy prescription required to realize these sometimes conflicting objectives. Two observations are instructive. First, as Professor Bonbright indicates in the above passage, there is a general consensus among economists that dynamic efficiency trumps static efficiency in terms of consumer welfare.[15] Second, recognition of the operative trade-offs between these various measures of efficiency is particularly critical in technologically-dynamic industries. To wit, the capital-intensive nature of these industries is such that relatively high price-cost margins may be necessary, not only for cost recovery, but also to provide the requisite incentives for investment in innovation.[16] These observations suggest

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[13] *Id.*, p. 84.

[14] Preamble, 1996 Telecommunications Act of 1996. Pub. L. No. 104-104, 110 Stat. 56 (codified as amended in scattered sections of 47 U.S.C.)

[15] As Professor Kahn observes:

> Second, wherever mandatory sharing, for the sake of jump-starting the entry of competitors, would interfere with the more creative and dynamic investment in facilities-based competitive entry and innovation by incumbents and challengers alike, it is the latter that must take primacy.

Alfred E. Kahn, *Whom the Gods Would Destroy, or How Not to Deregulate*, Washington D.C.: AEI-Brookings Joint Center for Regulatory Studies, 2001, p. 22.

[16] See Antitrust Modernization Commission, Report and Recommendations, Washington D.C. 2007. pp. 40-41. ("For these reasons, firms with low marginal costs but large fixed costs, for research and development and other innovative activity, for instance, often need to price significantly above marginal costs simply to earn a competitive return in the long run.")

that more light-handed regulation with respect to static efficiency may be expected to spur both product and process innovation and hence promote dynamic efficiency.[17]

23. It is in this sense that competition policies, in the form of forced sharing, that focus exclusively on the elimination of barriers to entry and reducing market power necessarily entail trade-offs between imitation and innovation (respectively, between static and dynamic efficiency). To wit, forcing incumbents to share non-essential network elements with rivals, particularly at unduly favorable prices,[18] invites those new entrants to become *de facto* clones of the incumbent provider.[19] This policy prescription sacrifices innovation for imitation in the sense that artificially encouraging entry via the reseller model may have the effect of "crowding out" facilities-based entry.[20] Policies that reward imitation rather than

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[17] See, for example, James E. Prieger and Daniel Heil, "The Rules of the Road or Roadblocks on the Information Highway: Regulation and Innovation in Telecommunications, Working Paper 08-15, AEI Center for Regulatory and Market Studies, April 2008.

[18] Whereas the relationship between innovation and competition is complex and not yet settled in the economics literature, there is evidence to suggest that higher market concentration leads to higher rates of innovation when the ability of the firm to appropriate the returns from its investments is weak, which would be the case for mandatory unbundling at regulatory-prescribed prices.

> Economic theory is ambiguous on the relationship between competition and innovation. Competition can reduce innovation incentives, particularly in markets where property rights are weak and it is difficult for firms to appropriate the value of their innovations. ... There is also some empirical support for the theoretical result that competition can reduce innovation incentives in markets with weak appropriation.

Richard J. Gilbert, "New Antitrust Laws for the 'New Economy'?, Testimony Before the Antitrust Modernization Commission, Washington D.C., November 8, 2005, p. 8.

[19] See, for example, Alfred E. Kahn, Timothy J. Tardiff and Dennis L. Weisman, "The 1996 Telecommunications Act At Three Years: An Economic Evaluation of Its Implementation by The FCC." *Information Economics and Policy*, Vol. 11, No. 4, December 1999, pp. 319-365; and Dennis L. Weisman, "The (In)Efficiency of the 'Efficient-Firm' Cost Standard." *The Antitrust Bulletin*, Vol. XLV(1), Spring 2000, pp. 195-211.

[20] A recent study concludes that the share price of both the ILECs and telecommunications equipment manufacturers declined upon announcement of the FCC's decision to liberalize unbundling rules.

> Second, both leading suppliers of narrowband (voice) infrastructure, Nortel and Lucent, exhibit a pattern of returns similar to the ILECs. This suggests that enhanced UNE-P rules are not only a negative for incumbent carriers but also for equipment manufacturers supplying switches and

innovation will attract those market entrants adept at imitation, predominantly arbitragers, while driving away genuine innovators.[21]

24. That consumers may realize greater benefits from a policy design that places primacy on dynamic efficiency does not imply that policymakers necessarily have the requisite incentives to put in place such policies. Regulators tend to emphasize performance metrics that are measureable to their constituencies. As a result, a regulator is more likely to be held accountable for the behavior of prices than for innovation foregone even when the latter is more important for consumer welfare. In addition, the short tenure of most regulators would naturally lead them to stress short-run price performance over advances in innovation that may only materialize over the longer run.[22]

Principle 2. The optimal regulatory policy should balance Type I errors (regulating when market forces provide sufficient competitive discipline) and type II errors (not regulating when market forces provide insufficient competitive discipline) so as to minimize the expected social cost of error.

25. In deciding upon the appropriate balance of Type I and Type II errors, the Commission should consider whether one type of error is more amenable to self-

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other network infrastructure. This evidence is consistent either with the theory that generous UNE-P opportunities lead incumbent and competitive carriers to substitute out of network infrastructure, or the rent-seeking explanation of resale competition developed above, or both. It is inconsistent, however, with the view that UNE-P helps facilitate competitive entry that will result in increased network investment.

Thomas W. Hazlett and Arthur M. Havenner, "The Arbitrage Mirage: Regulated Access Prices with Free Entry in Local Telecommunications Markets." *The Review of Network Economics*, Volume 2(4) December 2003, p. 447.

[21] Michael Powell, the former chairman of the FCC, commented on the boom and bust in telecommunications markets and the regulators' culpability in it. He noted, in particular, that regulators attempted to drive the price of entry close to zero in telecommunications markets and, as a result, succeeded in attracting primarily arbitrageurs rather than genuine innovators. See *Telecommunications Reports*, "Powell Recommends Simplicity in New Law for IP Services." April 1, 2005.

[22] See Glen O. Robinson and Dennis L. Weisman, "Designing Competition Policy for Telecommunications." *The Review of Network Economics*, Vol. 7(4), December 2008, pp. 509-46.

correction by market forces than the other type of error. For example, prices that are above competitive levels will tend to be self-correcting, whereas prices pegged below market levels will tend to discourage competition (and investment) in a manner that is not easily reconciled with the goals and objectives for the telecommunications sector as set forth in the 1996 Act.[23]

26. Similar reasoning should serve to guide the scope of mandatory unbundling. For example, the Commission may be uncertain as to the benefits/costs of mandatory unbundling of local loops in a particular market area. That decision should be duly informed by (i) the effect of mandatory unbundling on the ubiquity and intensity of facilities-based competition; (ii) the fact that retail regulation at the state level serves as a check on ILEC market power; and (iii) the risk that unbundling policies that are overly expansive in scope become a self-fulfilling prophecy. In other words, mandatory unbundling will crowd out facilities-based competition and thereby serve to ensure that pervasive, mandatory unbundling is required for retail competition in perpetuity. What is of particular concern is a "bad equilibrium" in which the ILECs do not invest because they cannot earn the required (market) returns and the CLECs do not invest because it is less costly to lease.

27. The Commission has long expressed a preference for facilities-based entry as opposed to entry on the basis of resale or unbundled network elements.[24, 25] The

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[23] Robert W. Crandall and Leonard Waverman, "The Failure of Competitive Entry Into Fixed-Line Telecommunications: Who Is At Fault?," *Journal of Competition Law and Economics* 2(1): 113-148, 2006; Jerry A. Hausman, and Gregory J. Sidak, "Did Mandatory Unbundling Achieve Its Purpose? Empirical Evidence From Five Countries," *Journal of Competition Law & Economics*, 1: 173-245, 2003; Thomas W. Hazlett, (2006) "Rivalrous Telecommunications Networks With and Without Network Sharing," *Federal Communications Law Journal*, 58(3): 477-509, 2006.

[24] See Federal Communications Commission, *In the Matter of Unbundled Access to Network Elements, Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers*, WC Docket No. 04-313, CC

former not only offers the prospect of more robust innovation and a wider range of choices for consumers, but also potentially obviates the need for costly and distortionary regulatory intervention in the marketplace. Hence, to the extent that mandatory unbundling discourages facilities-based entry, the Commission should adopt a policy that mandatory unbundling is presumptively unnecessary absent credible evidence to the contrary. This is a policy that explicitly recognizes that the social costs of unbundling when it is unnecessary are potentially larger than the social costs of not unbundling when it is necessary. This is particularly likely to be the case when state level price regulation is in place to control any undue exercise of market power on the part of the incumbent providers.

Principle 3. The optimal regulatory policy should be platform-neutral and competitor-neutral in that it should serve to protect the integrity of the competitive process rather than individual competitors.

28. The goals and objectives of the 1996 Telecommunications Act include reduced regulation, lower prices and incentives for investment in technology and infrastructure. There is no requirement in the Act that calls for retail competition to be achieved through mandatory unbundling policies. To the contrary, the goal of

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Docket No. 01-338, Order On Remand, Released February 4, 2005 (hereafter Triennial Review Order on Remand or "TRRO"), ¶ 2, ¶ 33, ¶ 218 and note 594,. Important goals of the Act include the deployment of advanced technology and infrastructure. The FCC used this authority to reject calls for unbundling of fiber-to-the-home and packet switching.

[25] Canadian regulators had previously reached the very same conclusion. In Telecom Decision CRTC 97-8 at ¶ the73, the Commission observed that :

> The Commission is of the view that efficient and effective competition will best be achieved through facilities-based competitive service providers; otherwise competiton will only develop at the retail level, with the ILECs retaining monopoly control of wholesale level distribution.

reduced regulation portends a preference for facilities-based competition over competition based on resale or mandatory network unbundling.[26]

29. The above observations are significant because there is no provision in the Act that requires the Commission to artificially sustain a particular CLEC or set of CLECs that rely upon a business model based on resale and mandatory network unbundling provided that facilities-based platforms are present and contributing toward vigorous competition in the retail market. In other words, the Commission should be agnostic with respect to the particular technological platform employed to bring about vigorous competition in retail markets. The Commission should therefore seek to foster *competition on the merits* without regard to any particular carrier, technological platform or business model.[27]

30. The practice of asymmetric regulation undermines the competitive process to the detriment of consumers. It is accepted doctrine that regulation and competition policy should serve to protect the integrity of the competitive process rather than the financial viability of individual competitors.[28] Unfortunately, the reality is often quite different. As Professor Alfred Kahn has observed:

> The regulator tends as a matter of constitutional preference ... to convert the maintaining of the "level playing fields" into an interference with the contest itself. Regulators move from trying to assure a fair and equal start

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[26] See, for example, Alfred E. Kahn, Timothy J. Tardiff and Dennis L. Weisman, "The 1996 Telecommunications Act At Three Years: An Economic Evaluation of Its Implementation by The FCC," *Information Economics and Policy*, Vol. 11, No. 4, December 1999, pp. 319-365.

[27] The term "competition on the merits" refers to the basic idea that the returns that a firm enjoys should reflect its superior efficiency and business acumen in the marketplace *vis-à-vis* its relatively less proficient rivals. In United States v. Aluminum Co. of Am., 148 F.2d 416, 430 (2d Cir. 1945), Judge Learned Hand observed that "A single producer may be the survivor out of a group of active competitors, merely by virtue of his superior skill, foresight and industry." For a more recent discussion of the term "competition on the merits" and its role in differentiating between competitive and exclusionary behavior in antitrust, see Antitrust Modernization Commission, Report and Recommendations, Washington D.C. 2007.

[28] Richard A. Posner, *Antitrust Law*, Chicago: University of Chicago Press, 2001.

> to ensuring an equal finish; to preserve whatever the regulator conceives to be the proper market shares of the various competitors.[29]

31. In a similar context, The Honorable Stephen Breyer, Associate Justice of the U.S. Supreme Court, has warned of the dangers associated with just such misdirected protections:

> A second special policy risk of deregulation is that government policymakers will protect competitors instead of protecting competition. This is a problem familiar to students of antitrust. It arises when regulators or antitrust enforcers confuse means with ends by thinking that the object of the law is to protect individual firms from business risks rather than to bring consumers the price and production benefits that typically arise from the competitive process. Where deregulation is at issue, the consequence of misdirecting protection is to threaten to deprive the consumer of the very benefits deregulation seeks."[30]

32. The recent report of the Antitrust Modernization Commission likewise admonished against mistaking the protection of competitors with the protection of the competitive process. The following passage in instructive.

> Economic research found precompetitive reasons to explain highly concentrated markets—that is, that the most efficient firms were winning the competitive struggle and thereby achieving high market shares. ... In response to this and other advances in economic understanding, the Supreme Court in 1977 stated without caveat that "the antitrust laws ... were enacted for the 'protection of competition, not competitors.'" ...There is now a better understanding that trade-offs exist between the goals of consumer welfare and protecting small firms. To protect small firms can mean a less efficient economy in which consumers must pay higher prices.[31] (footnotes omitted)

33. Competition policies that mistake protecting competitors with protecting the integrity of the competitive process give rise to a problem of "moral hazard" in

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[29] Alfred E. Kahn, "The Uneasy Marriage of Regulation and Competition." *Telematics*, Vol. 1, Number 5, 1984, p. 9.

[30] Stephen Breyer, Anticipating Antitrust's Centennial: Antitrust, Deregulation, and the Newly Liberated Marketplace, *California Law Review*, Volume 75, 1987 at 1018.

[31] Antitrust Modernization Commission, Report and Recommendations, Washington D.C. 2007. p. 34.

which new entrants and/or incumbents develop an unnatural dependence on the regulatory process for their very survival.[32] For example, market providers may have limited incentives to operate efficiently or to bear the risks associated with facilities-based entry if they know that they can always appeal to regulators for relief. They do so because they understand that regulatory agencies do not want to see competitive experiments fail.[33] As a former chief economist of the FCC observed in the context of long distance competition in the United States:

> A firm does not have to possess a large market share to exercise economic power. The OCCs [other common carriers] do not possess large market shares, but they can certainly exercise power by threatening to make government officials who have inflicted huge costs on consumers to promote competition look bad. They can do this by threatening to fail. A small market share and low profits can be assets in such an extortion campaign. They can make the threat of failure more compelling and thus make it more likely that government officials will yield to extortionate demands. And as is always the case with extortionists, giving in merely encourages additional blackmail attempts.[34]

34. The truth of the matter is that this Commission has at times confused protecting competitors with protecting the integrity of the competitive process. For example, the history of the Commission's actions with respect to the transition to competition in the long-distance marketplace strongly suggests that some of its policies—particularly as they relate to asymmetric regulation—may well have

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[32] A moral hazard is a particular incentive problem that arises when the economic agent does not bear the full costs of a loss and, as a result, fails to put forth the efficient level of effort (which cannot be observed directly) to avoid that loss. For example, an individual may not take adequate precautions in locking the doors on his rental car or parking the rental car so as to avoid parking lot damage because he does not pay the full cost in the event of theft or damage. The moral hazard problem explains why most insurance policies require co-payments or deductibles.

[33] For an overview of the literature, see David E. M. Sappington and Dennis L. Weisman, *Designing Incentive Regulation for the Telecommunications Industry*. Cambridge: MIT Press and Washington D.C.: AEI Press, 1996, Chapter 8; and John R. Haring , "Implications of Asymmetric Regulation for Competition Policy Analysis," Working Paper No. 14, 1984.

[34] John R. Haring, "The FCC, the OCCs and the Exploitation of Affection," Working Paper No. 17, Federal Communications Commission, Office of Plans and Policy, June 1985.

resulted in consumers paying higher prices than would otherwise have been necessary. The following quotation from an article penned by the former chairman and other high-ranking Commission administrators is instructive on this point.

> It can be argued, for instance, that some of the Commission's regulatory actions in the interexchange market that were designed to promote competition during transition, such as . . . restrictions on competitive pricing responses by AT&T, will have resulted in substantial, unnecessary costs for society that never would have been incurred in a truly competitive marketplace. Moreover, this approach will have directly increased consumer costs by requiring regulated firms to charge higher prices to protect competitors during the transition.[35]

35. On this score, we believe it important for the Commission to practice *intelligent failure*—learning from its previous policy failures in a manner that dutifully informs the design of optimal policies going forward.[36] That is to say, the Commission has an opportunity to learn from its experience in overseeing the transition to competition in the long-distance market and apply those important lessons to the local exchange marketplace. Unfortunately, there is a dearth of evidence to suggest that this is what is taking place. Mr. Raymond Gifford, a past chairman of the Colorado Public Utilities Commission, has opined on the incentives that regulators have to encourage entry, albeit artificially, in local

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[35] Mark S. Fowler, Albert Halprin, and James D. Schlichting. "'Back To the Future': A Model For Telecommunications." *Federal Communications Law Journal*, Volume 38, Number 2, 1986, pp. 193-194. [At the time this article was written, the authors were, respectively Chairman, Chief, Common Carrier Bureau, and Special Counsel, Common Carrier Bureau, Federal Communications Commission.]

[36] The term "intelligent failure" was coined by the great inventor and philanthropist, Charles Franklin Kettering, Among Kettering's numerous inventions was the individual ringing function for party line telephone service, the solution to a problem that he encountered while working on a telephone line crew in rural areas. Stuart W. Leslie, *Boss Kettering*, New York: Columbia University Press, 1983; and See also T. A. Boyd, PROPHET OF PROGRESS – SELECTIONS FROM THE SPEECHES OF CHARLES F. KETTERING, New York: E. P. Dutton and Co. Inc., 1961, pp. 108-09.

telephone service markets by creating profitable opportunities for prospective market entrants.

> While this incentive to create a margin may not be "real competition", the behavior comports with the regulators' incentives and abilities. A short time horizon, political pressure to show gains in competitive entry, and a plastic rate methodology – all this gives the regulator ample room to furnish the aesthetics of competition.[37]

Principle 4. Market share tests are inherently problematic in regulated industries and the Commission should not rely upon them to draw inferences about market power.

36. The Commission should not rely exclusively or even predominantly on market share to draw inferences about market power in telecommunications markets that have historically been subject to regulatory fiat. Indeed, the standard relationship between market share and market power is likely to be particularly misleading in a regulated setting. This is necessarily the case because the various market shares are not the outcome of a market process, but rather the outcome of a regulatory ("command and control") process. The following passage from one of the classic articles on the relationship between market power and market share is instructive on this important point.

> In view of the growing importance of antitrust enforcement in regulated industries, we shall note briefly the significant limitations of our formal analysis when applied to a market in which rates are regulated by a government agency. To the extent that regulation is effective, its effect is to sever market power from market share and thus render our analysis inapplicable.[38]

[37] Raymond L. Gifford, "Regulatory Impressionism: What Regulators Can and Cannot Do," *The Review of Network Economics*, Volume 2(4) December 2003, p. 475.
[38] William W. Landes and Richard A. Posner, "Market Power in Antitrust Cases," *Harvard Law Review*, Volume 94, Number 5, March 1981, p. 975.

37. It is quite possible, even likely, that the incumbent provider's high market share may actually reflect the absence of rather than the presence of market power.

> For example, in many regulated industries firms are compelled to charge uniform prices in different product or geographical markets despite the different costs of serving the markets. As a result, price may be above marginal cost in some markets and below marginal cost in others. In the latter group of markets, the regulated firm is apt to have 100% market share. The reason is not that it has market power but that the market is so unattractive to other sellers that the only firm that will serve it is one that is either forbidden by regulatory fiat to leave the market or that is induced to remain in it by the opportunity to recoup its losses in other markets, where the policy of uniform pricing yields revenues in excess of costs. In these circumstances, a 100% market share is a symptom of a lack, rather than the possession, of market power. (footnotes omitted) [39]

38. The limitations of drawing inferences about market power from market share are well documented in the literature.[40] Such metrics are necessarily backward looking in their approach and therefore quite limited in predictive value in markets that exhibit "fragility" due to their technologically-dynamic character,[41] such as telecommunications.[42] Market share measurement is inherently static in nature. In addition, the theoretical relationship between market share and market power predicted by some economic models does not necessarily hold up empirically.

> Although several economic models of firm behavior predict that larger market shares are associated with higher prices, the relationship has been difficult to detect empirically. First, market share data are hard to obtain in many cases. In addition, it is likely that the relationship between market shares and market performance (e.g., profitability) is industry-specific. . . . Accordingly, scholars disagree on whether there is a "critical market share"

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[39] Id., p. 976.

[40] See, for example, Dennis L. Weisman, PRINCIPLES OF REGULATION AND COMPETITION POLICY FOR THE TELECOMMUNICATIONS INDUSTRYU - A GUIDE FOR POLICYMAKERS. The Center for Applied Economics, KU School of Business, Technical Report 06-0525, 2006, Section 3.5.2.

[41] See Richard Schmalensee, "Antitrust Issues in Schumpeterian Industries," *American Economic Review*, Vol. 90, No. 2, May 2000, pp. 192-194.

[42] See Section 1.521 U.S. Department of Justice and the Federal Trade Commission. *Horizontal Merger Guidelines*, 1992 [Inclusive of April 8, 1997 Revisions]. This section of the guidelines indicates that market share measures can be misleading in terms of competitive significance when market conditions are changing.

where a firm becomes sufficiently dominant that it can exercise unilateral market power."[43] (footnotes omitted)

39. The above observations notwithstanding, should the Commission determine that some market share metric is necessary to inform the record, one based on capacity rather than actual sales is likely to be superior.[44] Indeed, as Judge Richard Posner, a leading law and economics scholar, has observed:

> Competition is not a matter of many sellers or low prices or frequent changes in prices or market shares. It is properly regarded as the state in which resources are deployed with maximum efficiency, and it is not so much the existence of actual rivalry, let alone any specific market structure or behavior, as the potential for rivalry, that assures competition.[45]

40. Landes and Posner also suggest that a superior measure of market share in drawing inferences about market power would be based on the capacity rather than the current output of the competitive fringe:

> If *i*'s market share is 80%, consumers cannot easily substitute other goods, and producers of other goods cannot easily switch to the production of this good, *i* may still lack substantial market power. Suppose the output of competing producers of the good is highly responsive to changes in the price. . . . Market share alone would be a poor measure of market power in such a case, at least in the long run. . . . The excess capacity of the fringe firm would limit *i*'s efforts to raise price above marginal cost. To reflect this factor, one could redefine *i*'s market share as its current output divided by the sum of *i*'s output and the fringe firm's capacity (*i.e.,* by their potential rather than current, output). This adjustment would reduce *i*'s market share . . . and thereby provide a better measure of *i*'s market power.[46]

41. Consider, for example, a particular market in which the ILEC and a cable company compete. Suppose the cable company quickly garners 5 percent of the customers and the ILEC files for deregulation. There may be a tendency to conclude that the

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[43] ABA Section of Antitrust Law, Antitrust Market Power Handbook (2005), pp. 82-83.
[44] Landes and Posner, Op. Cit., pp. 974-975.
[45] Richard A. Posner, "The Effects of Deregulation on Competition," *Fordham International Law Journal*, Volume 23, 2000, p. 18.
[46] Landes and Posner, Op. Cit., pp. 948 - 949.

ILEC continues to maintain market power since it has 95 percent of the customers. And yet, if capacity is truly the relevant measure of market share, and both the ILEC and the cable company are able to address 100 percent of the customers, the ILEC's market share is actually only 48.72 percent (95/(95 + 100)).

42. Hence, how market share is measured is critically important for evaluating the existence of market power. In fact, the Competition Bureau in Canada came to this very conclusion in a recent forbearance proceeding. The following passages are instructive.

> Market shares should be defined in a manner that reflects the potential for the ILEC to exercise market power if there is forbearance. . . . Therefore, the mere presence of the competitor has a larger impact on ILEC behaviour than its actual market share.[47]
>
> For example, in geographic markets where there are two independent facilities-based service providers with sunk costs, that are not capacity constrained, and are equally capable of offering the relevant product, the capacity market share of the ILEC and the new entrant will each be 50%.[48]

43. In fact, in evaluating proposed mergers in the wireless industry and the significance of Hirschman-Herfindahl (HHI) measures,[49] the Commission has itself recognized the limitations of market share/concentration measures based on actual sales.

> For many markets where the facts of a high subscriber-based HHI and a high change in HHI might seem to suggest a potential competitive problem, there is in fact little likelihood of harm. We find that the presence and capacity of other firms matter more for future competitive conditions than do current subscriber-based market shares. In particular, current

[47] Canadian Radio-Television and Telecommunications Commission (CRTC), Telecom Public Notice CRTC 2005-2, *Forbearance from Regulation of Telecommunications Services*, Argument of The Commissioner of Competition, September 15, 2005, ¶ 61.
[48] *Id.*, ¶ 62.
[49] The HHI is computed as the sum of the squared market shares of each firm in the market. The HHI ranges from effectively 0 in the case of atomistic competition to 10,000 in the case of a monopoly.

> market shares understate the likely future competitive importance of Verizon Wireless, Sprint, T-Mobile, and Nextel. These firms all compete fiercely for customers; all are investing substantially in capacity and new services in this sector; and Verizon Wireless, T-Mobile, and Nextel have been gaining nationwide market share over recent quarters.[50]

44. Furthermore, in order to reduce the costs of regulation and discourage rent-seeking behavior,[51] it should not be necessary for an incumbent provider to demonstrate that the conditions for regulatory forbearance have been met in Market B if these conditions have previously been met in Market A and the two markets are comparable in terms of the relevant economic characteristics. That is to say, the Commission should take advantage of every opportunity to streamline the forbearance process by, in part, drawing inferences across markets that share common characteristics. Notably, the Commission employed a similar approach in determining whether there was impairment with respect to particular network elements.[52]

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[50] FCC, *In the Matter of Applications of AT&T Wireless, Inc. and Cingular Wireless Corporation for Consent to Transfer Control of Licenses and Authorizations*, etc, WT Docket Nos. 04-70, 04-254, and 04-323, Memorandum Opinion and Order, October 26, 2004, ¶ 148.

[51] Economic rent is defined as the difference between the amount that firms are willing to pay for an input and the minimum amount necessary to obtain that input. Economic rent is essentially a return that the firm earns on a scarce input to production. This input may consist of a reputation, creative/entrepreneurial talent, a franchise, or a natural resource. The expenditure of resources to attain (sustain) a monopoly is called rent-seeking (defending) because firms will compete to earn a "rent" on the source of the monopoly. These costs represent socially-unproductive expenditures on securing market outcomes that are privately beneficial but socially detrimental. These social costs can take numerous forms that include: (1) A diversion of resources from the marketplace to the hearing room; (2) Compliance costs; (3) Strategic use of the regulatory process that may serve to delay the introduction of new services or establish artificially high price floors for the incumbent provider; and (4) Competitors developing a dependence on the regulatory process for their very survival. See, for example, Fred S. McChesney. *Money for Nothing: Politicians, Rent Extraction, and Political Extortion.* Cambridge MA: Harvard University Press, 1997.

[52] The FCC specifically observes that

> [I]n applying our impairment test, we draw reasonable inferences regarding the prospects for competition in one geographic market based on the state of competition in other, similar markets (TRRO, ¶ 5).

45. The Commission, of course, has previous experience with market share tests, and that experience should serve to inform the record here. Whether explicit or otherwise, the Commission signaled AT&T that it would not be declared non-dominant until its market share for switched long-distance serves declined to a predetermined level. The "magic number" was never disclosed publicly, but some have suggested that it was somewhere in the neighborhood of 60%.[53] The Commission also adopted a number of asymmetrical regulatory policies that had the effect of ceding market share to AT&T's rivals in a manner that did not reflect competition on the merits.[54]

46. The policy lessons to be learned from the experience in the long-distance marketplace are two-fold. First, competitive handicapping policies that artificially restrain certain providers so that other providers may flourish impede the competitive process to the detriment of consumers. Second, consumers are harmed when regulatory rules render it more profitable for competitors to do battle in the hearing room—in a quest for regulatory favoritism and protection—than deploy innovative, high-value services in the marketplace.

Principle 5. Any dearth of competition in retail telecommunications markets is likely an artifact of regulatory-rate distortions that served to suppress competition.

47. The perceived need for continued regulatory oversight, including mandatory network unbundling, may well be an artifact of the economically inefficient rate-

[53] Peter W. Huber, "Telephones, Competition and the Candice-Coated Monopoly, Regulation, 1993, Number 2, p. 36.
[54] See, for example, Dennis L. Weisman, "Asymmetrical Regulation," *Telecommunications Policy*, Vol. 18(7), October 1994, pp. 499-505; and John R. Haring, "Implications of Asymmetric Regulation for Competition Policy Analysis. Working Paper 14, Office of Plans and Policy, Federal Communications Commission, 1984.

design policies of the past that likely served to curb the intensity of competition. If regulation has served to peg prices at artificially low levels in the market for local telephone service—a claim that cannot credibly be contested, at least historically—regulators would, as a matter of course, observe less competition and hence less substitutability between competing technological platforms than would otherwise be present.[55] In the antitrust literature, this phenomenon is a manifestation of the well-known *Cellophane Fallacy*.[56] This fallacy occurs when two or more products may appear to be substitutable, or not substitutable, but such is an artifact of extant prices diverging from competitive levels.[57]

48. The D.C. Circuit's *USTA Decision* spoke to this very issue concerning the implementation of the 1996 Telecommunications Act:

> Competitors will presumably not be drawn to markets where customers are already charged below cost, unless either (1) the availability of UNEs priced well below the ILECs' historic cost makes such a strategy promising, or (2) provision of service may, by virtue of economies of scale and scope, enable a CLEC to sell complementary services (such as long distance and enhanced services) at prices high enough to cover incomplete recovery of costs in basic service.[58]

49. This observation may well have special significance for the issue of wireless-wireline substitutability. To the extent that wireline prices have been pegged below

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[55] This is presumably what former FCC Chairman Michael Powell meant when he observed that "retail rates are not an irrelevant part of an economic market, and regulators may have to make a choice between 'sustainable businesses' and low prices to end users." "Powell: Subsidies Can Be Market Barriers," Quote attributed to Mr. Powell by *Telecommunications Reports*, 5 March 2001, p. 10.

[56] *United States v. E.I. dupont de Nemours and Co., 351 U.S. 377 (1956)*. See also Dennis W. Carlton, "Does Antitrust Need to be Modernized?" *Journal of Economic Perspectives*, Volume 21, Number 3, Summer 2007, pp. 160-62.

[57] For example, the higher penetration of wireless service in Japan and Europe is explained in part by the lack of subsidies and the higher price for wireline telephony. See Jerry Hausman, "Mobile Telephone" in Martin Cave, Sumit Majumdar, and Ingo Vogelsang, eds. *Handbook of Telecommunications Economics*. North-Holland: Amsterdam, 2002, Chapter 13, pp. 564-565.

[58] *United States Telecommunications Association v. FCC,* 290 F.3d at 422.

market levels by regulatory fiat, an increase in such prices would as a matter of course result in less substitution of wireless for wireline than would be the case otherwise. In other words, there will be a natural bias that would tend to lead policymakers to conclude that wireless and wireline are not particularly close substitutes. A serious consequence of this bias is that it may lead policymakers to draw the market boundaries around wireline telephone service too narrowly—to conclude in error that wireless is not in the same market as wireline.

50. To see how this can occur, note that market power is typically defined as the ability of a firm to profitable raise prices above *competitive* levels for more than a transitory period of time.[59] Recognize that the definition does not reference merely the ability to raise prices, but rather the ability to raise prices above competitive levels.[60] As there can be no credible claim that wireline prices were necessarily maintained at competitive levels under regulatory fiat, increases in such prices are not necessarily indicative of market power.

51. These problems have already surfaced in the protracted debate over forbearance applications. For example, parties that have a vested interest in having the various forbearance applications rejected conjecture that the market for telephone service would be a duopoly, consisting of an ILEC and a cable company, absent mandated unbundling at regulatory prescribed prices. In reality, the fiction of the duopoly in the market for local telephone service is itself an artifact of ignoring the history of

[59] *Horizontal Merger Guidelines*, *op. cit.*, Section 0.1. (A firm possesses market power when it has "the ability profitably to maintain prices above competitive levels for a significant period of time.")

[60] See Dennis W. Carlton, "Market Definition: Use and Abuse," *Competition Policy International*, Volume 3, No. 1, Spring 2007, pp. 1-27. (Carlton argues, in part, that the benchmark price for the analysis is that which would have prevailed in the absence of the "bad act" or market distortion. To the extent that regulation has served to "distort" the current price—an issue on which there could be little serious debate—it is not the proper price to be used as a benchmark for the analysis.)

telecommunications rate design. In other words, because wireline rates have been pegged at artificially low levels by regulatory fiat, market boundaries are drawn too narrowly and this leads policymakers to mistakenly conclude that wireless is not in the same product market as wireline. It is in this sense that the need for regulatory oversight, inclusive of mandatory unbundling, becomes a self-fulfilling prophecy. To wit, regulators set artificially low local telephone service rates that discourage the very competitive entry that they seek as evidence that they can safely forbear from regulation.

52. Ironically, the Commission has previously recognized this very problem. In the TRRO, the Commission observed that overly broad unbundling obligations should not be used to compensate for other distortions in the regulatory regime.[61] Hence, to the extent that regulation has pegged prices at artificially low levels, it would not be appropriate for the Commission to mandate unbundling to remedy the dearth of competition without first establishing that facilities-based competition would not have been forthcoming in the absence of the "distortions in the regulatory regime."

Principle 6. Historical ratemaking polices in telecommunications that diverge from the competitive standard can lead regulators astray in applying standard market definition guidelines.

53. The seemingly renewed interest in applying market definition guidelines to inform forbearance applications carries significant risk, particularly when some parties may have strong incentives to apply these guidelines mechanically and myopically. Whereas, the evaluation of a horizontal merger and deregulation decisions may

[61] TRRO, ¶ 23.

share a common concern, that of the exercise of market power, there are important differences between the evaluation of a merger and deregulation that should be duly noted for purposes of a careful policy analysis.

54. The primary purpose of defining the relevant market is that of calculating market shares. To the extent that market share measurement, for whatever reason, is of limited value for the exercise at hand, so, by implication, must be the definition of the relevant market.

> The boundaries of the relevant market in antitrust economics normally cannot be determined with absolute precision. Nor do real world markets always array themselves in binary fashion, where products are clearly inside or outside the market. . . . At base, what matters more than defining a market perfectly is identifying the economic forces that constrain a firm's pricing. The exercise of defining a market and calculating market shares is useful to the extent that it accurately reflects these economic forces.[62] (footnotes omitted)

The contra-positive of this statement implies that when market shares are not reflective of economic forces, defining a market and calculating market shares may be of little, if any, real value.

55. What this implies is that the emphasis placed on market definition is appropriate only insofar as there is reason to believe that the resulting market share calculation sheds some light on the ability of the incumbent provider to exercise market power.

> A loose economic definition of a market is that it comprises all those products whose presence constrains the price of a particular product to a particular level. For economists, drawing bright line boundaries around products in a market often makes no sense. Indeed, if antitrust law did not commonly require defining a market, economists would probably spend much less time discussing what the denominator of a market share should include.[63]

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[62] ABA Section of Antitrust Law, Antitrust Market Power Handbook (2005), p. 70.

[63] Dennis W. Carlton, "Does Antitrust Need to be Modernized?" *Journal of Economic Perspectives*, Volume 21, Number 3, Summer 2007, pp. 161.

56. In a typical merger proceeding, the analysis begins with a competitive market and inquires as to whether the proposed consolidation is likely to lessen rivalry in a manner that would allow for the exercise of undue market power. The market forces being examined are centripetal ("center-seeking") in nature. In the context of deregulation, markets are becoming increasingly competitive and the focus is on whether they have become sufficiently so to enable the regulator to defer to market forces for the requisite level of discipline. The market forces being examined are centrifugal ("center-fleeing") in nature. This distinction looms large in the context of market definition for purposes of forbearance because the market boundaries may be shifting rapidly.

57. To the extent that prices were maintained below market levels under regulatory fiat, the degree of demand substitution that policymakers observe in attempting to draw market boundaries may be skewed *ala* the *Cellophane fallacy*. That is to say, there would be a natural bias to draw market boundaries too narrowly. To wit, the ILEC may be able to sustain a price increase—not because it has market power—but because regulators maintained prices below (competitive) market levels historically.[64]

58. Another important difference between a merger and forbearance analyses concerns the important role of *path dependence*. For example, a regulated monopolist that begins with a 100% market share and experiences increased competition that reduces its share relatively quickly to 80% is likely in a far different competitive situation than a firm with a 50% market share merging with a firm with a 30%

[64] This is precisely why the definition of market power turns not on the ability to merely raise prices, but on the ability to raise prices above *competitive* levels. See note 59 *supra*.

market share, despite the fact that in both cases a single firm would have 80% of the market. Merger enforcement guidelines generally recognize the importance of changes in market concentration and/or the stability of market concentration, but it is unclear precisely how much weight is given to changes in market concentration as opposed to actual market concentration based on a snapshot of the market at a particular point in time.[65]

59. Finally, the precise relationship between market share and market power turns on whether the firm in question participates in multiple markets as well as the precise demand relationships between the products and services in these markets. For example, when a firm participates in two different markets and the relationship between the markets is one of complements (substitutes), the single-market share metric will tend to over (under)-state market power.[66]

60. Consider, for example, a local exchange carrier that provides only basic local telephone service and has a market share of 80%. Now suppose that this same local exchange carrier expands its product line to include long-distance telephone service and vertical features—services that are used in a complementary manner with basic local telephone service. Even though it still maintains 80% of the market for basic local exchange telephone service, the carrier will now have reduced incentives to raise price. This is the case because the loss of basic local service customers that follows a price increase means that net revenues are

[65] See, for example, Section 1.5 of the U.S. Department of Justice and Federal Trade Commission *Horizontal Merger* Guidelines, 1992 [Inclusive of April 8, 1997 Revisions] and Section 4.17 of *the Merger Enforcement Guidelines* of the Competition Bureau, Canada, September 2004.
[66] Timothy J. Tardiff and Dennis L. Weisman, "The Dominant Firm Revisited." *Journal of Competition Law & Economics*, Volume 5, Number 3, September 2009, pp. 517-536.

foregone not only on basic local service, but also on those services that are used in a complementary fashion with basic service, such as long-distance and vertical features. Hence, the 80% market share in the case of a single-product provider would tend to imply greater degree of market power than an 80% market share in the case of a multi-product provider when the relationship between the products is one of complements.

Principle 7. The cost structure for wireline providers (i.e., pronounced scale/scope economies) and the corresponding high price-cost margins required for financial viability implies that relatively modest levels of competition may be sufficient to impose the requisite pricing discipline.

61. It important to recognize that the technical conditions of supply (scale/scope economies) that constitute the central economic argument for regulation can, under certain conditions, actually be relied upon to constrain the market power of the wire line provider. To see this, recognize that regulated firms typically operate with high price-cost margins due to pronounced scale and scope economies. Hence, price increases that produce even small reductions in demand can generate large losses in contribution to joint and common costs because the firm's revenues decline much more than the costs it can avoid.[67] It is in this manner that high price-cost margins can serve to discipline the deregulated firm's pricing behavior.

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[67] As Mitchell and Vogelsang observe:

> In telecommunications networks, production facilities have well-determined capacities, and the costs of operation are nearly independent of the flow of services through those facilities . . . Consequently, . . . variable costs are very small.

Bridger M. Mitchell and Ingo Vogelsang, *Telecommunications Pricing: Theory and Evidence.* New York: Cambridge University Press, 1991, p. 9.

62. The phrase that "competition occurs at the margin" means that it is the marginal customers, those willing to substitute alternative services in the face of a price increase, that serve to impose pricing discipline on the market provider.[68] This observation has special significance for wireline providers because it implies that a relatively small percentage of customers (the "marginal customers") willing to discontinue service or switch to alternative service providers in the face of a price increase is sufficient to provide the requisite competitive discipline.

63. A stylized, hypothetical example may prove instructive. Suppose that the ILEC provides only basic telephone service and that the ratio of price to avoidable cost for this service is 2. This implies that an ILEC would not have an incentive to raise the price of basic service by 5% if the corresponding reduction in quantity demanded is at least 10%.[69, 70] Now consider the more realistic scenario in which the ILEC provides a portfolio of complementary services consisting of basic local service, long-distance, vertical features and broadband. Under plausible conditions, it can be shown that the ILEC would not have an incentive to raise the price of basic service if the corresponding reduction in quantity demanded is at least 2.5%.[71] That is to say, relatively modest reductions in quantity demanded

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[68] See, for example, Jerry A. Hausman., "Regulated Costs and Prices in Telecommunications," in Gary Madden (ed.), *International Handbook of Telecommunications Economics, Volume 2: Emerging Telecommunications Networks*, 2003, p. 226.

[69] Let r denote the ratio of price to avoidable cost. It is straightforward to show the critical percentage reduction in quantity demanded is given by $c^*=[r/(r-1)]\times 5\% = [2/(2-1)] \times 5\%=10\%$. See, for example, Dennis L. Weisman, "When Can Regulation Defer to Competition for Constraining Market Power?: Complements and Critical Elasticities." *Journal of Competition Law & Economics*, March 2006, pp. 1-12

[70] The higher the ratio of price to avoidable cost, the smaller is the critical reduction in quantity demanded necessary to render a contemplated price increase unprofitable, ceteris paribus. For example, if the ratio of price to avoidable cost is 5, the ILEC would not have an incentive to raise price if the expected decrease in quantity demanded is $c^*=[5/5-1)]\times 5\% = 6.25\%$.

[71] See Timothy J. Tardiff and Dennis L. Weisman, "The Dominant Firm Revisited," *Journal of Competition Law & Economics*, Volume 5, Number 3, September 2009, pp. 517-536.

following a price increase are sufficient to discourage any attempt to raise such prices.

64. This reduction in the critical market share loss from 10% to 2.5% implies that the local exchange carrier now has markedly reduced incentives to raise price as a result of adding complementary services to its product line, all other factors held constant. This is the case because the loss of a basic local service customer now entails not just the loss of net revenue from basic local service, but also the loss of net revenues from long-distance, vertical features and broadband, services used in complementary fashion with basic local service.

65. To summarize, the higher the price-cost margins required for financial viability and the more pronounced the demand complementarities,[72] the stronger the pricing discipline imposed on the ILEC. This explains why even relatively modest levels of competition from "imperfect" substitutes may be sufficient to discourage the ILEC from raising price. This is also the basis for the claim that a little competition can go a long way in controlling market power in telecommunications markets.

Principle 8. The purpose of mandatory unbundling is not to control market power *per se*, but rather to enable competition that would not be possible otherwise.

66. In its TRRO, the FCC explicitly rejects the idea that a decision to unbundle a particular network element should turn on the presence of market power. The FCC notes, in particular, that the decision should turn on whether the requesting carrier

[72] To the extent that the digitalization/packetization of next-generation networks gives rise to decreasing ratios of variable to fixed costs, it should be expected that price-cost margins will increase, *ceteris paribus*.

is impaired without access to that element and not on whether market power is present in either the downstream or the upstream market.

> The purposes of a market power analysis are not the purposes of section 251(d)(2). While this antitrust analysis attempts to determine whether market participants would be able to exercise market power and raise prices above competitive levels if a merger were consummated, the Act requires only that network elements be unbundled if competing carriers are impaired without them, regardless of whether the incumbent LEC is exercising market power or the unbundling would eliminate this market power. A market power analysis would go to the question of whether an incumbent LEC could raise its retail prices unchecked; the impair analysis asks whether a new entrant can provide its services without the UNE. A market power analysis might be appropriate if the only goal of the Act were to drive prices to cost, but that approach disregards the Act's other goals of encouraging the deployment of alternative facilities and new technologies and reducing regulation.[73] (footnotes omitted)

67. This discussion serves to underscore the important principle that network unbundling is not a regulatory-ratemaking function, but rather a "competition-enabling" function. That is, the determination as to whether to unbundle a particular facility does not turn on the control of market power or dominance, but rather on the basis of whether unbundling is necessary to provide an efficient firm with the opportunity to compete in the relevant geographic market. This determination does not turn on the intensity of the competition that is present in the market, but rather on whether competition is present at all.

68. Moreover, it is not the purpose of unbundling to render a rival a "more effective" competitor, it is to enable competition that would not have been possible otherwise. This viewpoint was articulated by Michael Powell, the former Chairman of the FCC, when he characterized the revised set of FCC unbundling rules as a

[73] TRO, ¶ 109.

"workable set of rules that preserves access to the incumbent's network where there is, or likely will be no other viable way to compete."[74]

69. Moreover, any static efficiency gains (measured in terms of reducing price-cost margins) that can be attributed to mandatory unbundling must be weighed against dynamic efficiencies foregone (measured in terms of reduced incentives for investment in innovation). Indeed, recent studies have shown that leased access has not led to a level of CLEC investment in facilities greater than that which would have obtained otherwise. To the contrary, access dependence turns out to be economically addictive, leading to increased reliance on leased access.[75]

70. The Commission has adopted a different standard under §10 than under §251 of the 1996 Act for conditions under which it may forbear from requiring an ILEC to provide unbundled network elements to rivals at regulatory-prescribed rates. In addition to the familiar public interest considerations, the Commission has interpreted §10 in a manner that permits it to forbear from imposing unbundling requirements on the ILEC only when doing so will not permit the ILEC to exercise market power (i.e., when regulation is not necessary to ensure "just and reasonable" rates). Hence, the standard for mandatory unbundling under §251, which, at least in theory does not turn on market power considerations, differs from the standard for forbearance from mandatory unbundling under §10, which by Commission decree does turn on market power considerations.

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[74] TRRO (Concurring Statement of Chairman Powell), p. 179.

[75] For a recent review of this literature and the policy lessons to be drawn from it, see Glen O. Robinson and Dennis L. Weisman, "Designing Competition Policy for Telecommunications," *The Review of Network Economics*, Vol. 7(4), December 2008, pp. 509-546.

71. This asymmetry between the §10 and §251 standards is distortionary and potentially harmful to consumers. This is the case for three primary reasons. First, the Commission has recognized that market power considerations (static efficiency) must defer to investment considerations (dynamic efficiency) in determining the merits of unbundling under §251. And yet, under §10, the Commission has essentially reversed the priority of the various considerations in determining that market power is paramount. Second, given the Commission's historical tendencies to overreach in the scope of network unbundling,[76] the divergence between the §10 and §251 standards means that the Commission has made it more difficult for it to "correct errors on the field of play." That is to say, because the Commission has set stringent standards for relieving an ILEC of its unbundling obligation once that obligation is in place, there is a greater risk of excessive unbundling with all of the market distortions and social costs that attach thereto.[77] Third, price regulation exists as a "safety net" at the state level should the ILEC continue to have the ability to exercise significant market power in the absence of network unbundling obligations.

72. We hasten to point out the need to clearly distinguish between the theory underlying §251 as espoused in the TRRO and the way in which the impairment determination has been conducted in practice. We support the basic premise that (i) the impairment determination should not turn on market power considerations; (ii) potential competition based, in part, on capacity-based market share measures,

[76] Id., pp. 512-514.

[77] This is the case because, at least in theory, the Commission considers factors other than static efficiency (i.e., market power considerations) in deciding whether to mandate unbundling, but appears to require the absence of market power before relieving an ILEC of that very same unbundling obligation.

should be given considerable weight by the Commission; and (iii) dynamic efficiency should be accorded greater weight than static efficiency in the design of the optimal policy.

73. It is unfortunate that this emphasis is not reflected in the way in which the Commission has actually applied the theory espoused in the TRRO. In practice, the Commission uses counts of ILEC business lines and collocations to determine whether CLECs are not impaired without access to DS1 and DS3 loops and transport in a particular wire center. However, this metric does not measure potential (or existing) competition in a market. For example, the business line measure counts Qwest business lines and Qwest wholesale lines, but then excludes all competitors' facilities-based lines. Hence, when Qwest loses business lines to facilities-based providers, either cable or wireless, the inference drawn is that potential competition is somehow reduced. In other words, the Commission's measure indicates impairment precisely under those market conditions when impairment does not exist.

74. In summary, the fact that the Commission has adopted different standards under §10 and §251 of the Act has the effect of placing greater weight on static efficiency *vis-à-vis* dynamic efficiency. This is problematic, not only because the Act seeks to encourage investment in facilities-based networks, but also because there is a consensus among economists on the relative importance of dynamic efficiency over static efficiency.[78] Hence, the Commission's statutory obligations as well as the economics literature strongly suggest a symmetry between unbundling and

[78] See the discussion and rationale underlying *Principle 1 supra*.

forbearance standards that is based on the relative importance of dynamic over static efficiency. In this sense, it is critical that the Commission not confuse "mandating the competitive outcome with fostering the competitive process."[79]

Principle 9. Wholesale markets are relevant to the implementation of the 1996 Telecommunications Act only insofar as they are required for competition in retail markets.

75. The Commission has from time to time in myriad venues discussed the importance of vigorous competition in the wholesale market to inform its forbearance decisions.[80] And yet, it unclear as to the statutory authority upon which the Commission relies for such guidance. The wholesale market is relevant only to the extent that facilities-based providers acting alone fail to provide for the requisite level of competitive discipline.

76. Should the Commission's interest in the wholesale market turn on a particular CLEC business model—regardless of the competition from facilities-based providers—it will have violated *Principle 3 supra*. That is to say, it will have violated the principle of both *platform-neutrality* and *competitor-neutrality*. The Commission should be agnostic as to the particular technological platforms that are used to deliver high-value products and services to consumers.

77. To the extent the Commission disavows these principles, it will have confused protecting competitors with protecting the integrity of the competitive process. Notably, this is precisely what occurred when the Commission presided over the

[79] Dennis L. Weisman, "The (In)Efficiency of the 'Efficient-Firm' Cost Standard." *The Antitrust Bulletin*, Vol. XLV(1), Spring 2000, pp. 197.
[80] See, for example, the *Qwest 4* MSA Order.

transition to competition in the long-distance market. To wit, it will have spent far too much time mechanically counting the number of competitors, and far too little time assessing whether consumers have meaningful choices at competitive prices for their telecommunications products and services.

Principle 10. Policymakers have recognized that (i) subscription to both wireless and wireline does not imply that the two services are complements, and (ii) wireless provides competitive discipline on wireline prices.

78. There is increasing recognition on the part of regulators and policymakers in the telecommunications industry that wireless provides competitive discipline on wireline pricing. This is evident from the fact that recent regulatory decisions throughout North America cite ubiquitous wireless competition as a factor in forbearance and deregulation of telecommunications services.

79. In Canada, ILECs may petition to be forborne from regulation in an exchange when there are two independent, facilities-based competitors to the incumbent provider, where at least one of them is a wireline provider other than the ILEC.[81] As of June 30, 2009, throughout Canada the CRTC has forborne from regulating in exchanges that account for 77 percent of residential lines and 68 percent of business lines, representing 75% of all local revenues.[82]

80. The California Commission recently determined that wireless is in the same product market as wireline communications. This determination was instrumental

[81] Telecom Decision CRTC 2006-15, *Forbearance from the regulation of retail local exchange* services, as varied by Order in Council, P.C. 2007-0532, April 4, 2007.
[82] Canadian Radio-television and Telecommunications Commission, Communications Monitoring Report 2009 (August 2009).

in the California Commission's decision to forbear from regulating local telephone service on a going-forward basis. The following passages are instructive.

> Verizon established that "wireless substitution accounts for *approximately half of ILEC primary residential wireline losses,* as wireless providers improve the reach of their networks and customers exhibit a growing willingness to *'cut the cord.'* " (footnote omitted) [83]
>
> We agree that the build out of wireless carriers' networks since this Commission's last major telecommunications regulatory review eighteen years ago has made wireless technologies a close substitute for landline services. This evidence is a significant factor in this decision.[84]

81. Finally, in a number of other states, including Iowa and Virginia,[85] wireless providers are recognized as full-fledged facilities-based entrants in telecommunications markets that serve to impose pricing discipline on wireline providers. Decisions in a number of other states concerning the competitive discipline imposed by wireless providers are pending at the time of this writing.

82. The latest survey results from National Health Interview Study confirm the validity of treating wireless and wireline as substitutes. As of the second half of 2008, 20.2% of American homes had only wireless telephones.[86] In addition, another 14.5% of homes received all or almost all calls on wireless phones despite having a

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[83] California Public Utilities Commission, Decision 06-08-030, August 30, 2006, p. 119. Available at http://www.cpuc.ca.gov/WORD_PDF/FINAL_DECISION/59388.PDF.

[84] Id., p. 120.

[85] Virginia Acts of Assembly — 2009 Reconvened Session, Chapter 788, *An Act to amend § 56-235.5 of the Code of Virginia, relating to telephone regulatory alternatives*, Approved April 8. 2009; State of Iowa, Department of Commerce Utilities Board, Docket No. INU-08-1, In Re: Possible Extension of Board Jurisdiction Over Single Line Flat-Rated Residential and Business Rates for Local Exchange Carriers, Final Order Issued June 27, 2008.

[86] Stephen J. Blumberg and Julian V. Luke, "Early Release of Estimates From the National Health Interview Survey (NHIS), July –December 2008," Division of Health Interview Statistics, National Center for Health Statistics, May 2009, p. 1. In addition, the authors report a 2.7 percentage point increase in the number of wireless-only households in the last half of 2008. This represents the largest 6-month increase observed since NHIS began collecting data on wireless-only households in 2003.

wireline telephone in the home.[87] Hence, almost 35% of American homes were "mostly wireless" during the period of the survey.[88]

83. In the *Verizon 6* and *Qwest 4* MSA Orders, the Commission treated wireless as a substitute for wireline only in the case of "cord cutting"—that is, when the consumer no longer subscribes to wireline service.[89] While it is proper for the Commission to consider wireless competition, the specific approach utilized understates the impact of wireless competition, and is problematic for three primary reasons, each of which is discussed in turn.

84. First, as discussed in connection with *Principle 6*, market definition is problematic when prices have been set by regulatory fiat rather than market forces. Hence, if the Commission observes an increase in wireline prices, it may be inclined to conclude that wireless does not exert sufficient competitive discipline on wireline prices and therefore wireless must not be in the same product market as wireline.

85. To further illustrate the nature of this problem, suppose that the price of wireline telephone service was pegged by regulators at a price of zero. In addition, suppose that virtually all consumers subscribe to both wireless and wireline telephone service. It would be erroneous to conclude that these two services are complements based solely on the fact that most consumers choose to subscribe to both services. Nor could the regulator credibly determine that wireless exerts insufficient competitive discipline on wireline if the price of wireline were to increase upon the

[87] Id. In contrast, one year earlier, 15.8% of households had "cut the cord" and an additional 13.1% received all or most of their calls on a wireless phone. Thus, the proportion of "wireless mostly" households increased from 28.9 % to 34.6% (or 16 percent) in a single year.
[88] In it initial filing in this proceeding, Qwest provided a Phoenix specific study performed by Market Strategies that shows 25% cord-cutting in Phoenix.
[89] See paragraphs 19 and 20 of the *Qwest 4 MSA* Order.

relaxation or removal of price regulation. This argument is valid whenever regulatory fiat has served to peg wireline prices below market levels.

86. Second, as discussed in connection with *Principle 7*, given the cost structure of wireline telephony, wireless may exert sufficient competitive discipline on wireline prices even when the two services are imperfect substitutes. This underscores the fact that not all consumers need to view wireless and wireline as close substitutes for wireless to exert sufficient competitive discipline on wireline prices. As discussed above, it is the "competition at the margin" that disciplines the firm's pricing behavior.

87. Finally, recent market research is suggestive of a relatively high degree of substitutability between wireline and wireless in the lower income strata of the U.S. population.[90] This may suggest that what may appear anecdotally to be a complementary demand relationship between wireless and wireline may, in fact, be attributable to an income effect rather than a price effect. That is to say, consumers that are less income-constrained may well subscribe to both wireline and wireless, not because they are complements but simply because they can afford to do so.[91] Moreover, if consumers must choose between wireless and wireline, they are increasingly likely to choose wireless.[92] This is further reflected in the fact that as of June 2008, there were 65% more wireless access lines than wireline access lines

[90] For example, among those surveyed that described their household income as "Poor, Near Poor and Not Poor," the percentage of wireless-only households is 30.9%, 23.8% and 16.0%, respectively. See Stephen J. Blumberg and Julian V. Luke, "Early Release of Estimates from the National Health Interview Survey, July – December 2008," Division of Health Interview Statistics, National Center for Health Statistics, May 2009, p. 8.
[91] In a similar vein, we would not conclude that the Toyota Camry and the Honda Accord are complements merely because some households own both models simultaneously.
[92] See notes 88 and 90 *supra*.

in the U.S.[93]

VI. SUMMARY AND CONCLUSION

88. This primary objective of this paper is to inform the Commission's deliberations on the proper scope of regulatory oversight in the rapidly evolving telecommunications marketplace. Given the technologically dynamic nature of the industry and the emergence of facilities-based platforms, the social costs of regulatory intervention, whether through mandatory unbundling policies, stringent price regulation or mandated network management practices, are far more pronounced today than they were just a few years ago.

89. The principles articulated in this paper along with the economic and public policy rationale underlying their development suggest two overarching policy recommendations. First, the Commission should reverse the traditional presumption regarding economic regulation in telecommunications markets; regulation should be the exception rather than the rule. Second, the Commission previously concluded that unbundling is among the most intrusive of all forms of regulation. This implies that the use of mandatory sharing should be exceptional in nature, a policy instrument of last resort to be used by the Commission only under conditions in which competition is not possible any other way.

[93] *Local Telephone Competition: Status as of June 30, 2008*; Industry Analysis and Technology Division, Wireline Competition Bureau, July 2009, Tables 7 & 14.