

enhanced opportunity for collusion are unlikely to be met in the mobile telecommunications services market even if the Commission substantially relaxes its proposed limitations on cellular ownership of PCS spectrum. Moreover, even if these concentration levels are reached, other industry factors relevant to the mobile telecommunications services market, including: (1) rapid technological progress; (2) an increased demand for mobile services; (3) the heterogeneous nature of potential services; and (4) an expanding fringe of smaller firms (e.g., SMRs), render collusion among cellular providers unlikely.⁴⁵ Thus, since anticompetitive effects are unlikely even with complete control, the cellular attribution standard can safely be increased beyond the percentage normally deemed to constitute control when higher market shares are involved.

3. The Current Restrictions on Cellular Eligibility Carry the Distinct Risk of Creating Inefficiencies and Decreased Innovation in the Mobile Services Marketplace

In the final analysis, arbitrary limits on cellular eligibility due to concerns about the undue exercise of market power should not amount to a needlessly strict "numbers game," ruling out an entire class of possible cellular/PCS combinations because an artificial boundary has been crossed.⁴⁶ The real danger, as the Commission has noted, is that innovation and

⁴⁵ See Merger Guidelines §§ 1.521, 2.1; Besen and Burnett at 49-55.

⁴⁶ See United States v. General Dynamics Corp., 415 U.S. 486 (1974).

economies of scope may be irretrievably lost by strict application of such rules.⁴⁷ Indeed, innovative efficiency, according to one commentator, should be the primary goal of antitrust and related laws even if this results in some deferral of consumer welfare due to initially diminished interfirm rivalry.⁴⁸ Early in the modern antitrust revolution, commentators questioned the use of static concentration models in technologically dynamic industries.⁴⁹ Later, Professors Ordover and Willig more rigorously developed the argument against the application of static economic theory (such as market share and concentration analysis) to technologically dynamic industries:

The economic foundations of antitrust policy rest largely on static analysis, while the foundations of our economy have become increasingly dynamic. It may be illogical and socially harmful to apply the static equilibrium framework to industries where technological progress is rapid and competition is driven by product and process innovation. To be sure, current product market structure in such industries affects current pricing decisions, but it may also affect the rate and direction of inventive activity. These latter effects may be the more important, as 'over the long run the gains to society from continuing innovation are vastly

⁴⁷ See Merger Guidelines § 4; Besen and Burnett at 55-56.

⁴⁸ Joseph Brodley, The Economic Goals of Antitrust: Efficiency, Consumer Welfare, and Technological Progress, 62 N.Y.U.L. Rev. 1020 (1987).

⁴⁹ J. Fred Weston, Changing Environments and New Concepts of Firms and Markets and Frederick M. Rowe, Antitrust and Vanishing Boundaries, both in New Technologies, Competition and Antitrust, Ninth Conference on Antitrust Issues in Today's Economy, The Conference Board, 9, 14 and 25, 26 (1970).

greater than those associated with competitive pricing.⁵⁰

They conclude that:

[M]ergers in R&D-intensive industries should be assessed under guidelines that specifically account for the dynamic effects that may be of critical significance there. Insensitive application of static merger guidelines either may permit mergers with likely anticompetitive future effects to go unchallenged or may halt mergers that would benefit society by accelerating innovation and enhancing future competition.⁵¹

Moreover, maximizing technological innovation without increasing the risk of collusion can be accomplished more readily in technologically dynamic industries for, as some commentators demonstrate, where products and services are subject to rapid technological change, collusion is more difficult.⁵²

That the prevention of increases in concentration should be subordinated to other goals is echoed by Professors Farrell and Shapiro who demonstrate that public policy should encourage the

⁵⁰ Janusz A. Ordover and Robert D. Willig, Antitrust for High-Technology Industries: Assessing Research Joint Ventures and Mergers, 28 J. L. & Econ. 311, 311-313 (1985) (quoting Richard Nelson & Sidney Winter, The Schumpeterian Tradeoff Revisited, 73 Am. Econ. Rev. 114 (1982)) ("Ordover and Willig"). See generally Joseph Schumpeter, Capitalism, Socialism, and Democracy (1950); Arnold Harberg, Monopoly and Resource Allocation, 44 Am. Econ. Rev. 77 (1954).

⁵¹ Ordover and Willig at 313. Professors Ordover and Baumol subsequently reiterated the conclusion that "mergers in high-technology industries, in which technologies and products are short-lived, should raise fewer concerns than would similar mergers in industries which have entered their stable phase." Janusz A. Ordover and William Baumol, Antitrust Policy and High-Technology Industries, 4 Oxford Rev. Econ. Policy 13, 32 (1988).

⁵² See, e.g., George A. Hay, Oligopoly, Shared Monopoly, and Antitrust Law, 67 Cornell L. Rev. 439, 449-450 (1982). See also Besen and Burnett at 50-51.

acquisition by an efficient firm of a smaller, less efficient firm, even when it significantly increases concentration, because overall efficiency, and thus consumer welfare, is thereby increased.⁵³

These considerations both argue against rigid limitations of the type proposed by the Commission and demonstrate conclusively the very real danger of sacrificing innovation and efficiencies.

B. The Commission Should Relax the Cellular Eligibility and Attribution Restrictions to Maximize Consumer Welfare

As discussed above, the Commission's primary concern in adopting the 10% overlap restriction and the 20% attribution limit for cellular providers is to avoid the exercise of "undue market power."⁵⁴ Moreover, the 20% cellular attribution standard is designed to account for the partial, passive ownership interests in cellular licenses arising from the Commission's early settlements policy.⁵⁵ The foregoing analysis demonstrates that the current eligibility restrictions are more rigorous than necessary to achieve their desired purpose. Thus, CTIA recommends that the Commission modify its cellular eligibility rules by:

- increasing the 10% overlap to 40%;
- increasing the 20% cellular attribution rule to 30-35%; and

⁵³ Joseph Farrell and Carl Shapiro, Horizontal Mergers: An Equilibrium Analysis, 80 Am. Econ. Rev. 107, 108 (1990)

⁵⁴ PCS Order at ¶¶ 105, 107.

⁵⁵ Id. at ¶ 107.

- adopting a single majority shareholder rule to protect the interests of passive investors.
 1. **The 10% Overlap Limitation Should Be Increased to a 40% Threshold**

The current 10% overlap limitation is too restrictive and creates unintended consequences for both large and small cellular companies. The threshold can safely be increased to 40% without reducing consumer welfare.

The Besen and Burnett analysis demonstrates that the 10% population overlap limitation is overly restrictive and handicaps current cellular licensees.⁵⁶ In order for the weighted average market share of a cellular licensee acquiring a 30 MHz PCS license to exceed the 23.5% market share allowed a non-cellular licensee, the population overlap would have to exceed 40%. If the cellular licensee's geographic service area ("CGSA") is partially outside its PCS service area, which is highly probable, the overlap would have to be even greater for the cellular licensee's overall market share to exceed 23.5%. Seen in this light, a 40% overlap is actually a conservative threshold.

A 10% overlap restriction would constrain not only the largest cellular companies, but also mid-sized and small cellular companies, and many companies not traditionally thought of as cellular companies. For example, Youngstown Cellular Telephone Company provides service in two MSAs and one RSA in Ohio and Pennsylvania, with a total population of 721,898. These markets fall within the Cleveland MTA, which has a population of

⁵⁶ See Besen and Burnett at 46-49, 57-58.

4,945,749. Since Youngstown Cellular's share of the MTA pops is 14.6%, it would be barred from seeking more than a 10 MHz license in the Cleveland MTA under the 10% rule as currently written.⁵⁷

The best solution would be to judge spectrum acquisition on a case-by-case basis taking into account all of the variables that influence overall market share in an overlap situation, including the service area overlap, the populations in their respective service areas, and the quantity of spectrum currently allocated to and the quantity sought to be acquired by the licensee. However, if such an approach proves impractical, it seems clear that an overlap standard of at least 40% would adequately protect the public from the exercise of undue market power while not unduly hampering innovation and increased efficiency in this emerging industry.⁵⁸

2. The 20% Cellular Attribution Standard Should Be Raised to a 30-35% Threshold

The cellular attribution standard should be raised from 20% to at least 30-35% because the danger of undue market power in a

⁵⁷ Population figures are based upon 1990 census figures and MTA figures are also based upon 1990 census and Rand McNally's 1992 Commercial Atlas and Marketing Guide at 40. For additional examples of the undesirable effects created by the current 10% restriction, see Appendix B.

⁵⁸ An increase in the overlap percentage also finds support among members of the Commission and PCS commenters. For example, Commissioner Barrett finds that "the record support for 10% is questionable," and would permit "cellular entry in the MTA where cellular owns no more than 25-30% of pops in that area." See Dissenting Statement of Commissioner Barrett at 14 (also citing examples of counterproductive effect of 10% overlap); see also American Personal Communications ex parte presentation in Gen. Docket No. 90-314 (July 8, 1993) (advocating a 20-25% cellular overlap threshold).

single firm is sharply constrained by the 40 MHz limit on PCS spectrum. Even a controlling shareholder is limited to a market share of 23.5% (i.e., 40 MHz) -- a percentage well below the 35% threshold necessary for undue market power.⁵⁹ Where the benefits are limited and the costs high, as is the case here, the Commission should elect a less confining attribution standard.⁶⁰

The Commission's de facto control jurisprudence supports an increased cellular attribution threshold. Rarely has the Commission found shares as low as 20% to be sufficient to constitute de facto control.⁶¹ In the instant case, the Commission should refrain from adopting a blanket 20% attribution rule. As the analysis set forth above demonstrates, there is not a strong basis for concern over market power in the general case.⁶² The 20% attribution rule could preclude much beneficial activity while preventing very little undesirable activity.

⁵⁹ See discussion at pp. 16-17, supra.

⁶⁰ See Motor Vehicle Mfr. Ass'n of the United States, Inc. v. State Farm Mut. Auto. Ins. Co., 463 U.S. 29, 54-55 (1983).

⁶¹ See, e.g., News Internat'l PLC, 97 F.C.C.2d 349 (1984) (20% interest convertible to 42.5% interest not considered control in closely held corporation); Columbia Broadcasting System, 7 R.R. 298 (1951) (26.6% interest not considered control); see generally Stephen F. Sewell, Assignments and Transfers of Control of FCC Authorizations Under Section 310(d) of the Communications Act of 1934, 43 Fed. Comm. L. J. 277, 296-302 (July 1991).

⁶² The broadcast and cable attribution rules under which the Commission generally attributes stock interests of 5% or more, see, e.g., 47 C.F.R. §§ 73.3555, 76.501, 63.54, are distinguishable from the instant case in that these stricter limits are designed to promote programming diversity, a concern not relevant to the mobile services marketplace.

In addition, to account for the numerous passive investors within the cellular industry, the Commission should adopt a "single majority shareholder" exception to its 30-35% attribution standard.⁶³ Thus, to the extent that there is a greater than 50% owner in a licensee, all other ownership interests (including those greater than 35%) would be non-cognizable.

A relaxed attribution standard appears to have substantial support from members of the Commission. For example, Commissioner Barrett finds the 20% standard a "problem" which effectively precludes cellular interests "a fair shot to participate in PCS MTA areas" because of its treatment of "passive investments (i.e. limited partnership)" and "noncontrolling investments greater than 20% equity."⁶⁴ CTIA submits that a 30-35% percent attribution standard, in conjunction with the single majority shareholder exception, will best meet the concerns raised.

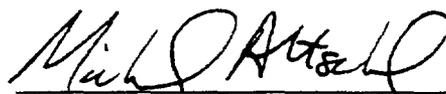
⁶³ The single majority shareholder exception, which arose under the broadcast attribution rules, relies upon the theory that if a single majority shareholder exists, all other minority interests should not be attributable because the minority shareholder, even acting in collaboration with other minority shareholders, lacks the ability to exert control over the licensee on the basis of shares held. See Attribution of Ownership Interests, 97 FCC 2d 997, 1008-1009 (1984). In the broadcast context, this exception applies solely to corporate entities. CTIA submits that, in the PCS context, such an exception should apply regardless of the business form used.

⁶⁴ See Dissenting Statement of Commissioner Barrett at 13-14. Similarly, Commissioner Duggan expresses a desire to accommodate parties holding such interests because they "are incapable of engaging in anticompetitive conduct." See Separate Statement of Commissioner Duggan at 2.

CONCLUSION

For the foregoing reasons, CTIA respectfully requests that the Commission on reconsideration allocate PCS spectrum in four 20 MHz and four 10 MHz blocks at the BTA level and relax the cellular overlap restriction and the attribution limit in accordance with the recommendations herein.

Respectfully submitted,
**CELLULAR TELECOMMUNICATIONS
INDUSTRY ASSOCIATION**



Michael F. Altschul
Vice President, General Counsel
Two Lafayette Centre, Third Floor
1133 21st Street, N.W.
Washington, D.C. 20036

Philip L. Verveer
Daniel R. Hunter
Francis M. Buono
Jennifer A. Donaldson
WILLKIE FARR & GALLAGHER
Three Lafayette Centre
1155 21st Street, N.W.
Washington, D.C. 20036-3384

Of Counsel

December 8, 1993

I. Introduction and Summary of Conclusions

The Federal Communications Commission recently released its Second Report and Order, In the Matter of Amendment of the Commission's Rules to Establish New Personal Communications Services.¹ The Cellular Telecommunications Industry Association (CTIA) has asked CRA to analyze certain antitrust aspects of the FCC's plans for Personal Communications Services (PCS).² Our analysis evaluates the appropriateness of, and need for, several of the limitations placed on cellular operators in bidding for licenses to use the portions of the radio frequency spectrum that have been allocated for the provision of mobile telecommunications services.

Under FCC rules, incumbent cellular operators may not acquire licenses in the forthcoming PCS auctions for more than 10 MHz in addition to their current holdings of 25 MHz in any region where their current service areas cover 10 percent or more of the population. New competitors may acquire licenses for up to 40 MHz of bandwidth. This restriction on incumbents means that, if a cellular operator currently holds licenses for even a moderately

¹GEN Docket No. 90-314, Issued October 22, 1993 (hereinafter Second Report and Order). The radio spectrum allocated for personal communications services is to be assigned by competitive bidding. See Notice of Proposed Rule Making, In the Matter of the Implementation of Section 309(j) of the Communications Act Competitive Bidding, PP Docket No. 93-253, Issued October 12, 1993. According to the Second Report and Order, cellular and PCS operators are expected to offer similar, if not identical, services; PCS firms will, therefore, compete directly with cellular companies. Because both sets of firms are expected to offer the same services and compete for the same customers, in order to eliminate confusion we refer to these offerings as mobile telecommunications services. Mobile telecommunications services include the full range of offerings that may be provided, by either existing cellular or new PCS companies.

²In two earlier papers filed with the FCC, one of the present authors addressed several similar issues. See S.M. Besen, R.J. Lerner, and J. Murdoch, "An Economic Analysis of Entry by Cellular Operators in Personal Communications Services," November 1992; and, by the same authors, "The Cellular Service Industry: Performance and Competition," November 1992.

populated region within a Major Trading Area (MTA), it may not bid for licenses for the use of either Channel A or B (30 Mhz each).

Evaluation of the economic implications of the Commission's rules requires an antitrust analysis of the market for mobile telecommunications services. For example, analysis of the effects of the rule that limits cellular carriers to bidding for a license for the use of a single 10 MHz band in their territories requires a definition of the relevant geographic market within which mobile services providers compete. Similarly, an evaluation of the effects of permitting cellular operators to acquire licenses for additional bandwidth in the PCS auction, or in the aftermarket, requires product and geographic market definitions, as well as calculations of market shares and concentration before and after the acquisitions. Finally, an overall evaluation of competition in this industry must take into account the wide variety of factors that influence and determine market performance in addition to market structure. Because of the need to discuss a full range of these antitrust issues, this report addresses the following:

- the general principles underlying an antitrust analysis. Basically, we assess why public policy seeks to rely on competition, and under what circumstances competition is likely to lead to economically desirable outcomes (Section II);
- the relevant antitrust product and geographic markets within which PCS specifically, and mobile telecommunications services generally, should be evaluated (Section III);
- the proper measure of market shares, and the evaluation of a range of possible market structures for mobile telecommunications services (Sections IV and V); and
- whether or not the market for mobile telecommunications services is likely to be competitive (Section VI).

We reach the following conclusions:

- The product market for mobile telecommunications services is broad. Available evidence suggests that firms offering mobile services will be able to shift among a wide range of different services rapidly and at relatively low cost. The ability of firms to change the services they provide in response to price and profit opportunities ties virtually all of the various mobile telecommunications services into one broad market; narrow, relevant antitrust markets limited to specific services would be exceptional. To the extent that there is some limited class of services that has special requirements (very broad spectrum needs, for example), such services might constitute more narrow markets and, therefore, require individual attention.
- The scope of the geographic market for mobile telecommunications services depends on whether providers may charge different prices to customers in different regions. If price discrimination is permitted, among, for example, Basic Trading Areas (BTAs), then narrow regions like BTAs may be relevant geographic markets. If, however, price discrimination is barred, the geographic market will often be much broader, typically becoming substantially larger than a BTA.
- Within the broad market for mobile telecommunications services, the capacity to transmit information is the appropriate measure of market share. Bandwidth, however, is not necessarily an appropriate measure of capacity. The ability to transmit information within a given amount of spectrum is determined in part by the technology adopted, and newer, digital systems have a far greater capacity than do older, analog ones. Because existing cellular operators will, for some time, be required to continue to serve customers that have invested in analog equipment, they will have lower effective capacity and market share per unit of allocated bandwidth than will firms with licenses for the same amount of bandwidth that employ only digital equipment. Incumbent cellular operators will suffer this “analog handicap” for as long as they must continue to serve customers using the old technology. The share of the mobile telecommunications market held by cellular firms will thus be less than their share of assigned bandwidth.
- Significant efficiencies will be obtained if cellular operators are permitted to provide Personal Communications Services. These efficiencies stem from economies of scope, cost savings that result when the same firm provides more than one service. Some of these efficiencies would be sacrificed if limits were placed on the acquisition of PCS licenses by incumbent cellular operators.
- Contrasted with the standards in the “Department of Justice and Federal Trade Commission Horizontal Merger Guidelines,” and current legal enforcement of the antitrust laws, the market structure standards adopted in the Second Report and Order are both overly rigid and conservative. For example, the current rules limit the amount of spectrum that may be licensed to an incumbent cellular carrier in the PCS auctions to 10 MHz. Depending on the assumptions adopted, this bandwidth would give an

incumbent cellular operator between 17 and 20 percent of market capacity. Yet the Merger Guidelines pose no strict bar to acquisitions by firms with market shares in this range. Indeed, the Merger Guidelines evince no concern with acquisitions that leave a single firm with a post-acquisition share of less than 35 percent, assuming other conditions are met.

- Even in the most highly concentrated market structure possible under pending PCS rules, the Merger Guidelines would not bar, and might not even warrant investigation of, significant acquisitions of additional capacity by incumbent cellular operators. For example, even if there are only five or six mobile service providers, the acquisition of an additional 5 MHz of spectrum by a cellular operator that already has 35 MHz would not violate the Guidelines. And, if the added 5 MHz of capacity were acquired from a competitor with 35 or 40 MHz allocation, measured concentration might remain the same, or even decline.
- Even if the number of mobile service competitors were quite small, there is a variety of factors that act to inhibit the exercise of market power. Key features of the emerging market for mobile telecommunications services are the anticipated tremendous dynamism of the technologies that may be available and the range of services that may be offered. Such market dynamism may, for example, result in firms continuing to adopt new, more capable technologies that lead to rapid expansion of industry capacity. Moreover, such capacity expansion may also come from a rapidly expanding competitive fringe, which today is dramatically illustrated by the consolidation and digitization of SMR operators to provide an array of mobile telecommunications services. Combined with rapid market growth, these factors tend to limit anticompetitive behavior by mobile telecommunications service providers.
- In many instances, the courts have adopted more liberal and flexible standards for evaluating mergers than those articulated in the Merger Guidelines, rejecting numerous attempts by the antitrust authorities to block proposed transactions. Generally, the courts have found analysis of market shares and concentration to constitute only one factor, albeit an important one, in evaluating mergers, and have placed great weight on other, non-structural market conditions. Many of the factors commonly recognized to reduce the likelihood of anticompetitive behavior are present in the market for mobile telecommunications services.
- We conclude that rules governing the structure of the market for mobile services, under the terms currently contemplated in the Second Report and Order, may prevent a variety of merger and acquisition transactions that do not threaten to reduce competition or raise prices of mobile telecommunications services and that in fact promise significant efficiencies. Many such transactions may be unobjectionable on purely structural grounds. Moreover, when considered in light of other factors that inhibit coordinated behavior and collusion, a more flexible rule of reason approach is warranted. We would

urge that the Commission entertain the notion that incumbent cellular operators be allowed to acquire additional spectrum after the PCS auctions are conducted.

II. The Role of Competition

Economic policy seeks to rely on competition for a variety of reasons. When firms compete, prices are driven toward costs, society's resources are efficiently allocated among the various goods and services that can be produced, and consumers must pay no more than necessary to secure these products. Moreover, firms in competitive markets are under continuing pressure to adopt new products, services, technologies, and cost-reducing innovations, whose benefits are passed on to consumers.³ When firms do not compete, the principal fears are that prices will rise above costs, resources will be inefficiently allocated, and income will be transferred from consumers to producers.⁴

Analyses that identify the benefits of competition typically begin with an examination of markets in which there is a large number of firms, each selling a homogeneous or relatively undifferentiated product, and where the entry or exit of firms is either free or easy. In such a setting, no single firm or group of firms has the ability to raise price above cost. No single firm can raise prices to consumers without rapidly losing sales to rivals — either existing firms or new entrants — and there are so many competitors that no group of them successfully can coordinate their behavior — either tacitly or overtly — to raise prices above competitive levels.

³For a discussion of the benefits of competition, and the harm associated with monopoly, see F.M. Scherer and D. Ross, Industrial Market Structure and Economic Performance, Third Edition (Boston: Houghton Mifflin, 1990), pp. 18-29.

⁴We recognize that the Commission is also concerned with diversity of ideas and diversity of ownership. Our focus is solely on the economic effects of competition in the provision of mobile telecommunications services, since issues of diversity of ideas do not arise here. We do not address the issue of ownership diversity.

Moreover, in markets with many competitors, firms are under constant pressure to offer consumers a wide range of products and/or services, or else face the threat that rival firms or new entrants will do so. Finally, firms in competitive markets are driven to introduce cost-reducing technologies in order to avoid being placed at a cost disadvantage relative to their rivals.

In many real-world markets, the number of rivals is smaller than that identified in the textbook treatment of competition. It does not follow, however, that economic policy should attempt to maintain a market structure with a very large number of firms. For one thing, this might involve the sacrifice of significant cost savings from exploiting economies of scale and scope. Moreover, most economists believe that many of the desirable outcomes resulting from market structures in which there are large numbers of firms can be achieved even if the number of firms in a market falls short of the competitive ideal. In practice, the ability of an individual firm or group of firms to raise prices is limited by a wide variety of factors. A single firm must have a large share of a market before it can unilaterally raise prices. And even in markets where there are relatively few firms, coordination of behavior to raise prices is often very difficult. Thus, while economists generally believe that the likelihood of noncompetitive, coordinated behavior is limited when the number of firms is relatively large, markets may behave very competitively even when they are composed of only a few firms and concentration is relatively high.

Evaluating competition in markets composed of only a few firms is challenging. When the number of firms is limited and market concentration is high, there is no single, easily applied rule for assessing the extent of competition, or of determining how far market performance

departs from the competitive ideal. As a result, public policy analyses often focus not on determining the precise number of firms necessary to achieve the competitive benefits of intense rivalry, but on whether or not specific changes in a market, particularly reductions in the number of firms or increases in market concentration, result in unacceptable threats to competition. For example, in enforcing the merger provisions of the antitrust laws, the Federal Trade Commission and the Antitrust Division of the Department of Justice evaluate whether a specific merger or acquisition is likely substantially to lessen competition.⁵ We pursue this approach below in evaluating competitive conditions in the mobile telecommunications market.

The array of factors that must be taken into account in determining whether or not competition prevails in a market, and whether or not competition may diminish as a result of a reduction in the number of competitors, is quite broad. The analysis typically begins by defining the relevant product and geographic markets, and then evaluates the market's structure, principally the number and size distribution of firms. The key concern in focusing attention on these features of market structure is that, as the number of firms is reduced, the probability that the remaining firms can raise prices to consumers may be increased.

The analysis, however, does not stop there. Close consideration also is given to conditions of entry by new firms and expansion by existing ones, as well as to a variety of other factors that influence the conduct of firms. For example, even in markets that are relatively concentrated, if incumbent firms can expand, or new competitors can enter the market rapidly, firms will be unable for long to maintain prices at supracompetitive levels.

⁵"Department of Justice and Federal Trade Commission Horizontal Merger Guidelines," April 2, 1992, Bureau of National Affairs, Special Supplement. [Hereinafter "Merger Guidelines" or "Guidelines."]

If expansion or entry is easy and will occur rapidly in the face of high prices, high levels of concentration may still be consistent with competitive market performance. Moreover, even when market concentration is relatively high, firms may be unable effectively to coordinate their behavior and raise prices to consumers. Attempts by firms jointly to raise and sustain prices above competitive levels are limited by many factors, such as cost differences among them, differences in the range of products offered, rapid technical change in both products and services, and rapid market growth.⁶

If market conditions are changing rapidly, and are expected to continue to change rapidly in the future, the very fact of this market dynamism may prevent firms from coordinating their behavior and raising prices. In such circumstances, which are present in the mobile telecommunications market, even high levels of concentration may be acceptable, especially where economies of scale or scope permit larger firms offering a wider array of products or services to experience lower costs.

Analysis of the competitive consequences of changes in market structure -- reductions in the number of firms and increases in concentration -- proceeds in the following manner:⁷

- **Market Definition and the Identity of Competitors.** The relevant product and geographic markets within which the firms compete are defined, and the firms that compete in those markets are identified.
- **Number of Competitors and Concentration.** Within the relevant markets, the number of firms and levels of market concentration are summarized and evaluated by the computation of summary statistics, including the Herfindahl-Hirschman Index (HHI). If the concentration numbers are low by generally accepted standards, there is a

⁶Lawrence J. White ("Antitrust and Merger Policy: A Review and Critique," *Journal of Economic Perspectives*, 1, 13-22, Fall 1987, pp. 17-18) discusses some of the "other market characteristics" that are taken into account in the Guidelines.

⁷This description is patterned on the analysis outlined by the Merger Guidelines.

presumption that competition prevails, and that changes in concentration pose no material threat that competition will be harmed by a reduction in the number of competitors.

- Expansion and Entry. The ease with which existing firms may expand or new firms enter a market is evaluated. Even when market concentration exceeds generally accepted levels, the ability of existing firms to expand or new firms to enter may undercut the ability of existing firms to raise prices above competitive levels.
- Factors Inhibiting Coordinated Behavior. Factors that limit collusive behavior are assessed. When market concentration exceeds generally accepted levels, the ability of firms to coordinate behavior and raise prices above competitive levels may be inhibited by a large number of market characteristics. For example, sustained and rapid change in supply or demand, or both, may effectively prevent coordinated market behavior.
- Efficiencies. Economies of scale or scope that result when firms are combined are examined. Even where the risk of coordinated behavior is enhanced through merger, this factor must be weighed against the associated cost savings. Economies may result from increasing the output of the same product within a single firm (scale), or from combining the production of two or more products in a single firm (scope), or both. If these efficiencies are sufficiently great, they may more than compensate for the additional risk created by increased concentration.

We generally follow this approach in our analysis of competition in the mobile telecommunications market.

III. Defining the Mobile Telecommunications Services Market

We define the relevant product and geographic markets for mobile telecommunications services for several reasons. In particular, market shares and concentration typically have relevance only within economically meaningful markets. A predicate, therefore, to interpretation of shares and concentration is identification of the relevant markets within which mobile service providers compete. Moreover, the FCC has specified limits to the amount of bandwidth for which cellular companies may obtain licenses in the forthcoming PCS auctions. Analysis of the reasonableness of these restrictions on cellular company licensees requires identification of the

relevant geographic markets. If, for example, geographic markets are broader than individual BTAs, so that shares and concentration within those regions have no economic significance, the strict limits on cellular company acquisition of PCS licenses might, in some locales, be relaxed without risking anticompetitive outcomes.

Basic Principles

Defining the product and geographic markets for mobile telecommunications services requires identification of the group of firms that determine the price of a specific service or group of services, and specification of the geographic regions within which prices are determined. Market definition precedes an analysis of how competition in the mobile telecommunications market is affected by the industry's market structure, or by a reduction in the number of competitors, or by an increase in concentration.

The Merger Guidelines provide a sound methodology for defining relevant product and geographic markets, and for identifying the competitors within those markets.⁸ Basically, the Merger Guidelines pose a series of hypothetical questions, the purpose of which is to identify the narrowest group of products, and the smallest geographic region, within which sellers profitably could raise prices. In assessing market definition, one does not consider the identity of individual sellers. One simply asks whether, if a hypothetical single-firm monopolist raised the price of a product sold within a specific geographic region, that price increase would be profitable. If the hypothetical price increase would not be profitable, the implication is that many consumers must either have shifted their purchases to other products, or to the purchase of the same products sold by firms in other geographic regions. If enough consumers switch

⁸¶¶ 1.1, 1.2, and 1.3 of the Merger Guidelines describe basic principles of market definition and identification of market competitors.

to competing products so that the hypothetical price increase is unprofitable, then the market must be expanded to include those other products; the relevant product market is broader than, and includes more products than, the tentative antitrust market. Similarly, if the price of a product sold in a specific region is raised but consumers switched their purchases to sellers in some other region, then the geographic market must be expanded to include these other suppliers. One has successfully identified the relevant product and geographic market only when the hypothetical price increase is profitable.

We can illustrate these principles with an example. Assume that there was a proposed merger between the only two Ford automobile dealerships in Alexandria, Virginia. Evaluating market definition would begin by posing the question of whether the merged firm profitably could raise the price of Ford automobiles sold in Alexandria. If, after raising the price, the Ford dealer found that it lost significant sales to other vehicle brands (Chevrolets or Hondas, for example) sold by dealers in Alexandria, so that the price increase was not profitable, the dealer would be forced to rescind the increase to counteract the loss in sales. One would conclude that the product market was broader than just Ford vehicles.

The Ford dealership in Alexandria might also lose sales to Ford dealerships in Arlington. If a sufficient number of buyers shifted to Ford dealers located outside of Alexandria so that the price increase was not profitable, then the geographic market would be broader than Alexandria, and would also include sellers in other regions.

To define the relevant product and geographic market, one would continue to add competing automobile brands and sellers in adjacent regions until the smallest group of firms that

sold the product in the narrowest region that could profitably raise the price was identified.⁹ In the example above, the relevant market might be the sale of some broad class of automobiles (all small and mid-sized cars, for example) in the entire Washington metropolitan area. The key issue in this, or any, market definition analysis is to identify the full range of sellers that might prevent the hypothetical monopolist from raising prices. If such constraints on pricing exist, the market is broader than originally proposed.

Note that the identification of the relevant product and geographic markets described above is based solely on the reaction of consumers to an assumed increase in price. However, competing firms may begin supplying a relevant product so rapidly that, although they do not now sell the product, they are, nonetheless, participants, or competitors, in the market. Under the Merger Guidelines, if, in the face of a price increase, a firm that does not currently produce and sell a product would likely begin to do so at low costs and within one year, then it is “in the market.” If a firm is in a market through such supply response, then its capacity must be taken into account in evaluating the number of firms and market shares.

More technically, a firm that begins selling the product within one year must be able to switch its capacity to the production of that product without incurring significant sunk costs.¹⁰ Sunk costs are costs that cannot be recovered if the firm subsequently decides to exit the

⁹Because of “chain reaction” effects, an analysis that begins by considering a limited set of products, or a narrow geographic region, may end up identifying broad product and/or geographic markets. For example, assume that the analysis above found that Alexandria could not be a relevant geographic market, and that the market had also to include Arlington. In the next round of analysis, one would hypothesize a price increase by auto dealers in both Alexandria and Arlington. That analysis might find that significant sales were lost to dealerships in Montgomery County. Thus, even though Alexandria, the locale of the merging firms, does not border Montgomery County, the two regions could be in the same relevant geographic market.

¹⁰See Merger Guidelines, ¶ 1.32. A supply response that requires more than one year and/or involves substantial sunk costs is considered separately in evaluating barriers to entry. See Merger Guidelines, ¶ 3.

business. Formally, the Merger Guidelines define markets solely on the basis of shifts in consumer demand. Firms that can enter a market rapidly, through supply-side flexibility and expansion, are taken into consideration in identifying the firms that participate in the market. However, because we believe that such supply-side flexibility is a key feature in the provision of mobile telecommunications service, we have included both demand- and supply-side flexibility in defining relevant markets. If the analysis is conducted properly, this distinction has no effect on the conclusions that are reached.

Continuing the example above, assume that, in evaluating only changes in demand, we found that the sale of Ford automobiles in metropolitan Washington constituted a relevant market (contrary to the common-sense notion that would have Fords competing with other brands). However, if other existing auto dealerships (that sold Hondas, for example) could begin selling Ford vehicles within one year without great cost, then those potential competitors would also be in the market, participating through supply response. Thus, even if there were only a few Ford dealers at the date of a merger, if other auto dealerships could rapidly and inexpensively begin selling Fords, those firms would also be included in the evaluation of market shares and concentration.

Price Discrimination and Market Definition

Under a Merger Guidelines analysis of relevant markets, the objective is to identify the smallest group of products and the narrowest geographic region in which a small price increase by a hypothetical monopolist would be profitable. However, even when a price increase imposed on all customers of a product would not be profitable, if sellers can raise prices to a more narrow or limited class of customers that cannot substitute away from the purchase of a

product, the sale of the product to that specific group may be a relevant market. The ability to engage in price discrimination (price differences to different customers not justified by cost differences) may allow firms profitably to raise prices to a specific group of customers, e.g., small businesses in some region, or to all customers in a narrow geographic area. If this occurs, then such price discrimination may result in relevant antitrust product markets that are more narrow than would be the case if the sellers were required, either by competition or regulation, to charge the same price to all customers. In general, the greater latitude that suppliers have to charge different prices to different customers (either across products or regions), the narrower the relevant market. Price discrimination may thus affect the definition of both product and geographic markets.¹¹

Section 202(a) of the Communications Act bars unreasonable discrimination among classes of customers and across geographic regions.¹² If the bars to discrimination embodied in Section 202(a) are enforced across broad classes of products and regions, relevant product and geographic markets will be broader than if such discrimination were permitted.

Defining the Product Market for Mobile Telecommunications Services

As CRA discussed in a previous paper,¹³ PCS encompasses a potentially wide array of offerings. These consist of services that may directly substitute for one another, services the demands for which may be independent, and services that may be complements in demand.

¹¹The Merger Guidelines address this issue at ¶¶ 1.12 (price discrimination in product market definition) and 1.22 (price discrimination in geographic market definition).

¹²47 U.S.C. Section 202(a).

¹³Besen, Lerner, and Murdoch, "An Economic Analysis of Entry by Cellular Operators in Personal Communications Services," November 1992.

Because many of these services are likely to be new, uncertainty about precisely which services will be offered under the rubric of PCS adds to the usual difficulties in defining product markets. That is why, in CRA's earlier paper, we conducted a "worst case" analysis, by assuming that PCS simply refers to cellular telephone service. We then asked how modifying this assumption about which services would be offered in the 2 GHz band would change our conclusions about the competitiveness of the mobile telecommunications market.

The problems of market definition from the demand side are no less formidable today than they were a year ago. At the same time, however, we believe that it is possible to define the mobile telecommunications services market in much the same way we had in our earlier analysis, not by focusing on the demand for services the identities of which are still largely unknown, but by considering the supply side of the provision of these services. As noted above, the Merger Guidelines indicate that one should employ only demand-side factors in defining antitrust markets, introducing supply-side substitution only later as an additional consideration. However, the nature of mobile services suggests that a better approach here is to introduce supply-side substitutability directly in the process of market definition.

Because we now have information that was not available to us at the time we submitted our original paper, we can perform a more refined version of our previous analysis. Moreover, the outlines of the Commission's PCS plan have been announced, so that we can direct our analysis specifically to that plan rather than to hypothetical alternatives. In particular, we consider whether to include all providers of mobile telecommunications services in the same market, and evaluate competition in the market under that definition.

Conditions for a Single Mobile Telecommunications Services Market

Under reasonable conditions, all mobile telecommunications licensees — including those providing cellular, PCS, and Specialized Mobile Radio services — should be considered to be in the same antitrust market. Moreover, under these conditions, the capacity of each firm to transmit information over its bandwidth, without regard to the uses to which that bandwidth is put, is the correct measure of firm shares, and market concentration can be measured using these shares.¹⁴ This section discusses the conditions under which market definition and concentration measurement can be carried out in this manner. It also considers how market definition and concentration change if the conditions described here are not met.

To anticipate our conclusion, we find that it is reasonable to treat all firms that provide mobile telecommunications services as being in the same antitrust market. The key to this conclusion is that providers are legally able rapidly to move among the provision of various services, and can do so at modest cost. If all firms can easily offer a wide range of services, they are in the same market. The remainder of this section discusses the conditions supporting this conclusion.

Absence of Legal or Regulatory Restrictions on Spectrum Use. The first condition is that there are no legal or regulatory restrictions on the uses to which the spectrum licensed to any firm can be put. If there are no restrictions on spectrum use, and the other conditions discussed below are also met, a licensee can shift from the provision of one service to another in response

¹⁴As discussed in detail below, there is not a one-to-one relationship between bandwidth and capacity. The capacity to transmit information is a function of both bandwidth and the technology used; analog technologies are inherently less capable than digital technologies. Capacity is based on effective bandwidth.