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## Introduction

Mergers(1) in the mobile telecommunications industry are popping up like worms after a spring rain. The Federal Communications Commission (the Commission or the FCC) is issuing thousands of local, regional, and nationwide licenses for Personal Communications Services (PCS), which are expected to be stitched together into national networks.(2) Existing mobile companies are combining vertically and horizontally,(3) and satellite-based communications systems that will blanket the nation are moving off the drawing boards and into the air. Sober industry observers predict the clustering of now separate capabilities—telephone, dispatch, paging, for example—into a single box for "people on the move.(4)

All these transactions will involve the transfer of radio licenses and control over them. Such transfers may not occur without the prior approval of the Commission under the "public interest" standard of the Communications Act of 1934 (the Act).(5) In granting or withholding its approval under the "public interest" standard, the Commission must consider the impact of each transfer on competition.(6)

This Article describes the accepted standards for analyzing the competitive effects of mergers and suggests ways for the Commission to apply those standards to mergers involving mobile radio telecommunications services (mobile services).(7) No article can exhaust the subject. Therefore, this Article seeks to state the major issues that should and should not arise in the Commission's competitive analysis and to suggest standards by which those issues could be decided.

Part I explains three definitional questions that typically start the competitive analysis of a merger. The answers to those questions determine the kind of competitive analysis that the merger will receive when reviewed by the FCC. Part I also suggests several possible answers to these questions for mobile services mergers. Part II then explains the analysis by which the pro- and anti-competitive effects of mergers are usually examined and evaluated, and highlights the effects that are most likely to be found in a mobile services merger. Finally, Part II surveys the remedies for the harms to competition likely to result from such a merger.

## I. Preliminary Definitions

The typical preliminary step in a competitive analysis of a merger is to answer three questions. The first two questions are: "What is the `product market'?" and "What is the `geographic market'?" Answers to these questions are a prerequisite for answering the basic question of whether the merger will help or hurt competition. The answers pinpoint exactly what kind of competition, if any, is involved in the merger, in exactly what business, and where. Within those limits, the substantive analysis of the merger begins with the third question: "Which of three classifications best fits the merger—horizontal, vertical, or conglomerate?"

# **A. The Product Market**

## 1. Generally

For each party to a merger, at least one product market must be defined. The United States Supreme Court, in its classic statement of what a product market is, said in *Brown Shoe Co., Inc. v. United States*(8) that "[t]he outer boundaries of a product market are determined by the reasonable interchangeability of use or the cross-elasticity of demand between the product itself and substitutes for it.(9) In that case, the Supreme Court found three product markets—men's, women's and children's shoes. It chose not to find either one big product market for all shoes or hundreds of product markets for shoes of different sizes, ages, and styles. The Supreme Court based its finding on

evidence of the public's recognition of the severability of men's, women's, and children's shoes, their manufacture in separate plants, the existence of peculiar characteristics of each kind of shoe that made it generally noncompetitive with the others, and the existence of distinct classes of customers for each kind of shoe.(10) The Supreme Court has followed basically the same approach in similar cases, emphasizing reasonable interchangeability as shown by evidence of the actual behavior of consumers.(11)

There are a few "short rules" about defining product markets. First, a product market may be a cluster of different products or services that is "sufficiently inclusive to be meaningful in terms of trade realities.(12) Second, two services may be in the same product market even if they are not identical, or even fungible, so long as there is demonstrated competition between them.(13) Third, many distinctions that people in a business consider important, such as technology (*e.g.*, analog versus digital) and regulatory classifications (*e.g.*, common carrier versus private), are probably irrelevant to the "reasonable interchangeability" test. What matters most are the perception and actual behavior of customers. If a digital call and an analog call sound the same to a consumer (and all other things are equal), both are probably in the same product market.(14) Fourth, within a product market, there may be one or more submarkets. That is a section of a market which has enough distinctive characteristics that it is treated as part of a market and as a separate market in its own right.(15)

The Supreme Court's "reasonable interchangeability" test for defining product markets is subjective and somewhat imprecise. As the Court itself has said, "[N]o more definite rule can be declared than that commodities reasonably interchangeable by consumers for the same purposes" constitute one product market.(16) If the test is applied loosely, it can lead to product markets that are so broad that almost any merger within those markets will not seem to threaten competition.(17)

An alternative and purportedly more precise test for defining a product market can be found in the most recent Department of Justice and Federal Trade Commission 1992 Horizontal Merger Guidelines.(18) The *Horizontal Guidelines* focus on one factor, price, and even more specifically on the effect of price increases on consumers' behavior.(19) Under the *Horizontal Guidelines*, a product market is "a product or group of products such that a hypothetical profit-maximizing firm that was the only present and future seller of those products . . . likely would impose at least a 'small but significant and nontransitory' increase in price.(20) The *Horizontal Guidelines* restate this definition in terms of a test. To determine whether Product A is in the same market as Product B, ask whether, if all the sellers of Product A increased their prices by 5 percent—and not because of increased costs—for one year,(21) would enough buyers shift to buying Product B so that the price increase would prove unprofitable for the sellers of Product A.(22) In other words, if all cellular service providers raised their prices by 5 percent for one year,(23) would the increased revenues from their remaining cellular customers more than offset their losses from customers who switched to a cheaper substitute product—paging services, for example. If the cellular providers suffer a net loss, then paging belongs in the product market with cellular service.

The Five Percent Question has drawbacks. First, it has been criticized for inevitably leading to unduly narrow product markets(24)—just as the "reasonable interchangeability" test has been criticized for leading to unduly broad ones. Second, the Five Percent Question is hypothetical. One source for the answer to the hypothetical question is the executives of the merging companies or their experts, whose opinions are likely to be self-serving.(25) A more reliable answer to the question could be obtained by a professional survey of buyers of Product A, asking what they would do in the event of a 5 percent price increase. Such a survey, however, is expensive and somewhat impractical for litigation at the FCC, and it would still yield only a hypothetical answer.(26)

The FCC is not required to make a decision between the Supreme Court's "reasonable interchangeability" test and the *Horizontal Guidelines'* Five Percent Question. However, the FCC has consistently used the Supreme Court's test of reasonable interchangeability.(27) Therefore, this Article will assume that the Commission will continue to rely primarily on the Supreme Court's "reasonable interchangeability" test for defining product markets. The definition of the product market is often the single decisive issue in merger cases—and, in the context of the Commission, competitive analyses of mergers. Therefore, great attention may be given to defining product markets in mobile services merger cases. The following subsection describes the leading candidates for inclusion in that market.

## 2. Mobile Services

If both parties to a mobile services merger provide a particular service, then that service will certainly be in the product market. Defining this service provides the starting point in determining the product market. The next step is to ask what other services are reasonably interchangeable and, therefore, also belong in that product market. The following is a description of all the services which, as of the time of publication, might belong in the product market in a mobile services merger.(28) Each description focuses on those facts which are most relevant to the services inclusion *vel non* in the relevant product market under both the "reasonable interchangeability" test and the Five Percent Question.

## **a. Cellular Mobile Telephone Service**

Cellular service consists of simultaneous two-way voice communications with functions and privacy that are virtually identical to home and office telephone service via a mobile telephone.(29) Originally, the service was almost entirely in vehicles, but portable phones now account for one-half of all sales—a share that is expected to grow. The Commission licenses only two cellular systems per area.(30) Each system uses 25 MHz of spectrum.

Cellular service has been in existence for more than thirteen years growing at the astounding rate of 50 percent per year. It now has approximately 24 million customers. In most markets, the two systems have roughly the same market share. A typical cellular customer's monthly bill is sixty dollars. Evidence shows that some cellular carriers, especially those in major cities, are earning rates of return vastly higher than a competitive market would allow.(31) Recently, however, cellular charges have begun to decline, and features have begun to increase—a trend widely attributed to cellular carriers' anticipation of competition from PCS.(32) Except in a few rural areas where only one license has been sought, there is no room for entry by new providers of cellular service.(33)

## **b. Specialized Mobile Radio Systems**

Specialized Mobile Radio Systems (SMRs) provide "dispatch" service, a two-way voice communications system for business vehicles (*e.g.*, taxicabs, delivery trucks) that talk with each other and a central dispatcher.(34) SMR terminals are not as compact as cellular ones and, therefore, are almost always limited to vehicles. However, some portable units do exist and are expected to become more common. For over a decade, SMRs have been authorized to connect the public switched telecommunications network (PSTN), which enables them to offer telephone service that is functionally equivalent to cellular service. Thus, the FCC has found that cellular and interconnected SMRs are now competitive with each other, and the competition between them is likely to grow.(35) In actual practice, however, SMRs appear not to have engaged in direct, visible competition with cellular carriers.(36) At the end of 1993, approximately 1.8 million vehicles were served by SMR systems. A typical SMR customer pays fifteen dollars per month for dispatch service and fifty dollars more for interconnection to the PSTN. Thus, the average SMR customer who obtains interconnection to the PSTN receives a monthly bill equivalent to that received by the average customer of cellular service.

Unlike cellular systems, SMRs have no Commission-ordained numerical limit per area and no fixed number of MHz per system. The total amount of spectrum available for all SMRs in an area presently will be 21 MHz.(37) The largest SMR, Nextel, began consolidating local SMRs a few years ago and at one time aspired to be the third cellular network.(38) Recently, however, Nextel lowered its sights to serving "mobile working groups" with an innovative, "bundled" offering of telephone, dispatch, and paging service.(39) Some frequencies allocated for SMRs are still available, even in urban areas.(40) Dispatch communications also occur on private and federal government systems, which are discussed below.

## **c. Paging Service**

Paging service consists primarily of a small portable receiver that emits a beep, vibrates, or displays a telephone number on a screen when someone calls the customer. In practical effect, the signal alerts the subscriber to call a

phone number which replays the message that the caller left via voice mail, answering service, or other device. More sophisticated forms of paging include receiving a short message (*e.g.*, a telephone number to call, a few words, or a voice message). There are many competing carriers in most areas, and the Commission has concluded that "the paging industry is highly competitive."<sup>(41)</sup>

Approximately 4.5 MHz currently are used for paging service. Since the service mostly consists of momentary signals rather than conversations, this relatively small amount of spectrum now accommodates 27.3 million subscribers and could accommodate many more. Over 30 percent of cellular customers also subscribe to paging service. A typical monthly rate for paging service is between nine and seventeen dollars and depends on the service or "coverage" area and functions that the customer desires. Of the spectrum allocated to paging service, almost all is in use in major urban areas. However, spectrum allocated to cellular service and subcarriers on some television and FM radio stations may also be used for paging service. This provides additional capacity for entry by new competitors.<sup>(42)</sup>

## **d. Air-Ground Service**

Air-ground service consists of telephone service on airplanes. In its principal form, it allows calls to be placed from commercial planes, but not to them. A call costs approximately one and a half dollars per minute regardless of the distance between the aircraft and the point in the United States called. The operation of cellular terminals on airplanes in-flight is forbidden for safety reasons, which greatly reduces possible competition between cellular service and air-ground service.<sup>(43)</sup> Approximately 4.5 MHz are assigned to all types of air-ground service. There are three competing providers of air-ground service, none of which dominates. Licenses for three more carriers are available for issuance by the FCC, so there is room for entry by new carriers.<sup>(44)</sup>

## **e. Satellite Systems for Mobile Communications**

Several mobile satellite systems provide mobile telephone service in the United States. Telephones that use satellite-based systems are so large they require a car or a backpack to transport them, and charges are several times higher than those for cellular service. The present satellite-based service is only marketed to, and attractive in, extremely rural areas and, therefore, is not considered reasonably interchangeable with other forms of mobile telephone service.<sup>(45)</sup> Interchangeable satellite systems are expected in several years.<sup>(46)</sup>

## **f. Maritime Services**

Telephone services to ships and fixed offshore installations such as oil rigs are provided by stations on land—public coast stations—and by satellites other than those just mentioned. Public coast stations provide service in a small area, typically up to thirty miles from the shore. The satellites have regional or national coverage. Some public coast stations compete with each other; satellites compete with all of them.<sup>(47)</sup> Public coast stations use approximately 15 MHz of spectrum, and satellites use 19 MHz of spectrum, for a total of almost 34 MHz. While these services are necessary for the protection of life and property on the water, much of their actual use is for business and personal communications. They are thought to be competitive with cellular service in coastal harbors and on other popular recreational bodies of water, where vessels already have telephones that use public coast stations and cellular customers may take their cellular phones on board.<sup>(48)</sup>

## **g. Personal Communications Service**

The Commission has allocated the relatively large amount of 153 MHz of spectrum for PCS and has divided it into three categories: broadband, narrowband, and unlicensed. The Commission intends PCS to inject significant new competition into mobile services.

## 1. Broadband PCS

In contrast to the systems and services described above, broadband PCS allocations may be used for any mobile service—telephone, dispatch, data, paging, and/or video, for example.(49) This flexible definition is far less regulatory than the Commission's traditional approach to mobile services and makes broadband PCS something of a "wild card" in the marketplace. Broadband PCS has an allocation of 120 MHz, which will be licensed by auction in six blocks, three of 30 MHz each and three of 10 MHz each. However, service to most of the country is not expected until 1996 at the earliest. The principal initial application of broadband PCS will likely be for mobile telephone service.(50) Broadband PCS will make possible the entry of three to six new competitors in the areas of existing cellular carriers, SMRs, and all other mobile service providers.(51) Opinions about the future success of broadband PCS differ.(52)

## 2. Narrowband PCS

Narrowband PCS received an allocation of 3 MHz from the Commission; these are expected to be used for sophisticated forms of paging, such as two-way paging.(53) All licenses have been issued, and service is expected to begin in 1996.

## 3. Unlicensed PCS

Unlicensed PCS received an allocation of 30 MHz from the Commission; 10 MHz of which is expected to be used for voice communications, and 20 MHz for data. Unlicensed PCS devices will likely consist of new cordless telephones, wireless telephone and data networks within offices, and other kinds of short-range telecommunications of an internal and business nature. At present, its basic functions appear likely to be short-distance telephone calls using switchboards or the PSTN, and short-distance dispatch and paging services.(54)

# h. Private Mobile Radio Systems

All the services described above are "common carrier" services, which are offered to the general public for a price.(55) In addition, the Commission has made large frequency allocations for an array of "private" mobile communications systems, which serve the internal needs for voice and other communications of specific types of businesses and state or local government entities.(56) Private systems may be interconnected with the PSTN under certain conditions, thus, allowing use for mobile telephone service.(57) While many communications on these systems are very specialized (e.g., taking the temperature of railroad tracks in remote areas and reading pressure gauges in underground storage facilities), some are simply business persons engaging in telephone or dispatch conversations in ways that could occur via the common carrier services described above.(58) Allocations for such systems total approximately 70 MHz. Private mobile systems existed before the first "public" ones, and today they boast approximately 15 million transmitters in use and equipment valued at up to \$30 billion, which makes them comparable in size to the cellular industry. By definition, "rates" are not charged by private systems. The spectrum for private systems is used in all urban areas; there is little vacant spectrum elsewhere.(59)

## 1. "Low End" Mobile Radio Systems

Citizens Band (CB) radios and walkie-talkies allow two-way voice communications with each other, with no privacy and within a range of up to 150 miles of each other. They are used largely for recreational purposes, but some personal and business communications occur on them. These services have a combined frequency allocation of approximately 2 MHz.(60)

## 2. Federal Government Systems

The federal government uses a large amount of spectrum for its mobile communications needs, independent of the Commission's regulatory authority. Some of the communications provided on this spectrum are similar to the services described above, and there is anecdotal evidence of some interchangeability.(61)

### 3. Plain Old Telephone Service

Mobile services are interchangeable with traditional wireline local-exchange telephone service, sometimes called plain old telephone service (POTS), in the sense that both provide communications within a local area, with access to long-distance services.<sup>(62)</sup> In practical effect, however, the interchangeability of mobile services with POTS has been minimal because of mobile systems' relatively high prices and limited capacities.<sup>(63)</sup> The only significant interchangeability that has been detected to date is between cellular service and coin or "pay" telephones. Both are accessible to persons who are away from home or office and happen to have car or portable telephones as well.<sup>(64)</sup> Optimists, however, believe that rates for broadband PCS and cellular services will fall low enough to be real competitors for POTS and that the former services will have enough capacity to threaten a significant amount of telephone companies' POTS revenues.<sup>(65)</sup> The Commission has shown no desire to prevent such competition.

### 3. A Note about Terminal Equipment

All services described above require the use of either a telephone or another kind of "terminal equipment." Typically, the customer buys or rents a terminal from the chosen carrier.<sup>(66)</sup> In addition, most terminals may be used for only one service (*e.g.*, cellular or paging) and sometimes for only one carrier's service.<sup>(67)</sup> This "bundling" of service and terminals creates a barrier to interservice and intercarrier competition, where for example, customers fleeing from an unjustified 5 percent price increase will probably need to scrap their existing terminals and buy new ones. In some cases, this cost could be so high as to amount to a significant barrier to interchangeability, possibly even creating a self-contained product market of "locked in" customers for one service or one carrier.<sup>(68)</sup>

### 4. The Product Market In Mobile Services Mergers

Findings about which services compete with each other on a nationwide basis may occur in the Commission's decisions regarding rulemaking proceedings. These findings are a good starting point for defining the product market for a specific merger.<sup>(69)</sup> Each merger probably concerns a specific locality or localities, however, and defining a product market may require analysis of local peculiarities. For example, the product market in a merger of one mobile telephone service company with another may be just mobile telephone service. If, however, one of the companies also provides paging service to the same area, the product market also may include paging service. Satellite systems may be in the product market in a rural area, and maritime services also may be included in an area that includes a heavily used harbor or river. The point is simply that the facts of each merger need individual examination to lead to a valid product market for an analysis of its competitive effects.

## a. Precedent

Past FCC decisions offer little guidance about product markets in mobile services mergers, principally because these decisions date from a time when each mobile service was largely a self-contained oligopoly, and regulatory barriers were still in effect between cellular, SMR, and paging services.<sup>(70)</sup> This made for seemingly minimal competition between and among different mobile services. The parties to merger litigation before the Commission also seem not to have briefed often the issue of product markets.<sup>(71)</sup>

Recent decisions of the Commission's Wireless Telecommunications Bureau (WTB), however, show increasing attention to this issue and progressive refinement in findings. In a ruling concerning a merger of SMRs, the WTB first found a product market of all CMRS, a broad regulatory category consisting of almost all the mobile radio services described in the preceding subsection.<sup>(72)</sup> In two later decisions, which concerned other mergers of SMRs, the WTB refined its analysis and found a product market of all cellular, paging, SMR—both interconnected and noninterconnected to the PSTN—services, broadband and narrowband PCS, and Business Radio—a form of private mobile radio system—that is interconnected to the PSTN.<sup>(73)</sup> The WTB excluded maritime, air-ground, and satellite systems from the product market and reserved judgment about whether unlicensed PCS belonged in it.<sup>(74)</sup>

The Department of Justice (DOJ), in recent analyses of mobile services mergers, has defined much narrower markets. In reviewing the acquisition of McCaw Cellular Communications by AT&T, it posited a product market consisting of

only cellular service.(75) In reviewing a merger of two SMRs, it posited a product market of "trunked" SMRs at 220, 800, and 900 MHz.(76) In neither case did the DOJ include either paging service or PCS in the same product market with cellular or SMR service. All of these decisions by the DOJ resulted in consent decrees. So far, none has been litigated or affirmed by a court.

The relatively narrow definitions posited by the DOJ can be attributed to several factors. One factor tending to separate cellular service and SMR service is the failure of their providers to compete directly with each other and the fact that a customer switching to an SMR needs to buy a new terminal, which may cost up to \$1000. The relatively low price and functionality of paging service, and the current unavailability of PCS, coupled with the *Horizontal Guidelines'* strict standards for including "supply substitutes" and new entrants in product markets (discussed below) account for the DOJ's exclusion of those services from the product markets.

## **b. Possible Product Markets**

The regulatory classification of CMRS is a malleable lump of clay with which to start shaping a generic product market for mobile services mergers. However, significant additions, deletions, and alterations may be necessary.(77) Services that are classified as "private," and, therefore, are not CMRS for regulatory purposes, may be in competition with CMRS services.(78) Furthermore, while CB radio and unlicensed PCS are not CMRS because they do not require a FCC license,(79) and under the Communications Act only licensed services may be CMRS, their functional similarity to cellular service—providing local two-way voice communications—may place them in the same product market. Finally, federal government systems and POTS are not CMRS, but they may compete with services that are CMRS.(80)

Several approaches to defining product markets in mobile services mergers merit consideration. Certainly, each mobile service provided by one of the merging companies belongs in a product market. As to each service, one could ask whether it is reasonably interchangeable with another service described in the preceding subsection. Alternatively, one could ask the Five Percent Question about the merging company's particular service and the other aforementioned services.

The answers to these questions might lead to several different product markets. At the narrow extreme are the recent decisions of the DOJ, finding service-specific markets, such as only cellular service or only trunked SMR service, at certain frequencies.(81) Second, a more functional analysis of mobile services might result in a finding of three major product markets: telephone service, dispatch, and paging.(82) The "telephone service" market would consist of cellular, a portion of interconnected SMRs' usage, and perhaps broadband PCS. Satellite, air-ground, maritime, unlicensed PCS, and private, federal government, and low-end systems would probably be considered separate "niche" markets, or a submarket of the telephone service market with little or no influence over the market's "Big Three"—cellular service, interconnected SMR service and broadband PCS. The "dispatch" market would consist of some portion of interconnected SMRs, all noninterconnected SMRs, perhaps some broadband PCS, private systems, and federal government systems. The "paging" market would consist of existing paging services, narrowband PCS, and perhaps some part of private and federal government systems.(83)

A third possible vision would emphasize power in the marketplace as measured by revenues, making cellular service by far the most significant service. According to this view, cellular has power over and, therefore, is in the same product market with other services, such as SMR, paging, PCS, and private systems. Collectively, however, the other services might exert some constraint over cellular, just as many Lilliputians, working together, subdued Gulliver.(84) Under such a vision, cellular service would be found in the product market of every merger, but in a merger of cellular companies the product market might consist of only cellular service.

Finally, a relatively loose application of the reasonable interchange ability test might lead to the formulation of a single product market, perhaps called "services for people on the move,(85) consisting of all the services described earlier.

Evidence exists to support multiservice product markets. The Commission has found that many mobile services now

compete with each other or are expected to do so soon.(86) Furthermore, the Commission has found that convergence among previously distinct services is growing.(87) Technology is making possible "one stop shopping" for both paging and talking, and for talking within discrete groups and with the rest of the world.(88) Paging devices are starting to feature two-way capabilities, to deliver written messages, similar to short telephone calls on cellular systems and SMRs,(89) and even to deliver short simulated-voice messages. Such capabilities make paging resemble a two-way voice service and are expected to proliferate in the next year.(90)

The Commission favors such convergence.(91) It is systematically removing regulatory barriers to convergence, and no longer erects them in the first place when it creates new services (*e.g.*, PCS). Thus, today's cellular carriers are allowed to provide paging and dispatch service on their cellular frequencies,(92) and dispatch systems may provide paging and telephone service.(93)

However, care in finding multiservice product markets is prudent. Just as one swallow does not make a spring, the first paging terminal with voice capability does not place paging and mobile telephone service in the same product market. A convincing amount of factual evidence is needed. The facts need careful analysis to distinguish between services that compete with each other and, therefore, belong in the same product market and services that merely complement each other and, thus, ought to remain in separate product markets.(94)

### 1. PCS, Uncommitted Entry, and Supply Substitution

The Commission created PCS with the express goal of becoming "competitive with existing services such as cellular, SMR, and others.(95) PCS is widely expected to take the form of specific services that are functionally equivalent with, and priced no higher than, existing mobile telephone, dispatch, and paging services. If broadband PCS is as multifaceted as predicted, it may eventually blur the distinctions between mobile telephone, dispatch, and paging and may create enough new applications that there will indeed be a single product market of services for "people on the move."

Whether PCS belongs in the product market in a mobile services merger is a potentially contentious issue. The question whether existing services like cellular and SMR belong in the same product market focuses on functions or price-elasticities, whereas the question about PCS focuses on time. As of the time of publication, broadband PCS is available only in the Baltimore-Washington area. Narrowband PCS is available in only a few regions and localities, and while the frequencies for unlicensed PCS are available, they do not appear to be in much use. Widespread availability of broadband and narrowband PCS, even in large cities, is not expected until late 1996 or into 1997.(96)

There is evidence, however, that the inevitability of broadband PCS is having a significant impact on existing services. For example, cellular prices are declining; features and functions are increasing; and cellular carriers are offering options that resemble the expected form of broadband PCS.(97) These trends are probably attributable to the cellular carriers' knowledge that soon they will face several new competitors in the form of several broadband PCS licensees.(98)

These facts may satisfy the legal standards for including PCS in the product market for a current mobile services merger. Under the reasonable interchangeability standard, product markets may include companies or services that will soon be in competition with those that are in the product market now. The case law uses the term "supply substitution" to describe the ability of a company that does not now provide a service, but could by retooling its production facilities and could start to provide the service with reasonable promptness and at modest cost.(99) Such companies may be included in the product market with companies that provide the service now.

The *Horizontal Guidelines* describe the same general idea by the term "uncommitted entrant(100) and apply stricter standards than existing case law for the speed and ease with which the new company must start providing the service. The *Horizontal Guidelines* define an uncommitted entrant as a company that would—not just could—enter the product market without incurring significant sunk costs(101) within one year of a small but significant and nontransitory price increase. The company also must be able to exit the market just as easily. In other words, the company must be uncommitted to the market.(102) The *Horizontal Guidelines* also appear to include in the relevant market "firms which have committed to entering the market prior to the merger.(103)



Broadband and narrowband PCS may now satisfy these standards, or at least the principles underlying them. While starting to provide those services is by no means fast or inexpensive, companies have already incurred billions of dollars of sunk expense for them<sup>(104)</sup> and have committed billions more. There is no doubt that broadband and narrowband PCS will be provided on a significant scale by 1997, even without an increase in the price of existing mobile services. It requires only a sensible extension of the principles of supply substitution and uncommitted entry to apply them to companies that are firmly committed to entering a market, despite expense and other barriers. The effect that broadband PCS is having on cellular prices and quality adds factual support to this proposition. It follows, as in the ordinary case of supply substitution and uncommitted entry, that broadband and narrowband PCS have overcome obstacles to entry and that the effect of broadband PCS on competition is felt. Therefore, broadband and narrowband PCS may belong in a relevant market for mobile services in a current merger.<sup>(105)</sup>

## c. A Note about Evidence

In applying either the reasonable interchangeability test or the Five Percent Question,<sup>(106)</sup> facts about customers' behavior are generally the most probative evidence.<sup>(107)</sup> Since the process of market definition is fact-intensive, counsel in any case where the product market is likely to be a disputed issue should present factual evidence in support of asserted product market definitions. Commission findings in past rule makings may not constitute such evidence. Those findings also may be out-of-date or may omit the unique attributes of the companies and areas involved in a particular merger.

Records of an increase or decrease in the number of customers or of what actually happened when a price change occurred would be most probative. For example, a party claiming that cellular and interconnected SMR services are in the same product market could produce records of a cellular company showing that it, to a significant degree, won or lost customers to interconnected SMRs.<sup>(108)</sup> Less probative, but still useful, would be the results of a survey that asked existing customers the Five Percent Question: What would you do if all providers of your service raised prices by 5 percent? Still less probative evidence could be expert—factual and theoretical—and anecdotal testimony.<sup>(109)</sup>

## d. Conclusion

At the end of the analysis outlined above, at least one product market consisting of one or more mobile services, and perhaps some POTS, has been defined. Product market analysis is laborious in part because it is often the single decisive issue in merger cases. Once it is finished, however, the definitional task then changes focus, from function and price-elasticity to the geographic areas within which the services in the product market compete.

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(1). For brevity, in this Article the term "merger" includes a merger, acquisition, joint

venture, combination, and other transfer of stock, assets, or control. The term also includes mergers that are merely proposed and under consideration by the Commission. The term "company" includes corporations, partnerships, sole proprietorships, and other legal forms of business entities.

(2). See *infra* notes 107-08, 110 and accompanying text.

(3). See, e.g., *In re Bell Atlantic Mobile Systems, Inc. and NYNEX Mobile Comm.*

Co., *Order*, 77 Rad. Reg. 2d (P & F) 1487 (1995), *application for review pending* [hereinafter *BAMS-NYNEX*];

Transfer of US West, Inc. Cellular Licenses to WMC Partners, L.P., *Public Notice* (May 12, 1995); *In re Applications of Motorola, Inc. for Consent to Assign 800Mhz Licenses to Nextel Comm., Inc.*, *Order*, 10 FCC Rcd. 7783 (1995), *petition for reconsideration pending* [hereinafter *Motorola, Inc.*]; *In re Applications of Nextel Comm., Inc. for Transfer of Control of OneComm., N.A., and C-Call Corp.*, *Order*, 10 FCC Rcd. 3361 (1995) [hereinafter *Nextel Communications, Inc.*], *reconsideration denied by Order*, 10 FCC Rcd. 10450 (1995).

(4)" . *See, e.g., McCaw Buys \$1.1 Billion in Stock from Nextel to Develop Enhanced 2-*

*Way Radio*, *Comm. Daily*, Apr. 6, 1995, at 4, 4-5 (plans to "combine radio dispatch, duplex telephone interconnect, alphanumeric short message service and future data capabilities in one device"). *See also infra* notes 39, 88-90.

(5). 47 U.S.C. § 310(d) (1994). Unlike the Department of Justice, which may acquiesce

to a proposed merger, the Commission must affirmatively find that a proposed transfer is in the public interest, or else the transfer may not occur.

(6). *SBC Comm., Inc. v. FCC*, 56 F.3d 1484, 1489 (D.C. Cir. 1995), *petition for reh'g*

*en banc pending on other grounds, aff'g In re Applications of Craig O. McCaw and American Tel. & Tel. Co., Memorandum Opinion and Order*, 9 FCC Rcd. 5836 (1994), *reconsideration denied, Memorandum Opinion and Order on Reconsideration*, 10 FCC Rcd. 11786 (1995) [hereinafter *Craig O. McCaw*]; *United States v. FCC*, 652 F.2d 72, 88 (D.C. Cir. 1980) (*en banc*) (In deciding whether a proposed radio license transfer meets the

"public interest" standard of the Communications Act, the Commission must "seriously [consider] the antitrust consequences of a proposal and [weigh] those consequences with other public interest factors.").

In addition, the Commission has express authority over mergers of "common carriers engaged in . . . radio communications or radio transmissions of energy" under the Clayton Act, which prohibits mergers "in any line of commerce . . . in any section of the country" where the effect may be "substantially to lessen competition, or to tend to create a monopoly." 15 U.S.C. §§ 18, 21(a) (1994). The Commission seldom invokes this authority, however, because its authority under the Communications Act is usually sufficient to authorize whatever actions the Commission wishes to take concerning a merger. *See, e.g., Craig O. McCaw*, 9 FCC Rcd. paras. 7, 9 & n.25.

(7). For a general discussion of how regulatory agencies such as the Commission apply

antitrust and economic principles under the "public interest" standard of regulatory statutes, such as the Communications Act, see *Northeast Utilities Serv. Co. v. FERC*, 993 F.2d 937, 947-48 (1st Cir. 1993); *Town of Concord v. Boston Edison Co.*, 915 F.2d 17, 22 (1st Cir. 1990), *cert. denied*, 499 U.S. 391 (1991); *United States v. FCC*, 652 F.2d 72, 82, 88 (D.C. Cir. 1980) (*en banc*); *United States v. AT&T*, 498 F. Supp. 353, 364 (D.D.C. 1980).

(8). *Brown Shoe*, 370 U.S. 294 (1962).

(9)" . *Id.* at 325. Although *Brown Shoe* is almost thirty-five years old and might be

decided differently on the merits if it were decided today, its criteria for defining product markets are still followed. *See, e.g., Allen-Myland, Inc. v. IBM Corp.*, 33 F.3d 194, 201 & n.8 (3d Cir. 1994); *U.S. Anchor Mfg., Inc. v. Rule Indus., Inc.*, 7 F.3d 986, 995 (11th Cir. 1993); *Community Publishers, Inc. v. Donrey Corp.*, 892 F. Supp. 1146, 1153-54 & n.9 (W.D. Ark. 1995); *In re Application of General Electric Co.*, *Memorandum Opinion and Order*, 4 FCC Rcd. 8207, para. 10 & n.29 (1989).

There is cross-elasticity of demand between two services if a change in the price of one causes a change in demand for the other. For example, if an increase in the price of cellular service would increase or decrease the demand for paging service, then cellular service has cross-elasticity of demand with paging service. *See D.W. Carlton & Jeffrey M. Perloff*, *Modern Industrial Organization* 920 (1994). *See also Community Publishers, Inc.*, 892 F. Supp. at 1153 & n.7 (citing *SuperTurf, Inc. v. Honsanto Co.*, 660 F.2d 1275, 1278 (8th Cir. 1981)).

(10). *Brown Shoe*, 370 U.S. at 326-328. The Supreme Court cautioned against drawing

product markets too narrowly. "[T]he boundaries of the relevant market must be drawn with sufficient breadth to include the competing products of each of the merging companies and to recognize competition where, in fact, competition exists." *Id.* at 326.

(11). *See, e.g.*, *United States v. E.I. du Pont de Nemours & Co.*, 351 U.S. 377 (1956).

The Supreme Court stated that a product "market is composed of products that have reasonable interchangeability for the purposes for which they are produced—price, use and qualities considered." *Id.* at 404. "This interchangeability is largely gauged by the purchase

of competing products for similar uses considering the price, characteristics and adaptability of the competing commodities." *Id.* at 380-81. *DuPont* was followed in *Satellite Business Systems, Memorandum Opinion, Order, Authorization and Certification*, 62 F.C.C.2d 997, 1073-74, para. 218, *reconsideration denied by Memorandum Opinion and Order*, 64 F.C.C.2d 872 (1977), *aff'd sub nom.*, *United States v. FCC*, 652 F.2d 72, 97 (D.C. Cir. 1980).

(12) . *See, e.g.*, *United States v. Connecticut Nat'l Bank*, 418 U.S. 656 (1974); *United*

*States v. Marine Bancorporation, Inc.*, 418 U.S. 602, 618-19 (1974). Thus, in a leading decision about bank mergers, the Supreme Court defined a product market of "the cluster of products (various kinds of credit) and services (such as checking accounts and trust administration) denoted by the term 'commercial banking'." *United States v. Philadelphia Nat'l Bank*, 374 U.S. 321, 356-57 (1963).

(13). For example, the Supreme Court found glass and metal containers and all end uses

for which they compete to be in the same product market, despite clear differences in their production methods, prices, and possible uses. *United States v. Continental Can Co.*, 378 U.S. 441, 449-53 (1964). The Supreme Court was convinced by evidence showing that over the years the manufacturers of glass and metal containers had competed for the same customers (*e.g.*, baby food companies, beer brewers), and each had won over some of the other's customers. *Id.*

A later case described the Supreme Court's decision in *Continental Can* as an examination of "the substitution of containers in certain end uses, the attempts by producers to expand their market shares, and [the fact] that producers took the pricing of the competing container into account in marketing their own product. The structure, history, and probable future of the industries involved were also considered." *FTC v. Owens-Illinois, Inc.*, 681 F. Supp. 27, 34-35 (D.D.C. 1988), *vacated on other grounds*, 850 F.2d 694 (D.C. Cir. 1988). The court in *Owens-Illinois*, found a broader product market of "rigid-walled containers," including not only glass and metal containers, but also plastic and paper ones. *Id.* at 46, 54-55. Again, the court was convinced by evidence that showed manufacturers of each product competing with the others for the same customers. *See also United States v. General Dynamics Corp.*, 415 U.S. 486, 491 (1974) (noting the district court's finding of a product market of "energy," consisting of coal, oil, natural gas, nuclear energy, and geothermal power).

(14). *See, e.g.*, *In re Application of MCI Comm. Corp. and Southern Pac. Tel. Co.*,

*Memorandum Opinion and Order*, 10 FCC Rcd. 1072, para. 15 (1994).

(15). Submarkets are defined by much the same factors as markets. *Continental Can*, 378

U.S. at 457-58; *Brown Shoe Co., Inc. v. United States*, 370 U.S. 294, 325 (1962). Some later cases disparage the idea of submarkets, reasoning that something is either a full-fledged product market or it is not. *Allen-Myland, Inc. v. IBM Corp.*, 33 F.3d 194, 208 n.16 (3rd Cir. 1994) ("The use of the term 'submarket' is somewhat confusing."); *Satellite TV & Associated Resources, Inc. v. Continental Cablevision of Virginia, Inc.*, 714 F.2d 351, 355 n.5 (4th Cir. 1983) ("The term 'submarket' is to be avoided; it adds only confusion to an already imprecise and complex endeavor."); *Community Publishers, Inc. v. Donrey Corp.*, 892 F. Supp. 1146, 1154 n.9 (W.D. Ark. 1995) ("[T]he term 'submarket'

is unnecessary.").

(16). *United States v. E.I. du Pont de Nemours & Co.*, 351 U.S. 377, 395 (1956).

(17). *See, e.g.*, Robert Pitofsky, *New Definitions of Relevant Market and the Assault on Antitrust*, 90 Colum. L. Rev. 1805, 1810-18 (1990).

(18). Dep't. of Justice and Fed. Trade Comm'n 1992 Horizontal Merger Guidelines, 4

Trade Reg. Rep. (CCH) ¶ 13,104 (1992), 57 Fed. Reg. 41,532 [hereinafter Horizontal Guidelines]. The FCC has not adopted the *Horizontal Guidelines* as rules. *See Craig O. McCaw, Memorandum Opinion and Order*, 9 FCC Rcd. 5836, para. 10 n.27 (1994); *United Telecommunications, Inc. and U.S. Telephone, Inc., Memorandum Opinion and Order*, 98 F.C.C.2d 1306, para. 21 n.13 (1984).

(19). This is part of cross-elasticity of demand, which is one component of the Supreme Court's "reasonable interchangeability" test. *See supra* nn. 9, 11, 13.

(20)" . Horizontal Guidelines, *supra* note 18, § 1.11, at 20,572. If the firm could profit

from price discrimination among its customers in a product market, the *Horizontal Guidelines* may treat each such group of customers as a separate product market. *Id.*, § 1.12, at 20,573.

(21). Although the *Horizontal Guidelines* do not prescribe the use of 5% and one year

in all cases, those numbers are used in daily application. *See Andrew C. Hruska, Note, A Broad Market Approach to Antitrust Product Market Definition in Innovative Industries*, 102 Yale L.J. 305, 323 (1992). *See also* Horizontal Guidelines, *supra* note 18, § 1.11, at 20,572.

(22). *See* Horizontal Guidelines, *supra* note 18, § 1.11, at 20,572. *See also* *United States*

*v. E.I. du Pont du Nemours & Co.*, 351 U.S. 377, 400 (1956) ("If a slight decrease in the price of cellophane causes a considerable number of customers for other flexible wrappings to switch to cellophane, it would be an indication that a high cross-elasticity of demand exists between them; that the products compete in the same market.").

(23). This Article will refer to this test as the Five Percent Question. When asking the

Five Percent Question, the price used must be the price that would be charged in a competitive market, free of regulation, or "coordinated interaction." Horizontal Guidelines, *supra* note 18, § 1.11, at 20,573. In the cellular industry, there has been some price regulation and many structural and historical incentives to coordinated interaction. *See infra* nn. 161-64.

(24). *See, e.g.*, Hruska, *supra* note 21, at 308 n.17, 313 n.44 ; Gina M. Killian, Note,

*Bank Mergers and the Department of Justice's Horizontal Merger Guidelines: A Critique and Proposal*, 69 Notre Dame L. Rev. 857, 884-88 (1994) (describing longstanding disagreement about the relevant market in bank mergers between the Department of Justice, which finds relatively narrow markets, and federal banking regulators, who find relatively broad markets).

(25). Even if the merging companies had data on how a 5% price increase would affect

sales, the application of the *Horizontal Guidelines's* test requires a simultaneous and identical price increase by all their competitors. Such a chain of events is extremely unlikely. Competitors would also have to make their own sales results available to the merging parties and the FCC.

(26). The Author knows of no merger litigation in the FCC in which the results of such a survey have been introduced into evidence.

(27). Some Commission decisions have referred to the *Horizontal Guidelines'* test, but have not applied it. In this respect, the Commission is consistent with reported court decisions in merger cases, not one of which has defined a product market by using the Five Percent Question exclusively. *See, e.g., Craig O. McCaw, Memorandum Opinion and Order*, 9 FCC Rcd. 5836, para. 10 (1994); *BAMS-NYNEX, Order*, 77 Rad. Reg. 2d (P & F) 1487, para. 17 (1995).

(28). The following descriptions and some other parts of this Article draw heavily from, and sometimes paraphrase, the Commission's first annual report to Congress about competition in commercial mobile radio services (CMRS). *In re Implementation of Section 6002(B) of the Omnibus Budget Reconciliation Act of 1993, First Report*, 10 FCC Rcd. 8844 (1995) [hereinafter *CMRS First Annual Report*]. For another detailed description of the various mobile radio services in the United States, see Nat'l Telecomm. and Information Admin., U.S. Dep't of Commerce, Pub. No. 88-21, *Charting the Course for a New Century* 283-99 (1988).

CMRS is a category created by Congress to encompass all mobile telecommunications services that are provided for profit and make interconnected service available to the public (or to such classes of eligible users as to be effectively available to a substantial portion of the public, as specified by the FCC). *See* 47 U.S.C. § 332 (c)(1) (1994); 47 C.F.R. § 20.3 (1995); *In re Implementation of Sections 3(n) and 332 of the Communications Act, Second Report and Order*, 9 FCC Rcd. 1411, paras. 39-70 (1994) [hereinafter *CMRS Second Report and Order*]. CMRS providers consist of cellular, interconnected specialized mobile radio (SMR), paging, air-ground, satellite-based, maritime, broadband and narrowband PCS

systems, and interconnected private Business Radio systems. *Id.* para. 139. Congress also created, and the Commission defined, another category called private mobile radio systems (PMRS), which includes all mobile radio communications systems that are not CMRS. *See* 47 U.S.C. § 332 (c)(2) (1994); 47 C.F.R. §§ 20.3, 20.9 (1994).

(29). Each service described in this subsection as being "voice" or "telephone" service is also capable of data and facsimile applications. For brevity's sake, however, only "voice" or "telephone" service will be mentioned. For the same reason, the word "telephone" should be understood to include terminal equipment for nonvoice uses.

(30). For a discussion on the size of these areas, see *infra* p. 277. *CMRS Second Report and Order* includes cellular "resellers" within the definition of CMRS. Resellers buy cellular service in bulk from one or both system operators and resell it to consumers, thus, competing with system operators at the retail or "street" level. Except in a few states where state regulators have protected them to varying degrees, cellular resellers have little or no competitive significance. *CMRS Second Report and Order*, 9 FCC Rcd. para. 37.

(31). *CMRS First Annual Report*, 10 FCC Rcd. Tables 9-11. These higher earnings are expected in a duopoly in which there is ever growing demand and absolute barriers to entry exist. "[T]he Commission has previously acknowledged that, while competition in the provision of cellular services exists, the record does not support a conclusion that cellular services are fully competitive." *CMRS Second Report and Order*, 9 FCC Rcd. para. 138. *See also CMRS First Annual Report*, 10 FCC Rcd. para. 4.

(32). *See infra* p. 272.

(33). For more concerning cellular service, see generally *CMRS First Annual Report*, 10

FCC Rcd. paras. 13-28. Mobile telephone services using technologies that predated cellular service are still available, but in an ever-diminishing number of areas. 47 C.F.R. § 22.561 (1995).

(34). The primary use of SMRs is for voice communication, but some SMRs are devoted primarily to data communications, including facsimile.

(35). *In re* Implementation of Sections 3(n) and 332 of the Communications Act, *Third*

*Report and Order*, 9 FCC Rcd. 7988, paras. 73, 261-62 (1994) [hereinafter *CMRS Third Report and Order*].

(36). *See CMRS Second Report and Order*, 9 FCC Rcd. paras. 141-43 ("Although

interconnected SMRs may . . . be considered in competition with cellular carriers, [they] have a small share of the mobile telephone business and do not exercise market power."). "Market power is the power to force a purchaser to do something that he would not do in a competitive market . . . . It has been defined as the ability of a single seller to raise price and restrict output." *Eastman Kodak Co. v. Image Technical Services, Inc.*, 504 U.S. 451, 464 (1992) (quotation marks and citations omitted). *See also Horizontal Guidelines*, § 0.1 at 20.570-71. (concluding that SMR licenses face competitive disadvantages and do not at present appear to have market power in the mobile telephone market). In markets such as mobile services, where competition is on the rise, market power might be defined negatively—the failure to lower price and increase output. *See Michael H. Riordan & Steven C. Salop, Evaluating Vertical Mergers: A Post-Chicago Approach*, 63 *Antitrust L.J.* 513, 539 n.63 (1995).

(37). SMR frequencies are in three bands in the radio frequency spectrum. In the 800

MHz band, there are approximately 14 MHz now available for use. In the 900 MHz band, approximately 5 MHz are allocated. Some of them are in use, and the rest are expected to be available for use in 1996. In the 220 MHz band, approximately 2 MHz are allocated and are expected to be available for use in 1996. *In re* Amendment of Part 90 of the Comm'n's Rules to Provide for the Use of the 220-222 MHz Band by the Private Land Mobile Radio Service, *Second Memorandum Opinion and Order and Third Notice of Proposed Rulemaking*, 60 Fed. Reg. 46,564 (FCC 1995).

(38). Gautam Naik, *For Nextel, '94 Was Best of Times and Worst of Times*, Wall St.

J., Jan. 3, 1995, at A14; Mike Mills, *Nextel to Buy Wireless Competitor*, Wash. Post,

Aug. 6, 1994, at D1, D8.

(39). *McCaw Buys \$1.1 Billion in Stock from Nextel to Develop Enhanced 2-Way Radio*,

*supra* note 4, at 4.

(40). For more concerning SMRs, see *CMRS First Annual Report*, 10 FCC Rcd. paras.

35-39.

(41)" . *CMRS Second Report and Order*, 9 FCC Rcd. para. 140.

(42). For more concerning paging service, see *CMRS First Annual Report*, 10 FCC Rcd.

paras. 29-34.

(43). 47 C.F.R. § 22.925 (1995).

(44). For more concerning air-ground service, see *CMRS First Annual Report*, 10 FCC

Rcd. paras. 40-41.

(45). As the Commission stated in the *CMRS Third Report and Order*, "[c]urrently,

providers of [mobile satellite systems] expect to serve as a complement to terrestrial services for the most part since their service will be relatively expensive and therefore generally will not be a constraining factor on the price of terrestrial services." *CMRS Third Report and Order*, 9 FCC Rcd. para. 269.

(46). These are Low Earth Orbit (LEO) systems, which will have 3.5 MHz for primarily

nonvoice communications and 33 MHz for voice and nonvoice communications. LEOs are not expected to provide service on a significant scale until 2000. For more concerning satellite-based mobile services, see *CMRS First Annual Report*, 10 FCC Rcd. paras. 42-43.

(47). *In re* Amendment of the Commission's Rules Concerning Maritime Communica

tions, *Notice of Proposed Rule Making and Notice of Inquiry*, 7 FCC Rcd. 7863, paras. 34- 35 (1992).

(48). For more concerning maritime services, see *CMRS First Annual Report*, 10 FCC

Rcd. para. 44.

(49). *See, e.g., In re* Implementation of Section 309(j) of the Communications

Act—Competitive Bidding, *Notice of Proposed Rule Making*, 8 FCC Rcd. 7635, para. 116 (1993) (affirming earlier definition of PCS as a "wide array of mobile, portable and ancillary communications services to individuals and businesses").

(50). *FCC Plans Monthly Sales for IVDS, SMR, MMDS and 10-MHz PCS Spectrum*,

Comm. Daily, June 6, 1995, at 1,1 ("CTIA Pres. Thomas Wheeler said PCS is 'just more

spectrum.'"); Gautam Naik, *No Big Deal?*, Wall St. J., Mar. 20, 1995, at R16 ("PCS technology . . . will do almost nothing that cellular service won't also be capable of or in some cases can do already. PCS, in fact, is shaping up more as a strategic supplement than as a communications revolution."); Gautam Naik, *Craig O. McCaw Confounds the Giants with His Wild and Woolly PCS Bidding*, Wall St. J., Feb. 23, 1995, at B1, B7 ("Mr. McCaw sees the next generation of wireless as less than revolutionary. 'Basically,' he says, PCS is 'cellular at a different frequency.'"). *But see FCC Plans Monthly Sales for IVDS, SMR, MMDS and 10-MHz PCS Spectrum, supra*, at 1 ("Industry representatives predicted PCS services would exceed cellular in reliability, coverage and price, especially with new services not available from cellular.").

(51). *See* Summary of Federal Communications Commission Presents En Banc Meeting

on PCS Issues, Panels I and II (Apr. 11, 1994). Cellular carriers in an area are allowed to be licensed for one of the smaller broadband blocks thus adding 10 MHz to a cellular carrier's existing 25 MHz. *See infra* note 142.

(52). *Compare CMRS First Annual Report*, 10 FCC Rcd. para. 61 ("PCS . . . is virtually

certain . . . to intensify competition at all levels.") *with London Calling*, The Economist, Aug. 5, 1995, at 60, 60 (disappointing initial sales for PCS in the United Kingdom); *Moody's Sees Expensive Road Ahead for PCS Providers*, Comm. Daily, Mar. 24, 1995, at 7, 7 (An investment analyst estimates that "PCS services won't be widely available until 'well into the next century,' meaning cellular companies will have [an] advantage 'for a few more years and are likely to have ample time to prepare for new entrants.'"); *and* Charles Mason, *AirTouch Execs Say PCS Will Play Small Role*, Telephony, Apr. 18, 1994, at 12, 12 (paraphrasing the president of AirTouch, the recently divested cellular subsidiary of Pacific Bell, as saying that cellular carriers' more than ten-year head start over PCS providers is virtually insurmountable, and estimating that it will take PCS carriers seven or eight years to deploy networks as ubiquitous as cellular ones, and by that time cellular carriers will have improved their networks even further).

(53). *FCC Plans Monthly Sales for IVDS, SMR, MMDS and 10-MHz PCS Spectrum*,

*supra* note 50 ("Mtel Pres.-COO Bernard Puckett said studies show his paging customers are willing to pay 20-50% premiums for 2-way service and said pricing structure will be established to control early customer signups. His company already is testing 2-way service in Washington, D.C., but isn't available commercially." *Id.* at 2.).

(54). For more concerning PCS, see *CMRS First Annual Report*, 10 FCC Rcd. paras. 45-

50; *Telephony*, Comm. Daily, Aug. 16, 1995, at 3, 3 (unlicensed PCS system for "workers [who] are often away from their desks but need to be accessible.").

(55). For a definition of the term "common carrier," see National Ass'n of Regulatory

Util. Comm'rs v. FCC, 525 F.2d 630, 640-42 (D.C. Cir.), *cert. denied*, 425 U.S. 992 (1976).

(56). Examples include communications within factories or department stores, or between

the headquarters and mobile units of a police force. Private systems may provide service on a for profit basis to others.

(57). *See, e.g.*, Amendment of Part 90 of the Comm'n's Rules to Prescribe Policies and

Regulations to Govern the Interconnection of Private Land Mobile Systems with the Public Switched Telephone Network in the Bands 806-821 and 851-866 MHz, *Second Report and Order*, 89 F.C.C.2d 741, paras. 37-39 (1982), *on reconsideration*, *Memorandum Opinion and Order*, 93 F.C.C.2d 1111 (1983).

(58). *CMRS Third Report and Order*, 9 FCC Rcd. para. 12 ("[A]ll reclassified private

mobile radio services actually compete, or have the potential to compete within a reasonable time period, with existing commercial mobile radio services."). Many businesses use a mixture of their own private systems and common carrier services, usually cellular and paging, to meet their total need for mobile telecommunications. For an example of a business whose communications needs could be met by cellular, SMR, or private systems, see *CMRS First Annual Report*, 10 FCC Rcd. para. 53 & n.109.

(59). For more about private mobile radio communications services, see *CMRS First*

*Annual Report*, 10 FCC Rcd. paras. 51-55; *CMRS Second Report and Order*, 9 FCC Rcd. paras. 71-99.

(60). For more about these services, see *In re* Elimination of Individual Station Licenses

in Radio Control Radio Services and Citizens Band Radio Service, 48 Fed. Reg. 24,884 (1983) (codified at 47 C.F.R. §§ 95.401, 95.407(f), 95.420 (1994)).

(61). *CMRS First Annual Report*, 10 FCC Rcd. para. 61 & n.126. The federal

government is also in the process of reallocating 200 MHz from government use to private- sector uses. The Commission has earmarked some of this spectrum for mobile radio services, but it is not expected to be in use for several years, and even then, the frequencies may not be useable for substitutes for the services described herein. *In re* Allocation of Spectrum Below 5 GHz Transferred from Federal Government Use, *First Report and Order and Second Notice of Proposed Rulemaking*, 77 Rad. Reg. 2d (P & F) 314 (1995).

(62). This was one of the original rationales for allowing "wireline" carriers to provide

mobile services. *See, e.g.*, *In re* The Bell Telephone Company of Pennsylvania, *Decision*, 22 F.C.C.2d 1244, 1251 (1957) (For a wireline local exchange carrier to provide paging service "is a logical extension of its telephone service.").



(63). *In re Inquiry Into the Use of the Bands 825-845 MHz and 870-890 MHz for*

Cellular Communications Systems; and Amendment of Parts 2 and 22 of the Commission's Rules Relative to Cellular Communications Systems, *Report and Order*, 86 F.C.C.2d 469,

para. 32, at 484 (1981). *See also In re Applications of James F. Rill, Trustee for Comet Inc., and Pacific Telesis Group, Memorandum Opinion and Order*, 60 Rad. Reg. 2d (P & F) 583, para. 37 (1986) ("CELLULAR service is properly viewed not as a substitute for WIRELINE local exchange service, but as a COMPLEMENT to landline communications . . . . this adjunct to their WIRELINE local exchange facilities . . . .") (capitalization in original). *See also United States v. Western Elec. Co.*, 1986-1 Trade Cas. (CCH) ¶ 66,987, 1986 WL 931, at \*3 (D.D.C. Feb. 26, 1986).

(64). *Craig O. McCaw, Memorandum Opinion and Order*, 9 FCC Rcd. 5836, para. 14

n.36, at 5847 (1994) (noting substitution between interexchange calls from pay telephones and from cellular telephones).

(65). *CMRS First Annual Report*, 10 FCC Rcd. para. 75 n.155. *See also Telephony*,

Comm. Daily, July 13, 1995, at 5, 6 (PCS licensee Wirelesco "emphasized their service isn't merely competitor to cellular but also will compete with local exchange companies." *Id.* at 6.)

Several other aspects of cellular service, in particular, limit its interchangeability with POTS. One is the carriers' common practice of charging cellular customers for calls they receive—a practice that is unknown in POTS and makes many cellular customers reluctant to receive calls. Cellular carriers also require each cellular telephone to have a unique telephone number and impose significant monthly charges, typically about \$20, for each telephone. These practices prevent cellular service from being a practical substitute for POTS, which allows consumers to have any number of extension telephones with the same telephone number at no extra charge. The Commission has posed no obstacle to carriers changing their practices so as to offer "real" extension service. *See In re Revision of Part 22 of the Commission's Rules Governing the Public Mobile Services, Report and Order*, 9 FCC Rcd. 6513, para. 59 (1994), *petition for reconsideration pending on other grounds*.

(66). The only major exception is cellular service; significant sales of telephones occur

independently of the service. *CMRS First Annual Report*, 10 FCC Rcd. para. 25 & nn.27, 38.

(67). Most SMR terminals may be used only on the system of one SMR. Broadband PCS

terminals also are not required to be useable on all broadband PCS systems, and they will not likely be so. The Commission, in order to facilitate customers changing from one

cellular carrier to another, originally required all cellular telephones to be capable of using both carriers' frequencies. In 1988, the Commission rescinded this rule. *Id.* para. 16 n.15. No other service described in this subsection has ever had such a rule, and there is no prospect of such a rule for PCS. *See, e.g., FCC Plans Monthly Sales for IVDS, SMR, MMDS and 10-MHz PCS Spectrum, supra* note 50, at 2 (The industry "[p]anel also agreed that [government] shouldn't set standards for new technology, with Wayne Perry, vice [chairman] of AT&T Wireless, comparing that action with freezing computer standards with near-obsolete 286 chip. Rather, they said, companies should be free to offer whatever services at whatever technical standards worked best. Panel members endorsed wide range of technologies, from CDMA (Bell Atlantic consortium) and TDMA (AT&T) digital standards to analog technologies at 1.8 GHz, as Jerry Waylan, [executive vice president] of GTE Personal Communications Services, suggested.").

(68). *Cf. Eastman Kodak Co. v. Image Technical Services, Inc.*, 504 U.S. 451 (1992);

*Digidyne Corp. v. Data General Corp.*, 734 F.2d 1336, 1341-44 (9th Cir. 1984), *cert. denied*, 473 U.S. 908 (1985). Whether this is true in a given case depends on the facts. A customer's need to buy a new SMR terminal for \$1000

might chill interchangeability to a significant degree, but the need for a new fifty-dollar pager would cause barely a sneeze. It might be argued that carriers can minimize this by offering to buy back a customer's old terminal or discount a new one, or by compensating a new customer for contractual penalties incurred in termination of an existing carrier. However, this merely passes the chilling effect on competition from the customer to the carrier in the short term. In the long term, the carrier will recover the added cost from the customer.

(69). A Commission's rule making can reflect massive factual and theoretical evidence

about competition that the parties submitted to it in that proceeding. For example, in the *CMRS Third Report and Order*, the Commission analyzed, in order to make certain regulatory classifications, whether various mobile radio services were "substantially similar" to each other. *CMRS Third Report and Order*, 9 FCC Rcd. paras. 22-79. Such evidence, as a practical matter, will not be gathered in an adjudicatory merger proceeding before the Commission. In a merger proceeding, however, the Commission may use evidence and findings from a prior rule making in defining product and geographic markets. See, e.g., *Craig O. McCaw, Memorandum and Order*, 9 FCC Rcd. 5836, para. 148 & n.35 (1994), following *In re Policy and Rules Concerning Rates for Competitive Common Carrier Services and Facilities Authorizations, Fourth Report and Order*, 95 F.C.C.2d 554, para. 13, at 562-63 (1983) (finding a single nationwide market for all interexchange services), *rev'd on other grounds*, *AT&T v. FCC*, 978 F.2d 727 (D.C. Cir. 1992); *In re IDB Communications Group, Inc. and Southwest Communications, Inc., Memorandum Opinion*

*and Order*, 10 FCC Rcd. 1110, para. 28 n.53, at 1115 (1994), following *In re Int'l Competitive Carrier Policies, Report and Order*, 102 F.C.C.2d 812, para. 36, at 829 (1985), *reconsideration denied*, 60 Rad. Reg. 2d (P & F) 1435 (1986) (finding two primary international product markets and route-by-route geographic markets).

(70). See *infra* notes 91-93.

(71). In the only reported court decision applying § 7 of the Clayton Act to a merger of

mobile service companies, there was no dispute about the product market. *McCaw Personal Communications, Inc. v. Pacific Telesis Group*, 645 F. Supp. 1166, 1168 n.3 (N.D. Cal. 1986).

(72). *Nextel Communications, Inc., Order*, 10 FCC Rcd. 3361 (1995). For a full

definition of CMRS, see *supra* note 28.

(73). *In re Applications of Dial Page, Inc. for Consent to Transfer Control of Dial Call,*

*Inc. SMR and Business Licenses to Nextel Comm., Inc., Order*, File No. 907075, DA 95- 2379, paras. 21, 24 (Nov. 22, 1995); *Motorola, Inc., Order*, 10 FCC Rcd. 7783, paras. 17- 18, at 7785-86 (1995).

(74). In the only other recent decision speaking to this issue, *Craig O. McCaw,*

*Memorandum Opinion and Order*, 9 FCC Rcd. 5836, paras. 16-17, at 5848 (1994), the Commission found a relevant product market consisting only of cellular service.

(75). *United States v. AT&T Corp.*, 59 Fed. Reg. 44,166 (D.D.C. 1994) (distinguishing

cellular service from wireline service on ground of mobility and noting that "[w]ith extremely limited exceptions, there are no providers of mobile telephone services other than the two cellular carriers").

(76). *United States v. Motorola, Inc.*, 59 Fed. Reg. 55,708, at 55,709 (Dep't of Justice-

Antitrust Div. 1994) (competitive impact statement). "Trunking" is an efficient way to use spectrum, see *CMRS First Annual Report*, 10 FCC Rcd. para. 35.

(77). See *CMRS Third Report and Order*, 9 FCC Rcd. para. 14 (the Commission noting

that its decision that certain services are substantially similar "further[s] our policy objective of ensuring a level regulatory playing field for CMRS. We note, however, that an analysis performed in the context of a different set of policy goals, or application of the same policy goals to different circumstances, may result in different conclusions regarding the extent of competition."). *See also id.* paras. 42, 47, at 8011-12, 8014.

(78). Antitrust analysis by courts recognizes that for some users of a product, self-

manufacture is a competitive alternative to buying from an outside supplier. *See* *FTC v. Owens-Illinois, Inc.*, 681 F. Supp. 27, 31, 42-3, 50-1 (D.D.C. 1988) ("Interplant transfers are relevant to antitrust review since INTERNALLY consumed products must sometimes be considered in the market along with products sold externally.") (capitalization in original). Self-manufacture is comparable to buying a private radio communications system instead of subscribing to a service from a common carrier.

(79). *CMRS Second Report and Order*, 9 FCC Rcd. para. 37.

(80). 47 U.S.C. § 153(n)(3) (1989 & Supp. 1995).

(81). *See supra* notes 75-76.

(82). *See Motorola, Inc., Order*, 10 FCC Rcd. 7783, para. 18 & n.51, at 7786 (1995);

*Nextel Communications, Inc., Order*, 10 FCC Rcd. 3361, para. 31 & n.104 (1995).

(83). This functional approach—for example, grouping together all two-way voice servic

es—is consistent with the *Horizontal Guidelines*, which start with a basic or core product and then look at the "next best substitute." *Horizontal Guidelines, supra* note 18, § 1.11, at 20,572.

(84). *See id.* (defining product market by reference to a basic or core product and

alternatives to it that, "in the aggregate," would make a price increase for the product unprofitable).

(85)" . *See CMRS Third Report and Order*, 9 FCC Rcd. para. 58, where the Commission

stated that "[t]he common characteristic of mobile services customers is their need to communicate electronically on a real-time basis (or virtually real-time basis) while they are `on the move.'"

(86). *See CMRS First Annual Report*, 10 FCC Rcd. para. 67. The Commission has also

found that maritime service providers compete with each other and with cellular service.

(87). *CMRS Third Report and Order*, 9 FCC Rcd. paras. 56-57, 61-62, 74-75, 77, 261-

62. *See also id.*, paras. 57-68; *Telephony*, Comm. Daily, Aug. 24, 1994, at 4, 4 (Personal Communications Industry Association (PCIA) and National Association of Business and Educational Radio (NABER) are considering merging because, according to the Chairman of NABER, "the traditional lines of private and common carrier distinctions no longer exist."); *Telephony*, Comm. Daily, Sept. 7, 1994, at 4, 4 (PCIA and NABER announce merger plans.); *Telephony*, Comm. Daily, Sept. 22, 1994, at 8, 8-9 (Cellular Telecommunications Industry Association is soliciting membership among potential PCS companies, including providers of long-distance and cable television services, summoning "all those working together to build the wireless future."); *Telephony*, Comm. Daily, Sept. 23, 1994, at 6, 6 (Board of PCIA approves merger with NABER.).

(88). *See supra* note 4 and accompanying text. Some new digital mobile telephones

include pagers. *CMRS Third Report and Order*, 9 FCC Rcd. para. 75.

(89). *See supra* pp. 257-260. Paging units now have the capabilities to store and recall

messages, display full-text messages, and deliver voice messages. *See, e.g., Comm. Daily Notebook*, *Comm. Daily*, July 21, 1995, at 8, 8 (PCS demonstration features telephone call and alphanumeric paging via one handset.); *Telephony*, *Comm. Daily*, July 18, 1995, at 8, 8 (announcement of market test of two-way paging); Salomon Bros., *The Wireless Telecommunications Review* 20 (1994).

(90). Dave Kansas, *PageNet Officials Send Mixed Signals With Stock Sales*, *Wall St.*

*J.*, Mar. 29, 1995, at C1, C15 (A PageNet product scheduled for release in early 1996 "would permit callers to leave not only a phone number in the pager, but also a voice message."); Naik, *supra* note 50, at B1, B7 ("Mobile Telecommunications Technology, Inc., of Jackson, Miss., plans to roll out inexpensive two-way paging services in 300 markets in the second half of this year, allowing users to send brief messages from one beeper to another.").

(91). The Commission has stated that "all CMRS providers should have the potential to

utilize any CMRS spectrum in a manner that can adapt the nature of the service they provide to meet specific customer needs . . . . [E]ven if CMRS providers offer differing services today, if consumers desire particular services or combinations of services in the future, a variety of CMRS providers should have the opportunity to use different technological configurations to meet this customer demand in competition with other CMRS carriers." *CMRS Third Report and Order*, 9 FCC Rcd. para. 69.

(92). *In re* Amendment of Parts 2 and 22 of the Commission's Rules to Permit

Liberalization of Technology and Auxiliary Service Offerings in the Domestic Public Cellular Radio Telecommunications Service, *Report and Order*, 3 FCC Rcd. 7033, para. 77, at 7043 (1988). The only limitation on such paging service is that it not interfere with the cellular service. In practical effect, this is an insignificant limitation.

(93). *Motorola, Inc., Order*, 10 FCC Rcd. 7783, paras. 17-20 (1995).

(94). For example, if customers make an "either/or" decision between paging and

cellular, that would support putting the two services in the same product market. But if the two services meet related but different needs of the same customers, as for example clothes- washing detergent and bleach, that would support putting them in different product markets. *See generally* *FTC v. Procter & Gamble Co.*, 386 U.S. 568, 573-74 (1967) (holding liquid packaged detergents and bleach are in different product markets). Cellular and paging services can be said to compete for consumers' "mobile communications dollars" in the same sense that detergent and bleach compete for consumers' "clothes cleaning dollars." But this broad of an approach, if taken to its logical conclusion, would determine that every product in the world competes with every other product for "the consumer's dollar." Such analysis is too sweeping to be useful for defining product markets and may be avoided by the Five Percent Question.

Some people use several mobile services simultaneously. As noted above, over 30% of cellular subscribers also subscribe to paging service and many businesses use a combination of common carrier services and private systems. *See supra* p. 258. Taxi drivers and police often have cellular service, dispatch service and a CB radio in their vehicles. These facts, however, may not show competition among the services. Perhaps the services are merely complimentary to each other, as in the case of clothes-washing detergent and bleach, meeting related but different needs. The same question will likely be posed about mobile services and POTS. The first widespread use of mobile services in the home, for example, may be for uses that POTS does not now perform, such as baby monitoring, instead of as a direct substitute for existing POTS uses. *See* *CS First Boston, PCS: A Critical Piece of the Communications Puzzle* 20-21 (1995). It is unclear, without more, whether mobile services and POTS will be competitors or mere complements for each other.

(95)" . *In re* Amendment of the Commission's Rules to Establish New Personal

Communications Services, *Second Report and Order*, 8 FCC Rcd. 7700, para. 31, at 7715 (1993).

(96). *State Activities*, Comm. Daily, June 9, 1995, at 7, 7 (The first broadband PCS

service, provided by the winner of an early "pioneer" license from the Commission, began service in the Baltimore-Washington, D.C. area in late 1995.); *Telephony*, Comm. Daily, June 7, 1995, at 8, 9 ("PCS PrimeCo alliance of 3 RHCs and AirTouch . . . said suppliers must meet PrimeCo deadline of providing service by end of next year.").

(97). *See Naik, supra* note 50, at B1, B7 ("GTE . . . already offers rudimentary follow-

me service to residential customers on a combination of local telephone and cellular networks. Its Tele-Go service is now used by more than 120,000 subscribers in 15 cities. Customers pay up to \$25 a month for unlimited use of a small cordless phone at home and a per-minute fee of 20¢ to 30¢ for calls made while traveling with the device."); Mike Mills, *Wireless: The Next Generation*, Wash. Post, Feb. 20, 1995, 1, 14-15; *Telephony*, Comm. Daily, Mar. 9, 1995, at 8, 8 (NYNEX cellular company "said it will begin offering PCS-type services in metro N.Y. under Geographic Option Plan trademark, giving customers greater flexibility in setting rates and using service. Monthly charge is \$24.99, with additional min. at 29 cents in home county, 99 cents elsewhere."); Mary E. Thyfault, *Bell Companies Get Personal—Bell Atlantic, NYNEX Plan to Merge Their Mobile and Cellular Divisions as PCS Players Continue Consolidation*, InformationWeek, July 18, 1994, at 33 (Bell Atlantic announces a low-priced, low-range offering on its Annapolis, Philadelphia, and Pittsburgh cellular systems, intended to resemble what PCS offerings will be like.).

(98). *Cisco Pres. Sees Fundamental Shift in Telecommunication in Next 5 Years*, Comm.

Daily, Mar. 21, 1995, at 1, 1-2 ("Northern Telecom [director]-cellular product marketing, said pressure from PCS industry is forcing cellular industry to pay more attention to customers and less to technology."). *See also CMRS First Annual Report*, 10 FCC Rcd. paras. 23-24. *But see FCC Plans Monthly Sales for IVDS, SMR, MMDS and 10-MHz PCS Spectrum, supra* note 50, at 2 ("Bell Atlantic/Nynex Cellular [Vice-President] Gary Schulman . . . said cellular prices were coming down regardless of new entrants.").

(99). *SBC Comm., Inc. v. FCC*, 56 F.3d 1484, 1493-94 (D.C. Cir. 1995) and cases cited

*supra* note 6; *Rothery Storage and Van Co. v. Atlas Van Lines, Inc.*, 792 F.2d 210, 218 (D.C. Cir. 1986); *Equifax, Inc. v. FTC*, 618 F.2d 63, 66 (9th Cir. 1980); *FTC v. Elders Grain, Inc.*, 868 F.2d 901, 907 (7th Cir. 1989). *Cf. Horizontal Guidelines, supra* note 18, § 1.321, paras. 20,573-74 n.14 ("If production substitution among a group of products is nearly universal among the firms selling one or more of those products, . . . [the Department of Justice] may use an aggregate description of those markets as a matter of convenience.").

A typical period is two years. *See FTC v. Owens-Illinois, Inc.*, 681 F. Supp. 27, 37 & n.23 (concerning "the extensive present and future intermaterial competition in the glass and other packaging industries, . . . [a]n important, but undisputed, assumption of the economic analysis in this case is that the relevant time frame within which to view elasticity is approximately two years. In other words, conversions by purchasers between types of containers must be feasible within this time frame for demand and supply to be considered elastic.").

(100)" . *Horizontal Guidelines, supra* note 18, § 1.0, para. 20,572; § 1.32, paras. 20,573-3

to -4.

(101). Sunk costs are, generally, costs that cannot be recovered, such as capital spending

for unique equipment and expenses such as advertising. *See also Carlton & Perloff, supra* note 9, at 925.

(102). *Id.*

(103)" . *See Horizontal Guidelines*, § 3.2, paras. 20,573-10 n.27. It is unclear whether the

words "prior to the merger" refer to the time of entry or to the time of commitment. The difference could be significant in the case of broadband PCS, whose future providers are now committed to entering the mobile services market, but

will not enter it for a year on a significant scale.

(104). *FCC Auction for PCS Licenses Ends with Proceeds Topping \$7 Billion*, Comm.

Daily, Mar. 14, 1995, at 1.

(105). Future competitors who do not pass either the case law or the *Horizontal*

*Guidelines*' test for supply substitution may be considered later in the analysis of a merger, under the term "Ease of Entry." See *infra* at 297-99.

(106). For evidence that is acceptable under the *Horizontal Guidelines*, see *Horizontal*

*Guidelines*, *supra* note 18, § 1.11, paras. 20,572-73.

(107). *FTC v. Owens-Illinois, Inc.*, 681 F. Supp. 27,35 (D.D.C. 1988), *citing* *United*

*States v. Continental Can Co.*, 378 U.S. 441, *passim* (1964). For an analysis of evidence to define product markets, see *Community Publishers, Inc. v. Donrey Corp.*, 892 F. Supp. 1146, 1155-65 (W.D. Ark. 1995).

(108). Similarly probative evidence from the cellular company's regularly kept business

records would be its documents about planning, marketing, or sales showing that the company considered interconnected SMRs to be a serious source of competition. Conversely, the absence of any mention of SMRs in a cellular company's files might be evidence that the cellular company did not consider itself to be competing with SMRs.

(109). Examples of anecdotal evidence about whether two services are in the same product

market could consist of advertisements for both of them appearing in the same narrowly focused trade journals; comparative advertising by providers of one of the services; the presence of providers of both services at the same trade shows or gatherings of customers; and articles, speeches, and customer declarations that were not prepared in anticipation of litigation.