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BEFORE THE
FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, D. C. 20554

In The Matter of	)	
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Bundling of Cellular Customer Premises Equipment and Cellular Service	)	CC Docket No. 91-34

Comment of the Staff of the Bureau of Economics of the Federal Trade Commission*

July 31, 1991

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* This comment represents the views of the staff of the Bureau of Economics of the Federal Trade Commission. They are not necessarily the views of the Commission or any individual Commissioner. Inquiries regarding this comment should be directed to Bruce H. Kobayashi (202-326-3363) of the FTC's Bureau of Economics.

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Executive Summary

The staff of the Federal Trade Commission submits the attached comment in response to the Federal Communications Commission's (FCC) Notice of Proposed Rulemaking (NPRM) to evaluate the bundling of cellular premises equipment (CPE) and cellular service. Under current FCC rules, all facilities-based providers of cellular service (i.e., those who are licensed by the FCC to use the spectrum reserved for mobile phone service) are prohibited from "bundling". In the NPRM, the FCC seeks comments on "the benefits or possible adverse consequences of eliminating or substantially modifying the current cellular antibundling policy," and on their tentative conclusion that "a consideration of all the factors ... , and the existence of the antitrust laws, warrant allowing the bundling of cellular service and CPE."

Given that competitive harm is unlikely if no market power exists in either the cellular service or the CPE market, this comment recommends that the extent of market power be used as a first screen to separate harmless or beneficial from potentially harmful bundling. While the staff concludes that CPE is produced and sold in a competitive market, it disagrees with the FCC's tentative conclusion that cellular service is produced in a competitively structured market, which leaves open the theoretical possibility that bundling may be used for anticompetitive purposes.

Even if bundling can be used, in theory, for anticompetitive

purposes, it should not necessarily be prohibited on a per se basis. This staff comment examines both pro-competitive uses of bundling (including using bundling to pursue promotional and transaction-cost efficiencies) and anti-competitive uses of bundling (including using bundling to monopolize the CPE market, to engage in price discrimination, and to evade rate-of return regulation). This examination leads us to conclude that the potential for competitive harm, while theoretically possible, does not appear likely, and seems unlikely to outweigh the gains from pro-competitive uses of bundling. Further, any cases identified in the future that raise anticompetitive concerns could be subject to a case-by-case review under the antitrust laws.

Overall, the staff concludes that a per se prohibition of bundling in this market is not warranted, and supports the FCC's tentative conclusion to allow carriers to bundle cellular service and CPE.

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I. Introduction

The staff of the Federal Trade Commission (FTC) appreciates this opportunity to respond to the Federal Communications Commission's (FCC) Notice of Proposed Rulemaking.[1] The FCC is seeking comments on "the benefits or possible adverse consequences of eliminating or substantially modifying the current cellular antibundling policy." Our comment addresses certain issues relating to economic efficiency and competition, based upon price theory and welfare economics as understood in the interpretation and enforcement of the antitrust laws. Except

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[1] See Notice of Proposed Rulemaking, In the Matter of Bundling of Cellular Customer Premises Equipment and Cellular Service, CC Docket No. 91-34, Released March 27, 1991.

as noted, it does not discuss other policy considerations, such as distributional issues, that may be relevant to the FCC.

Section II summarizes the expertise of the staff of the Federal Trade Commission. Section III summarizes the issues contained in the NPRM. Section IV contains an economic analysis of the practice of bundling. Part A of the Section examines the structure of both the cellular service and consumer premises equipment (CPE) markets. The staff agrees with the tentative conclusion in the NPRM that the CPE market is competitively structured. However, we cannot conclude that the cellular service market is competitive, nor can we conclude that cellular resellers provide competition to the facilities-based cellular carriers. Part B of this Section examines uses of the practice of bundling identified in the economics literature. First, we examine transaction costs explanations for bundling. Second, the use of bundling as a potentially efficient promotional device is examined. Because this explanation for bundling appears likely to pertain to the cellular market, we find that a prohibition on bundling is likely to induce cellular carriers to switch to alternative promotional devices that are less preferred by consumers. Third, we examine the potential use of bundling to monopolize the CPE market. Fourth, we examine the possibility that bundling is used as a price discrimination device. Finally, the potential use of bundling to evade rate-of-return regulation is examined. Although monopolization of the CPE market, price discrimination, and evasion of rate-of-return regulation are

theoretically possible, we conclude that these potential concerns do not provide a compelling reason to impose a per se ban on bundling. Section V concludes the comment.

II. Expertise of the Staff of the Federal Trade Commission

The FTC is an independent regulatory agency responsible for maintaining competition and safeguarding the interests of consumers.[2] In response to requests by federal, state, and local government bodies, the staff of the FTC often analyzes regulatory or legislative proposals that may affect competition or the efficiency of the economy. In the course of this work, as well as in antitrust and consumer protection research, nonpublic investigations, and litigation, the staff applies established principles and recent developments in economic theory to competition and consumer protection issues, including efficiency rationales for rate and entry regulation.[3]

The FTC staff has commented on a variety of other issues before the FCC, including: (1) competition, rate deregulation and the FCC's policies relating to the provision of cable television service;[4] (2) elimination of the prohibition on common ownership

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[2] 15 U.S.C. §§ 41 - 59.

[3] See, e.g., Mathios and Rogers, The Impact of State Price and Entry Regulation on Intrastate Long Distance Telephone Rates, Bureau of Economics Staff Report to the Federal Trade Commission, November 1988.

[4] See Comment of the Staff of the Bureau of Economics and the San Francisco Regional Office of the Federal Trade Commission, In the Matter of Competition, Rate Deregulation and the Commission's Policies Relating to the Provision of Cable Television Service, MM

of cable television systems and national television networks;[5] (3) rules relating to whether cable television systems "must carry" television broadcast signals;[6] (4) the FCC requirement that broadcast licenses be held for at least three years before being transferred;[7] (5) rules relating to the network ownership of financial interests and syndication rights;[8] (6) the allocation of spectrum and setting of standards for digital audio broadcasting;[9] and (7) the regulation of 900-number services.[10]

III. Background of and Issues Contained in the NPRM

The FCC is soliciting comments on whether it should allow cellular service carriers to engage in "bundling", offering a subscriber a bundle of two products (cellular service and consumer premises equipment (CPE)) together at a single price.[11] This practice has generally resulted in a bundle price that is lower than the subscriber could obtain by purchasing the CPE and

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Docket No. 89-600, April 20, 1990.

[5] CT Docket No. 82-434.

[6] MM Docket No. 85-349.

[7] BC Docket No. 81-897.

[8] MM Docket No. 82-345 and MM Docket No. 90-162.

[9] GEN Docket No. 90-357.

[10] CC Docket No. 91-65.

[11] There are numerous sellers of the CPE (mobile phones). The structure of the CPE market is discussed in more detail in Section IV.A of this comment, infra.

service separately. The Notice "tentatively concludes that a consideration of all of the factors ... and the existence of the antitrust laws, warrant allowing the bundling of cellular CPE and service."[12] The practice of bundling is distinct from "tying" because the cellular carrier will be required to offer cellular service separately at nondiscriminatory rates.[13]

Current FCC rules prohibit facilities-based providers of cellular service (i.e., those who are licensed by the FCC to use the spectrum reserved for mobile phone service) from "bundling". FCC rules also limit the number of facilities-based providers of cellular service per Cellular Geographic Service Area (CGSA) to no more than two.[14] These facilities-based providers are the only sellers of service at the wholesale level. At the retail level, facilities-based providers of cellular service market

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[12] See NPRM, supra, Section III, p. 2.

[13] That is, the cellular carriers must make cellular service separately available at a uniform wholesale price. See NPRM, Section I. The requirement for non-discriminatory pricing prohibits cellular carriers from conditioning cellular service prices on certain attributes of the consumer (e.g., whether he is a new or repeat subscriber, or where a new subscriber chooses to purchase CPE), and would appear to eliminate, in this setting, the concern that the separate-purchase option might be rendered illusory by exorbitant prices. The type of bundling, presented here, where the goods in the bundle are separately available, is commonly referred to as "mixed bundling." With "pure bundling" or "tying," only the bundle is made available. For more complete discussion of the economics of bundling and tying, see Klein and Saft, "The Law and Economics of Franchise Tying Contracts," 28 Journal of Law and Economics 345-361 (1985) and Section IV.B, infra.

[14] The CGSA's generally correspond to standard metropolitan statistical areas. See 47 C.F.R. § 22.903.

their product through many types of outlets, including direct sales forces, commissioned agents, and local and national retail chains.[15] In addition, the FCC mandates that resellers (i.e., retailers not part of the facilities-based carriers' preferred retail distribution system) be able to purchase at nondiscriminatory prices wholesale service from the facilities-based carriers for resale.

This rulemaking stems from a petition filed by the National Cellular Reseller's Association (NCRA).[16] In its petition, the NCRA requested the FCC to reaffirm its prohibition against bundling by facilities-based cellular carriers. The resellers claim that the FCC has not enforced its prohibition against bundling, and has allowed the facilities-based carriers indirectly to bundle service and CPE.[17] Rather than ruling on the NCRA petition, the FCC instituted this rulemaking to determine whether its policy on bundling "should be eliminated,

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[15] See, e.g., Comments of the Cellular Telecommunications Industry Association, (CTIA) In the Matter of Bundling of Cellular Customer Premises Equipment and Cellular Service, CC Docket 19-34, May 20, 1991, pp. 3-4.

[16] See NCRA petition, December 23, 1988.

[17] See also Comments of Cellnet Communications, In the Matter of Bundling of Cellular Customer Premises Equipment and Cellular Service, CC Docket No. 91-34, May 20, 1991, pp. 2-4. Some states maintain more restrictive rules on bundling. See, e.g., Comments of the People of the State of California and the Public Utilities Commission of the State of California, In the Matter of Bundling of Cellular Customer Premises Equipment and Cellular Service, CC Docket 91-34, May 20, 1991.

substantially modified, or clarified."[18]

IV. An Analysis of Bundling

In this Section, we examine the likely effects on consumers from repeal of the FCC's antibundling rule. Given that bundling of two products is unlikely to harm consumers if no market power exists in either market, the extent of market power is used as a first screen to separate harmless or beneficial from potentially harmful bundling.[19] In Part A of this Section, the staff agrees with the FCC's tentative conclusion that CPE is produced and sold in an unconcentrated and competitive market. However, the staff disagrees with the tentative conclusion that cellular service is produced in a competitively structured market.

Because the staff cannot rule out the existence of market power in the market for cellular service, Part B of this Section provides an analysis of the likely competitive effects of bundling in this market. Even if market power is found to exist, the restraint (bundling) should not necessarily be condemned on a per se basis. A per se condemnation of bundling would be appropriate only if the existence of a net anticompetitive effect is probable, and the costs of a case-by-case evaluation exceed the benefits from allowing bundling in limited circumstances. We

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[18] See NPRM, supra note 1, at n. 9.

[19] A similar standard has been adopted by the Federal Courts in tying cases. See Jefferson Parish Hospital District No. 2 v. Hyde, 466 U.S. 2 (1984).

examine both pro-competitive and anti-competitive uses of bundling, and conclude that the theoretical potential for competitive harm does not appear likely to materialize in this setting. Given the procompetitive explanations for bundling, our analysis concludes that a per se condemnation of bundling in this market is not warranted. Further, any cases identified in the future that raise anticompetitive concerns could be subject to a case-by-case review under the antitrust laws.

A. Market power in the provision of CPE and Cellular Service

The NPRM suggests that the market for CPE is competitive.[20] There seems to be general agreement on this point. Cellular phones are manufactured in an unconcentrated industry by a large number of national and international companies.[21] Barriers to entry seem low, and recent entry by firms engaged in the consumer

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[20] See NPRM, supra note 1, at 10.

[21] According to the North American Telecommunications Association, there are 15 suppliers of cellular phones to the U.S. Market, including foreign suppliers such as Toshiba, NEC, Panasonic, Uniden, Mitsubishi, and Oki. There are three basic types of cellular phones: mobile, used primarily in automobiles; transportable, which can used either in a car or carried in a pouch; and portable, or "pocket-sized" phones. According to their figures, no supplier has more than 15 percent of the mobile phone sales, which account for 69 percent of total U. S. CPE sales (by units). Motorola is the largest U. S. based supplier of CPE equipment, with 35 percent of portable phone sales (which account for 19 percent of total CPE sales), and 10 percent of transportable phone sales (which account for 22 percent of the total CPE sales). See Comments of the North American Telecommunications Association, In the Matter of Cellular Customer Premises Equipment and Cellular Service, CC Docket No. 91-34, May 20, 1991, Attachment A.

electronics industry has been observed.[22]

However, there is not general agreement with the NPRM's tentative conclusion that cellular service is "sufficiently competitive" and is produced in an industry with a "competitive structure."[23] The NPRM states that "within each market, facilities-based carriers compete not only with each other, both directly and through agents, but also with numerous resellers."[24] The NPRM also notes that cellular companies "must also compete with other types of communications services, such as paging and wireline service."[25]

1. The Structure of the Cellular Service Industry

The U. S. Department of Justice Merger Guidelines set out a method used by the antitrust agencies to determine whether a product or group of products constitute an antitrust market.[26] An antitrust market consists of the product or group of products for which a hypothetical monopolist would find profitable a small but significant and non-transitory increase in the price over competitive levels, assuming initially that entry into the

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[22] For example, Kenwood, a producer of home and car audio equipment recently entered the CPE market, and other electronics manufacturers such as Sony have announced their intention to enter the market. See Comments of the CTIA, supra note 15.

[23] See NPRM, supra note 1, §III.13 and n. 15.

[24] See NPRM, supra note 1, §III.12.

[25] See NPRM, supra note 1, §III.13.

[26] See the U.S. Department of Justice Merger Guidelines, June 14, 1984, Section 2.21, reprinted in 4 Trade Reg. Rep. (CCH) para 13.103.

production of the product(s) would not occur. An important step in the process is to see whether consumers can find acceptable substitutes for the products or services included in the candidate market. If so, the candidate market is expanded to include these products. Once the relevant market is defined, the method goes on to consider whether the structure of this market is likely to be conducive to non-competitive pricing. The structure of the market, along with other factors (such as conditions of entry), is used as a proxy for determining whether the firms in the market might possess market power.[27]

For the purposes of this rulemaking, the aim would be to examine, empirically, whether the availability of other communications services (e.g., paging and wireline services) would prevent a hypothetical monopolist of wholesale cellular services (in a given CGSA) from raising price above the competitive level. The question of the demand substitution is crucial because if these alternatives would not prevent an anticompetitive price increase, then wholesale cellular service would be considered a relevant antitrust market. Any evidence the FCC has collected on this empirical issue would help greatly in determining whether or not providers of wholesale cellular service have market power. But because we find that this issue has not been clearly resolved, we adopt, in this comment, the conservative assumption that competition from other services is

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[27] See the U. S. Department of Justice Merger Guidelines, supra note 26.

too insubstantial to constrain facilities-based carriers from exercising market power.[28]

Under current FCC rules, no more than two facilities-based carriers are allowed in each CGSA.[29] Thus, these rules place an absolute barrier to entry into the provision of wholesale cellular service, and limit the number of providers of wholesale cellular service in each CGSA to two.[30] Under the assumption that wholesale cellular service constitutes a relevant antitrust market, the Herfindahl-Hirschman Index (HHI), which is used to measure the extent of market concentration, would be, at minimum, 5000,[31] well above the "highly concentrated" threshold contained

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[28] The NPRM and many of the comments have noted that the federal courts have ruled that a "cellular carrier may not be found to have market power in the service market." See Metro Mobile CTS v. New Vector Communications, 661 F. Supp. 1504, 1522-1525 (D. Ariz. 1987), aff'd 892 F. 2d. (9th Cir. 1989). However, this decision relates to the ability of the wireline cellular franchisee (in this case New Vector) to exercise market power vis a vis the non wireline franchisee (Metro Mobile) during the headstart period. In terms of the market definition exercise, the court found that New Vector, alone, did not possess market power. However, the court did not rule on the guidelines market definition issue of whether the two cellular franchisees together possess market power.

[29] See the discussion in note 14, supra.

[30] See Demsetz, "Barriers to Entry," 72 American Economic Review 47-58 (1982).

[31] The HHI is the sum of the squared market shares of the firms in a market. In a duopoly, the least concentrated market is a market where each of the two firms has a 50 percent market share. The HHI in this case equals $50^2 + 50^2 = 5000$.

in the Department of Justice Merger Guidelines.[32]

2. Competition between Resellers and Facilities-Based Carriers

In the NPRM, the FCC relies on cellular resellers to provide competition to the facilities-based cellular carriers.[33] It is unlikely that cellular resellers will provide effective competition at the wholesale level to the two facilities-based cellular carriers. Although the presence of resellers has been found to provide a competitive influence in other markets, such as the provision of wireline toll service within Local Access and Transport Areas (intraLATA), we do not expect that cellular resellers will have a similar effect.[34] Resellers operating in the intraLATA toll telephone service can purchase service from facilities-based long distance carriers. In essence, these long distance companies provide an alternative source of competition at the wholesale level to the local Bell Operating Company (BOC) through the resellers. Thus, it is the presence of an alternative source of competition to the BOCs at the wholesale

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[32] The Guidelines define markets where the HHI is above 1800 to be highly concentrated. See the U. S. Department of Justice Merger Guidelines, supra note 26, §3.11. "Highly concentrated" markets receive the most scrutiny under the Guidelines.

[33] See NPRM, supra note 1, §III.13.

[34] Mathios and Rogers, supra note 3, pp. 51-52 found that the existence of resellers in the intraLATA market lowered prices. They found that rates for intraLATA toll service were about 7.5 percent higher in states that restrict both facilities-based carriers and resellers from competing with the Bell Operating Companies (BOC) in providing this service. Restricting facilities-based carriers (but not resellers) from providing intraLATA toll service did not result in higher prices.

level, and not the presence of resellers, per se, that provides the observed competitive influence. Resellers in the intraLATA service facilitate competition by providing a retail outlet for an alternative source of wholesale competition.

In contrast, no similar source of wholesale competition to the facilities-based cellular licensees exists, so the cellular reseller cannot serve the same procompetitive function as the intraLATA reseller. Thus, while resellers can provide additional competition at the retail level, they cannot provide a check on the ability of the facilities-based carriers to exercise market power. Even with intense retail competition, the two facilities-based cellular carriers potentially can force the consumer to pay a supracompetitive price by setting wholesale service prices at supracompetitive levels. Furthermore, given the competitive state of the retail cellular market, it is unclear what marginal contribution resellers make in the retail market.[35] Resellers currently compete with a large number and variety of retail outlets in a competitive retail market, and it seems unlikely that their absence would result in a reduction in competition at the retail level.

Much of the opposition to the proposal to lift the FCC's prohibition of bundling has come from resellers. Reseller complaints, both in response to the NPRM and in court cases, claim that the facilities-based carriers are engaging in a

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[35] See the discussion surrounding note 15, supra.

predatory "price-cost squeeze" (i.e., increasing the uniform wholesale cellular price charged to retailers and reducing the retail price charged by the vertically-integrated retailers through commissions or other incentive payments).[36] As is the case in almost all alleged instances of predation, however, the observable implications of attempted predation (e.g., small margins, selective commissions or promotional payments to retailers) are difficult to differentiate from the observable implications of intense retail competition and from the use of an efficient distribution system.[37] And given that the ability of a wholesaler to choose how to distribute his products may have a significant impact on the type of services or the quality of the product provided, interference in these relationships should be

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[36] See NPRM, supra note 1, §II.3, and Metro Mobile v. New Vector, supra note 28.

[37] See, e.g., Miller and Pautler, "Predation: The Changing View in Economics and the Law," 18 Journal of Law & Economics 495-502 (1985). See also Cargill, Inc. and Excel Corp. v. Monfort of Colorado, Inc. 107 S. Ct. 484, 491-493 (1986). In general, if there are no quality control problems at the retail level, it is in the interest of even a monopoly wholesaler to have a competitive margin at the retail level in order to avoid a successive monopoly problem. See, e.g., Posner and Easterbrook, Antitrust Cases, Economic Notes and Other Materials, (2d. ed. 1981) pp. 875-76. Thus, one also would expect to observe small retail margins in an efficient and competitive retail market. If there are quality control problems at the retail level, the wholesaler may wish to limit competition at the retail level. See Klein and Leffler, "The Role of Market Forces in Assuring Contractual Performance," 89 Journal of Political Economy 615-641 (1981), and Klein and Murphy, "Vertical Restraints as Contract Enforcement Mechanisms," 31 Journal of Law & Economics 265-298 (1988). The quasi-rents resulting from limiting competition at the retail level act as a reward to those retailers who actually provide high quality service.

approached with caution.[38] As the Department of Justice noted in examining this market in 1986:[39]

> "As is recognized in antitrust law and economic literature, allowing firms to select their own distribution networks is generally the most efficient government policy. Thus, in the absence of a showing of likely anticompetitive effect from a particular distribution system, regulatory constraints on a cellular carrier's decision as to which dealers should resell its service are unwarranted and would not serve the public interest in efficient distribution of cellular service."

The NPRM requests comment on how changing the bundling rule will affect resellers.[40] To the extent that elimination of the rule allows the cellular service companies to utilize their preferred distribution systems more intensively, and to the extent that resellers are not part of this preferred system, resellers may be adversely affected. However, the possibility that one type of retailer may be harmed, by itself, does not provide a basis for a rule that limits the use of a potentially efficient contract or retail distribution system. Given these considerations, and given that resellers are not likely to improve industry performance at either the wholesale or retail

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[38] See the discussion in note 37, supra.

[39] See Comments of the Department of Justice, In re Request of Cellular Telephone Company for Declaratory Ruling that Nonwireline Cellular Carriers Should Not Be Required to Provide Resale Service to Operating Wireline Cellular Carriers in the Same Market, Ref. No. 64400-SAW, June 3, 1986.

[40] In the NPRM, the FCC notes that "the justifications for the Commission's original adoption of anti-bundling policies did not focus on any impact of those policies on resellers. Rather, the unbundling requirements were intended to protect ratepayers and to promote competition in the CPE marketplace." See NPRM, supra note 1, § III.19.

level, there does not seem to be a compelling basis, based upon reseller complaints, to regulate vertical relationships between cellular carriers and their retailers.

B. Economic Reasons for Bundling

In this Section, uses of bundling that have been identified in the economic literature are explored and considered in the context of the cellular service market. Part B.1 reviews transactions cost explanations for bundling. Part B.2 reviews the economic literature on promotional pricing and applies this to the bundling of CPE and cellular service. Part B.3 examines the "leverage" theory of bundling. Part B.4 examines price discrimination explanations of bundling. Finally, Part B.5 examines the use of bundling to evade rate-of-return regulation.

1. Bundling and Efficient Packaging

As noted in the NPRM, "packaged offerings are commonplace in a variety of industries in which customers can purchase a number of goods in a package at a lower price than the individual goods could be purchased separately." The courts have recognized that "there is nothing inherently anticompetitive about packaged sales," and under the federal antitrust laws, these packaged offerings are legal unless they constitute an illegal tie-in or otherwise represent an unlawful exercise of monopoly power.[41]

The economics literature has noted that bundling can be used to reduce transaction and information costs. In addition to

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[41] See Jefferson Parish Hospital District No. 2 v. Hyde, 466 U.S. 2, 25 (1984).

allowing the consumer to engage in "one-stop shopping", bundling could be used by the seller for quality control purposes,[42] or to lower the costs of distributing his product.[43]

2. Bundling as an Efficient Promotional Device

Bundling is currently being used by the cellular carriers, through their retailers and agents, to give introductory discounts to new subscribers.[44] Based on our review of the available economic literature that discusses introductory discounts, we conclude that prohibiting bundling may cause the

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[42] See, e.g., Klein and Saft, supra note 13, and the discussion in note 37, supra.

[43] The NPRM, supra note 1, §II.6 notes that "bundling reduces the "transactions costs" of determining the individual consumer's optimal commodity bundle, i.e., the seller rather than the consumer performs the search for the optimal commodity bundle." For example, selling a package can reduce the number of times a product must be inspected prior to final sale, thus reducing information costs. For a detailed explanation of how bundling eliminates redundant expenditures on information, and for an application of this theory to the distribution of diamonds and films, see Kenney and Klein, "The Economics of Block Booking," 26 Journal of Law & Economics 497-540 (1983). See also Marvel and McCafferty, "Resale Price Maintenance and Quality Certification," 15 RAND Journal of Economics 346-359 (1984).

[44] See, e.g., NPRM, supra note 1, § III.17 and the ads contained in the Comments of Southwestern Bell Mobile Systems, Inc., In the Matter of Bundling of Cellular Customer Premises Equipment in [sic] Cellular Service, CC Docket 91-34, May 20, 1991, Addendum 1. These ads show promotions that provide deep discounts on CPE equipment as long as the purchaser also agrees to take cellular service for a fixed time period (e.g., three months). While the efficiency explanations of bundling offered in Part B.1 of this Section, such as consumer preference for one stop shopping, and lowered transactions costs are correct and can lower the cost (and thus the price) of the bundle, they do not necessarily explain why consumers must be offered a discount in order to take the preferred bundle. For this reason, the discussion contained in this Section focuses on the promotional pricing aspect of the bundle.

cellular companies to replace these discounts with promotional expenditures that are more costly and less likely to be directly appropriated by the consumer.

Economic analysis suggests that introductory discounts can be used by firms to signal to consumers that they have lower marginal costs[45] or higher quality than alternative sellers.[46] For example, in the cost-signalling model, consumers cannot observe a firm's costs, and can observe a firm's future price only after incurring a sunk cost in the current period.[47] Because a firm with lower costs will charge lower prices in the future, consumers would prefer to commit to a firm with lower costs. Consequently, a low-cost firm has an incentive to try to distinguish itself from a high cost firm, because by doing so it will benefit from the sales generated by this consumer preference. Introductory discounts that are large enough to be profitable for low-cost firms, but not high-cost firms, can accomplish this. A similar explanation applies to the case of high quality firms attempting to distinguish themselves from low

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[45] See Bagwell, "Introductory Price as a Signal of Cost in a Model of Repeat Business," 54 Review of Economic Studies 365-384 (1987).

[46] See, e.g., Nelson, "Information and Consumer Behavior," 78 Journal of Political Economy 533-547 (1970), Shapiro, "Optimal Pricing of Experience Goods," 14 Bell Journal of Economics 497-507 (1983), and Milgrom and Roberts, "Price and Advertising Signals of Product Quality," 94 Journal of Political Economy 796-822 (1986).

[47] For example, a cellular customer may incur carrier-specific sunk costs that are tied to the specific number (e.g., business cards or ads printed with a specific phone number).

quality firms. In either case, the economic literature has noted that the use of introductory pricing can achieve the desired differentiation at minimal cost.[48] In some circumstances, promotional pricing may be the only way in which a firm with lower overall costs can effectively compete.[49] Thus, to the extent that promotional pricing is being used to signal low costs or high quality, a ban on such promotions would result in cellular companies and their agents substituting away from direct discounts to consumers toward promotions that are less likely to be appropriated by the consumer (e.g., purely dissipative signals such as advertising with no obvious informational content),[50] thereby reducing total welfare.

Contrary to the claims in some comments, these promotions do not result in higher future prices, and do not result in current cellular subscribers being forced to subsidize new subscribers'

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[48] See Milgrom and Roberts, supra note 46, p. 799.

[49] For an example, see Besen and Johnson, Compatibility Standards, Competition, and Innovation in the Broadcasting Industry, RAND Pub. No. R-3453-NSF (Nov 1986), pp. 26-28. In this example, competition for a larger base of subscribers and the potential for repeat sales cause competing firms (even the most efficient firm) to set the initial price below cost.

[50] See Milgrom and Roberts, supra note 46, p 799. Shifting promotional expenditures from direct payments to the consumer to television advertising is likely to be more dissipative (i.e., the consumer is likely to receive less utility from television advertising than from a direct payment). For a general discussion of dissipative versus non-dissipative promotions, see Klein and Leffler, supra note 37.

CPE purchases.[51] Once a customer agrees to purchase service from a cellular carrier, any promotional expenditures become sunk costs. Given that a profit maximizing firm will set service rates based on the marginal cost (and not the average cost) of providing service, and given that sunk costs do not directly affect the marginal cost of providing service, service rates charged will not systematically increase as promotional expenditures increase. In fact, if a ban on promotions causes consumers to commit to the high marginal cost firm, service rates will be higher than under the regime where the promotions are allowed to act as signals of low cost or high quality.

Because the provider of service must recover the cost of the introductory discount (which must be large enough to separate the low from the high cost firms) over the life of the relationship, he must prevent customers who have already received the discount from obtaining another discount (i.e., he must limit the discount to new subscribers). Since those customers interested in purchasing the bundle are likely to be new subscribers, giving the discount only to those who purchase the bundle is likely to be a low cost and effective way to limit discounts to new

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[51] See, e.g., Comments of Cellnet Communications, Inc., supra note 17, p. 13.

subscribers.[52]

Similarly, since the purpose of the discount is to reduce the price of cellular service, and not the price of phones, the provider of service must prevent those just interested in phones from purchasing a below-cost phone and immediately cancelling service. This is achieved by bonding those customers who have received the introductory discount to the provider who gave the discount (e.g., through minimum service requirements or cancellation fees).

3. Bundling and Foreclosure of the CPE market

Traditionally, anticompetitive explanations of tying or bundling have posited that these practices permit a monopolist in one market (e.g., cellular service) to "leverage" his monopoly into a second market (e.g., CPE) by foreclosing independent CPE producers from access to its cellular customers. Indeed, the protection of independent CPE producers (and not resellers) seems to have been the focus of the FCC's antibundling rule.[53]

The leverage theory has been criticized in the economics literature. Intuitively, critics have noted that if a monopoly seller of a good extracted all of the available monopoly profits

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[52] See Peterman, "The International Salt Case," 22 Journal of Law & Economics 351-364 (1979). Peterman notes that the costs of administering selective price reductions to reflect lower costs may dictate whether it is in the first good's price (e.g., the cellular service price) or the second good's price (e.g., the CPE price) that the discount is reflected. See id., p. 359, pp. 362-363.

[53] See NPRM, supra note 1, § III.19 and the discussion in note 40.

through the sale of this good, no additional monopoly profits could be gained by forcing the consumer to purchase a second good. In short, if the goods are demanded in fixed proportions, only one monopoly profit can be extracted.[54]

Recent theoretical work has reexamined the leverage theory.[55] In this model, bundling may allow a monopolist in one market profitably to deter the entry (or to induce the exit) of a competitor in a second market with a duopoly structure.[56] The additional profits from being a monopolist (rather than a duopolist) in the second market, under carefully defined specific conditions, can outweigh the sacrifice in monopoly profits from pricing the first good at its (unbundled) profit-maximizing

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[54] See, e.g., Bork, The Antitrust Paradox, Basic Books (1978), Posner, Antitrust Law: An Economic Perspective, University of Chicago Press (1976). These arguments hold where the two goods are used in fixed proportions, (e.g., complementary goods such as bolts and nuts). Under these conditions, bundling or tying cannot be used for anticompetitive purposes, as an increase in the price of one good will cause the amount the purchaser is willing to pay for the second good to fall by the same amount. In the variable proportions case, economic explanations of tying or bundling have centered upon its use as a device to facilitate price discrimination (see Part B.4 of this section, infra) in addition to its use as an efficient vertical contract (see e.g., Blair and Kaserman, "Vertical Integration, Tying, and Antitrust Policy," 68 American Economic Review 397-402 (1978).

[55] See Whinston, "Tying, Foreclosure, and Exclusion," 80 American Economic Review 837-859 (1990).

[56] The monopolist uses the bundle to reduce the residual demand facing the competitor in the second market below the level at which he can produce profitably (i.e., recover both his fixed and variable costs). The competitor, anticipating negative profits, is deterred from entering or induced to exit the second market. Thus, this model is a variant of the entry deterrence models. See, e.g., Dixit, "The Role of Investment in Entry Deterrence," 90 Economic Journal 95-106 (1980).

level.

While the model indicates that use of bundling for these purposes can be profitable, its author acknowledges that, by itself, it does not provide a compelling case for per se bans on bundling.[57] Further, the conditions necessary to obtain an anticompetitive outcome do not appear to exist in the cellular market. First, it does not seem likely that individual cellular companies possess market power vis a vis the national CPE manufacturers.[58] In addition, the model requires that the second

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[57] Whinston, supra note 55, suggests that issues of policy should be approached with caution. He notes that "[w]hile the analysis vindicates the leverage hypothesis on a positive level, its normative implications are less clear. Even in the simple models considered here, which ignore a number of other possible motivations for the practice, the impact of this exclusion on welfare is uncertain. This fact, combined with the difficulty of sorting out the leverage-based instances of tying from other practical cases, makes the specification of a practical legal standard extremely difficult." To illustrate this point further, one can note that the economics literature has produced a large number of entry deterrence models. In these models, almost any type of investment (e.g., plant capacity, R&D) can serve as an investment in entry deterrence. However, it is seldom argued, based on these theoretical arguments, that all such investments should be banned.

[58] While the cellular service companies may have market power in a CGSA, (or in several CGSA's for multiple system operators) the relevant geographic market for the sale of CPE equipment is at least a national (and possibly a world) market. If individual cellular service companies do not possess market power in the sale of cellular service on a national level, it is unlikely that foreclosure of the CPE market will be successful. According to the CTIA, there were 125 facilities-based cellular systems operators nationally at the end of 1990. See Comments of the CTIA, supra note 15, p 13. Under these conditions, a CPE manufacturer foreclosed by one cellular service company from its CGSA's easily could sell his equipment to other cellular companies operating in many other CGSA's. The potential for the cellular service companies to act as monopsonists does not seem to be a concern here either. CPE seems to be elastically supplied, thus minimizing the effects of any monopsony power. Moreover, allowing cellular

good (in this case, CPE) be produced with decreasing (and not constant) costs. This assumption does not seem to hold for the manufacture of CPE.[59] And in the case of complementary goods, the model requires that only the bundle be sold.[60] Such a restriction would be explicitly prohibited by the FCC.[61] More generally, this model is extremely sensitive to the assumptions employed, and the "leveraging" outcome is just one of many possible equilibrium outcomes.[62] Furthermore, even if bundling were used to deter entry or to induce exit, the effects on total welfare are ambiguous. In this model privately profitable

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service companies to integrate vertically into CPE manufacturing and sales will likely reduce any existing welfare losses from monopsony. See, e.g., McGee and Basset, 19 "Vertical Integration Revisited," Journal of Law & Economics 17-38 (1976), and Perry, "Vertical Integration: The Monopsony Case," 68 American Economic Review 561-570 (1978). Finally, there seems to be little danger that the local cellular service companies would be able to extract quasi-rents from the CPE manufacturers, as there seems to be little or no costs of manufacturing and selling CPE that are specific to any geographic market. Manufacture of CPE is national and not tied to local markets, and CPE is sold on the retail level through independent outlets that also sell other products (e.g., home and car audio products).

[59] See, e.g., NPRM, supra note 1, § III.11, and the discussion around note 22, supra.

[60] See Whinston, supra note 55, p. 850.

[61] Pure bundling would be prohibited as the cellular carriers must make cellular service separately available at a uniform wholesale price. See NPRM, Section I, and footnote 13, supra.

[62] Whinston, supra note 55, pp. 855-856. See also Malueg and Schwartz, "Preemptive Investment, Toehold Entry, and the Mimicking Principle, 22 RAND Journal of Economics 1-13 (1991). They show that the entry deterrence result can be weakened if there is more than one potential entrant (in this case corresponding to the existence of more than one CPE manufacturer) or if the model is extended past two periods.

bundling can increase both total and consumer surplus.[63] Finally, per se bans on bundling are not necessary to discourage anticompetitive outcomes from its use, as any such attempt to monopolize the CPE market could be addressed with traditional antitrust enforcement.[64]

In our view, the record in this proceeding does not support the leverage theory. As noted above, the majority of comments opposing the tentative conclusions in the NPRM are from resellers, not CPE manufacturers. If foreclosure of the CPE market was the likely outcome of bundling, we would expect that the independent CPE manufacturers, acting in their own self-interest, would have submitted comments.[65]

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[63] See Whinston, supra note 55, and note 57, supra.

[64] See NPRM, supra note 1, § III.9 and n. 10. See also Brennan, "Understanding Raising Rival's Costs," 33 Antitrust Bulletin 95-113 (1988).

[65] Tandy, which manufactures CPE and retails them through Radio Shack Stores filed a comment that opposed lifting the bundling rule. See Comments of Tandy Corporation, In the Matter of Bundling of Cellular Customer Premises Equipment and Cellular Service, CC Docket 91-34, May 20, 1991. However, Tandy did not focus on the foreclosure of the CPE market in its comment. It notes "the carriers' purpose in bundling is not to drive CPE retailers from the market and then raise 'its' CPE prices, even though that may be an incidental result of their practices. Instead, the carriers goal is to obtain market share in the service market ... ." Id., p. 9. Tandy suggests that these promotions will keep the price of cellular service high in the long run, and will result in the evasion of rate-of-return regulation. For a statement of the reasons that promotions do not raise price, see note 51, supra. For a discussion of the cross subsidy to evade regulation issue, see the discussion in Part B.5 of this Section, infra.

4. Price Discrimination

The economics literature has focused much attention on the use of bundling as a price discrimination device. Two ways in which bundling or tying can be used to price discriminate have been identified in that literature. First, there is the "metering" argument, whereby the tied good is priced above cost to discriminate against heavy users of the tying good.[66] In the case of cellular service, this is not a viable option, since the FCC mandates that service and CPE also be made available separately.[67] In addition, the cellular company has the ability to meter through its ability to charge separately for airtime. Thus, tying CPE to cellular service does not seem to be required for metering.[68]

Given these considerations, our analysis focuses on the second use of bundling for price discrimination: the practice of

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[66] See, e.g., Bowman, "Tying Arrangements and the Leverage Problem," 67 Yale Law Journal, 19 (1957), pp. 23-25. Bork, supra note 54, pp. 376-377, notes that this "price discrimination hypothesis fits the facts of the IBM case." See International Business Machines, Inc. v. United States, 243 U.S. 131 (1936). IBM required those who leased their tabulating machines also to purchase the cards used in the machines. For a discussion of alternative explanations for apparent cases of metering, see Peterman, supra note 52.

[67] See note 13, supra.

[68] That is, cellular service companies are able to use a two part tariff by charging a fixed monthly fee, and a per minute charge to meter usage. For a discussion of two part tariffs, see Oi, "A Disneyland Dilemma: Two Part Tariffs for a Mickey Mouse Monopoly," 85 Quarterly Journal of Economics 77-90 (1971).

"block booking".[69] Block booking allows the seller to extract larger sums from the buyers than would be possible if the two products were only sold separately. For example, suppose the demands for two products in a bundle were such that any given buyer placed a relatively high value on one, but not both, of the products, so that the value of the bundle remained relatively constant across buyers.[70] Under these circumstances, a constant bundle price, set at the correct level, could extract more of the available consumer surplus. If the two products in the bundle were priced separately, and the monopolist could not discriminate between low and high valued buyers for each product, he would have to act as a single price monopoly. This would result in some of the previously captured sums being turned into a deadweight loss and some of the surplus being given to the

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[69] See, e.g., Stigler, "A Note on Block Booking," in G. Stigler, ed., The Organization of Industry, Chicago (1968): 165-170. Block booking can be profitable with both pure bundling (i.e., only the bundle is sold) or with mixed bundling (i.e., both goods in the bundle also are available separately). See Adams and Yellen, "Commodity Bundling and the Burden of Monopoly," 90 Quarterly Journal of Economics 475-498 (1976).

[70] In other words, the value of the products in the bundle are not positively correlated. The cases of independent demands and of negatively correlated demands have been the standard cases studied in the literature. See Schmalensee, "Commodity Bundling by a Single Product Monopolist, 25 Journal of Law & Economics 67-71 (1982). However, bundling for price discrimination may be useful with slightly correlated demand. It will not be viable with strongly correlated demands. See McAfee, McMillan, and Whinston, "Multiproduct Monopoly, Commodity Bundling, and Correlation of Values," 103 Quarterly Journal of Economics 371-383 (1989).

buyers.[71]

The economic literature on bundling has pointed out that it is difficult to distinguish the use of bundling for price discrimination from legitimate promotions and other efficient vertical contracts.[72] Consequently, we suggest that regulatory interference with such practices be undertaken with caution.[73] As mentioned above, a ban on such promotions or contracts can reduce welfare. In addition, price discrimination can increase welfare even if potential efficiency effects of bundling are ignored.[74] Thus, we do not find that the theoretical possibility of price discrimination supports a per se ban on bundling, particularly in light of the ability to address anticompetitive

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[71] Stigler, supra note 69, provided the following example. In the example, there are two buyers, A and B, and two goods, X and Y. Buyer A would pay $8,000 for good X and $2,500 for good Y. Buyer B would pay $7,000 for good X and $3,000 for good Y. If priced separately, the price of X and Y would be $7,000 and $2,500 per buyer respectively. The total revenue is $19,000. With block booking, a single price of $10,000 per buyer can be set, resulting in revenues of $20,000.

[72] See Kenney and Klein, supra note 43.

[73] See the discussion surrounding note 37, supra.

[74] See, e.g., Adams and Yellen, supra note 69, p. 498. They note that "public policy must take account of the fact that prohibition of commodity bundling without more may increase the burden of monopoly. This is consistent with the general theorem of second best: when one distortion exists (e.g., monopoly), elimination of the other distortions (e.g., bundling) may either enhance or diminish social welfare. The implication is that monopoly itself must be eliminated to achieve high levels of social welfare." See also, Varian, "Price Discrimination and Social Welfare," 75 American Economic Review 870-875 (1985), and Hausman and MacKie-Mason, "Price Discrimination and Patent Policy," 19 RAND Journal of Economics 253-265 (1988).

practices with conventional antitrust enforcement.

5. Cross Subsidy with Rate-of-Return Regulation

In addition to the anticompetitive effects examined above, the potential for a monopolist subject to binding rate-of-return regulation to use an unregulated product to "pad" its rate base has been noted in the economic literature.[75] Such cross-subsidization can lead to higher prices in the regulated market, and inefficient production in the unregulated market.

It is not clear that such concerns provide a basis for having an antibundling rule at the federal level. As noted in the NPRM, cellular service is not regulated at the federal level, and is largely unregulated at the state level.[76] In addition, for those states with regulation, utilization of regulation based on rate-of-return principles is not common.[77] If rate-of-return principles are not being used, then the distortions from the cross subsidy, which are caused by use of rate-of-return regulation, will not be present. And even if some states employ rate-of-return regulation, antibundling regulation at the federal

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[75] See, e.g., Brennan, "Cross Subsidization and Cost Misallocation by Regulated Monopolists," 2 Journal of Regulatory Economics 37-51 (1990).

[76] See NPRM, supra note 1, § III.14,1 and Comments of the CTIA, supra note 15, Attachment D. According to the CTIA, 26 states and the District of Columbia have no regulation at the state level, and only 12 states and Puerto Rico are regulated at both the wholesale and retail level.

[77] The NPRM, supra note 1, § III.14 suggests that "it appears that there are no tariffs which require cellular carriers to price service according to rate-of-return principles."

level is not required. Such regulation can be limited to and enforced by those states that choose to have rate-of-return regulation.[78]

V. Concluding Remarks

Our analysis of the existing economic literature, considered in the context of the cellular industry, does not support a per se ban on "bundling" by cellular carriers. Lifting of such a ban is unlikely to present an anticompetitive danger, and will allow cellular carriers to pursue promotional and transaction-cost efficiencies. Because cellular service firms possess some measure of market power, economic theory does admit the possibility that bundling could, under certain conditions, reduce consumer welfare. However, the theoretical potential for anticompetitive behavior does not provide a compelling basis for a per se ban. If one were able to identify such outcomes following the lifting of a ban on bundling, they could be subject to a case-by-case review under the antitrust laws.

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[78] Cellular Service is largely an intrastate service. See NPRM, supra note 1, § II.4. For arguments in favor of regulatory federalism, see NPRM, id., § III.21, and Comments of the People of the State of California, supra note 17.