AN ECONOMIC ANALYSIS OF THE RURAL CELLULAR ASSOCIATION'S PETITION FOR RULEMAKING REGARDING EXCLUSIVITY ARRANGEMENTS BETWEEN COMMERCIAL WIRELESS CARRIERS AND HANDSET MANUFACTURERS

Michael L. Katz

February 2, 2009

CONTENTS

I. INTRODUCTION AND OVERVIEW

1. The Rural Cellular Association (RCA) has petitioned the Federal Communications Commission (Commission) to open a proceeding as a first step in implementing a policy of banning exclusive contracts between handset manufacturers and wireless carriers.[1]

2. I have been asked by counsel for AT&T to conduct an economic analysis of whether prohibiting exclusive contracts between commercial wireless carriers and handset manufacturers as urged by the *RCA Petition* would promote consumer welfare and economic efficiency. I conclude that it would not. Indeed, by far the most likely effects of such a policy would be to restrict competition and harm consumers. Accordingly, as explained below, the Commission should not open a proceeding to consider imposing such regulation, let alone actually impose it.

3. Briefly, my findings are the following:

- *It is widely accepted in legal, public policy, and economic analysis that exclusive contracts frequently promote competition and consumer welfare.* Exclusivity arrangements can promote competition and increase incentives for suppliers to engage in: (a) facilities investment and innovation, and (b) customer service and promotional activities. These effects arise because exclusive contracts provide a means for parties to commit to dealing with one another and, thus, such contracts can increase the incentives for the parties to invest in their economic relationship. For this reason, exclusivity arrangements are common in many competitive markets (*e.g.,* a department store may have a contract with a clothing manufacturer to be the exclusive distributor of a certain line of clothes).

---

[1] Rural Cellular Association, "Petition for Rulemaking Regarding Exclusivity Arrangements between Commercial Wireless Carriers and Handset Manufacturers," May 20, 2008 (hereinafter, *RCA Petition*).

- *The evidence indicates that use of exclusive contracts between wireless carriers and handset manufacturers promotes competition and benefits consumers in wireless communications markets.*

  — First, the introduction of exclusive handsets is an important form of competition in this industry. Manufacturers and carriers work together to create innovative new products that allow them to gain (typically temporary) competitive advantages over their rivals. Innovation by one manufacturer-carrier pair creates competitive pressure for other manufacturers and carriers to meet or beat that innovation.

  — Second, exclusive deals between handset manufacturers and wireless carriers strengthen carriers' incentives to make network investments in support of innovative new handset features and functions, to promote new handsets, and to provide customer support for those handsets. Absent exclusivity, a carrier could have reduced incentives to engage in these competitive activities in support of a handset model because: (a) many of the benefits would accrue to other carriers offering that model (through what is known as *free riding*); (b) the carrier would be reluctant to make commitments that required high sales volumes to be successful because of concern for insufficient demand (as a result of what are known as *contractual externalities*); and (c) the handset manufacturer would be in a better position to appropriate the benefits of the carrier's investments by threatening to switch the manufacturer's handset distribution to other carriers (a tactic known as *hold up*).

  — The iPhone provides a vivid illustration of these points. The introduction of the iPhone on AT&T's network is widely credited with having spurred other handset manufacturers and carriers to introduce a range of new, competing offerings. Moreover, the exclusive arrangement between Apple and AT&T in the United States created an economic environment in which AT&T was willing to invest in network improvements to support certain innovative features to the iPhone, such as visual voicemail, and to engage in extensive promotional activities and customer training specific to the iPhone.[2] Absent the exclusivity provisions, AT&T's investment incentives would have been significantly diminished by the threats of free riding, contractual externalities, and hold up.

- *Economic theory has identified circumstances in which exclusive arrangements can harm competition and consumers by excluding competitors but those conditions do not apply to the wireless telecommunications industry and the arrangements under attack by the RCA Petition.* In some market settings (*e.g.,* when there is a dominant distributor that locks up such a substantial portion of the suppliers that rival distributors are left without competitively viable supply options

---

[2] Visual voicemail provides a visual index of the voicemail messages that a user has received, and it allows him or her to access those messages in any order.

and there are no offsetting efficiency benefits from the exclusive arrangements), exclusive contracts can harm competition, to the detriment of consumers. Those conditions do not apply here:

— As the *RCA Petition* itself reveals, there are many different manufacturers selling handsets through many different carriers.[3] There are literally hundreds of handset options in the marketplace, no single handset or manufacturer enjoys a dominant position, and, as discussed below, RCA members themselves offer a wide range of many different models of handsets, including "smart phones" with advanced features.

— This is not a marketplace in which there is a single, dominant distributor that has obtained exclusive distribution rights. Rather, many different carriers have negotiated exclusive rights to distribute individual handsets from many different manufacturers. In many instances, a single handset manufacturer has exclusive deals with several different wireless carriers, where each arrangement covers a different handset model.[4] Such arrangements do not exclude rival carriers from dealing even with that handset manufacturer. Moreover, as just noted, there is no dominant handset manufacturer.

— The wireless industry is highly competitive, with no dominant carrier. In its most recent study of CMRS competition, the Commission reported that 98.5 percent of all United States consumers had access to two or more wireless carriers.[5] The Commission also found that, although on average rural consumers had access to fewer wireless competitors, 94.2 percent of rural consumers had access to two or more wireless carriers[6] and "CMRS providers are competing effectively in rural areas."[7]

These market facts are inconsistent with a theory that exclusive deals are being used to keep either handset manufacturers or carriers from competing. There is simply no support for the conclusion that these exclusive contracts are exclusionary and harm consumers.

- *Handset manufacturers have independent incentives to limit the carriers with whom they contract.* When a wireless carrier distributes a particular handset, the

---

3 *RCA Petition,* Appendix A.

4 For example, the *RCA Petition* reports that LG has exclusive deals for various handset models with AT&T, Alltel Wireless, SprintNextel, and Verizon Wireless; and Samsung has exclusive deals for various handset models with AT&T, Alltel Wireless, SprintNextel, T-Mobile, and Verizon Wireless. (*RCA Petition*, Appendix A.)

5 Federal Communications Commission, "Thirteenth Annual Report and Analysis of Competitive Market Conditions With Respect to Commercial Mobile Services," rel. January 16, 2009 (hereinafter *CMRS Report*), ¶ 40.

6 *CMRS Report*, ¶ 104.

7 *CMRS Report*, ¶ 109.

carrier's actions can affect the handset manufacturer's reputation, sales, and profitability. The handset manufacturer thus has an important interest in the carrier's behavior and the quality of the carrier's service. Consequently, a handset manufacturer—particularly one introducing a handset with innovative new features and functions—has incentives to limit the set of carriers that sell its handset to those carriers whose networks and customer support systems will provide a high-quality user experience that allows the handset to perform up to its capabilities. Some carriers may lack the necessary ability or infrastructure, or the carriers may be unwilling or unable to provide credible commitments to offering the levels of effort the handset manufacturer desires. The handset manufacturer may refuse to deal with carriers that do not meet its requirements.

- *A ban on exclusive contracts between handset manufacturers and wireless carriers thus would not result in all handsets' being available to rural carriers, but such a ban would undermine investment, innovation, and competition.* As just discussed, even absent the ability to enter into exclusive contracts, handset manufacturers would have incentives to limit the set of carriers with which they deal.[8] Thus, a ban on exclusive contracts would not ensure that all carriers had access to all handsets.[9] But the ban would undermine carriers' incentives to engage in the competitive activities identified above. It is important to observe that this would be the case even in those situations where a carrier had a *de facto* (*i.e.*, non-contractual) exclusive arrangement because the exclusivity would be solely at the manufacturer's discretion and the carrier could not be sure that its exclusivity would continue.

- *A ban on exclusive contracts between handset manufacturers and wireless carriers would not be an effective or efficient way to promote universal service.* The focus of universal service policy is properly on communications capabilities and functionalities, not specific handsets. Imposition of policies that harm competition and innovation would run counter to the goal of promoting the widespread availability of advanced telecommunications services. Moreover, attempts to force handset manufacturers to deal with specific carriers would undermine the incentives of those carriers to undertake network upgrades that would—in the

---

8 In this discussion, I am assuming that the Commission will not impose a duty to deal on handset manufacturers. Even if the Commission somehow had the statutory authority to impose a duty to deal on handset manufacturers, doing so would be an unprecedented move in such a highly competitive industry and would be flatly contrary to U.S. competition policy. Moreover, enforcement of such a duty to deal would require imposition of highly detailed and burdensome regulations that would require the Commission to second-guess the business decisions of highly competitive firms.

9 In addition, the possibility of various handset-network combinations is limited by technical compatibility issues (*i.e.*, the handsets and networks may operate on different technical standards).

absence of coercive regulation—make those networks attractive distribution outlets from the perspective of handset manufacturers.

- *The Commission should not impose the burden of a proceeding on itself or the industry*. There is no need for a detailed (and costly) inquiry into theories or facts. The *RCA Petition* is without merit.

4. The remainder of this white paper explains these findings in greater depth and provides details of the facts and analysis that led me to reach them.

II. EXCLUSIVE CONTRACTS BETWEEN HANDSET MANUFACTURERS AND WIRELESS CARRIERS ARE PROCOMPETITIVE

5. Economists have devoted considerable attention to the effects of various types of exclusive contracting. The focus in the *RCA Petition* is on exclusive contracts under which a distributor or dealer (*e.g.,* a wireless carrier) is promised that it will be the sole distributor for a given product (*e.g.,* a wireless handset) for some period of time.[10] Economists have developed a variety of theories of how this type of exclusive contract promotes innovation, competition, and consumer welfare. In this section, I examine the theory and evidence regarding the procompetitive effects of exclusive contracts between handset manufacturers and wireless carriers.

A. EXCLUSIVE HANDSET DISTRIBUTION CONTRACTS PROMOTE INNOVATION AND ARE AN IMPORTANT FORM OF COMPETITION IN THIS INDUSTRY

6. Manufacturers and carriers work together to create innovative new products that allow them to gain (typically temporary) competitive advantage over their rivals. When one manufacturer-carrier pair innovates, there is competitive pressure for other manufacturers and carriers to meet or beat that innovation.

---

10 This practice corresponds to what is known in the literature as granting an *exclusive territory*.

7. It is my understanding that most exclusive contracts cover only one model in the manufacturer's overall product line and that many contracts are for a short period of time (*e.g.*, less than six months). Clearly, such agreements are not excluding rival carriers from being able to compete. Rather, they are a means of creating marketplace buzz and (as discussed below) a way to prevent free riding at the time of product introduction and initial promotions.

8. Some exclusive arrangements have longer terms and, as in the case of the Apple iPhone, may involve the manufacturer's only handset offering. Such arrangements would be expected for particularly innovative handsets or for handsets that require large investments and support activities by the carrier. By facilitating the introduction of these innovative handsets, these more extensive exclusive arrangements also promote competition and innovation, to the benefit of consumers.

9. As noted above, innovation by one manufacturer-carrier pair creates powerful competitive pressures for other manufacturers and carriers to meet or beat that innovation. The introduction of the iPhone provides a dramatic illustration of the power of exclusive contracts to spur competitive innovation. The iPhone is often mistakenly credited with being the first mobile phone handset to offer a touch screen. It was not.[11] However, it was the first touch-screen handset widely to capture the public's imagination. Since the iPhone's introduction on the AT&T network, there has been a wave of innovative product offerings by rival handset manufacturers and carriers. Consider, for example, product introductions just in

---

11 For example, the Motorola A780 and LG KE850 Prada both had touch screens and preceded the iPhone.

the last few months.[12] In the late fall of 2008, Research in Motion and Verizon teamed up to launch the Blackberry Storm, which has a very high resolution touch screen that features tactile feedback, something the iPhone does not have.[13] Google has teamed up with HTC to offer the G1 through T-Mobile. The G1 makes use of Android, Google's powerful new operating system, and offers features such as copy-and-paste capabilities and multimedia messaging that the iPhone3G does not.[14] In addition, Palm recently announced that Sprint will distribute Palm's new Pre handset, which features both a touch screen and a slide-out keyboard, and is based on a new operating system offering several powerful, innovative features.[15] Many of these product introductions are seen as direct responses to the competitive

---

[12] In the text, I focus on recent examples of product innovation and introduction. Other touch-screen phones and phones with visual voicemail were introduced earlier. For example, in April 2008, Sprint announced that it would be offering the Samsung Instinct, which featured visual voicemail and a touch-screen with localized tactile feedback. ("Samsung Instinct (TM), Exclusively from Sprint, Wins Big in Vegas with Coveted CTIA Wireless 2008(R) "Best in Show" Emerging Technology Award," Sprint Nextel Corporation News Release, April 7, 2008, *available at* http://newsreleases.sprint.com/phoenix.zhtml?c=127149&p=irol-newsArticle_newsroom&ID=1126377&highlight, *site visited* January 20, 2009.) And, in August 2008, Verizon Wireless began offering a free software upgrade that allowed existing LG Voyager handsets to provide visual voicemail. ("Visual Voice Mail From Verizon Wireless Gives Customers A New Way To Manage Their Messages," Verizon Wireless press release, August 11, 2008, *available at* http://news.vzw.com/news/2008/08/pr2008-08-11.html, *site visited* January 19, 2009.)

AT&T's comments and appendices in this proceeding document additional examples of competitive product introduction and innovation.

[13] Verizon reported that the BlackBerry Storm, which Verizon began offering exclusively on November 21, 2008, sold 1 million units through January 2009. (Matt Hamblen, "Verizon posts improved Q4 earnings; 1M BlackBerry Storms sold," *Computerworld*, January 27, 2009, *available at* http://www.computerworld.com/action/article.do?command=viewArticleBasic&taxonomyId=15&articleId=9126850&intsrc=hm_topic, *site visited* January 29, 2009.)

[14] C-Net Review of T-Mobile G1 (black) *available at* http://reviews.cnet.com/smartphones/t-mobile-g1-black/4505-6452_7-33283585.html?tag=mncol;lst, *site visited* January 19, 2009.

[15] Palm press release, "Palm Unveils All-new webOS," January 8, 2009, *available at* http://investor.palm.com/releasedetail.cfm?ReleaseID=358392, *site visited* January 16, 2009;

challenged posed by AT&T and the iPhone. Indeed a Google search for "iPhone killer" returns over 860,000 hits.[16] There is even a website titled http://www.iphonekiller.com/.[17]

10. This example also dramatically underscores the lack of any reasonable basis for treating a single handset, such as the iPhone, as an "essential facility." Rival manufacturers offer many competing handsets with touch screens and other advanced features. Several of these models are available to—and offered by—RCA members.[18] More broadly, there are many potential innovators, both traditional handset manufacturers and carriers, and new entrants such as Apple and Google. There is no one company that has a monopoly on innovation, and there is no handset manufacturer without which a carrier could not succeed.[19]

Ben Patterson, "Palm gets back into the game with touchscreen Pre, WebOS," January 8, 2009, *available at* http://tech.yahoo.com/blogs/patterson/32611, *site visited*, January 20, 2009.

16 Search conducted on http://www.google.com on January 19, 2009.

17 Among other things, the website describes dozens of new touch screen handset offerings, all of which the website claims "provide something unique that's not found in an iPhone." (*available at* http://www.iphonekiller.com/about/, *site visited* January 29, 2009.)

18 For example, the HTC Touch series of phones offers a touchscreen, and some offer access to the internet and email, and the ability to play music. Many of these handsets are offered by RCA members. (HTC Touch Diamond (http://www.htc.com/www/product/touchdiamond/overview.html) is offered by Epic Touch Co. (http://www.epicpcs.com/store/phone_listing1.htm) and XIT Cellular (http://www.xit.net/services/wireless_phones/HTCdiamond.asp); HTC Touch Dual (http://www.htc.com/www/product/touchdual/overview.html) is offered by several carriers, among them Cellular One of East Texas (http://celloneet.com/site/phone/htc_dual), Kaplan Telephone Company (https://www.pacecellular.net/site.php?pageID=175&iteminfo=1&productID=113), and Long Lines Wireless (http://www.longlines.com/wireless/phones/phone.php?id=23). (*Sites visited* January 29. 2009.)

19 Of course, even if there were such a handset manufacturer, there are strong arguments against forcing that manufacturer to work with carriers with which it would rather not. These arguments and others are why even a monopolist has no general duty to deal under U.S. antitrust laws.

B. Exclusive Handset Distribution Arrangements Promote Investment by Preventing Free-Riding, Contractual Externalities, and Hold-Up

11. Economics research has identified several mechanisms through which exclusive contracting promotes innovation and consumer welfare by strengthening a distributor's incentives to engage in various competitive activities that benefit consumers. Several of those theories apply to the wireless industry.[20] It is useful to consider each theory in turn.

1. Exclusive Distribution Contracts Protect Investment Incentives by Preventing Carrier Free Riding

12. Suppose that a wireless carrier is considering whether to undertake promotion, education, or other activities in support of a particular handset that—in addition to increasing consumer demand for the carrier's services—would benefit any other carrier offering that handset. If there are multiple carriers with the same handset, then the carrier considering whether to undertake the activities may be concerned with *free riding* by other carriers: the other carriers would benefit from the increased demand for the handset created by the costly support activities, but those carriers would not bear any of the costs of those activities.

13. Free riding weakens a carrier's incentives to invest in supporting the handset. There are two components to the problem. First, the carrier undertaking the costly investment generates benefits for other parties for which the spending carrier is not compensated. That is, the carrier cannot fully appropriate the returns on its investment. Second, the beneficiaries of the free riding are product-market rivals. To the extent that rival carriers' free riding leads

---

[20] In the interest of space, here I review only those theories that are directly applicable to the wireless industry. For a broad discussion of theories of exclusive territories, see Michael L. Katz (1989), "Vertical Contractual Relationships," in *Handbook of Industrial Organization*, edited by R. Schmalensee and R.D. Willig (Amsterdam: North Holland Publishing).

them to increase the intensity of their other competitive activities, rivals' free riding actually harms the spending carrier. Both of these effects diminish the incentives to undertake the activity subject to free riding. Hence, the threat of free riding can be expected to induce carriers to invest less than the amount that would maximize the sum of manufacturer and dealer profits.

14. The literature has identified exclusive contracts as a solution to this problem.[21] Specifically, free riding can be prevented by granting exclusive territories.[22] In the present context, a carrier does not have to worry that other carriers will free ride on its investments in handset development, promotion, or consumer education if there are no other carriers authorized to sell that handset. Consequently, the carrier will have greater incentives to make those investments. Thus, for example, AT&T was able to engage in extensive developmental and marketing activities with Apple in connection with the iPhone without fear that those activities would merely serve to induce consumers to patronize other carriers offering the iPhone.[23] By strengthening investment incentives, exclusive contracts promote investment and innovation that might not otherwise occur.

---

21 Marvel (1982) provides an early analysis of the use of exclusive relationships to prevent free riding and, thus, maintain incentives to engage in promotional and other competitive activities. The roles of manufacturer and distributor are reversed in his theory, but the underlying logic parallels the situation addressed here. (Howard P. Marvel (1982), "Exclusive Dealing," *Journal of Law and Economics* **25**(1): 1-25.)

22 Another approach is to have the handset manufacturer pay the carrier to undertake the activities. However this approach can be subject to severe shortcomings due to carrier moral hazard (*i.e.,* it may be very difficult for a manufacturer to determine how hard the carrier's in-store personnel are working to promote the manufacturer's handset) or adverse selection (*e.g.,* the carrier knows more about market conditions than does the manufacturer, and the carrier can have incentives to engage in strategic reporting of its information to the manufacturer).

23 Interview with AT&T personnel, November 25, 2008.

15. It is worth noting that the adverse consequences of free riding can be particularly acute when there is a high degree of marketplace uncertainty and investments in handsets are risky. Consider a product launch that, if fully supported with promotional investments and network modifications, will have a 50-percent chance of success. If the handset introduction fails, the investing carrier will lose its investment. The carrier may be willing to undertake this risk of loss because there is also a 50-percent chance of gain. But if the product launch is successful and the carrier is not protected by an exclusive arrangement, other carriers will free ride on the success and diminish the investing carrier's returns. The initial carrier's willingness to undertake the risky investment will thus be weakened. For this reason, a regulatory policy that forced carriers to bear all of the risks of their product introductions but socialized the benefits associated with handset introductions that ultimately proved to be particularly successful would have especially pernicious effects.

2. By Reducing Contractual Externalities, Exclusive Handset Distribution Contracts Increase Carrier Willingness to Commit to a Handset

16. The economics literature has identified a second mechanism through which exclusive arrangements can strengthen investment incentives and competition. Exclusive handset distribution arrangements can encourage a carrier to make commitments that require a high sales volume to be successful and that, in turn, promote handset manufacturer willingness to devote resources to the development of innovative new devices and features.

17. Consider a carrier that is negotiating an agreement to purchase handsets for resale to the carrier's subscribers. Suppose that the handset manufacturer involved in the negotiations would like the carrier to make a commitment to purchase at least 200,000 handsets. In calculating whether such an arrangement would be attractive, the carrier would have to form

expectations about the degree of competition that the carrier would face in selling these handsets.

18. Many factors would enter into the assessment of competitive conditions, but one of them would be the contractual terms offered by that manufacturer to other carriers for that handset model. A carrier is less willing to invest in a given handset when the carrier thinks that rival carriers are likely to offer that handset as well, particularly if the carrier believes that its rivals will be offered the handset on favorable terms. In this sense, there is a contractual externality: the contract terms offered to any given carrier affect the incentives of rival carriers to invest in supporting the handset.

19. A carrier has significantly lower incentives to make a minimum-volume commitment if it expects rival carriers to be offering the same model to their subscribers. One "solution" would be for a handset manufacturer to engage in joint negotiations with multiple carriers or to show each carrier the terms of the contracts signed with other carriers. However, from a social perspective, such a process risks harming competition and consumers. And, from a private perspective, such a process risks antitrust litigation.

20. The economics literature has identified exclusive arrangements as a more practical solution.[24] When a carrier has an exclusive arrangement for a handset, that carrier has a greater (though highly imperfect) ability to project the likely sales of that handset and is, thus, more willing to enter into a significant minimum purchase agreement. Commitments of this

---

[24] See R. Preston McAfee and Marius Schwartz (1994) "Opportunism in Multilateral Vertical Contracting: Nondiscrimination, Exclusivity, and Uniformity," *American Economic Review*, **84**(1): 210-230, and R. Preston McAfee and Marius Schwartz (2004) "Opportunism in Multilateral Vertical Contracting: Nondiscrimination, Exclusivity, and Uniformity: Reply," *American Economic Review*, **94**(3): 802-803.

type can be particularly important to new entrants because these firms may have relatively limited resources and face fixed costs of entry.

21. Volume commitments are not the only type of carrier investment that exclusive contracts can promote through this second mechanism. When a carrier has an exclusive arrangement for a handset and, thus, the carrier projects that a relatively high volume of handset sales can be achieved, the carrier will also have greater incentives to undertake other investments that involve large, upfront, fixed costs.

22. Here too, the introduction of the iPhone provides an excellent example of how exclusive arrangements promote competitive activities. In the light of its exclusive arrangement with Apple, AT&T was willing to make substantial investments in support of the iPhone. For example, AT&T made substantial investments to modify its systems, processes, and procedures to allow a "grab and go" activation model for the original iPhone.[25] Under this innovative activation model, a consumer did not have to wait in the retail outlet while the handset was activated. Instead, a consumer could sit at a personal computer in his or her home or office and activate the handset and choose a rate plan through iTunes software.

23. AT&T also invested in modifications to its network hardware and software to support the iPhone's "visual voicemail" feature and to make use of enhanced callback features.[26] AT&T's incentives to make these investments would have been lower absent an exclusive arrangement with Apple.

---

[25] Interview with AT&T personnel, November 25, 2008.

[26] Interview with AT&T personnel, November 25, 2008.

3. Exclusive Handset Distribution Contracts Strengthen Investment Incentives by Limiting Manufacturer Hold Up

24. There is a third mechanism through which exclusive handset distribution contracts strengthen investment incentives. Some of a carrier's activities to support or promote a handset will increase the value that the handset manufacturer could earn in a relationship with rival service providers. Examples of such activities include training customers to make better use of the manufacturer's product or undertaking promotional activities for that handset. After the carrier had undertaken those activities, the manufacturer could threaten to steer sales to rival service providers as a form of hold up to extract price concessions from the carrier.

25. Absent some form of protection from hold up, a carrier will be worried that a manufacturer will threaten to take its business elsewhere unless the carrier makes post-investment concessions. Knowing that this may happen, the carrier is less willing to invest, to the detriment of the handset manufacturer and consumers.

26. An exclusive contract promotes carrier investment in handset-specific assets because the manufacturer cannot hold up the investing carrier by threatening to transact with another carrier.[27]

27. The introduction of the iPhone provides a good illustration of how an exclusive arrangement facilitates cooperation and investment. As already noted, AT&T was willing to engage in marketing activities that would also have enhanced the value of the iPhone to other

---

[27] Segal and Whinston (2000) provide a formal model of the investment incentive effects of exclusive contracts. One of their central findings is that exclusivity increases a carrier's investment incentives when the investment influences the manufacturer's value of transacting with other carriers. (Ilya R. Segal and Michael D. Whinston (2000) "Exclusive Contracts and Protection of Investments," *The RAND Journal of Economics*, **31**(4): 603-633.)

wireless carriers. Moreover, AT&T provided Apple with highly sensitive, proprietary information that allowed Apple to improve its distribution and activation model for the 3G version of the iPhone.[28] The exclusive arrangement between AT&T and Apple provided AT&T with the confidence that the sharing of this information with Apple would not undermine AT&T's competitive position or later be used by Apple as a bargaining chip to seek more attractive terms from AT&T in return for not supplying rival carriers while making use of the improved distribution and activation model.

III. ANTICOMPETITIVE THEORIES DON'T FIT THE FACTS OF THE INDUSTRY

28. The analysis of the previous section demonstrated that exclusive contracts between handset manufacturers and wireless carriers promote competition and consumer welfare. The analysis of the present section examines whether there is any theoretical or empirical basis for concluding that these exclusive contracts harm competition or consumer welfare, and it finds that there is not.

A. ECONOMIC THEORY IDENTIFIES CONDITIONS UNDER WHICH EXCLUSIVE CONTRACTS CAN HARM COMPETITION AND CONSUMERS

29. In examining whether there is possible harm to competition, it is vital to recognize a fundamental distinction. Competition policy (including antitrust enforcement and modern telecommunications regulation) is designed to protect competition because of the benefits that competition brings to consumers. These benefits typically come in the form of lower prices, greater innovation and variety, or higher product and service quality. There is a critical difference between protecting the competitive process and protecting individual competitors

---

[28] Interview with AT&T personnel, November 25, 2008.

from the rigors of the marketplace. Or, as is commonly stated, the concern of competition policy is with harm to competition, not harm to competitors.

30. The following hypothetical example makes clear why this distinction is so important. Suppose that a supplier invests in an innovative, new, proprietary product that is extremely attractive to consumers. The introduction of that innovative product harms competitors. But the innovation benefits consumers and is, indeed, a benefit of the competitive process in action. Competition policy properly favors innovation and seeks to protect competition. A policy that sought to protect competitors might block the introduction of innovative products. Alternatively, a pro-competitor policy might require that any such innovation be shared with rivals, thus greatly weakening or even destroying innovation incentives. In either case, a policy that sought to protect competitors would harm competition and consumer welfare.

31. Now, consider the question of whether exclusive contracts between handset manufacturers and wireless carriers might harm competition. Economic theory has identified certain circumstances in which exclusive contracts can harm competition and consumers, either by literally foreclosing firms from serving consumers or by raising rivals' costs by so much that their ability to compete is seriously weakened.

32. One such situation would be where there is a monopoly handset (*i.e.*, a handset such that a carrier could not compete without access to that handset). In this setting, a decision by the handset's manufacturer to distribute the handset solely through one carrier would create a carrier monopoly. Even if there were such a monopolist (which there is not), there would still be an important question whether that handset manufacturer would have economic incentives to create a monopoly carrier in this manner. The economics literature has shown that such

incentives could arise if the handset monopolist were subject to price regulation while carriers were not, or if the manufacturer feared that those carriers would integrate into handset manufacturing (so-called two-stage entry) unless the manufacturer first drove them out of business. Manifestly, those conditions do not apply in the United States. Although there has been debate regarding the full set of conditions under which such monopolization incentives arise, there is no need to engage in that debate here. There clearly is no handset manufacturer in a position even to contemplate creating a monopoly carrier.

33. Another situation in which exclusive deals could give rise to theoretical harm is when rival carriers cannot engage in the efficient distribution of a handset without the participation of a critical carrier. The conditions needed to give rise to this situation would include: (a) there were very large economies of scale and scope in the production of any given handset *model*; (b) there were no competing carriers with businesses large enough to support purchases that would achieve minimum efficient scale of other handsets; and (c) rival carriers could not purchase the same models of handsets as one another (which would otherwise allow them collectively to achieve minimum efficient scale). Under these hypothesized conditions, the one carrier large enough to make purchases achieving minimum efficient scale could eliminate or severely reduce competition from rival carriers by refusing to utilize the same handsets as its rivals. As will be discussed next, such conditions clearly do not apply in the wireless industry.

B. An Exclusion Story Doesn't Fit the Facts

34. A theory that exclusive arrangements between handset manufacturers and wireless carriers have harmed competition through exclusion is untenable. As the Commission stated in its most recent report on competition in wireless markets, the market is performing well

and "U.S. consumers continue to benefit from effective competition in the CMRS marketplace."[29] More specifically:

- **There are many competing carriers.** The overwhelming majority of United States consumers have access to multiple wireless providers with 98.5 percent of consumers being able to choose from at least two providers and 95.5 percent of consumers being able to choose from at least three providers.[30]

- **Market data do not support a conclusion that competition in wireless services has been harmed by exclusive contracts.** Subscriber penetration and minutes of use have grown, call quality has improved, and use of phones for text messaging has expanded.[31] The Commission stated that low prices "appear to have been a key factor" driving increased subscribership and use of phones for both voice and text messaging.[32] The Commission also described competition in the CMRS market as "flourishing" with providers continuing to build out and upgrade their networks.[33]

- **The handset industry is highly competitive.** There are many different suppliers offering a wide range of different models to a wide range of different customers, often under privately negotiated arrangements. The market has a worldwide scope, and no

---

[29] *CMRS Report*, ¶ 274.

[30] *CMRS Report*, ¶ 40.

[31] *CMRS Report*, ¶ 274.

[32] *CMRS Report*, ¶ 274.

[33] *CMRS Report*, ¶ 275.

one phone model or manufacturer dominates the industry, domestically or globally.[34] All of these structural conditions make tacit collusion difficult and promote competition. As discussed above, innovative handsets are continually being introduced, and the market research firm NPD Group found that smart phone prices declined 26 percent from the summer of 2007 to the summer of 2008.[35]

- **There are many handsets available.** There are many handsets from a range of different manufacturers that are available to any carrier seeking to purchase them for use on its network. One need look no further than Appendix A of the *RCA Petition* to see that exclusion is implausible.[36] Even those handset manufacturers that enter into exclusive contracts do so with a wide range of carriers. According to the *RCA Petition*, LG, for example, has entered into exclusive arrangements for particular

---

34 Gartner reported that in the third quarter of 2008, Nokia was the largest handset manufacturer in the world, with a 38 percent share of sales; Samsung had 17 percent of sales; Sony Ericcson had eight percent of sales. ("Gartner Says Global Economic Downturn Sparked Three-Way Battle for Third Position in Mobile Phone Market in Third Quarter 2008," Gartner press release, November 25, 2008, *available at* http://www.gartner.com/it/page.jsp?id=813812, *site visited* January 21, 2009.) An industry analyst estimated that the top three handset manufacturers in the U.S. in 2008 were Motorola (with an estimated 22 percent of U.S. units shipped), Samsung (21 percent), and LG (19 percent). (Oppenheimer & Co., "2009 Handset Guidebook - Walking In The Dark," November 23, 2008, Exhibit 42.) In addition, industry analysts have estimated that prices for mobile phones are declining for many manufacturers. (Wachovia Capital Markets, LLC, "Wireless Handset Market Q3 2008 - Semiconductors/Computer/Cell Phones," October 30, 2008, p. 4.) A market research firm recently reported that smart phone prices have declined. (Dylan McGrath, "iPhone Leads U.S. Smartphone Sales," EE Times, October 6, 2008, *available at* http://www.eetimes.com/showArticle.jhtml?articleID=210700311, *site visited* January 29, 2009.)

35 Dylan McGrath, "iPhone Leads U.S. Smartphone Sales," EE Times, October 6, 2008, *available at* http://www.eetimes.com/showArticle.jhtml?articleID=210700311, *site visited* January 29, 2009.

36 The presence of so many different models undermines any claim that the economies of scale in the production of a given model are large relative to total market demand. Thus, the first necessary condition for anticompetitive exclusion identified above does not hold in this industry.

models with AT&T, Alltel, Sprint Nextel, and Verizon Wireless; and Samsung has entered into exclusive arrangements for particular models with AT&T, Alltel, T-Mobile, Sprint Nextel, and Verizon Wireless.[37]

- **RCA members currently offer a wide range of handsets, including smart phones and even smart phones with touch screens.** Table 1 of this white paper illustrates this point. Of the 51 RCA members I have identified, all offer one or more phones with Internet access, and 38 offer one or more phones with touch screens. The great majority of RCA members (49 carriers) also offer phones that provide access to email and that can be used to play music.[38]

- **If scale is needed to purchase handsets, then small buyers can band together, either directly or through intermediaries.** Carriers have formed buyer cooperatives to pool their buying power. For example, Associated Carrier Group (ACG) was formed to "serve as a vehicle to harness its members' collective volume and knowledge to work with wireless phone and equipment manufacturers and vendors…."[39] In 2005, ACG obtained access for its members to a camera/music phone from Kyocera; in its press release concerning the deal, ACG stated that "The group of independent, rural carriers formed early this year for just such a purpose--making sure that smaller carriers get access to cool handsets, just like the nation's

---

37 *RCA Petition*, Appendix A.

38 See Table 1.

39 "Wireless Carriers Form Associated Carrier Group, LLC," Associated Carrier Group press release, January 25 2005, *available at* http://www.associatedcarriergroup.com/News/PR012505.html, *site visited* January 25, 2009.

larger players."[40] Recently, small carriers formed NextGen Mobile, LLC, a consortium designed "to help promote the existence of small and rural wireless companies throughout the country."[41] One of the goals of NextGen Mobile is to procure access for its members to leading-edge UMTS devices. NextGen Mobile's CFO stated that "By aggregating our orders, NextGen Mobile hopes to entice device manufacturers to develop and deliver the next 'it' handset or data card to those customers shut-out in the past."[42]

In addition to buyer cooperatives, there are wholesale suppliers that offer a variety of services to improve carriers' supply chain management and in some cases to assist carriers in customizing handsets. Examples include Brightpoint and BrightStar. By serving multiple carriers, a wholesaler can achieve the benefits of economies of scale even when serving smaller carriers.[43] Competition among wholesalers can be expected to drive them to pass some of these benefits on to their carrier customers.

---

40 "Rural carrier group scores first high-end handset," Associated Carrier Group press release, August 25 2005, *available at* http://www.associatedcarriergroup.com/News/RCR082505.html, *site visited* January 25, 2009.

41 "Domestic Wireless Operators Form New Alliance to Advance Small Carrier Causes and...," Business Wire, *available at* http://www.reuters.com/article/pressRelease/idUS173398+30-Sep-2008+BW20080930, *site visited* January 25, 2009.

42 "Domestic Wireless Operators Form New Alliance to Advance Small Carrier Causes and...," Business Wire, *available at* http://www.reuters.com/article/pressRelease/idUS173398+30-Sep-2008+BW20080930, *site visited* January 25, 2009.

43 The RCA lists wholesale handset suppliers on its website. (Rural Cellular Association, "Buyers' Guide Online," *available at* http://www.rca.officialbuyersguide.net/SearchResult.asp?cid=20, *site visited* January 21, 2009.)

IV. HANDSET MANUFACTURERS HAVE INDEPENDENT INCENTIVES TO LIMIT THE CARRIERS WITH WHICH THEY CONTRACT

35. Handset manufacturers have independent incentives to limit the carriers with which they contract. Because a carrier's actions can affect a handset's reputation, the handset manufacturer has an important interest in governing a carrier's behavior or in refusing to deal with carriers that do not meet the handset manufacturer's standards. Specifically, a handset manufacturer—particularly one introducing a handset with innovative new features and functions—has incentives to limit the set of carriers that sell its handset to those carriers whose networks and customer support systems will provide a high-quality user experience that allows the handset to perform up to its capabilities.

36. In addition to the free riding by one carrier on the efforts of another discussed above, there is a threat that a carrier will free ride on a handset manufacturer's reputation. For example, Apple could be worried that a carrier would offer the iPhone without a network that could support all of the iPhone's features. Rather than blame solely the network, some people could be expected to blame the iPhone, harming Apple's reputation. Hence, Apple has strong economic incentives to care about which carriers offer its handsets and whether those carriers have the right incentives to invest in providing an excellent experience for users of those handsets.

37. Many companies want their customers to have a uniform experience. Apple is a good example. For many years, Apple's corporate strategy has been to have relatively few partners in order tightly to control the user experience. It is thus far from surprising that Apple entered into an exclusive arrangement when launching the iPhone in the United States. Apple has also entered into exclusive distribution arrangements for the iPhone in many other countries,

which fits with the customer experience theory.[44] Apple's concern with customer experience would also explain why AT&T stores and Apple Stores were initially the only outlets for iPhones in the United States, although other outlets, including BestBuy and Wal-Mart have since been added. Further evidence of Apple's business strategy is provided by press reports indicating that Apple discussed having an exclusive relationship with Verizon Wireless for the iPhone and that, in those discussions, Apple sought to limit the set of retailers for its handsets.[45]

38. As just discussed, even absent the ability to enter into exclusive contracts, handset manufacturers would have incentives to limit the set of carriers with which they deal. Thus, a ban on exclusive contracts would not ensure that all carriers had access to all handsets. But—by blocking the realization of the benefits discussed in Section II.B above—the ban would undermine carriers' incentives to engage in the competitive activities identified above. It is important to observe that this would be the case even in those situations where a carrier had a

---

44 In 2007-2008, Apple reported exclusive arrangements with mobile carriers in U.K., Germany, France, Austria, France, Portugal, Switzerland, Dominican Republic, Egypt, Jordan, Luxembourg, Poland, Romania, and Slovakia. ("Apple Chooses O2 as Exclusive Carrier for iPhone in UK," Apple press release, September 18, 2007, *available at* http://www.apple.com/pr/library/2007/09/18iphone.html, *site visited* January 25, 2009; "Apple and T-Mobile Announce Exclusive Partnership for iPhone in Germany," Apple press release, September 19, 2007, *available at* http://www.apple.com/pr/library/2007/09/19iphone.html, *site visited* January 25, 2009; "Apple Chooses Orange as Exclusive Carrier for iPhone in France," Apple press release, October 16, 2007, *available at* http://www.apple.com/pr/library/2007/10/16orange.html, *site visited* January 25, 2009; "Orange and Apple to Bring iPhone 3G to Austria, France, Portugal & Switzerland on July 11," Apple press release, June 9, 2008, *available at* http://www.apple.com/pr/library/2008/06/09orange.html, *site visited* January 25, 2009.)

45 Leslie Cauley, "Verizon Rejected Apple iPhone Deal, *USA Today*, January 28, 2008, *available at* http://www.usatoday.com/tech/news/2007-01-28-verizon-iphone_x.htm, *site visited* January 29, 2009.

de facto exclusive arrangement because the exclusivity would be solely at the manufacturer's discretion and the carrier could not be sure that its exclusivity would continue.

V. THE RCA'S PROPOSED REGULATION OF HANDSET DISTRIBUTION WOULD NEITHER PROMOTE UNIVERSAL SERVICE NOR BENEFIT RURAL CONSUMERS

39. The focus of universal service policy is properly on communications capabilities and functionalities, not specific handsets. Implementing policies that harm competition and innovation run counter to promoting the widespread availability of advanced telecommunications services. Moreover, attempts to force handset manufacturers to deal with specific carriers undermine the incentives of those carriers to make network upgrades that would attract wireless manufacturers to want to supply those carriers in the absence of coercive regulation. Thus, imposing a duty on handset manufacturers to deal with rural carriers could undermine rural carriers' incentives to invest in and upgrade their networks.

40. Exclusive handset deals promote network expansion in another way. Major wireless carriers already serve substantial portions of the rural population and are continuing to expand their service offerings in these areas. The desire to offer seamless national footprints can induce carriers to roll out advanced networks in areas in which the patronage of local residents would be insufficient to support the necessary investment. A carrier's incentives to expand its national footprint can be driven, in part, by the desire to ensure the seamless provision of features and functions that are unique to that network and certain associated handsets.

41. If public policy makers choose to promote advanced wireless services in rural areas, there are policies that are much more appropriate than a ban on exclusive handset distribution

arrangements. One such policy is to provide explicit subsidies to rural consumers that would increase the demand for 3G and other wireless services in rural areas. Rather than distorting competition and investment, this policy would encourage them.

42. In summary, rather than promoting universal service, the RCA proposal would be ineffective, would undermine innovation and investment incentives for both wireless handset manufacturers and carriers, and, ultimately, would harm consumers.

VI. CONCLUSION

43. The *RCA Petition* fundamentally confuses harm to competitors with harm to competition. The proper focus of a pro-consumer policy is on harm to competition. As demonstrated by the analysis above, banning exclusive contracts would harm competition and consumers:

- **Handset Innovation would be Slowed:** Carriers have the strongest incentives to support handset innovation when they do not face threats of free riding, hold up, and contractual externalities, and when supporting handset innovation allows a carrier to get a competitive jump on its rivals, however short lived. The RCA's proposed policy would harm consumers by blocking the use of exclusive relationships to create the conditions that support innovation and investment.

- **Business Model Innovation would be Stifled:** The RCA's proposed policy would ban the use of certain types of contracts and, hence, would undermine business models predicated on such contracts. Apple, for example, has long supported its highly innovative strategy in computing and personal audio and video devices by undertaking activities on its own or by working with only a very limited set of partners. The *RCA*

Petition seeks to block such strategies. Based on my review of publically available information regarding Apple's broad corporate strategy, it seems likely that Apple would not have entered the wireless market as quickly or with as innovative a product if it had been blocked from pursuing its preferred business model.

- **Entry would Become More Difficult:** The ability to obtain volume commitments in exchange for exclusivity is likely to be particularly important for new entrants. The *RCA Petition* seeks to undermine such arrangements.

44. In summary, examination of the wireless industry reveals that the procompetitive theories fit the facts of the wireless handset industry, and the anticompetitive theories do not. There is no need for a detailed (and costly) inquiry into theories or facts to determine that the *RCA Petition* is without merit. For this reason, the Commission should not impose the burden of a proceeding on itself or the industry.

APPENDIX: QUALIFICATIONS

45. I am the Harvey Golub Professor of Business Leadership at New York University's Stern School of Business. I also hold the Sarin Chair in Strategy and Leadership at the University of California, Berkeley, where I have a joint appointment in the Haas School of Business Administration and the Department of Economics. I have served on the faculty of the Department of Economics at Princeton University. I received my A.B. from Harvard University *summa cum laude* and my doctorate from Oxford University. Both degrees are in Economics.

46. I specialize in the economics of industrial organization, which includes the study of antitrust and regulatory policies. I regularly teach courses on microeconomics and business strategy. I am the co-author of a microeconomics textbook, and I have published numerous articles in academic journals and books. I have written academic articles on issues regarding the economics of network industries, systems markets, antitrust enforcement, and telecommunications policy. I am recognized as one of the pioneers in extending the theory of network effects to competitive settings. I am a co-editor of the *Journal of Economics & Management Strategy* and serve on the editorial boards of *Information Economics and Policy* and the *Journal of Industrial Economics*. I recently completed a term on the Computer Science and Telecommunications Board of the National Academies.

47. In addition to my academic experience, I have consulted on the application of economic analysis to issues of antitrust and regulatory policy. I have served as a consultant to both the U.S. Department of Justice and the Federal Communications Commission on issues of antitrust and regulatory policy. I have served as an expert witness before state and federal

courts. I have also provided testimony before state regulatory commissions and the U.S. Congress.

48. From January 1994 through January 1996, I served as the Chief Economist of the Federal Communications Commission under the Clinton Administration. I participated in the formulation and analysis of policies toward all industries under Commission jurisdiction. As Chief Economist, I oversaw both qualitative and quantitative policy analyses.

49. From September 2001 through January 2003, I served as the Deputy Assistant Attorney General for Economic Analysis at the U.S. Department of Justice under the Bush Administration. I directed a staff of approximately fifty economists conducting analyses of economic issues arising in both merger and non-merger enforcement. Our principal professional focus was on understanding and projecting the impacts of various business practices and public policy decisions on consumers' economic welfare. My title as Deputy Assistant Attorney General notwithstanding, I am not an attorney.

Table 1: Features of Handsets Offered by RCA Carriers

	Total Handsets Offered with Features			
	Touch	Music	Web	Email
ACS Wireless Inc.	2	10	10	9
ACSI Advantage Cellular Systems	0	5	7	9
AirTel Wireless	0	0	3	1
Alaska DigiTel	0	5	5	3
All West Wireless	2	3	3	2
Appalachian Wireless	2	8	9	8
Bluegrass Cellular	4	14	18	12
Caprock Cellular	0	5	6	7
Carolina West Wireless	1	10	12	9
Cellcom	1	12	15	11
Cellular 29 Plus	1	5	6	4
Cellular One of East Texas	2	14	15	14
Cellular One of NE Pennsylvania	0	4	3	1
Cellular Properties Inc.	3	15	13	12
Cellular South	1	10	11	8
Choice Wireless	0	4	3	5
Citizens Mohave Cellular Co	1	1	3	1
Cleartalk	0	4	7	5
Copper Valley Wireless	2	4	5	3
Corr Wireless Communications	3	18	12	12
Epic Touch Co.	1	19	18	15
Etex Communications	2	6	4	3
Farmers Mutual Telephone Company	0	2	3	0
Five Star Wireless	1	3	2	2
Golden State Cellular	3	9	8	7
Illinois Valley Cellular	3	9	13	6
Inland Cellular Telephone	5	9	11	7
Kaplan Telephone Company	2	12	13	16
Leaco Rural Telephone	3	9	10	5
Long Lines Wireless	2	13	15	15
Mid-Tex Cellular	2	14	19	20
MTA Wireless	2	7	4	4
MTPCS LLC	4	17	20	14
NE Colorado Cellular (Viaero)	0	18	13	13
Nex-Tech Wireless	3	8	8	5
North-Eastern Pennsylvania Telephone Co.	3	16	13	17
Northwest Missouri Cellular	5	11	9	7
OTZ Communications	0	0	3	2
Panhandle Telecommunications Systems, Inc.	1	4	4	3
Pine Belt Wireless	0	1	1	1
Pioneer Cellular	2	8	8	5
Pocket Communications	0	2	3	0
Silver Star Communications	1	11	11	9
South Central Communications	1	7	6	6

Table 1: Features of Handsets Offered by RCA Carriers

	Total Handsets Offered with Features			
	Touch	Music	Web	Email
Syringa Wireless	1	7	5	5
Thumb Cellular Limited Partnership	3	8	6	4
UBET Wireless	2	9	8	8
United Wireless Communications, Inc.	2	5	4	4
West Central Cellular	0	7	9	9
Westlink Communications	2	11	11	12
XIT Cellular	2	12	11	12
No. of RCA Carriers Offering at Least One Handset with Feature	***38***	***49***	***51***	***49***

Sources: Handset offerings as listed on carrier websites, November 25-26, 2008.
Handset features as listed on manufacturer websites, where available, or carrier websites, November 25-26, 2008.