

Before the
Federal Communications Commission
Washington, D.C. 20554

DECLARATION OF PETER CRAMTON

QUALIFICATIONS

1. I am Professor of Economics at the University of Maryland, President of Criterion Auctions LLC, and President of Market Design Inc. I am expert on auctions, bargaining, and market exchange. Much of my recent work has applied this expertise to spectrum policy, the restructuring of infrastructure industries (especially electricity), and e-commerce. I previously was an Associate Professor at Yale University and a National Fellow at the Hoover Institution at Stanford University.

2. With respect to spectrum management, I have served as the lead auction advisor in spectrum auctions for many clients. My auction practice is worldwide, including engagements in the United States, Belgium, the Netherlands, Italy, the United Kingdom, Switzerland, Canada, Australia, Austria, and Singapore. I have advised several foreign governments on the design and implementation of spectrum auctions.

3. From July 1997 to August 1998, I served as the U.S. Department of Justice's expert in the matter of bid signaling in the FCC spectrum auctions. As part of this work I studied collusive bidding strategies in the FCC auctions, especially the DEF-block auction which concluded January 1997. The analysis resulted in two research papers, as well as modification of the FCC auction rules. From November 1994 to November 1995, I advised the FCC on the design and implementation of spectrum auctions. During the first broadband PCS auction I advised the FCC on a daily basis with respect to bid increments and other aspects of auction

implementation. I developed a tool to help the FCC and bidders track the progress of the auction. From July 1997 to December 1997, I advised the FCC on methods to improve the FCC auctions.

4. I also have extensive consulting experience in the areas of e-commerce and electricity deregulation. I have advised e-commerce market makers on market design for business-to-business and business-to-consumer trading. For several utilities, I have led the auction design for generation asset divestiture, standard offer service, and NUG entitlements under power purchase agreements.

5. I have published numerous articles in scholarly journals, including *American Economic Review*, *Econometrica*, *Review of Economic Studies*, *Journal of Economic Literature*, *European Economic Review*, *International Economic Review*, *Journal of Regulatory Economics*, *Journal of Law and Economics*, *Journal of Labor Economics*, *Journal of Economics and Management Strategy*, *Games and Economic Behavior*, and *Journal of Law, Economics and Organization*.

6. I earned my B.S. in Engineering from Cornell University, and my Ph.D. in Business from Stanford University. A more detailed curriculum vitae is included in the appendix.

SUMMARY OF CONCLUSIONS

7. In Part I, I demonstrate that the participation of Alaska Native and Salmon PCS in the closed auction resulted in average (closed) prices of \$3.12 per MHz-pop. The removal of the demand for closed spectrum by Alaska Native and Salmon PCS shifts the aggregate demand for closed spectrum backwards. The new demand curve intersects the supply of closed spectrum at a price of \$2.00 per MHz-pop. Hence, the participation of Alaska Native and Salmon PCS in the closed (set-aside) portion of the auction increased the average price per MHz-pop by over 50

percent (equal to $\$3.12$ less $\$2.00$ divided by $\$2.00$). In particular, the participation of Alaska Native and Salmon PCS in the closed auction forced value-seeking firms to relocate their interests from top-tier to second-tier markets. The resulting inflated prices in the second-tier closed markets such as San Antonio was to eliminate the possibility of legitimate entrepreneurs like Allegheny acquiring any spectrum at all.

8. In Part II, I demonstrate that certain carriers—AT&T in particular—have used affiliates to subvert the FCC’s spectrum cap. I explain why the need for more spectrum to provide bandwidth-intensive applications must be weighed against the possibility of returning to the duopoly days of cellular, when spectrum in a given license area was divvied up by two carriers. Even if one concludes that 45 MHz is not sufficient for an incumbent carrier to provide bandwidth-intensive applications, however, the FCC does not need to tap the reserve supply of spectrum for wireless entrepreneurs to meet the incumbent carriers’ growing need for spectrum. Alternative sources exist, and those sources should be tapped *before* the designated entity program is eliminated.

9. In Part III, I provide a rigorous methodology that should assist the FCC in giving teeth to its *de facto* standard of control. Define an “overlap market” as a license area where an incumbent carrier currently operates *and* where the incumbent’s front has acquired set-aside spectrum. The control test is as follows: if an incumbent carrier owns a sufficient share of the cash flows of a bidding agent such that the incumbent would be induced to unilaterally increase its price in an overlap market, then the bidding agent is controlled by the incumbent. The analysis may lead to different outcomes about control depending on the three factors of the test. For example, owning 15 percent of the cash flows of a bidding agent might not provide the incumbent carrier sufficient incentive to raise its own price in an overlapping market. Should the

FCC ignore this test, there is a strong likelihood that certain incumbent carriers would raise their prices in select geographic markets throughout the country.

10. In Part IV, I explain why the FCC could conduct a re-auction of the *closed* portion (only) of the licenses. The application process would not need to be restarted, as bidders who are declared ineligible based on the FCC's current review of the long-form applications would not be allowed to bid in the re-auction of the closed licenses. Allowing disqualified fronts to do so would induce future bidders to flout the ownership rules knowing that they would get a second chance to alter their corporate identities. Hence, the re-auction of the set-aside licenses could be (genuinely) closed to those bidders who originally applied as entrepreneurs before the start of Auction #35 less those bidders who are disqualified during the current proceeding. With respect to the open auction, the allocations and prices would be unaffected except for those bidders who are determined to have improperly received bidding credits. Because the FCC received \$11.5 billion on open properties, and because the FCC would receive an additional \$625 million in bidding credits inappropriately applied, the re-auction of only the closed portion would not jeopardize a substantial portion (71 percent) of the total revenues generated in Auction #35. The re-auction of the closed licenses is the best way to replicate the outcome of a but-for world where only legitimate entrepreneurs are allowed to compete for the set-aside licenses

I. PRICES FOR THE CLOSED LICENSES WERE ARTIFICIALLY INFLATED

A. An Analysis of Bidding on the San Antonio Closed Properties

11. It is difficult to say with certainty what the closed prices would have been in a but-for, set-aside auction that disallowed the participation of any incumbent carrier. An analysis of the bidding history in the San Antonio closed licenses, however, suggests that prices were

artificially inflated by the participation of certain incumbent carriers. In particular, by examining the prices at which legitimate entrepreneurs dropped out of the closed bidding in San Antonio, it is possible to infer, within a certain degree of accuracy, the allocation and prices at which the market for closed licenses in San Antonio would have cleared.

12. For each legitimate entrepreneur that bid on a closed license in San Antonio, I determine the prices at which each legitimate entrepreneur dropped its demand from two licenses to one license, and the prices at which each legitimate entrepreneur dropped its demand from one license to no licenses. Table 1 summarizes the results.

**TABLE 1: RESERVATION PRICES OF ENTREPRENEURS IN THE CLOSED SAN ANTONIO LICENSES
(WITHOUT SALMON PCS AND ALASKA NATIVE)**

Name	Price at which firm dropped from two units to one unit (\$ millions)	Price at which firm dropped from one unit to no units (\$ millions)	Marginal Bidder ("price setter")
3DL	NA	\$22	
Allegheny	\$14	\$37	
Leap	\$31	NA	
DCC PCS	\$39	NA	YES

Source: FCC web site (www.fcc.gov/wtb/auctions)

As Table 1 shows, 3DL was never active on two licenses in San Antonio, and 3DL dropped out of the San Antonio closed auction when prices reached \$22 million for 10 MHz. Allegheny reduced its demand from two licenses to one license in San Antonio when prices reached \$14 million for 10 MHz, and dropped out of the San Antonio closed auction entirely when prices reached \$37 million for 10 MHz. Finally, Leap reduced its demand from two licenses to one license in San Antonio when prices reached \$31 million, and went on to win one of the closed licenses at a price of \$40.2 million. DCC PCS, which dropped its demand from two to one license in San Antonio when prices reached \$40 million in the closed portion, won the other closed license at a price of \$39.7 million.

13. Had Leap and DCC PCS not been shut out of the top tier closed markets because of the participation of the incumbent carriers, as I explain below, the “marginal” bidder in the closed auction in San Antonio—that is, the bidder who determines the sale price—might not have been DCC PCS. For example, had DCC not participated in the closed San Antonio auction, the marginal bidder would have been Leap (specifically, Leap’s demand for the second unit), prices would have been (at most) \$31 million for 10 MHz, and Allegheny would have won one 10 MHz license. Had neither DCC nor Leap not participated in the closed San Antonio auction, the marginal bidder would have been Allegheny (specifically, Allegheny’s demand for the

second unit), prices would have been (at most) \$14 million for 10 MHz, and Allegheny would have won one 10 MHz license.

B. The Price Effect of the Participation of Incumbent Carriers in the Closed Auction

14. Our economic theory of damages is simple: because participation of incumbent carriers in the closed auction significantly increased prices in first-tier markets, value-seeking firms like Leap were forced to refocus their interests in the second-tier closed markets such as San Antonio and Austin (instead of Dallas and Houston), Columbus (instead of Cincinnati), and Providence (instead of Boston). The shifting interests of Leap are captured in Figure A1 of the appendix, which demonstrates a pictorial history of Leap's bidding history from rounds 1 through 30. A press statement from Leap's CEO released shortly after the auction further supports the value-seeking strategy employed by Leap:

We used the auction as an efficient, selective way to target the right markets at the right price. Because of our disciplined bidding, we achieved the lowest average price per POP among the ten most active bidders in the auction. This supports our goal to be a wireless carrier with one of the most efficient cost structures in the country.¹

The value-seeking strategy was echoed by Leap's COO:

For us, a designated entity bringing innovation to the wireless marketplace, this auction provided us with the opportunity to acquire more affordable individual markets that fit our business model, rather than filling out a national or regional footprint.²

Shortly before the auction ended, a Leap senior vice president suggested that "the company will leave the auction with far less spectrum than it wanted because competition from entrepreneurs

1. Leap Press Release, *Leap is High Bidder on Wireless Operating Licenses Covering 22.4 Million Potential Customers in FCC Auction—Leap Achieves Favorable Price of \$15.62 per POP* (downloaded at <http://www.leapwireless.com/site/pr/index.html>) (quoting Harvey White) [hereinafter LEAP PRESS RELEASE].

2. *Id.* (quoting Susan G. Swenson).

backed by big companies has driven up prices.”³ The same senior vice president later expressed dismay over the outcome of the auction:

The spirit of the compromise has been defiled in every way possible. That spectrum will fall under control of the major wireless carriers. . . . It's clearly a great way to keep competition out of the market.⁴

Leap appears to have recognized that participation by incumbent carriers in the closed auction forced Leap into second-tier markets that were more affordable.

15. The largest markets in which Leap acquired spectrum were Columbus, Ohio; Providence, R.I.; and Houston and San Antonio, Tex.⁵ The complete list of Leap's acquisitions includes New London, Conn.; Jacksonville and Melbourne, Fla.; Columbus and Indianapolis, Ind.; Lexington and Louisville, Ky.; Worcester, Mass.; Asheville, N.C.; Las Cruces, N.M.; Albany and Poughkeepsie, N.Y.; Scranton, Pa.; and Austin, Brownsville, Bryan, El Paso and McAllen, Tex.⁶ By any measure, these markets are not first-tier, and do not reflect the original interests of Leap as demonstrated by its initial bidding behavior.

16. The effect of a shift in demand by value-seeking firms such as Leap toward second-tier closed properties was an increase in the price of second-tier markets—such a large increase, in fact, that legitimate entrepreneurs like Allegheny were not able to obtain those second-tier markets given their budget constraints. I estimate the price impact of the bidding fronts on the closed properties by assuming that the marginal bidder in each market is a value-seeking bidder that views the spectrum in one market as a substitute for spectrum in another market. If this is the case, then the price impact can be determined by forming the aggregate

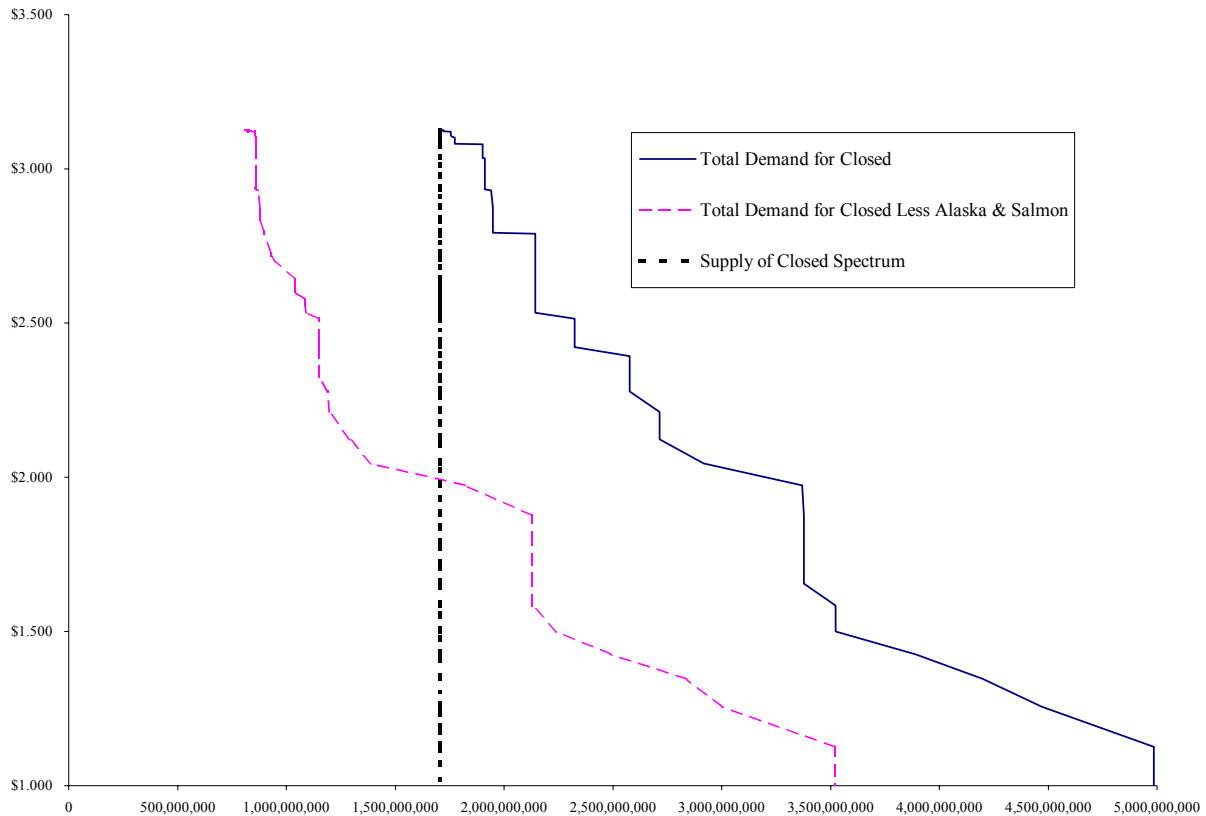
3. Mark Wigfield, *Big Carriers Dominate Cellular Auction, Despite Plan to Help Startups*, WALL STREET JOURNAL, Jan. 5, 2001, at B1 (quoting Dan Pegg).

4. Peter Goodman, *Auction Fails To Open Airwaves; Small Firms Backed Cellular Titans Buy Up Spectrum*, WASHINGTON POST, Jan. 23, 2001, at A1 (quoting Dan Pegg).

5. LEAP PRESS RELEASE, *supra* note 1, at *1.

demand for *closed* spectrum across all markets, subtracting out the aggregate demand for *closed* spectrum of the bidding fronts, and then determining where the new aggregate demand for closed spectrum intersects the total supply of closed spectrum. This calculation is displayed in Figure 1 below.

FIGURE 1: DEMAND FOR CLOSED SPECTRUM



Note: I made the demand curves monotonic—that is, always decreasing in price—by assuming that, if a greater demand was expressed at a higher price, the demand was at least as great for lower prices. This assumption introduces vertical steps whenever a non-monotonicity would otherwise occur.

As Figure 1 shows, the participation of Alaska Native and Salmon PCS in the closed auction resulted in average (closed) prices of \$3.12 per MHz-pop. The removal of the demand for closed spectrum by Alaska Native and Salmon PCS shifts the aggregate demand for closed spectrum

backwards. The new demand curve intersects the supply of closed spectrum at a price of \$2.00 per MHz-pop. Hence, the participation of Alaska Native and Salmon PCS in the closed (set-aside) portion of the auction increased the average price per MHz-pop by over 50 percent (equal to $\$3.12$ less $\$2.00$ divided by $\$2.00$).

17. This calculation is likely to lead to a conservative estimate of the impact of the fronts on prices for the closed licenses. The reason is demand reduction.⁷ Demand reduction is the incentive of a bidder to reduce its demands in an auction like the FCC auction that allows arbitrage across substitutable licenses. By demanding less a bidder can reduce the price that is paid for the spectrum won. The incentive to demand less is stronger the greater the quantity of spectrum won by a bidder. For most if not all of the non-front entrepreneurial bidders the quantity of spectrum won by the bidder in the actual auction was quite small. Hence, the incentive to reduce demands was quite small. Indeed, many of the true entrepreneurs had no incentive to reduce demands in the actual auction, because they won only a few small licenses. However, in the counterfactual auction with the fronts excluded, several of the true entrepreneurial bidders would have won substantial spectrum, and thus would have had a substantial incentive to reduce demands. As a result, the aggregate demand curve in an auction with the fronts excluded would lie strictly below the aggregate demand curve calculated from the bidding in the actual auction.

7. For a general analysis of demand reduction, see Lawrence M. Ausubel & Peter Cramton, *Demand Reduction and Inefficiency in Multi-Unit Auctions*, Working Paper, University of Maryland (1996). For the implications of demand reduction in FCC spectrum auctions, see Peter Cramton & Jesse Schwartz, *Collusive Bidding in the FCC Spectrum Auctions*, Working Paper, University of Maryland (2000).

II. CERTAIN INCUMBENT CARRIERS ARE USING SUBSIDIARIES TO CIRCUMVENT THE FCC'S SPECTRUM CAP

18. Since the FCC instituted the PCS auctions in 1994, the number of distinct licensees in each license area has grown from two (cellular) carriers to, on average, five carriers.⁸ As a result, prices for mobile telephony declined by 20 percent from 1998 to 1999, and by another 11.3 percent from 1999 to 2000.⁹ According to the FCC, only 170 MHz of spectrum (50 MHz of cellular plus 120 MHz of PCS) is currently available for broadband mobile telephony in each license area. If a single carrier is allowed to aggregate 85 MHz of spectrum in a given market, then the number of distinct, viable licensees per license area will fall to as low as two carriers, and the price of spectrum will likely reverse its downward course.

19. Although several carriers used fronts in Auction #35 to subvert the spectrum cap, no firm has perfected the art of subversion quite like AT&T. For each closed, set-aside license won by Alaska Native or DCC PCS in Auction #35 that overlaps with a cellular or PCS license owned directly by AT&T, I calculated the aggregate amount of spectrum controlled directly and indirectly by AT&T. *First*, I used mapping software to overlay AT&T's existing cellular and PCS footprint with the cellular and PCS footprints of American Cellular (a joint-venture between AT&T and Dobson),¹⁰ the combined Telecorp PCS and Tritel (23 percent of the equity owned by AT&T),¹¹ and Triton PCS.¹² *Next*, I overlay the footprint of AT&T and its affiliates with the closed PCS licenses won by Alaska Native and DCC PCS in Auction #35. For each overlap

8. Fifth Annual Report and Analysis of Competitive Market Conditions With Respect to Commercial Mobile Services (released Aug. 18, 2000) at Table 2B [hereinafter FIFTH REPORT].

9. *Id.* at 5.

10. Downloaded from Dobson's website at http://www.dobson.net/about_us/history_timeline.html.

11. AT&T Corp., 3rd Quarter SEC Form 10-Q (filed Aug. 14, 2000).

12. AT&T owns roughly 78 percent of the Series A Redeemable Preferred Stock authorized by Triton PCS. See Triton PCS Inc., 1999 SEC Form 10-K (filed Mar. 30, 2000).

region, I calculate the amount of spectrum owned directly and indirectly by AT&T. Table 2 summarizes the results.

**TABLE 2: AT&T’S DIRECT AND INDIRECT SPECTRUM HOLDINGS
IN AT&T-ALASKA NATIVE OVERLAP MARKETS**

AT&T-Alaska Native Overlaps	MTA	Market Name	MHz Won in Auction	MHz Before Auction			Owned By	Total MHz
				in BTA	in MTA	in MSA		
BTA								
36	24	Bellingham, WA	10	10		25	AT&T Only	45
63	1	Burlington, VT	15	10			AT&T Only	25
81	18	Cincinnati, OH	10		30	25	AT&T and Affiliates	65
110	22	Denver, CO	10	10		25	AT&T Only	45
159	37	Gainesville, FL	10	10			Affiliates Only	20
212	37	Jacksonville, FL	10			25	AT&T Only	35
220	34	Joplin, MO-Miami, OK	10	10		25	AT&T and Affiliates	45
239	13	Lakeland-Winter Haven, FL	10			25	AT&T Only	35
261	30	Longview, WA	10	10		25	AT&T Only	45
262	2	Los Angeles, CA	10	10		25	AT&T Only	45
289	13	Melbourne-Titusville, FL	10	20		25	AT&T and Affiliates	55
298	12	Minneapolis-St. Paul, MN	10			25	AT&T Only	35
318	1	New Haven-Waterbury-Meriden, CT	10	20		25	AT&T Only	55
319	1	New London-Norwich, CT	10	20			AT&T Only	30
321	1	New York, NY	10	10		25	AT&T Only	45
331	24	Olympia-Centralia, WA	10	10		25	AT&T Only	45
336	13	Orlando, FL	10	20		25	AT&T and Affiliates	55
357	8	Portland-Brunswick, ME	10		30	25	AT&T and Affiliates	65
358	30	Portland, OR	10	10		25	AT&T Only	45
408	13	Sarasota-Bradenton, FL	20			25	AT&T Only	45
440	13	Tampa-St. Petersburg-Clearwater, FL	10	10		25	AT&T and Affiliates	45
241	5	Lansing, MI	10		30		AT&T Only	40
84	16	Cleveland-Akron, OH	10		30		AT&T Only	40
95	38	Columbus, OH	10		30		AT&T Only	40
174	6	Greensboro--Winston-Salem--High Point, NC	10		30		AT&T and Affiliates	40
368	6	Raleigh - Durham, NC	10		30		AT&T and Affiliates	40
74	6	Charlotte-Gastonia, NC	10		30		AT&T and Affiliates	40
480	8	Worcester - Fitchburg - Leominster, MA	10		30		AT&T and Affiliates	40

Source: PCS licenses of AT&T and its affiliates are taken from RCR Wireless News, 2000 PCS Database (Fall 2000), available at <http://www.rcrnews.com/inside/databases/index.php3>. PCS licenses of DCC PCS and Alaska Native are taken from Federal Communications Commission, Public Notice, *C and F Block Broadband PCS Auction Closes; Winning Bidders Announced; Down Payments Due February 12, 2001, FCC Forms 601 and 602 Due February 12, 2001; Ten-Day Petition to Deny Period*, DA 01-211 (released Jan. 29, 2001) (downloaded at <http://www.fcc.gov/wtb/auctions/> on Jan. 30, 2001).

As Table 2 shows, AT&T owns, either directly or indirectly, 65 MHz in Cincinnati (BTA 81) and Portland-Brunswick (BTA 357). AT&T owns, either directly or indirectly, 55 MHz in Melbourne, Florida (BTA 289), Orlando (BTA 336), and New Haven (BTA 318).

20. To promote a competitive market for mobile wireless services, the FCC imposed certain restrictions on an incumbent carrier’s ability to aggregate spectrum in a given license area; specifically, a 45 MHz spectrum cap on spectrum held in any license area. Industry observers and scholars have recognized that the 45 MHz spectrum cap may not allow incumbent

carriers to offer bandwidth-intensive applications such as mobile data and video.¹³ Such considerations must be weighed against the possibility of returning to the duopoly days of cellular, when spectrum in a given license area was divvied up between two carriers. Even if one concludes that 45 MHz is not sufficient for an incumbent carrier to provide bandwidth-intensive applications, however, the FCC does not need to tap the reserve supply of spectrum for wireless entrepreneurs to meet the incumbent carriers' growing need for spectrum. Incremental spectrum for incumbent carriers could come from spectrum currently occupied by network broadcasters or government agencies, or from spectrum not set aside for entrepreneurs.

21. Ironically, the spectrum cap, intended to expand the set of wireless players, in fact created an extra incentive for the incumbent operators to form fronts. The fronts if allowed provide not only an entrepreneurial discount and access to the closed license, but also enable the incumbent operators to circumvent the spectrum cap. The result is a near absence of successful true entrepreneurs, as most of the closed spectrum went to fronts rather than true entrepreneurs. The FCC should enforce both the spectrum cap and the designated entity rules to promote competition in the mobile wireless industry.

III. AN ANTITRUST PERSPECTIVE OF CONTROL

22. To an economist, the FCC's definition of control—that is, ownership of a simple majority of voting shares or any other factors listed in its definition of *de facto* control—is of only limited value.¹⁴ As I explain below, economic control comes from equity interest (and hence receipt of net cash flows). Because AT&T owns 80 percent of Alaska Native's net cash

13. See, e.g., J. Gregory Sidak, Hal J. Singer, and David J. Teece, *A General Framework for Competitive Analysis in Wireless Telecommunications*, 50 HASTINGS L. J. 1639 (1999).

flows, AT&T controls Alaska Native.¹⁵ Because Cingular owns 85 percent of Salmon PCS' net cash flows, Cingular controls Salmon PCS.¹⁶ Neither one of those bidders should have participated in the closed portion of Auction #35.

23. The creation of a front that is partially controlled by an incumbent carrier can be analyzed in the context of the "unilateral effects" model of the Horizontal Merger Guidelines.¹⁷ Creating a front to acquire set-aside spectrum is no different than partially acquiring a designated entity that owns spectrum but has not yet constructed its wireless network. In the parlance of antitrust economics, acquiring such an entity that owns spectrum in a license area that is *currently occupied by the acquirer* would represent a reduction in "potential" competition. Hence, using a front to acquire set-aside spectrum in markets where the acquirer already owns spectrum represents a reduction in potential competition.

24. The tools of merger simulation can be used to estimate the unilateral price effects of a partial acquisition of a wireless carrier that owns spectrum in a license area that is currently occupied by the acquirer but has not yet constructed its wireless network.¹⁸ Merger simulation involves two parts: a front-end estimation procedure to recover demand estimates, and a back-end simulation procedure in which the demand estimates are used to calculate a post merger price change.

25. The price effect of the partial acquisition will depend largely on three factors

- (1) the share of cash flows being acquired;

14. *C and F Block Broadband PCS Spectrum Auction Scheduled for November 29, 2000, Rescheduled for December 12, 2000*, Public Notice DA 00-2259 (released Oct. 5, 2000) at 13 [hereinafter FCC'S OCTOBER NOTICE].

15. Alaska Native Short Form 175, Ownership Attachment (Exhibit A), at §2.D.

16. Salmon PCS Short Form 175, Ownership Attachment (Exhibit A), at §2.

17. Federal Trade Commission and Department of Justice Horizontal Merger Guidelines 1992, at §2.2.

18. For an application of simulation techniques to estimate the price effects of horizontal mergers, see Gregory J. Werden, *Simulating the Effects of Differentiated Products Mergers*, U.S. DEPARTMENT OF JUSTICE WORKING

- (2) the degree of likeness (from a consumer's perspective) between the acquisition target and the acquirer; and
- (3) the pre-acquisition market share of the acquiring firm.

To make my example more concrete, I apply the above analysis to the case of AT&T and Alaska Native in a license area where AT&T owns 60 MHz of spectrum prior to the beginning of Auction #35. Before the auction, AT&T chose a price to maximize 100 percent of its own (net) cash flows, taking into account the likely price response of its competitors. After the auction, AT&T will choose a price to maximize 100 percent of its own (net) cash flows *plus* its pro-rata share of the (net) cash flows of Alaska Native, again taking into account the likely price response of its competitors.

26. With respect to factor (1), because AT&T owns approximately 80 percent of the cash flows of Alaska Native, AT&T would enjoy a significant share of the profits of any incremental Alaska Native "spill-over" customers generated by an AT&T price increase. With respect to the second factor, because Alaska Native will likely brand itself under the AT&T name, consumers will likely perceive the two products to be close substitutes. Stated differently, AT&T would be strongly induced to unilaterally raise its own price knowing that many of the defecting ("marginal") customers would embrace a substitute product of which AT&T owns 80 percent of the cash flows. Finally, with respect to factor (3), because of the AT&T brand name, AT&T's early lead in the wireless industry, and its large share of the spectrum (equal to 60 MHz divided by 170 MHz) in the given license area, AT&T would enjoy a large base of non-defecting (inframarginal) customers over which it could spread its price increase. The culmination of those three factors will strongly induce AT&T to raise its own prices in a unilateral fashion.

27. The above analysis should assist the FCC in giving teeth to its *de facto* standard of control. Define an “overlap market” as a license area where an incumbent carrier currently operates *and* where the incumbent’s front has acquired set-aside spectrum. Simply put, if an incumbent carrier owns a sufficient share of the cash flows of a bidding agent such that the incumbent would be induced to unilaterally increase its price in an overlap market, then the bidding agent is controlled by the incumbent. The analysis may lead to different outcomes about control depending on the three factors of the test. For example, owning 15 percent of the cash flows of a bidding agent (as opposed to 85 percent in the case of Salmon PCS and Cingular) might not provide the incumbent carrier sufficient incentive to raise its own price in an overlapping market. Should the FCC ignore this test, there is a strong likelihood that certain incumbent carriers would raise their prices in select geographic markets throughout the country.¹⁹

28. The above test makes clear that neither voting control nor any indicia of direct management control are sufficient to capture the concept of “control” as that term is normally understood by economists or the Commission. For example, neither “50 percent of the board of directors or management committee” nor the “authority to appoint, promote, demote, and fire senior executives”²⁰ will affect the incumbent’s primary economic objective—to maximize the sum of its own profits plus its pro-rata share of the profits of its front—when the incumbent sets its price. The Commission’s test for *de facto* control instead contemplates full consideration of a broad range of control indicators, and under that test, a finding of control would clearly be compelled in this case.

19. One should note that this price effect would be lessened on nationwide pricing plans, as carriers typically set the prices of such plans based on nationwide (not local) factors. Customers who subscribe to local plans would shoulder the major brunt of the price increase.

29. I believe that a careful look at the detailed arrangements between the incumbent operators and their fronts will reveal that the incumbent operators have control “in fact” of the fronts, under the existing FCC rules. It would be irresponsible for any company to provide an entity billions of dollars and not have effective control of the entity. Even if the deal were structured so that the entity has the same incentives as the funding company, the company without control would still be vulnerable to hold-up by a misbehaving entity. It is my understanding in discussion with investment bankers familiar with this situation that effective control is maintained through the use of various put options that enable the funding company to take over the front whenever it is displeased. Certainly if this is the case, then the funding company has control “in fact” under any sensible definition of control.

IV. A PROPOSED REMEDY

30. As I demonstrated in Part I of this declaration, the prices in the closed (set-aside) portion of Auction #35 were artificially inflated because of the participation of certain incumbent carriers. The FCC must now attempt to replicate the outcome of a “but-for” world where incumbent carriers were not permitted to acquire set-aside licenses. The FCC can achieve such an outcome in one of two ways.

31. *First*, the FCC could reconstruct the aggregate demand curve for legitimate entrepreneurs based on the revealed reservation prices for the closed properties in Auction #35. The difficulty with such a process, however, is that the FCC could not guarantee that such an outcome would replicate the results of a but-for world. As I demonstrated earlier, the revealed

20. FCC’S OCTOBER NOTICE, *supra* note 14, at 14.

drop-out points are upwardly biased and thus any but-for prices based on those inflated drop-out points would be upwardly biased as well.

32. *Second*, the FCC could conduct a re-auction of the *closed* portion (only) of the licenses. The application process would not need to be restarted, as bidders who are declared ineligible based on the FCC's current review of the long-form applications would not be allowed to bid in the re-auction of the closed licenses. Allowing disqualified fronts to do so would induce future bidders to flout the ownership rules knowing that they would get a second chance to alter their corporate identities. Hence, the re-auction of the set-aside licenses could be (genuinely) closed to those bidders who originally applied as entrepreneurs before the start of Auction #35 less those bidders who are disqualified during the current proceeding. With respect to the open auction, the allocations and prices would be unaffected except for those bidders who are determined to have improperly received bidding credits. Because the FCC received \$11.5 billion on open properties,²¹ and because the FCC would receive an additional \$625 million in bidding credits inappropriately applied,²² the re-auction of the closed portion only would not jeopardize a substantial portion (71 percent) of the total revenues generated in Auction #35. The re-auction of the closed licenses is the best way to replicate the outcome of a but-for world where only legitimate entrepreneurs are allowed to compete for the set-aside licenses.

CONCLUSION

33. To summarize, the non-front entrepreneurial bidders were substantially harmed by the presence of the fronts bidding on the closed licenses. The remedy is simple: (1) disallow the

21. Downloaded at from FCC's web site at http://www.fcc.gov/wtb/auctions/c_f_blk/35market.xls on March 4, 2001.

bidding credits for bidders determined to be fronts of the incumbent operators, and (2) reauction the closed licenses with the same set of bidders, but without the disqualified fronts. This remedy corrects the harm caused by the fronts. At the same time it intensifies competition in the mobile wireless industry by encouraging the entry of new entrepreneurs. Consumers benefit from this increased competition.

I certify that the forgoing is true and correct, to the best of my knowledge, information, and belief.

Executed at College Park, Maryland on March 4, 2001.

A handwritten signature in cursive script, reading "Peter Cramton", is written above a horizontal line.

Peter Cramton

22. AT&T enjoyed \$67 million of bidding credits through its use of Alaska Native and Cingular enjoyed \$558 million of bidding credits through its use of Salmon PCS.