Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of:	)	
AUCTION NO. 61	)	**DA 05-194**
Auction of Automated Maritime Telecommunications System (AMTS) Licenses Scheduled for August 3, 2005	)	

To: Chief, Wireless Telecommunications Bureau

COMMENTS

Paging Systems, Inc. ("PSI"), by its attorneys, hereby submits its Comments in response to the Wireless Telecommunications Bureau ("Bureau") request in the *Public Notice*, Auction of Automated Maritime Telecommunications System ("AMTS") Licenses Scheduled for August 3, 2005. [1] Comments are due on or before February 18, 2005.

Although the Bureau requested comments "on a variety of auction-specific procedures"[2] prior to the start of the auction, PSI is addressing the fundamental flaw of the foundation for Auction No. 61, the previous AMTS Auction No. 57. Auction No. 61 will also be flawed if the Bureau does not deal with the issue of first impression in Auction No. 57. The Bureau does not acknowledge the defect in the earlier AMTS Auction in the *Public Notice*; instead it offers only licenses that were not bid on in Auction No. 57. However, the fact that Auction No. 57 was

1 *Public Notice*, DA 05-194, released February 2, 2005.

2 *Public Notice* at 2.

competitively defective -- in essence, rigged -- cannot be brushed aside because it is against the public interest and will taint the results of Auction No. 61.

I.

INTRODUCTION

1. PSI is a Commercial Mobile Radio Service ("CMRS") provider offering service to users by AMTS licenses under Part 80 of the Federal Communications Commission's ("FCC's" or "Commission's") Rules, on the west coast of the United States from Mexico to Canada and in Hawaii; and on the east coast from Maine to Puerto Rico, as well as in the Great Lakes region. Accordingly, PSI has significant interest in this AMTS Auction.

II.

BACKGROUND

2. PSI participated in AMTS Auction No. 57 which was held on September 15, 2004. PSI subsequently filed a Petition for Reconsideration and a companion, Motion for Stay ("Motion") of the post-auction processing procedure with the Bureau on October 14, 2004. An Opposition to the Petition for Reconsideration, Request for Leave and Opposition to Motion were filed on various dates. PSI's Reply to the Opposition to Petition for Reconsideration was filed on November 5, 2004. Other pleadings include PSI's Petition on November 22, 2003; a Petition to Deny PSI's Application for AMTS License in the Great Lakes Region in Auction No. 57 and Erratum on November 22, 2004; PSI's Opposition to that Petition to Deny on November 30, 2004; an Opposition to PSI's Petition on November 30, 2004; PSI's Reply to Opposition to Petition on December 7, 2004; Reply to PSI's Opposition to Petition to Deny on December 7, 2004; and a Request for Leave to File and Response to PSI's Reply to Opposition to Petition on December 20, 2004. [3] The Bureau has not yet responded.

[3] PSI incorporates by reference all of its filed documents (together, the "Pleadings.")

3. In its Pleadings, PSI asserted that Auction No. 57 was unlawful and raised a new and novel question of law of whether an auction is anti-competitive if two commonly-controlled entities participate. As discussed in the Petition for Reconsideration, two commonly controlled entities filed applications in Auction No. 57: Telesaurus-VPC, LLC ("Telesaurus") and AMTS Consortium, LLC ("Consortium", together the "Commonly controlled bidders"). [4] Based on disclosures in the Form 175, Telesaurus, a Delaware Limited Liability Company, has Series A and B interests with all voting rights vested in the Series A interest. Consortium is also a Delaware Limited Liability Company, with Series A and B interests. Based on its Form 175 disclosures, all interests are held by Telesaurus, and Telesaurus exercises *de facto* and *de jure* control. Warren Havens holds 51% of the voting interest, and exercises *de facto* and *de jure* control of Telesaurus and is the President of Consortium, acting for the manager. Thus, he is the real party in interest with respect to both applicants, which is, as argued below, in violation of the Commission's policies.

4. Because Auction No. 61 is premised on the "outcome" of the September 15, 2004 Auction,[5] PSI submits these Comments to reiterate the arguments in its previous Pleadings, which requested the Bureau's favorable action in setting aside the results of Auction No. 57 and dismissing the commonly controlled applications. The Bureau must also prohibit commonly controlled applications in the future. If the Bureau does so, Auction No. 61 can then offer all 20 licenses in a competitively neutral environment. It is important that the Bureau right the wrong of Auction No. 57 and preserve the integrity of the FCC auction process, as it has done so steadfastly in the past.

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[4] Petition for Reconsideration at ¶5.

[5] *Public Notice* at 2.

III.

DISCUSSION

A. Auction No. 57 Was Anti-Competitive.

5. PSI's Petition for Reconsideration has set forth the competitive issue, which was supported by an auction analysis by a well-known auction authority, Dr. John Morgan, of the Haas School of Business at the University of California. Dr. Morgan is highly regarded in the field of auction theory and has published numerous articles in the field of auction theory; he has published experimental studies on the auction mechanism used by the FCC compared to alternative theoretical structures; has used auction theory extensively in published studies of pricing; has presented his findings at international auction conferences advising the European Central Bank as well as a variety of international conferences in economics; has taught courses on auctions and auction theory for eight years; has previously worked with the FCC in his capacity as a consultant for the FTC; and has consulted with major Silicon Valley companies on business practices involving auctions. [6]

6. Dr. Morgan concludes that bidding by commonly-controlled entities is anti-competitive in three ways: at the entry level; in the bidding phase; and in the marketplace. [7] Dr. Morgan found that participation of commonly controlled bidders resulted in advantages to such bidders and harm to others participating in spectrum auctions where commonly controlled bidders are allowed, such as Auction No. 57. [8] Dr. Morgan also points out that bidding arrangements between non-commonly controlled entities have different competitive effects than do multiple, commonly controlled bidders. Dr. Morgan asserts that if single bidders entered into

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[6] Petition for Reconsideration at 5-6; *Curriculum Vitae* in Exhibit 1.

[7] The Analysis of Auctions with Multiple, Commonly Controlled Bidders ("Analysis") is included as Exhibit 1 to these Comments.

[8] Analysis at 2.

bidding agreements, the overall competitiveness of the auction would be unaffected. Therefore, the assertion by the Bureau's Auction and Spectrum Division ("Division") that since bidding agreements, joint marketing agreements, and post auction market structure agreements are permitted by the Auction Rules, the participation by commonly controlled bidders is not anti-competitive is mistaken. [9] The Division's position is erroneous when there is one controlling principal for two bidders. Precedent demonstrates that allowing commonly controlled bidders in the same auction violates Commission policy.

7. The Commission in the past recognized that "when one entity holds an attributable interest in more than one applicant for licenses in the same geographic license area, the potential for collusion is present because of the opportunity for the common owner to influence the bidding of the applicants." [10]

8. The focus is and has always been in connection with the Commission's competitive bidding rules, that collusive conduct is detrimental not only to the competitiveness and integrity of the auction itself, but equally important to the post-auction market for service to the public. The Commission realized that the public is harmed by a distortion of the auction

9. In the development of the FCC auction rules and policies, it was generally agreed that, in most cases, the number of bidders and the auction design would deter anti-competitive, collusive conduct. This reliance certainly has proven correct with respect to the Commission's previous auctions. Yet, the Commission still believed that it was necessary to develop procedural safeguards to ensure that collusion would not jeopardize the competitiveness of the

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[9] In the Matter of Motions for Stay of Auction No. 57 and Requests for Dismissal or Disqualification, DA 04-2983, released September 15, 2004 ("*Order*") at ¶10.

[10] In re Implementation of §309(j) of the Communications Act – Competitive Bidding, *Memorandum Opinion and Order*, 9 FCC Rcd 7684, 7688 at ¶10 (1994).

auction process. [11] The resultant competitive bidding Rules were designed not only to ensure the competitiveness of the auction process itself, but also the competitiveness of the post-auction marketplace. [12]

10. In clarifying the anti-collusion rules, the Commission recognized that the public interest favors allowing holders of non-controlling attributable interests in one applicant to obtain ownership interest in a second applicant in the same geographic areas. [13] This was necessary to balance the goal of protecting the integrity and robustness of the bidding process with the goal of flexibility for applicants in developing business plans and obtaining capital for participation in commission spectrum auctions. With respect to commonly controlled bidders, that balance, as well as Section 1.973(d), requires the prohibition of such applications.

B. Section l.973(d) Prohibits Commonly-Controlled Applications.

11. Section 1.937(d) provides for the dismissal of a conflicting application submitted by or for the benefit of the same applicant. [14] The applications of the Commonly controlled bidders in Auction No. 57 are for all practical purposes for the benefit of the same controlling entity. The *Order* seems to distinguish the commonly controlled applications pointing out that each has a different ownership structure. [15] This, however, is a distinction without a difference. The emphasis must be on who controls the entity and not the structure. [16] In the case of the Commonly controlled bidders, one is wholly owned by the other. Each is controlled by the same

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[11] See In re Implementation of Section 309(j) of the Communications Act – Competitive Bidding, *Second Report and Order*, 9 FCC Rcd 2348, 2386-88, ¶¶221-226 (1994).

[12] 47 C.F.R. §§1.2105, 1.2112 and 1.2110 are very specific in determining who actually controls the applicant, in order to avoid collusion.

[13] In re Implementation of §309(j) of the Communications Act – Competitive Bidding, *Memorandum Opinion and Order*, 9 FCC Rcd 7684, 7687-7688, ¶¶10-11 (1994).

[14] 47 C.F.R. §1.937(d)

[15] *Order* at ¶9.

[16] *See, e.g.,* 47 C.F.R. §§1.2105, 1.2112 and 1.2110.

individual. Section 1.937(d) does not distinguish between auction and non-auction applications. Thus, the auction rules did not have to prohibit applications by the Commonly controlled bidders. Section 1.937(d) governed. The prohibition's rationale is obvious – to keep one from gaming the Rules and to ensure competition. In Auction No. 57, the process was gamed and the Bureau's refusal to face that reality will result in another tainted auction.

IV.

CONCLUSION

Paging Systems, Inc., therefore, respectfully requests that the Commission consider these Comments; set aside the results of Auction No. 57 as requested in PSI's Pleadings; and begin anew in Auction No. 61, prohibiting commonly-controlled applications.

Respectfully submitted,

PAGING SYSTEMS, INC.

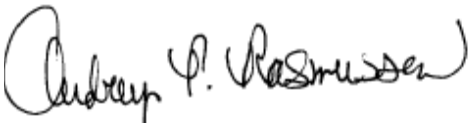

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EXHIBIT 1

An Analysis of Auctions with Multiple, Commonly Controlled, Bidders

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October 2004

1 Summary

Background

In FCC Auction No. 57, an apparently unusual situation arose: two of the bidders participating in this auction were controlled by the same entity. Concurrently, one of the bidders, Mobex Network Services, LLC, who had apparently originally contemplated participating in Auction No. 57, ultimately declined to do so, citing as a reason the presence of the two, commonly controlled, bidders. Another bidder, Paging Systems, Inc., scaled back its participation in the auction for the same reason. I have been asked by Paging Systems, Inc. to prepare an analysis using the tools of auction theory to assess the impact of multiple commonly controlled bidders on auction outcomes.

Summary of Results

Using the standard theoretical model of auction theory, I have compared a situation where each bidder is singly controlled with a situation where one of the bidders can create a second entity to compete in the same auction.[1]

The direct effect of the creation of multiple commonly controlled bidders is to make the bidding environment more competitive for the remaining bidders. Clearly, competing against an additional bidder makes the bidding process more competitive for the others and erodes their expected returns from the auction. At the same time, this also implies that the bidding environment is also more competitive for the multiple bidders, and, individually, their expected returns from the auction are also eroded. However, viewed jointly, i.e. from the perspective of the controlling entity, their returns are higher. Thus, the expected returns in the auction to the entity

[1] The standard model is the so-called, independent private values model, which has a long history of use in the analysis of auctions. See Vickrey, 1961 and Krishna 2002.

controlling multiple bidders increase relative to the situation where such tactics are not allowed.

Given that participation in the auction is costly and the expected returns to the auction are eroded by the presence of multiple, commonly controlled bidders, I then show that some bidders may rationally choose to opt out of participating in the auction in the presence of such bidders. That is, the competitive threat posed by the multiple, commonly controlled, bidders can be sufficient to lower the expected returns in the auction sufficiently to deter entry by one or more of the other bidders relative to the case where such tactics are not allowed. Indeed, it is quite possible for the multiple bidders to cause all other bidders to bow out of the auction for certain licenses—an extremely anti-competitive outcome. The reason is that if the costs of participation—which include costs of due diligence, bid preparation, financing, development of business plans, and so forth—are not compensated by the expected return from participation, the correct business response is not to participate. The presence of multiple, commonly controlled bidders lowers the expected return from the auction and thereby effectively "raises the bar" for participation.

Thus, the entity with multiple bidders competing in the auction gains a twofold advantage relative to the other bidders:

1. If entry deterrence is wholly or partially successful, it obtains licenses on more favorable terms.

2. If entry deterrence is wholly unsuccessful, the entity still increases its total returns.

On the other hand, the single bidders considering participation in the auction are harmed in two ways:

1. If they are successfully deterred, their returns from the auction are lower than in the case where such tactics are prohibited.

2. If they participate in the auction, then their expected returns are also lower owing to the increased competition.

To implement this outcome, the multiple, commonly controlled bidders need only execute a simple bidding strategy: When not bidding against one another, they bid as though they were independent bidders. When faced with competition from one another, all but one of the multiple bidders (which ever is judged to provide the highest expected return from the auction) drop out of the auction leaving only a single bidder to compete.[2] Thus, the analysis suggests that the implementation required to yield the entry deterring effects described above is quite feasible.

[2]Note that while this bidding strategy could easily be executed by other bidders through a bidding agreement, the competitive effects are different. If single bidders entered into such an agreement, the overall competitiveness of the auction would be unaffected and therefore one would not see either a shifting of returns or entry deterrence arising in response to such a strategy.

The rest of the paper consists of a formal mathematical analysis using the tools of auction theory and game theory to show each of these effects.

2 The Model

Consider an auction where there are k licenses available for sale and n risk-neutral *firms* interested in the licenses. Firms $1, ..., n-1$ each constitute a single *bidder*. Firm n, on the other hand, can choose to be one or 2 bidders. Thus, bidders n and $n+1$ are assumed to be both controlled by the same firm. Suppose that each license j has a common value, v_j, to all potential bidders. Suppose, in addition, that because of the unique organizational resources possessed by each bidder, bidder i creates additional value x_{ij} if it acquires license j. Suppose that x_{ij} is realized from some distribution G. Sufficient for our purposes is to consider the simple case where x_{ij} is distributed uniformly on $[0, 100]$. The value x_{ij} can be usefully thought of as the unique resources and capabilities, acumen, business plans, financing, and so forth available to bidder i for the commercial use of license j. While the realized additional value is known only to bidder i, all bidders know the distribution of possible additional values. Thus, if bidder i acquires license j, the value the bidder derives from this license gross of the bidder's payment in the auction is $v_{ij} = v_j + x_{ij}$.[3]

Suppose that there is an up-front cost, F_i, for each bidder to participate in this set of auctions. This up-front cost might represent costs associated with research into the economic value of the licenses, bid preparation costs, and financial costs associated with down payments and the like. Specifically, if a bidder wants to compete for any of the licenses, it must pay F_i.

Following this, the realizations x_{ij} are revealed and auctions for all of the licenses take place. In this model, an important result, the so-called revenue equivalence theorem (see Myerson, 1981), applies. Thus, to determine each bidder's expected return from participating in the auction, it is sufficient to model the bidding process as being an English auction.[4] For the case where a firm controls a single bidder, it is well-known that it is a weakly dominant strategy for participating bidders entails simply bidding up to one's valuation and then dropping out of the auction. With multiple, commonly controlled bidders, an equilibrium bidding strategy is slightly more complicated. Suppose that the reserve price is set at the common value v_j of

[3]The analysis is premised on the fact that is, at least partially, some difference in the additional value created by multiple, commonly controlled, bidders. For Auction No. 57, the analysis assumes that the differences in the financing, business plans, and ownership structures of the commonly controlled bidders, cited in Federal Communications Commission document DA 04-2983, are sufficient to generate some differences in the capabilities and resources of the two companies. While the analysis assumes that these are independent draws from some distribution G, the main conclusions would still obtain under milder assumptions.

[4]The revenue equivalence theorem implies that a formal modeling of the simultaneous-ascending auction format used will lead to identical economic results.

each license. In addition to up-front costs, a winning bidder is required to pay the cost of the winning bid for the license or licenses won.

We now turn to the analysis.

3 Analysis

3.1 Entry deterrence

Consider a license that is being competed over by 3 firms. First, consider the case where no firm creates multiple bidder identities. What is the expected return to a bidder for participating in the auction if it anticipates z bidders participating? In this model, the expected winning bid for each license in the auction is simply $\frac{z-1}{z+1} \times 100$. The expected additional value of the winning bidder is $\frac{z}{z+1} \times 100$. Thus, the total expected return available for all bidders is

$$ER = \left(\frac{z}{z+1} - \frac{z-1}{z+1}\right) \times 100$$

Since all bidders are alike, each expects to earn a $\frac{1}{z}$ share of this expected return. Hence, bidder i anticipates earning a return of

$$ER_i = \frac{1}{z} \times \left[\frac{100}{z+1}\right]$$

Thus, if all bidders participate then each expects to earn

$$ER_i = 8\frac{1}{3}$$

And, sufficient for all bidders to participate in this auction is that the up-front cost, F_i, is less than $8\frac{1}{3}$.

Next, suppose that one of the firms creates 2 bidding entities. Using our notation from above, the multiple bidders controlled by a single firm will be numbered as bidders 3 and 4.

How should bidders 3 and 4 bid? One simple possibility is to incent them to compete in an arms-length fashion. Now there are 4 potential bidders—bidders 1 and 2, who are controlled by separate firms, and bidders 3 and 4, who are controlled by a single firm. What is the expected return to bidder 1 (gross of up-front costs)? Using the same calculation as before but noting the presence of an additional bidder, yields

$$\begin{aligned} ER_1 &= \frac{1}{4} \times \left[\frac{100}{5}\right] \\ &= 5 \end{aligned}$$

The expected return of bidder 2 is identical.

Compare this to the return of the entity controlling bidders 3 and 4.

$$ER_3 + ER_4 = 10$$

This entity has managed to increase its expected return—even if all other firms continue to participate in the auction and even by instructing the two entities to compete with one another.

The situation improves further for the entity controlling 2 bidders if up-front costs are high enough. To see this, notice that the return from participating in the auction has declined significantly for bidders 1 and 2 and thus, it may no longer make sense for them to pay the up-front cost of participating. For instance, suppose that bidders 1 and 2 are only interested in this license and no others. Then, when $8\frac{1}{3} > F_i > 5$,one of the other bidders drops out and bidders 3 and 4 capture additional return. When $F_i > 8\frac{1}{3}$, both bidders 1 and 2 drop out of the auction and bidders 3 and/or 4 get the license for the reserve price. We summarize this result as

Remark 1 *The presence of multiple, commonly controlled, bidders creates an incentive for other firms not to participate in the auction.*

3.2 Two Bidder Competition

Next, consider a license where only 2 firms are competing. In that case, each firm earns expected return of

$$ER_i = 16\frac{2}{3}$$

Now suppose that one of the firms creates multiple bidders and that up-front costs are small enough that all firms choose to participate. Then bidder 1 earns

$$ER_1 = 8\frac{1}{3}$$

while the firm controlling bidders 2 and 3 earns

$$ER_2 + ER_3 = 16\frac{2}{3}$$

Of course, this understates the profits available to the entity controlling 2 and 3. Suppose that has bidders 2 and 3 bid in a slightly more sophisticated fashion: bidders 2 and 3 are to compete against 1 but not bid against each other. Since the only time firm 1 was winning was by defeating both 2 and 3, this does not change 1's expected return calculation at all; however, in some cases, 2 and 3 were competing against one another in the original contract and are not under the "revised" bidding agreement. Hence

$$ER_2 + ER_3 > 16\frac{2}{3}$$

Thus, we have

Remark 2 *Even when the number of competing bidders is unaffected, the presence of multiple, commonly controlled, bidders reduces the expected returns to other firms still participating in the auction while raising its own expected return.*

3.3 General Number of Bidders

The result that a firm controlling multiple bidders gains an advantage even without entry deterrence holds more generally. Suppose G is a uniform distribution on $[0, a]$. Suppose that there are n bidders in the auction. Analogous to our earlier result each earns expected returns of

$$ER_i = \frac{1}{n} \times \left[\frac{a}{n+1}\right]$$

When one firm can create 2 bidders, this results in $n+1$ bidders in the auction. Bidders 1,...,$n-1$, who are each owned by a separate firm, earn

$$\begin{aligned} ER_i' &= \frac{1}{n+1}\left[\frac{a}{n+2}\right] \\ &= \frac{1}{n+2} \times \left[\frac{a}{n+1}\right] \end{aligned}$$

and clearly $ER_i' < ER_i$. The firm controlling multiple bidders earns

$$\begin{aligned} ER_n' + ER_{n+1}' &= 2\frac{1}{n+1}\left[\frac{a}{n+2}\right] \\ &= \frac{2}{n+2} \times \left[\frac{a}{n+1}\right] \end{aligned}$$

and $ER_n' + ER_{n+1}' > ER_i$ for all $n > 2$. That is, if more than 2 bidders compete—up to any number—the firm with multiple bid identities gains at the expense of the others. Thus, the implications of Remarks 1 and 2 hold quite generally.

3.4 Bidding Behavior

What is the bidding behavior implied by the theory model? On its face, bidding would appear almost observationally equivalent to the case where the multiple bidders were independent. The key differences are:

1. Commonly controlled bidders should not bid against one another.
2. Greater than expected exit prior to the start of the auction.
3. Lower auction payments for commonly controlled bidders than other bidders.

Owing to the absence of significant round by round bid activity in FCC Auction No. 57, formal statistical analysis yields little insight beyond what one gets by simply summarizing the bidding activity. Prior to the start of the auction, Mobex, which was previously qualified to bid on many of the licenses, declined to participate in the auction, citing the presence of multiple commonly-controlled bidders as the reason. Paging Systems, Inc., which was qualified to participate for many of the licenses available in the auction, scaled back its participation and only competed for a single license. Thus, it appeared to be partially entry deterred by the multiple, commonly controlled, bidders.

The bidding activity in the auction itself may be summarized as follows: the two commonly controlled bidders bid separately on 8 B band licenses in round 1 of the auction. All bids were at the minimum acceptable bid level. One other bidder bid at the minimum acceptable level on a single A band license. Paging Systems, Inc. used a waiver in round 1. In round 2, Paging Systems, Inc. bid at the minimum acceptable level for a B band license that was not previously bid on. No other bids occurred. In round 3, there were no new bids and the auction ended with 10 licenses going unsold and 10 being sold at the opening bid price.

To see that the pattern of bidding is broadly consistent with the implications of the theory, notice that,

1. In no instance did the commonly controlled bidders bid against one another.

2. There appeared to be significantly less participation in the auction than would be expected given the number of qualifying bidders. This is consistent with the theoretical possibility of significant entry deterrence as a consequence of the participation of multiple, commonly-controlled, bidders.

4 Market Impact

The impact of the apparently successful entry deterring strategies of the commonly controlled bidders on the markets being served is twofold. First, because license holdings are concentrated in the hands of the multiple, commonly controlled, entities, these entities are, in effect, monopolies in seven of the markets.[5] One would expect that they will use this market power to increase prices to the detriment of consumers. Along the same lines, the competitive incentives to rapidly develop these markets may be reduced owing to the absence of competition.

Second, and less obviously, the value-added proposition provided by the licenses held by the commonly-controlled entities may be less than if such arrangements were disallowed. To see this, recall that the additional value-created by a bidder in the theory model for license j is simply x_{ij}. Suppose that bidder n, a commonly-controlled

[5]There were no competitive bids for nine of the A band markets, which can be attributed to the fact that Mobex, the incumbent A band licensee, chose not to participate.

bidder, won this license. By deterring entry, it may well be the case that some other bidder, $i \neq n$, may have had higher value-added were it to obtain this same license; that is, $x_{ij} > x_{nj}$; however, since i declined to participate in the auction, the incremental value created by i compared to bidder n, $x_{ij} - x_{in} > 0$, is simply never realized. Thus, even apart from market power effects, the total value created in the auction may well be reduced by the presence of the multiple, commonly-controlled, bidders.

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Curriculum Vitae

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JOURNAL PUBLICATIONS:
Papers are in PDF format. For published papers, the documents are a late working paper as opposed to a published version.

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CERTIFICATE OF SERVICE

I, Gladys L. Nichols, do hereby certify that on this 17th day of February 2005, the foregoing **COMMENTS** were served on the following persons by first-class United States mail, postage prepaid:

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/s/
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