Kathleen Q. Abernathy
Managing Director
Federal Regulatory

1275 Pennsylvania Avenue, N.W.
4th. Floor
Washington, D.C. 20004
(202) 383-6437

EX PARTE OR LATE FILED

DOCKET FILE COPY ORIGINAL

ORIGINAL

PAC TEL®
Corporation
A Pacific Telesis Company

October 29, 1993

RECEIVED
OCT 29 1993
FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

EX PARTE

Mr. William F. Caton
Acting Secretary
Federal Communications Commission
1919 M Street, NW, Room 222
Washington, DC 20554

RE: PP Docket 93-253

Dear Mr. Caton:

On Thursday, October 28, 1993, on behalf of PacTel Corporation, R. Preston McAfee, Professor, University of Texas, Michael Williams, Vice President, Analysis Group, and I met with Byron Marchant, Senior Legal Advisor to Commissioner Barrett, to discuss the proceeding indicated above. The attached document was provided during the presentation. Please associate this material with the above-referenced proceeding.

Two copies of this notice were submitted to the Secretary of the FCC in accordance with Section 1.1206(a)(1) of the Commission's Rules.

Please stamp and return the provided copy to confirm your receipt. Please contact me at 202-383-6437 should you have any questions or require additional information concerning this matter.

Sincerely,

Kathleen Q. Abernathy
Managing Director

Attachment

cc: Byron Marchant

No. of Copies rec'd 0+1
List ABCDE

FCC Bid Data Compiliation Sheet
MTA 1 and Channel Block A

	Day 1	Day 2	Day 3	Day 4	...
Minimum Acceptable Bid	Non-Binding Reservation Price				
Bidder 1					
Bidder 2					
Bidder 3					
: :					
Maximum Bid					

PCS Auction Bid Sheet for
Channel Block A

Bidder Code Number:_____
Date:_____
Time:_____

MTA	Channel Block A $ (bid)

Major Issues in Auction Design

Presentation to:

Federal Communications Commission

Washington, D.C.

by:

R. Preston McAfee
The University of Texas
and
Analysis Group, Inc.

for:

PacTel Corporation

October 28-29, 1993

What Are the Basic Auction Forms?

Sealed Bid

- Bidders independently submit bids
- Highest bidder obtains the object and pays highest bid

Oral Ascending or English Auction

- Bidders present in a room together
- Auctioneer accepts progressively higher bids
- Item sold when no one will top current high bid
- Can be operated electronically ("Japanese auction")

Variations on the Basic Auctions

- Reserve price or minimum acceptable bid
- Royalty payments
- Bidder qualification
- Price-preferences and set-asides
- Bargaining with several high bidders
- Concealing the number of bidders
- Bundling objects for sale together
- Repeated sealed bids instead of oral auction
- Entry fees

Major Issues in Auction Design

The *Winner's Curse*

"The winner is the firm that most overestimated the object's value."

- Bidders lower bids to adjust for winner's curse
- Winner's curse effects reduced by ascending bid auctions
- Most important when there is a significant uncertainty about value of object common to all bidders

Information Release

- Two types of information: value of object and level of competition
- Release of information about value tends to increase average sale price
  - Works by reducing winner's curse
  - Ascending bid auctions provide more information to release to bidders
- Release of information about competition may reduce average price

Major Issues in Auction Design (continued)

Efficiency (sell license to firm that values it most)

- Improved by ascending bid auctions
- Reserve prices create inefficiencies
- Issue most important when there are significant observable differences among bidders

Collusion

- Reduced by concealing identities of bidders
- Ascending bids make collusion easier
- Reduced by bundling licenses together into a single package

Major Issues in Auction Design (continued)

Bundling

- Can be used to increase revenue
- May induce inefficiencies
- Unnecessary provided goods are auctioned simultaneously

Risk Aversion

- Revenues increased by sealed bids
- Most important when bidders have limited resources relative to the value of the object for sale

Summary of Issues

Auction Theory	PCS Issue	Suggested Auction Design
"Winner's Curse"	Value of PCS uncertain	Ascending bid
Information Release	Value of licenses uncertain Level of competition uncertain	Ascending bid Keep number of bidders concealed
Efficiency	Bidders differ, e.g., some firms have cellular systems and some do not	Ascending bid Non-binding reserve prices
Collusion	More likely with sequential auctions	Keep identity of bidders concealed
Bundling	Value of MTAs interdependent	Simultaneous auctions
Risk Aversion	PCS licenses may sell for hundreds of millions of dollars Bidders must consult with management and consortium members	Repeated rounds of sealed bids

Recommended Auction Design for MTAs

Repeated Rounds of Sealed Bids

- Permits concealment of identities of bidders
- Permits simultaneous auction of many licenses
  - Allows bidders to assemble efficient geographic aggregations of licenses
  - Eliminates the need for a separate national license auction, which if carried out could have adverse effects on government revenues
- Can be completed rapidly
- Allows bidders to confer with management and consortium members
- Provides data for evaluation
- Increases government revenues compared to single round of sealed bids

Importance of Experimentation and Evaluation

Two Separate Issues:

- Experimentation
  - Use of information from early auctions to better design later auctions
- Evaluation
  - Assessment of the efficiency and revenue collection of auctions

Experimentation

The auction design has features that can be varied:

- Opening suggested minimum bid
- Time between bids
- Size of increment
- Penalty for disqualification
- Information release of current number of bidders

Suggestions:

- Experiment with different features on less valuable licenses
- Apply knowledge obtained to auctions for more valuable licenses

Evaluation

Can approximately learn how bidders valued licenses

- Auction design permits FCC to determine efficiency of auctions
  - Can learn how bidders valued licenses
- See how initial competition influenced prices per MHz per person
- Examine bidding data for extent of interdependencies
- Determine whether government revenues were maximized

Comments on National License

- Separate auction for national license is unnecessary

  - Daily revised sealed bid auctions encourage *efficient* aggregation of licenses
  - Bidders can submit national bids by submitting bids on every region

- Separate auction discourages bidding on individual geographic licenses

  - Possibility of little or no bidding on individual licenses

- Optimal ordering of national and local licenses unclear

  - If national first, may preclude bidding on local license
  - If national last, beliefs may preclude bidding on local licenses
  - Possibility of a "bullying" equilibrium in which national sells cheaply

Comments on National License (continued)

– Few potential bidders for a national license

  - Cellular companies excluded, (AT&T (McCaw), GTE/Contel, Southwestern Bell, BellSouth, Pacific Telesis, Ameritech, NYNEX, Bell Atlantic, US West, Centel, Metro Mobile CTS, US Cellular, Vanguard, ALLTELL, SNET)
  - Consortia involving cellular companies excluded
  - Even in good equilibrium, price may be low

Recommendations on Auction Design

- Repeated rounds of sealed bids
- Highest bid announced by FCC (bidder not identified)
- Bids occur simultaneously across MTAs for each channel block
- Bids occur sequentially for different channel blocks

How Auction Would Be Implemented: Illustrative Example

1. Round 1 (Start)

   - FCC suggests opening bid (e.g., $0.30 per MHz per person in license area)

   - Bidders submit sealed bids
     - Bids below suggested opening bid are permitted

   - FCC announces highest bid in each auction

   - If two or more bidders beat suggested opening, auction goes to next round with all bidders
     - Otherwise high bidder wins
       - If tie, go to next round
       - Only tied bidders eligible to bid from then on

Illustrative Example (continued)

2. Round 2

- FCC suggests opening bid (e.g., maximum bid in previous round plus 10%)

- Bidders submit sealed bids
  - Bids below suggested opening bid are permitted
  - Valid bids must exceed maximum bid in previous round

- FCC announces highest bid in each auction

- If two or more bidders beat suggested opening, auction goes to next round with all bidders
  - If no bids submitted, high bidder from previous round wins
  - Otherwise high bidder wins
    - If tie, got to next round

Illustrative Example (continued)

3. Round 3

   - Same as Round 2

Rounds continue until someone wins

Designated Entities

Goal: Increase participation of designated entities at least cost

Economic Solution: Price-preference (or bidder credits)

A price-preference lets a member of a preferred group submit a lower bid and still win the auction.

How much lower is the amount of the price-preference:

Example: Minority-owned business gets a 10% preference
- The highest non-minority firm bid is $1,000
- Minority wins if it bids at least $909.10
- Minority bid evaluated at $1.1 \times \$909.10 = \$1{,}000.01$

Used to favor domestic suppliers (6%-12% for Buy American Act, up to 50% for domestic defense contractors)

Advantages of Price-Preferences Over Set-Asides

- Price-preferences increase competition in *all* auctions

  - Designated entities become more viable competitors in auctions *not* set-aside
    - Non-preferred bidders bid higher than without preferences
  - All firms compete in all auctions

- Price-preferences establish values for implementation of unjust enrichment provision

  - If preferred group sells, should pay the amount of the preference to the government
  - Eliminates need to estimate unjust enrichment necessary with set-asides

Advantages of Price-Preferences Over Set-Asides (continued)

- Price-preferences minimize inefficient sale
  - Designated entities win if nearly competitive
  - Designated entities lose when they are much less efficient
    - This need not occur with set-asides

- Price-preferences may increase government revenues
  - A result of increased competition in all auctions
  - May increase revenues even over the outcome without favoritism
    - Since non-preferred firms choose higher bids
  - May implement preferring disadvantaged groups for free

- Price-preferences don't banish disadvantaged groups to set-aside
  - Disadvantaged groups compete effectively in *all* auctions

Advantages of Price-Preferences Over Set-Asides (continued)

- Price-preferences are a versatile instrument

  - Can set distinct preference levels for minority owned business, female owned business, rural telephone companies
  - Can adjust level of preference to achieve desired goals

- Price-preferences can be used for partial ownership

  - A firm owned by a preferred group obtains *part* of the preference
    - E.g., with a 10% preference, a 60% minority owned business would get a 6% preference
    - If it drops to 40%, must rebate 2% to government
      [60% - 40% = 20% of the 10% preference is 2%]
    - This gives incentives for all firms to include minorities

Disadvantages of Price-Preferences Over Set-Asides

- *Only* disadvantage is that it is difficult to compute an optimal preference

- Can be estimated by experimentation with 10 MHz licenses

- Past bids may be useful

  - See by how much disadvantaged groups missed winning
  - Use this as initial preference in experiments