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AIRTOUCH™
Communications

The new name for PacTel

ORIGINAL

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May 20, 1994

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MAY 2 0 1994

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

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

RE: GEN Docket 90-314, Amendment of the Commission's Rules to Establish New Personal Communications Services

Dear Mr. Caton:

On Friday, May 20, 1994, on behalf of AirTouch Communications, R. Preston McAfee, Joe Woods and I met with Donald Gips, Evan Kwerel, David Reed, John Williams, and Jonathan Cohen, regarding the above-referenced proceeding. We discussed the above referenced proceeding and the attached materials were distributed.

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 202-293-4960 should you have any questions or require additional information concerning this matter.

Sincerely,

Kathleen Abernathy/ЖМ

Kathleen Q. Abernathy

Attachment

cc: Jonathan Cohen
Donald Gips
Evan Kwerel
David Reed
John Williams

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

Auction Design Issues

Presentation to:

Federal Communications Commission
Washington, D.C.

by

R. Preston McAfee
University of Texas

and

Analysis Group, Inc.

May 20, 1994

Estimating the Value of Narrowband Licenses

- Estimates Based on Prior Sales
  - Valuation Must be Exclusively for Spectrum
  - Thus, Sales Prices Must be Net of Value of Existing Customers and Equipment
- Six Prior Purchases (1991-1993) by AirTouch Involving Only Licenses, No Existing Customers
  - Sales Prices (Net of Equipment) Range From \$0.11 to \$0.39 per Pop per MHz
  - Higher Prices Paid to Fill Out Existing Service Areas (Hold-Up Problem)
  - Frequencies Range From 25 to 30 kHz
  - Population Weighted Average Price per Pop per MHz equals \$0.22
  - \$0.22 Value Implies Winning Bid of \$5.5 Million for a Nationwide 50/50 kHz License

Estimating the Value of Narrowband Licenses, Cont'd

- Estimates Based on Six Recent Sales
  - Prices Likely Include Market Expectation of Increased Narrowband Spectrum
  - However, Prices Reflect Premiums:
    - One to Four Year Head Start
    - Filling Holes in Existing Network
    - Proven Technology
  - PCS Narrowband Value of Return Channel Uncertain
  - Thus, Valuation of $0.22 Likely an Overestimate of Value in Narrowband Auctions

Estimating the Value of Narrowband Licenses, Cont'd

- Estimated Values for Narrowband May Not Accurately Reflect Values for Broadband
  - Narrowband Usage (Paging) More Certain Than Broadband Usages for PCS Spectrum
  - Less Technological Uncertainty with Respect to Narrowband
  - Problematic to Scale Up $0.22 Value Based on 30 kHz for Regional License to 30 MHz Nationwide License (Distinct Products, Small Sample)

Issues Relating to Bid Preferences for Designated Entities

- Three Types of Participation
  - Ownership Equity
  - Board of Directors Participation
  - Management Decision Making
- Goal is to Encourage Participation by Women and Minorities
- Fundamental Trade-Off:
  - Large Rewards for Participation by Designated Entities May Encourage Token Ownership Interests to Capture Bid Preference
  - Small Rewards for Participation May Discourage Large Firms From Soliciting and Cooperating with Designated Entities

Issues Relating to Bid Preferences for Designated Entities, Cont'd

- Scaled Bid Preferences Based on Equity or Board Participation (or Minimum of These)
  - One Option is to Scale Bid Preference Without a Minimum Minority Ownership
    - For Example, Thirty Percent Equity or Board Participation Yields a Six Percent Bid Preference (30% Ownership times 20% Bid Preference)
    - This Provides Relatively Large Rewards for Participation By Designated Entities
  - Second Option is to Allow Bid Preference Only if Designated Entity Controls Firm
    - For Example, Sixty Percent Equity or Board Participation Yields a Twelve Percent Bid Preference (60% Ownership times 20% Bid Preference)
    - This Provides Relatively Small Rewards for Participation By Designated Entities
- Either Option Rewards Increased Participation by Women and Minorities
- Difficult to Quantify Management Decision-Making Role

Withdrawal Penalty Should Discourage Late Withdrawals

- Early Withdrawal Much Less Damaging Than Late Withdrawal
- Paying Difference Between Final Price and Bid Discourages Late Withdrawal
  - Late Withdrawal Leads to Lower Final Price
  - Withdrawer Should Be Penalized For Lower Final Price
  - Reflects Damage Done By Later Withdrawal
    - Lower Final Price Implies Greater Damage, Greater Penalty
  - Effectively, Bids Are Firm, But Government Offers to Resell License During Auction
- Difference Between Bid and Second Highest Bid Irrelevant As Auctions Progress
  - Doesn't Reflect Damage Done By Subsequent Withdrawal
- Appropriate Withdrawal Penalties Trade Off Cautious Bidding Against Insincere Bidding
  - Can Only Be Determined Experimentally

<u>Reasonable To Permit Bidders To Bid On More Licenses Than They Are Eligible To Win</u>

- Most Bidders Won't Choose To Make Such Bids
- If Bidders Do Make Such Bids, Will Drive Up Prices
- Especially Relevant for Non-Controlling Owners
  - Example: Firm 1 Owns 30% of Firm 2
    - Both Bid and Win Dallas Licenses
    - Firm 1 Is Not Permitted to Own 30% of Firm 2 and Separate License
    - Firm 1 Should Be Given The Choice of Divesting Its Ownership Interest In Firm 2 or Firm 1's Dallas License
- This Maximizes Efficient Allocation
- Lets Firm Choose Between Divestiture or Not Owning License

Problems With Dividing The Licenses Into Groups

- Best To Sell Them *All* Simultaneously
- If Not Possible, Faced With Choice Of Spectrum Or Geographic Divisions
- Any Division Creates Winners and Losers
- Winners and Losers in Geographic Division More Obvious
    - Winners Are firms Not Interested In Border Properties, Large Aggregations
- If Must Divide, Collect Most Closely Related Licenses In Single Aggregation
    - Close Relations Include Fungibility (e.g. *A* and *B*) and Geographic Proximity
    - More Distant Include Bidder Credits, Different Spectrum Size

Spectrum Divisions Create Uncertainty About Actual Prices

- Can't Choose "Best Price" On A License
- Create Probability of Regret and Consequent Inefficient Allocation
- Can't Relay on Prices Of Licenses Auctioned Later
- If Must Divide By Spectrum, Split Large (30 MHz) From Small (10 MHz)

Geographic Divisions Create Aggregation Problems

- No Natural Division
- Licenses On Border Won't Be Efficiently Aggregated
- Creates Problems For Assembling Broad Aggregations
- If Must Divide Licenses Geographically, Aim For Low Valued Borders
  - Low Population Density, e.g., Dakotas to New Mexico