



Spectrum Auctions at the FCC

Evan Kwerel
Senior Economic Advisor
Office of Strategic Planning & Policy Analysis
Federal Communications Commission

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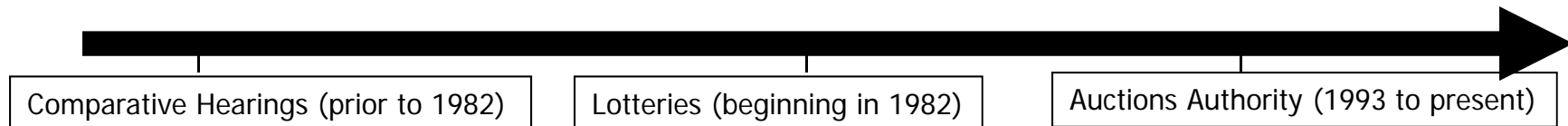
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Spectrum License Assignment Methods

- No Mutual Exclusivity
 - First Come, First Served
 - Open Entry
 - Frequency Coordination
- Mutual Exclusivity
 - Comparative Hearings
 - Lotteries
 - Auctions





Auction Overview

- August 1993
 - Omnibus Budget Reconciliation Act gives FCC auction authority
- March 1994
 - FCC adopts general auction rules
- July 1994
 - FCC conducts first spectrum license auction (10 licenses), using electronic simultaneous multiple round bidding at single auction site



Auctions Overview (continued)

- Since July 1994, the FCC has
 - Completed 63 auctions (as of 7/5/06)
 - Auctioned approximately 56,360 licenses
 - Qualified over 3,550 bidders to participate
 - Transferred over \$14.5 billion to the US Treasury (as of 9/30/05)



Why Auction Legislation Passed

- Deficits were at record levels in 1993
- Budget Enforcement Act of 1990 required increased expenditures to be paid for
- Defects of lotteries became apparent with huge windfalls to lucky lottery winners

Design Principles for Spectrum Auctions

- Assign licenses efficiently
 - Facilitate efficient spectrum aggregation and substitution
- Raise significant revenue
- Assign licenses quickly
- Simple and inexpensive to run and participate
- Robust against collusion and other destructive strategic behavior
- Perceived as fair, transparent and objective



Simultaneous Multiple Round Ascending Auction Design

- Novel design when implemented by FCC in 1994
- Based on design principles
 - Tailored to specific features of spectrum licenses
 - Required tradeoffs among some objectives
- Rules continually refined since introduced



Simultaneous Multiple Round Ascending Auction

- All licenses are available during entire auction.
- Bids are accepted until there are no new bids on any licenses.
- Facilitates aggregation and substitution.



Simultaneous *Multiple Round* Ascending Auction

- More than one bidding period permits
 - Information discovery (observe prices)
 - Pursuing backup strategies as information changes
- Design promotes timely completion
 - Minimum bids are a function of competition for the license
 - Minimum bidding activity required to maintain current eligibility



How Did FCC Get Auction Design Right?

- Successful collaboration among academia, industry and government
- Bidders hired leading academics to develop auction design proposals
- NTIA and FCC sponsored auction experiments
- FCC had economists capable of understanding and evaluating academic proposals and experiments



How Did FCC Get Auction Design Right?

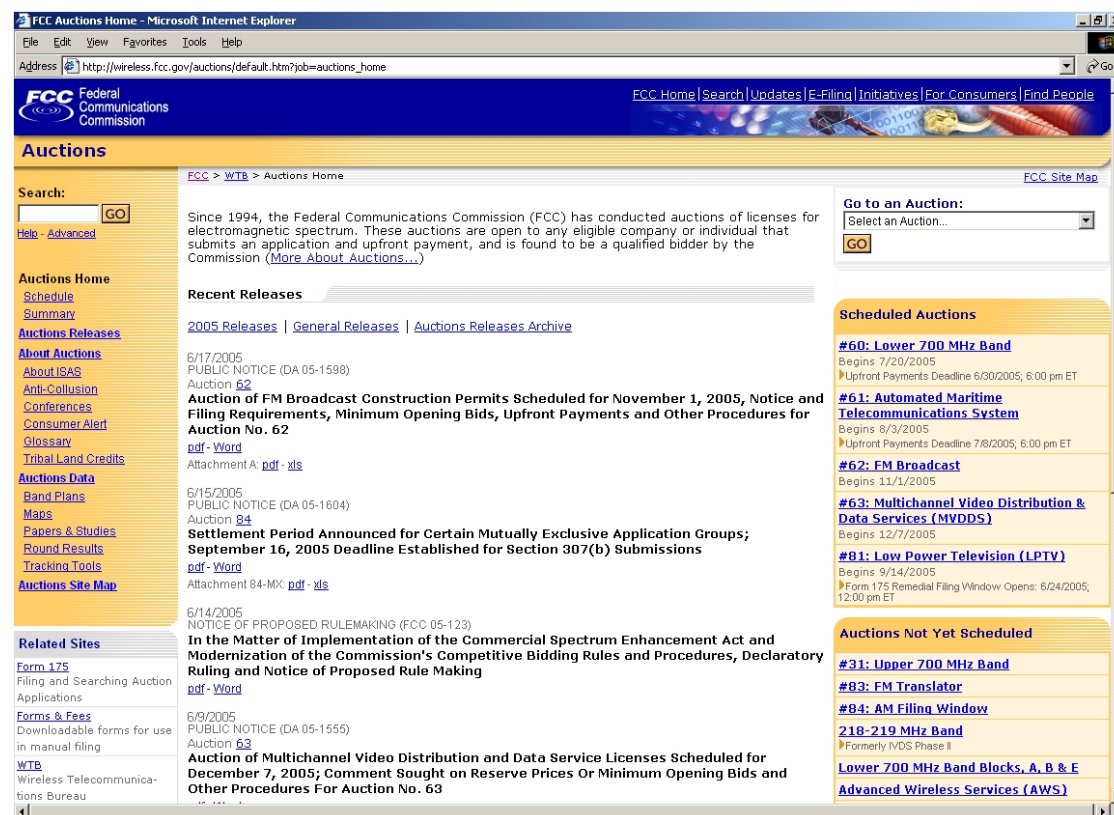
- FCC chairman was willing to take the risk to do the right thing
- Effective dialog between academics and FCC staff in *ex parte* meetings and conferences
- FCC hired consultants including game theorists and experimental economists



Additional Lessons Learned

- Start with a good design because inertia is strong
- Don't aim for perfection, just keep improving
- Start with small scale implementation and ramp up
- Contract out parts of implementation

For more information, please visit
the FCC Auctions web site:



FCC Auctions Home - Microsoft Internet Explorer

Address: http://wireless.fcc.gov/auctions/default.htm?job=auctions_home

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6/17/2005
 PUBLIC NOTICE (DA 05-1598)
 Auction [62](#)
Auction of FM Broadcast Construction Permits Scheduled for November 1, 2005, Notice and Filing Requirements, Minimum Opening Bids, Upfront Payments and Other Procedures for Auction No. 62
[pdf](#) - [Word](#)
 Attachment A: [pdf](#) - [xls](#)

6/15/2005
 PUBLIC NOTICE (DA 05-1604)
 Auction [84](#)
Settlement Period Announced for Certain Mutually Exclusive Application Groups; September 16, 2005 Deadline Established for Section 307(b) Submissions
[pdf](#) - [Word](#)
 Attachment 84-MC: [pdf](#) - [xls](#)

6/14/2005
 NOTICE OF PROPOSED RULEMAKING (FCC 05-123)
In the Matter of Implementation of the Commercial Spectrum Enhancement Act and Modernization of the Commission's Competitive Bidding Rules and Procedures, Declaratory Ruling and Notice of Proposed Rule Making
[pdf](#) - [Word](#)

6/9/2005
 PUBLIC NOTICE (DA 05-1555)
 Auction [63](#)
Auction of Multichannel Video Distribution and Data Service Licenses Scheduled for December 7, 2005; Comment Sought on Reserve Prices Or Minimum Opening Bids and Other Procedures For Auction No. 63

Scheduled Auctions

#60: Lower 700 MHz Band
 Begins 7/20/2005
 Upfront Payments Deadline 6/30/2005, 6:00 pm ET

#61: Automated Maritime Telecommunications System
 Begins 8/3/2005
 Upfront Payments Deadline 7/6/2005, 6:00 pm ET

#62: FM Broadcast
 Begins 11/1/2005

#63: Multichannel Video Distribution & Data Services (MVDDS)
 Begins 12/7/2005

#81: Low Power Television (LPTV)
 Begins 9/14/2005
 Form 175 Remedial Filing Window Opens: 6/24/2005, 12:00 pm ET

Auctions Not Yet Scheduled

#31: Upper 700 MHz Band

#83: FM Translator

#84: AM Filing Window

218-219 MHz Band
 Formerly IVDS Phase I

Lower 700 MHz Band Blocks, A, B & E

Advanced Wireless Services (AWS)

Related Sites
[Form 175](#)
 Filing and Searching Auction Applications
[Forms & Fees](#)
 Downloadable forms for use in manual filing
[WTB](#)
 Wireless Telecommunications Bureau

<http://wireless.fcc.gov/auctions/>