

# ***Spectrum Auctions - The Next Phase***

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# Summary

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- Introduction
- Experience to date
  - United States
  - Australia
  - United Kingdom
  - European Auctions
- Design Comparisons
- Bidders
- Conclusions

# Introduction

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- Reactions to auctions
  - Difficult birth in the early 90's
  - Dubbed a success in the late 90's with auctions in the US, Australia and the UK
  - Dammed by some - blamed for world recession in the post **.com** era!
  - Acceptance with reluctance by some
- Auctions - now the accepted orthodoxy
  - When? - when demand exceeds supply
  - Advantages? - effective, transparent and source of revenue
- Auction design critical!
  - Wide market variation in approach
  - Role of technology standards?

# United States

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- Impetus for change
  - Dissatisfaction with administrative methods
    - Comparative hearings (“beauty contests”)
    - Lotteries
  - Promise of improvement from applying economic theory!
- Policy objectives - 1993
  - Deployment of technological innovation
  - Promotion of economic opportunity and competition
  - Recovery of value on a public asset
  - Efficient and intensive use of spectrum
  - Allowing ‘*adequate*’ time for bidders (1997)

# United States (continued)

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## ■ Initial auctions

- Extensive consultations with auction theory consultants
- Results?
  - bidders were satisfied with the process
  - Revenue raised was above expectations

## ■ Distinctive features

- Multiple standards allowed (7)
- Specific service areas
- Roll-out requirement & “use- it or lose it” clause
- Resale prohibited

## ■ Retrospect?

- Collusive behaviour observed
- Favours “big players”
- Problem of spectrum incumbents

# Australia

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- Innovative pioneer in auction design!
- Features
  - Spectrum “blocks” which can be amalgamated into a licence
  - Technology neutral but ‘attuned’ to global standards
  - Competition safeguards (eg restrictions on Telstra)
  - No roll-out or “use-it or lose-it” clauses
  - *Tradable licences!* (eg recent Austar/Unwired deal)
- Retrospect
  - Spectrum incumbents
  - Role of vendors! (eg One.Tel)

# United Kingdom

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- First “3G” auctions in 2000
- Government objectives (similar to the US)
  - Assignment efficiency
  - Promote competition
  - Realization of full economic value
  - Potential revenue was a consideration
- Outcome a spectacular success!(?)
  - Raised US\$34 billion for 5 licences (2.5% of GDP)
  - Introduced competition through the auction design (eg one licence exclusive to new entrants)

# European Auctions

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- Very mixed results
  - “failure of auction design” (eg Italy, Netherlands)
  - Change in “market sentiment”
  - The French non auction
- *Criticisms* of auctions post **.com** bizarre
  - Damaged ‘value’ of European telcos? (and world economy)
  - Reduced network investment in 3G?
  - Incumbents plea for Government relief?
    - Had to win to protect their current business
    - Could realise greater value than new entrants

***Remember Christine Keeler!***

# Design Comparisons

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- Spectrum allocation process?
  - US: Deemed “command-and-control” (paradox?)
  - Europe: Restrictive technology options in Europe (eg ETSI and 3G)
  - Australia: Market oriented assuming ‘global technology’
- Auction design issues
  - Flexibility of use (ie accommodating multiple use)
  - Roll out and ‘use’ measures
  - Compensation for prior incumbents
  - Competitive safe guards
  - Source of information to bidders

# Bidders

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- Onus on the bidders to determine value
  - Incumbents and new players
- Value to the bidder depends on:
  - Availability of equipment for the particular bands
    - Likely cost and timing of infrastructure equipment
    - Likely cost and timing of terminals
  - Role of vendors?
    - Financing of bidders
    - Availability of equipment (in practice) - depends on scale!
  - Technical standards
    - Europe and US - defined
    - Accommodate multiple standards

# Conclusions

- Auction design has evolved to orthodoxy!
  - Several phases
    - Early focus on effective allocation and introducing competition
    - Matching to specific market conditions critical
    - Revenue raising phase
  - Next phase of opening up more spectrum (eg AWS spectrum in the US just completed - US\$13.9billion)
    - Buying out incumbents
- Technology standards & availability poorly understood
- Comparative observations on Australia
  - Spectrum auctions are 'market oriented'
  - Flexible and tradable licenses a key feature
  - Standards assumed *to date* are focused on Europe and USA

*Future technology standards and China?*