The Necessary Conditions for the Flexible Use of Spectrum

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Overview

• FCC and Wireless Bureau’s Spectrum Management Goals

• Formula for Successful Spectrum Management

• What This Means For Wireless Investors
Spectrum Management Goals

TRANSPARENCY → EFFICIENCY → RELIABILITY

• Promote *highest and best use of spectrum* and encourage growth and rapid deployment of *innovative* and *efficient* wireless technologies and services

• Advance *spectrum reform* by developing and implementing *market-oriented* allocation and assignment policies

• Conduct *effective and timely licensing activities* that encourage efficient use of spectrum

• Provide *adequate spectrum* for public safety and commercial purposes

• Vigorously protect against *harmful interference* and enforce public safety-related rules
Wireless Bureau Objectives

• Increase the consumer good to produce economic growth by the deployment of spectrum-based services

• Foster US global competitiveness through the use of spectrum services

• Greater emphasis on public safety and homeland security issues through the use of spectrum services

• Focus on excellent customer service to benefit our licensees and consumers
Spectrum “Manager” Activities

Spectrum Applications

Promote inter-modal convergence & competition

Policy

Rules

Spectrum Access

Outreach

Spectrum Resources & Tools

Provide access to new spectrum platforms

Consumer safeguard and public interest:
• E911
• Licensing Database
• Auction Systems
• LNP
• CALEA

• Subscribership grew from 16 to 160 million
• Competitors increased from 2 to 7 or more in many markets
• Prices dropped 80% or more
• Minutes of Use increased 400%

- **Subscribers**: 152 Million in 2003, UP 13% from 135 Million
- **Jobs**: 187,169 in 2003, UP 1% from 186,956 jobs
- **Capital Investment**: $134 Billion of 2003, UP 13% from $118 Billion
- **Minutes of Use**: 470 Average MOUs in 2003, UP 18% from 398 MOUs

Price per minute: DOWN 12%

10.5 cents Per Minute in 2003

Formula for Successful Spectrum Management  
(keeper slide)

• **Provide Flexibility** (provides for efficient use)
  • Maximum technical and operational autonomy for licensees
  • Rapid transition of spectrum to highest and best uses using market forces as much as possible

• **Ensure Competition** (provides for effective use)
  • Intermodal/Intramodal competition
  • LNP, intercarrier compensation, universal service, public interest
  • CMRS, PCS, MSS/ATC, MVDDS, DBS versus local, long distance, radio, television, movies, ISPs

• **Enforce Opportunity Costs of Using Spectrum** (provides market and economic discipline)
  • Auctions
  • Secondary Markets
Upcoming Licensed Spectrum Opportunities

- **MDS/ITFS Band (2.5-2.69 GHz)**
  - Flexibility (√)
  - Competition (?)
  - Opportunity Cost (?)

- **70/80/90 GHz**
  - Flexibility (√)
  - Competition (?)
  - Opportunity Cost (?)

- **MVDDS**
  - Flexibility (√)
  - Competition (√)
  - Opportunity Cost (√)

- **CMRS (Cellular, PCS, ESMR SMR)**
  - Flexibility (√)
  - Competition (√)
  - Opportunity Cost (√)

- **3G/AWS**
  - Flexibility (√)
  - Competition (√)
  - Opportunity Cost (√)

- **3650 MHz**
  - Flexibility (√)
  - Competition (?)
  - Opportunity Cost (?)
Wireless Investors

Traditional Communications World

Silos

New World of Digital Migration

Layered
Key Takeaways for Wireless Investors

• Dedicated chips for DSP provides flexibility so *spectrum will not be a scarce resource per se* (e.g., cognitive radios, software radios provide for more spectrum access)

• Applications and CPE must be **plug and play** and must be **digital** and **IP-centric**

• Operating system and support functions will be critical layer going forward

• All platforms will support all applications so target inter-modal competition for growth (*i.e.*, voice is just an application)
Wireless Investment Thesis

• Invest in customers and customer control, all else being equal

• Invest in applications that take share away from “old industries” (e.g., long distance, radio, television) that don’t have individualized customer relationships

• Invest in unique, scaleable applications focused on above

• Avoid OSS traps on platforms and avoid isolated platforms investments
Conclusion

Wireless meets the criteria for continued sector investment:

• Technology is driving an increase in wireless capacity so it can compete with other platforms

• Wireless has an ever-increasing number of applications that are seamlessly available to it

• Wireless has pre-existing level of high “individual” (not just household) subscriber penetration creating a scaleable environment
Thank you!