

**FCC**

Wireless Telecommunications Bureau



# 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

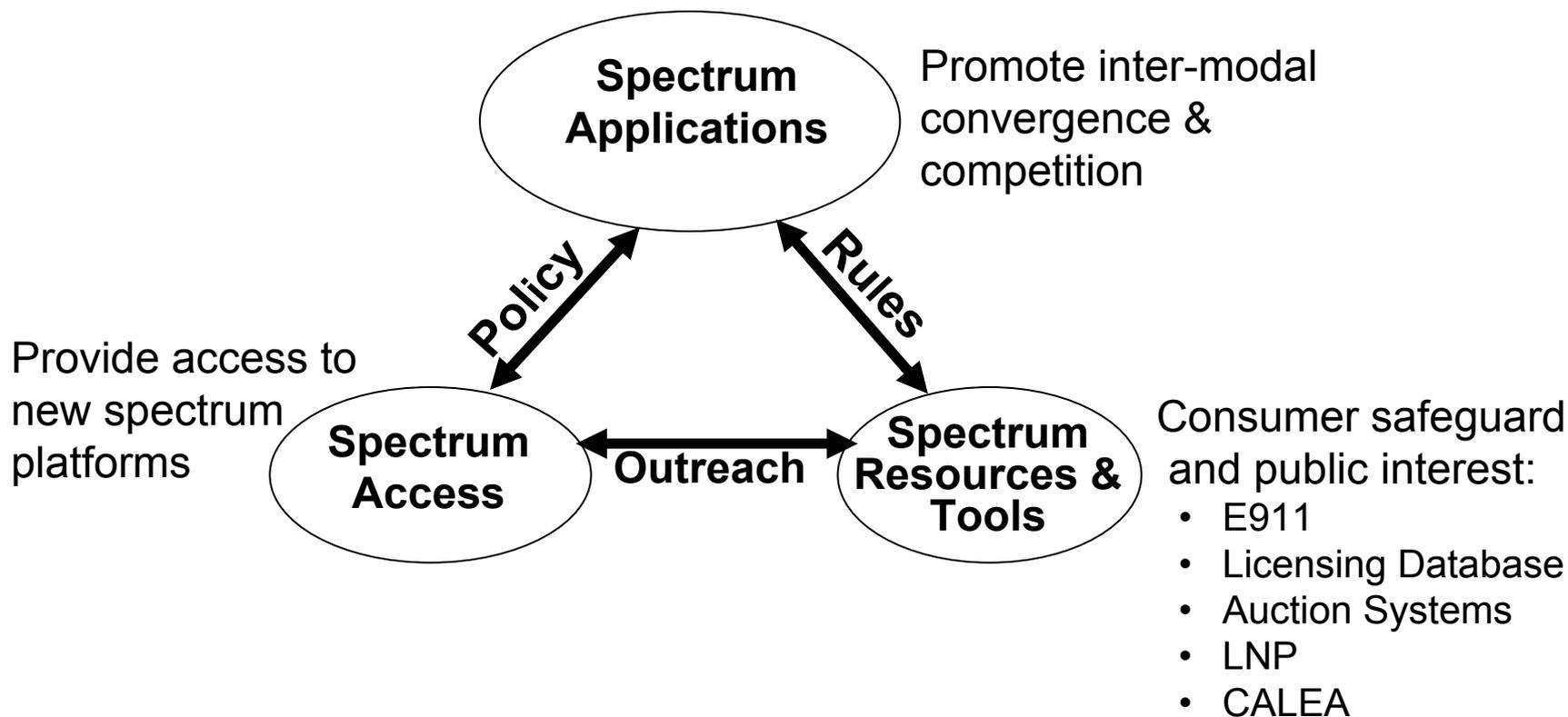
- Promote ***highest and best use of spectrum*** and encourage growth and rapid deployment of ***innovative*** and ***efficient*** wireless technologies and services
- Advance ***spectrum reform*** by developing and implementing ***market-oriented*** allocation and assignment policies
- Conduct ***effective 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

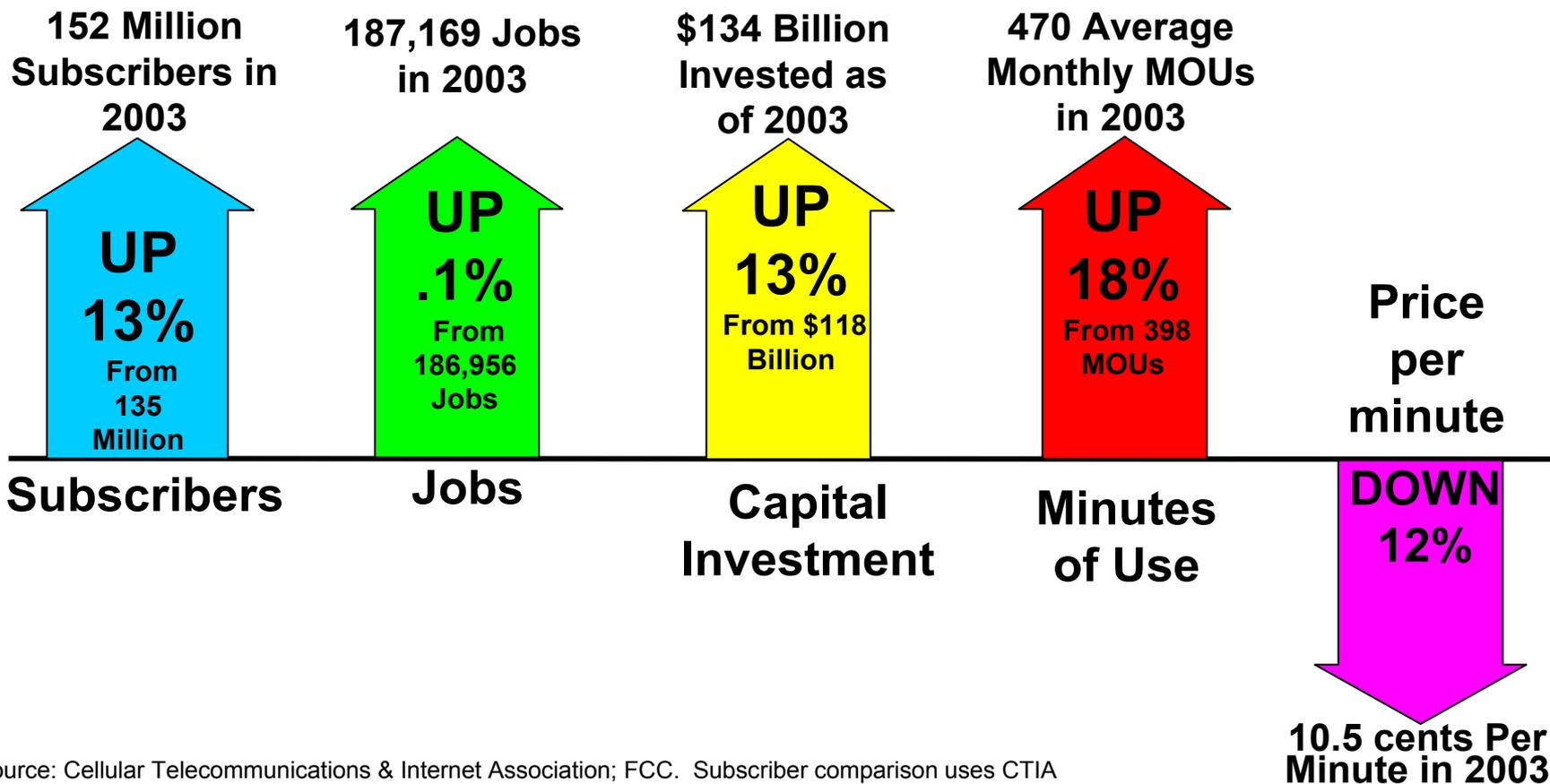
# Spectrum “Manager” Activities



# **Spectrum “Management” Success Story: The Mobile Wireless Story (1993-2003)**

- 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%

# Spectrum "Management" Success Story: The Mobile Wireless Story (June 2002 - June 2003)



10.5 cents Per Minute in 2003

Source: Cellular Telecommunications & Internet Association; FCC. Subscriber comparison uses CTIA estimate for June 2002 and FCC estimate for June 2003. June 2003 MOU estimate is preliminary.

## 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**

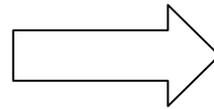
- Flexibility (✓)
- Competition (✓)
- Opportunity Cost (✓)

- **3650 MHz**

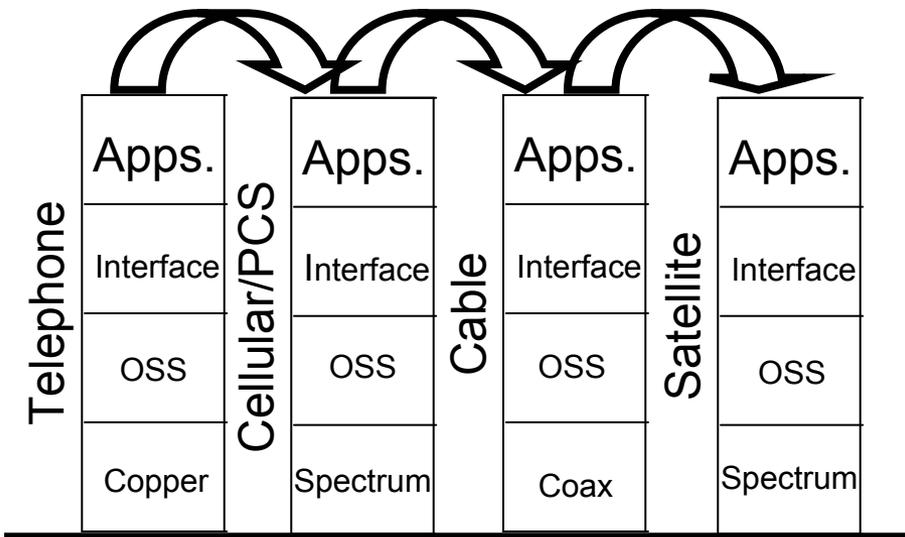
- Flexibility (✓)
- Competition (?)
- Opportunity Cost (?)

# Wireless Investors

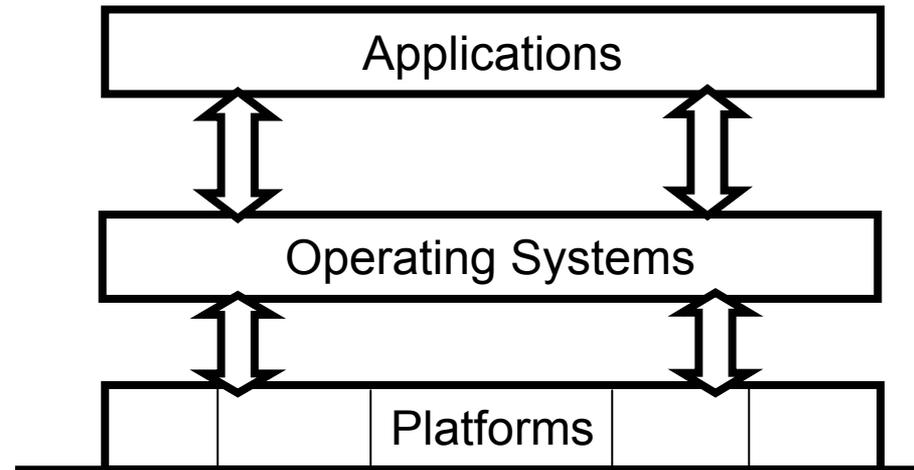
Traditional  
Communications  
World



New World  
of Digital Migration



Silos



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!**