How Policy Can Encourage Innovative Use of Spectrum

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INTRODUCTION

- The efficient use and expanded access to spectrum resources is fundamental to the future of any country's economy and global competitiveness.
- Prudent allocation of spectrum will help address the delivery of universal broadband access while still ensuring greater consumer choice in terrestrial television broadcasting
- Spectrum-based businesses employ hundreds of thousands of people, generates billions of dollars for the economy and make up one of the most dynamic sectors of the economy.

INTRODUCTION

- Radio in its many diverse forms is of vital importance not only to businesses:
  - from mobile telephony
  - Transport – land, air, sea
  - Broadcasting
  - PPDR applications
- Flexible spectrum policy is paramount as it provides an opportunity to get substantial amounts of valuable spectrum in the marketplace that could be used for wireless broadband networks and other applications.

INTRODUCTION

- Explosive growth of devices clamoring for access and increased reliance we all place on the network is putting enormous pressure and responsibility on operators, regulators and governments.
- Regulators are looking at how they can allocate more spectrum, harmonized, of course, with the rest of the world to take advantage of economies of scale for device production.
- Similarly, operators are looking at further network build-outs, just to keep up with surge in data demand

RADIO SPECTRUM- A FINITE RESOURCE

- The radio spectrum is a finite resource – there is no vacant spectrum remaining, and the cost of re-allocating spectrum to new uses is high.
- Also there is an exponential increase in the use of spectrum creating challenges for meeting the growing demand driven by
  - Mobile Broadband and computing devices,
  - Wi-Fi hotspots
  - Smart electricity grids and industrial automation (M2M or IoT).

EFFICIENT USE OF SPECTRUM

- Need to keep options open including reviewing the use of higher bands for new generations of mobile broadband.
  - E.g. Use spectrum above 24 GHz for future 5G and other networks - Internet of Things.
  - Such higher-band spectrum has been suitable only for direct line-of- sight to the receiver applications
- Need to encourage development of new technologies capable of overcoming those limitations in the bands from 5 -72 GHz

SHARING MAY BE AN OPTION

- E.g., in the USA, there were recommendations for the creation of a geolocation “spectrum access system” to delineate priority of access for users sharing the spectrum in which:
  - Federal government licensees, (DoD) would be granted highest priority of access;
  - Commercial entities, would be given secondary access;
  - A third group, “tertiary” users, would be afforded “general authorized access,” similar to Wi-Fi network operators.

RELEASE OF UNUSED SPECTRUM

- Find amenable solutions to the question of how to free up unused spectrum while compensating current owners.
  - Encourage and incentivize non-commercial and commercial users to sell off unneeded spectrum for mass consumption to encourage innovation.
- Place additional burdens on current spectrum users should they refuse to relinquish parts of their spectrum holdings for the public consumption

RE-DESIGN THE NETWORK

- Mobile Network Operators (MNO), are built around service to *people*. The driving force in delivering service is customer satisfaction
- In the network of the future, operators and regulators must forge new industry practices by restructuring and rationalizing the industry structure:
  - many of our markets, even smaller ones, have four or more players.
  - Consider use of a common carrier to optimise utilisation of spectrum and other resources

RE-DESIGN THE NETWORK

- Consider new operating models which could:
  - slash the cost of deploying base stations
  - innovate in distribution and recharging practices
  - seek more individualized pricing models, ideally delivered directly to customers rather than through advertising
- Review spectrum policy regimes to allow for the prudent and progressive expansion of spectrum resources to mobile broadband.

CONCLUSION

- Good policy and regulation with regard to spectrum allocation and licensing is required.
- Set of policies to make more spectrum available to innovative uses is required.
  - Re-assignment of spectrum from legacy single-purpose networks to high-demand, multi-purpose networks.
  - Incentive auctions, clear spectrum rights, and reassignment of government spectrum to public use
- Technical & financial structure of networks need to change to address demands of device-driven networks.

Thank you!