Key Roles of Government with Open RAN

Regulatory

Policy

Regulatory Role

▶ Spectrum Assignments
- International Harmonization (ITU)
- Regional Harmonization (e.g. ATU, CITEL, etc.)
- Allocation (Unlicensed, Assigned Licensed, Auction)
- Flexibility in spectrum assignment
- Does the spectrum model make sense for the use case?

▶ Device Type Acceptance

▶ Operator Requirements
- Performance
- Coverage
- Facilities

▶ Important to consider impacts on financial stability/survivability and flexibility for innovation

Policy

▶ Domestic assistance in innovation and new technology
- FCC Innovation Zones
- NTIA Public Wireless Supply Chain Innovation Fund
- UK Future RAN Competition (UK FRANC and ONP)
- Tax breaks for innovators and early adopters (Japan)

▶ International Cooperation; Examples:
- 2021 Prague Proposals on Telecommunications Supplier Diversity
- Quadrilateral Security Group (Quad; Australia, India, Japan, and U.S.)
- Bilateral Cooperation

Open RAN Adoption Categories

▶ Pilots & Trials
- Most major international carriers

▶ Production Deployment
- New greenfield networks
  - DISH Wireless
  - Rakuten Mobile
  - 1&1 Drillisch
- Existing brownfield networks
  - Vodafone UK
  - NTT Docomo
  - Tigo Colombia
  - Inland Cellular

Open RAN Pilots & Trials

Source: Telecom Infra Project

Adoption Case Study: DISH Wireless

▶ Advantages:
- Fast deployment time & quick rollout
- Reduced physical footprint
- Better control of resources
- Equipment Source flexibility

▶ Concerns:
- Network Performance
  - Unclear how much is Open RAN related vs using bleeding-edge core network features
- "Early Adopter's Tax" & Integration Difficulty

Source: Light Reading

Adoption Case Study: Rakuten Mobile

▶ Advantages
- Fast deployment time
- Reduced CAPEX and OPEX
  - 40% Savings per site on CAPEX
  - 30% Savings on OPEX
  - Reduced Staffing Footprint
- Flexible network deployment model

▶ Concerns
- "It's almost Open RAN"
- Self-developed solutions -> Rakuten Symphony
- Network Performance
  - Unclear if Open RAN related or due to spectrum availability

Adoption Case Study: Tigo Colombia

▶ Advantages
- Easier remote control and management
- More flexibility
- Performance comparable to traditional RAN

▶ Disadvantages
- Some features not available (e.g. ICIC)
- Lack of multi-vendor certification

▶ Neutral
- Cost on-par with traditional RAN
- Power consumption similar to traditional RAN

▶ *NOTE: The Tigo deployment is a 4G Open RAN system*

Barriers to Adoption

▶ Fear, Uncertainty, and Doubt
- Interoperability
- Performance
- Security

▶ Potential "interference" being conducted by traditional suppliers preventing progress

▶ Lack of acceptance by traditional vendors -> difficult to interoperate