



Spectrum Management and Administration in Vanuatu

**Presented to Training participant,
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The Government
of The Republic
of Vanuatu



Vanuatu – Geopolitical Overview

- Archipelago consisting of 83 islands of which 63 are inhabited
- Population of approximately 272,500 (July 2017 mini census estimates)
 - 40% of the population are under 15
 - 75% of the population live in rural areas
- GDP (2015) of \$US767.4 million
- Largest contributor to GDP is Services (tourism)
 - Agriculture follows close behind
- GNI per capita (2014) \$US3,140
 - 5% of monthly income is \$US13
 - Cheapest unlimited fixed internet service is \$US58 (512kbps)
 - 1.5Gb monthly prepaid mobile (3G/4G+) data is \$US8.95
- Challenges
 - Political stability, economic development, natural disasters, high cost of logistics (transport and shipping), ICT literacy



Legal Framework

- The Vanuatu Government, through the **Telecommunications and Radiocommunications Regulations Act, No 30 of 2009**, established a separate and independent legal regulatory body, under the name: “Telecommunications and Radiocommunications Regulator (TRR) that provides for a regulatory framework for telecommunications and radiocommunications in Vanuatu.
- Legislation that mandates TRR to managed the spectrum are;
 - **The Telecommunications and Radio Communications Regulation Act No. 30 of 2009;**
 - **Spectrum fees and Radio Apparatus License Fee regulation Order No. 157 of 2012;**
 - **Telecommunication Licence;**
- Also policies on;
 - **Spectrum and Apparatus licences and fees**
- The Regulator has in place policies and guidelines on band planning for;
 - **Fixed services**
 - **IMT services**

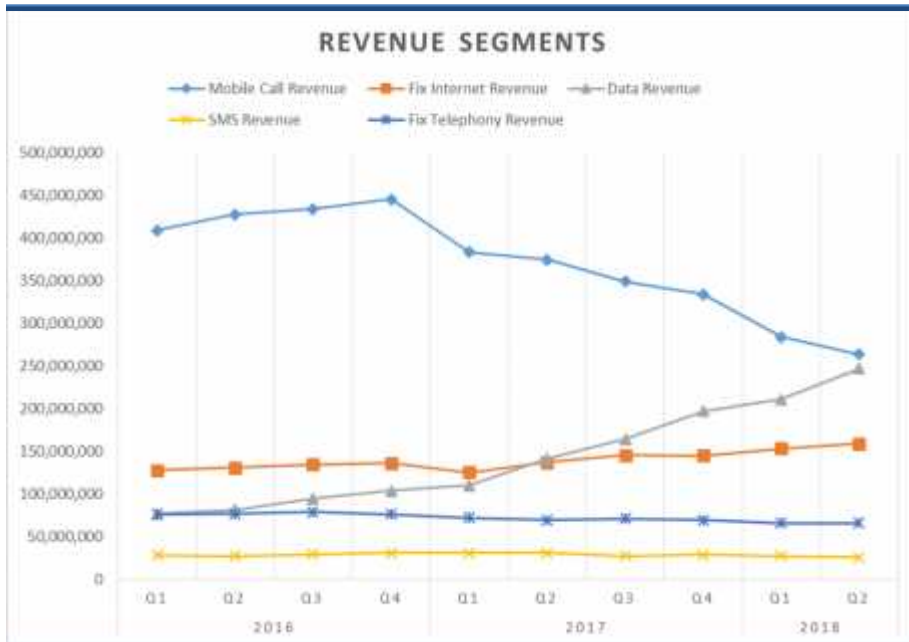


Competitive Landscape

- TRR is an Independent Regulator
- Two full service carriers (Telecom Vanuatu, Digicel)
 - Significant microwave backhaul and spur infrastructure
 - Minimal use of satellite
 - Both use licenced and unlicenced spectrum
- A further 4 ISP players
 - Telsat – WISP (unlicensed spectrum), HTS VSAT (Kacific)
 - Wantok – WISP (fixed 4G licenced and unlicenced spectrum), HTS VSAT (Kacific)
 - SPIM – Wireless hotspots (unlicenced spectrum)
 - PGL – HTS VSAT (Kacific)
- Single Submarine Cable – Interchange Cable Limited
 - Fiji – Vanuatu
 - Second cable in planning phase (RFS estimated late 2019 early 2020)
 - Planned route: Port Vila – Luganville - Honiara

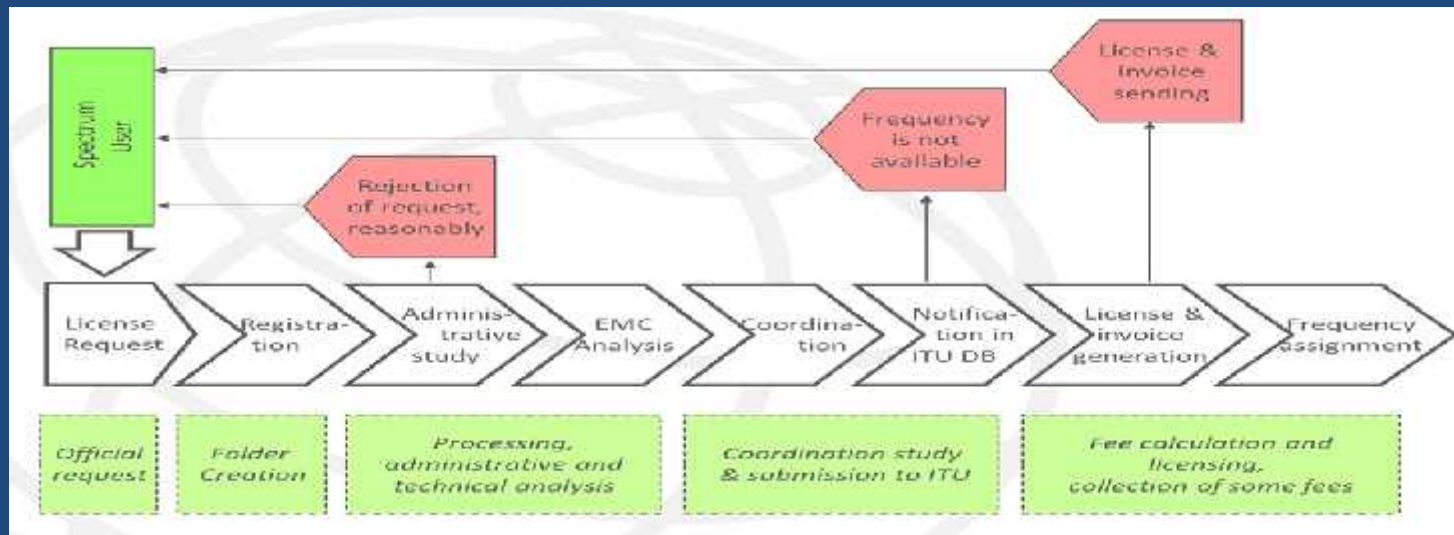


Some Statistics



National Spectrum Management

- TRR issues licenses authorizing a person to
 - Provide telecommunications services to end users to and from anywhere in Vanuatu;
 - Operate radiocommunication devices; and
 - Use radio spectrum.
- 3 types of licenses
 - Spectrum License
 - Radio Apparatus Licence
 - General User Radio Licence (GURL)



IMT Spectrum Bands

- Spectrum for IMT is used for 2G, 3G and 4G+ services
- Spectrum licences are renewed yearly
- Bands could be used for 5G services – technology neutral approach
- Current IMT spectrum bands in use
 - APT700Mhz
 - Assigned with spare capacity but not utilised
 - 900MHz
 - Fully assigned
 - 1800MHz
 - Fully assigned
 - 2100MHz
 - Assigned with spare capacity
- Future bands to be investigated
 - 800MHz (APT review and PPDR)
 - 2300, 2400, and 3.2GHz (currently all WiMAX but little use)
 - WRC19 identified bands



Current Spectrum Pricing

- IMT Bands
 - APT700MHz (90,000 VT per MHz)
 - 900MHz (90,000 VT per MHz)
 - 1800MHz (50,000 VT per MHz)
 - 2100MHz (27,000 VT per MHz)
- WiMax Bands
 - 2.3 GHz (17,000 VT per MHz)
 - 2.5 GHz (22,500 VT per MHz)
 - 3.5 GHz (15,000 VT per MHz)
- Digital TV bands
 - 500 – 690 MHz (6,750 VT per MHz)
- Radio Apparatus Licence
 - Aeronautical, Maritime, Amateur, Fixed, Land Mobile etc..
 - Approved fees are charge per Radio Apparatus Device



Future 5G Spectrum

- Vanuatu is currently investigating the planning for those bands to be allocated
 - Likely to remain unassigned in the short to medium term
- Spectrum under consideration is inline with current APT recommendations to be proposed at WRC19
- There does not appear to be any significant rationale to not proceed with the ITU recommended spectrum bands
- Current demand scenarios are low
 - Unlikely that there will be any rapid uptake of 5G services in Vanuatu in the short term



Satellite Spectrum

- Little use of C-band FSS
 - Both full service operators have C-band dishes but have effectively turned these off in favor of cable
 - Can be used in backup situations if required
 - Some C-band in use by USP, but declining
- Increasing use of Ku/Ka VSAT FSS
 - Kacific HTS services are used across the country
 - Provide coverage into remote and rural areas
 - Consideration of use for remote IMT backhaul (ie share the infrastructure)
- Other satellite services/spectrum in use
 - Meteorological
 - TVRO (Television Receive Only)
 - Maritime services (GMDSS)
 - Portable BGAN services
 - Handheld iridium



The Future Challenges for Spectrum Management

- Continue to use tools available
 - ITU SMS4DC – key to spectrum management
 - APT AFIS – for public information on spectrum holdings
- Better management of microwave fixed links
 - Licensees have had free range on spectrum
 - SMS4DC is starting to bring this into control
 - Continued need to approach Licensees for information on new and defunct links
- Shared Spectrum
 - How to share efficiently and effectively without Licensee complaints.
 - Desire to reduce cost to Licensee
- Spectrum Pricing
 - Comments of high licence fees
 - Licensing models appear to be overly complex and need to be simplified
 - Some model elements are not able to be identified
- Alternative Spectrum
 - TVWS and its use for broadband



Tankyu Tumas

