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Industry Summit, Promoting Digital Indonesia

Socio-economic Benefits of the Digital Transition and Key challenges

Thursday 6 February 2020, Jakarta



Industry Summit

Promoting Digital Indonesia

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Pacific



**Benefits of digital migration and
the digital dividend**





Importance of Digital Dividend

Digital Indonesia: *Socio-economic Benefits of the Digital Transitions & Key Challenges*

Jakarta, Indonesia
06 Feb 2020

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Scope

Definition and process

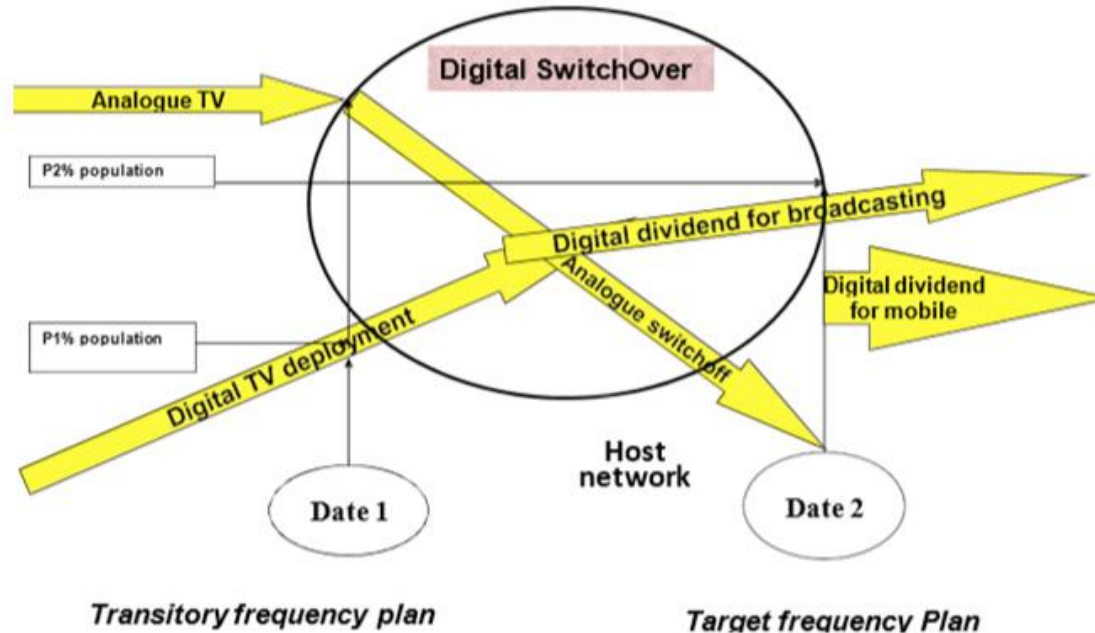
Potential Usage of Digital Dividend spectrum

Benefits

Conclusion

The digital dividend is the spectrum that becomes available over and above that required to accommodate the existing analogue television services in a digital form.

Digital Dividend- Process from Spectrum point of view



- Digital switchover starts with the first switch-off of an analogue transmission, which can only occur at a date (Date 1) when digital TV coverage deployment has reached a sufficient percentage of the population (P1% population), which should be close enough to that achieved in analogue form.
- At a date corresponding to the end of the DSO (Date 2), a higher percentage of the population (P2% population) is covered by digital TV, all analogue transmissions have been switched-off and all digital transmissions moved to the target frequency plan.

- Use the digital dividend for **broadcasting services** (e.g. provision of more programmes, high or ultra-high definition, or mobile television).
 - *This use may be accommodated in frequency planning arrangements already established at national level and with neighboring countries as part of the preparations for digital switchover. It may also require modifications of these arrangements to make available additional spectrum resources for broadcasting or other services.*

- Most countries have decided that a portion of the digital dividend should be used for **mobile services**. (e.g. IMT, PPDR services)
 - *This requires the definition of a distinct, harmonized mobile frequency allocation to enable ubiquitous service provision, universally compatible equipment, and international roaming (e.g. International Mobile Telecommunications).*

- The ability for governments or regulators to make the relevant bands available to mobile broadband for the **first digital dividend** is essentially linked to the successful transition from analogue to digital television broadcasting.
 - *WRCC-07 enabled the first digital dividend for mobile broadband in the band 790-862 MHz (800 MHz) in Region 1 and 698-790 MHz (700 MHz) in Regions 2 and 3*

- For the **second digital dividend**, it is linked to the migration to more advanced compression and modulation techniques, i.e. MPEG4 or HEVC instead of MPEG2, and more advanced modulation techniques - DVB-T2 instead of DVB-T.
 - *WRC-12 and WRC-15 enabled the second digital dividend for mobile broadband in the band 694-790 MHz (700 MHz) in Region 1 and in the band 610/614-698 MHz (600 MHz) in a few countries in Regions 2 and 3*



Benefits of BB and Digital Dividend

- Digital Dividend Customer benefits
- Digital Dividend Industry benefits
- Impact of BB on GDP growth
- Impact of BB on Employment

- **Derive primarily from the possibility of digital processing and compression, making much more efficient use of the network capacity.**
- **The key benefits** (as compared to analogue television broadcasts):
 - **Wider choice** in TV and radio channels
 - **Improved** picture and sound **quality** (depending on the system settings);
 - **Greater flexibility** due to portable and mobile reception;
 - **Enhanced information services** including the electronic programme guide or enhanced teletext services (with enhanced graphics);
 - **Increase in market competition and innovation** thanks to the potential arrival of new entrants at different levels in the value-chain, for instance new service providers, broadcasters, multiplex operators, network operators or infrastructure owner.

- **New and competitive Broadcast industry due to DTV**
 - **Lower prices (per channel)** for broadcasters
 - **Pay-tv services:** a full bouquet of services and incorporate a paying/billing system (i.e. conditional access system (CAS))
 - **New transmitter networks:** including new transmitters, antennas and transport networks
 - **New receiver devices:** many types of devices are being produced in the current market, including set-top-boxes, USB-based receivers, smart phones and integrated digital television sets (IDTVs);
 - **Conditional access systems:** the market comprises already 10 global players delivering integrated systems (head-end encryption and smart-card decryption).

Comparative Estimate - Impact of BB on GDP growth (1980- 2006)



Study	Region/Country	Impact on GDP growth for each 1% in Δ of broadband penetration
Koutroumpis (2009)	5 OECD countries with penetration higher than 30%	0.023
	8 OECD countries with penetration between 20% and 30%	0.014
	8 OECD countries with penetration under 17%	0.008
Katz et al. (2010a)	High Developed Counties in Germany	0.0256
	Less Developed Counties in Germany	0.0238
Qiang et al. (2009)	Countries of medium and low economic development	0.138
ITU Report	Latin America and the Caribbean	0.0158
	Arab States	0.02076
	Brazil	0.008
	Chile	0.009
	India	0.031
	Malaysia	0.077

Source: ITU report "The Impact of Broadband on the Economy", https://www.itu.int/ITU-D/treg/broadband/ITU_BB_Reports_Impact_of_Broadband_on_the_Economy.pdf

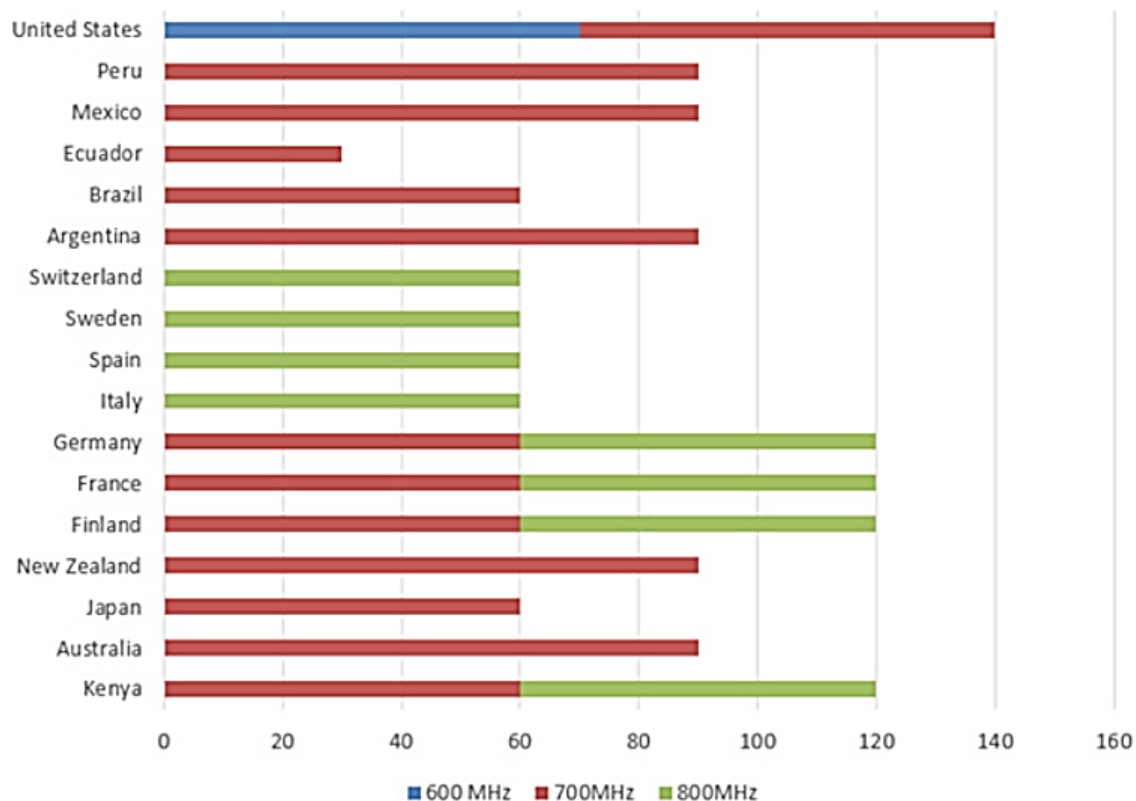
Comparative Estimate - Impact of BB on Employment (1980- 2006)



Source: ITU report "The Impact of Broadband on the Economy", https://www.itu.int/ITU-D/treg/broadband/ITU-BB-Reports_Impact-of-Broadband-on-the-Economy.pdf

Study	Region/Country	Impact on job creation for each 1% increase in rate of growth of broadband penetration	
		Employment	Unemployment
Katz et al. (2010a)	High developed counties in Germany	0.0061	
Shideler et al. (2007)	Kentucky, USA	0.14- 5.32	
Present study	Brazil		-0.0449
	Chile	0.181	
	India	0.02825	
	Saudi Arabia		-0.2434
	Indonesia		-8.6163
	Dominican Republic		-0.2952

Benchmarking of Digital Dividend Spectrum decisions



An overview of the digital switchover, including the dates and the applied compression system for digital television in a number of countries is provided by ITU and available at

<https://www.itu.int/en/ITU-D/Spectrum-Broadcasting/DSO/Pages/dataminer.aspx>

- The use of radio frequency spectrum for different services and applications for all citizens has a social and economic impact for a country.
 - *Enables public demand/choice but often implies highly political discussions.*

- Planning and coordination processes are required to cover legal and regulatory measures for the migration to digital networks including
 - *the harmonized allocation of the digital dividend spectrum;*
 - *the integration of all the relevant stakeholders into the process.*
 - *Heavy reliance on regional harmonization and cross-border coordination negotiations.*

Efforts should be undertaken as soon as possible to avoid the need for costly re-organization and potential disruptions later on.



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30 March – 3 April 2020