



# MOBILE BROADBAND SPECTRUM IN INDONESIA

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MCIT

# Outlines

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  - 3G Spectrum Demand
  - 2.1 GHz Spectrum Auction (Block 11 and 12)
- 3. Digital Dividend in Indonesia**
  - Impact of Broadband on The Economy
  - 700 MHz Band Plan
  - Strategy to Accelerate Digital Dividend in Indonesia

# Background

1. **Spectrum is a valuable and limited resource.**
2. **The spectrum crunch in Indonesia.**
3. **Exponential growth in data traffic (phenomenon of I-phone, tablet, android, etc.)**
4. **The development of mobile broadband is higher than fixed broadband in developing countries.**
5. **Spectrum demand of mobile broadband:**
  - ITU-R Report M.2078 : 1280 – 1700 MHz additional bandwidth in 2020.
  - FCC-US and OFCOM-UK : 500 MHz additional bandwidth in 2020.
  - Australia : 150 MHz in 2015, 150 MHz additional bandwidth in 2020.  
Currently Australia has 800 MHz bandwidth.
  - Currently, Indonesia has 425 MHz effective bandwidth.



# NATIONAL MID-TERM DEVELOPMENT PLAN (RPJMN) : YEAR 2010 –2014

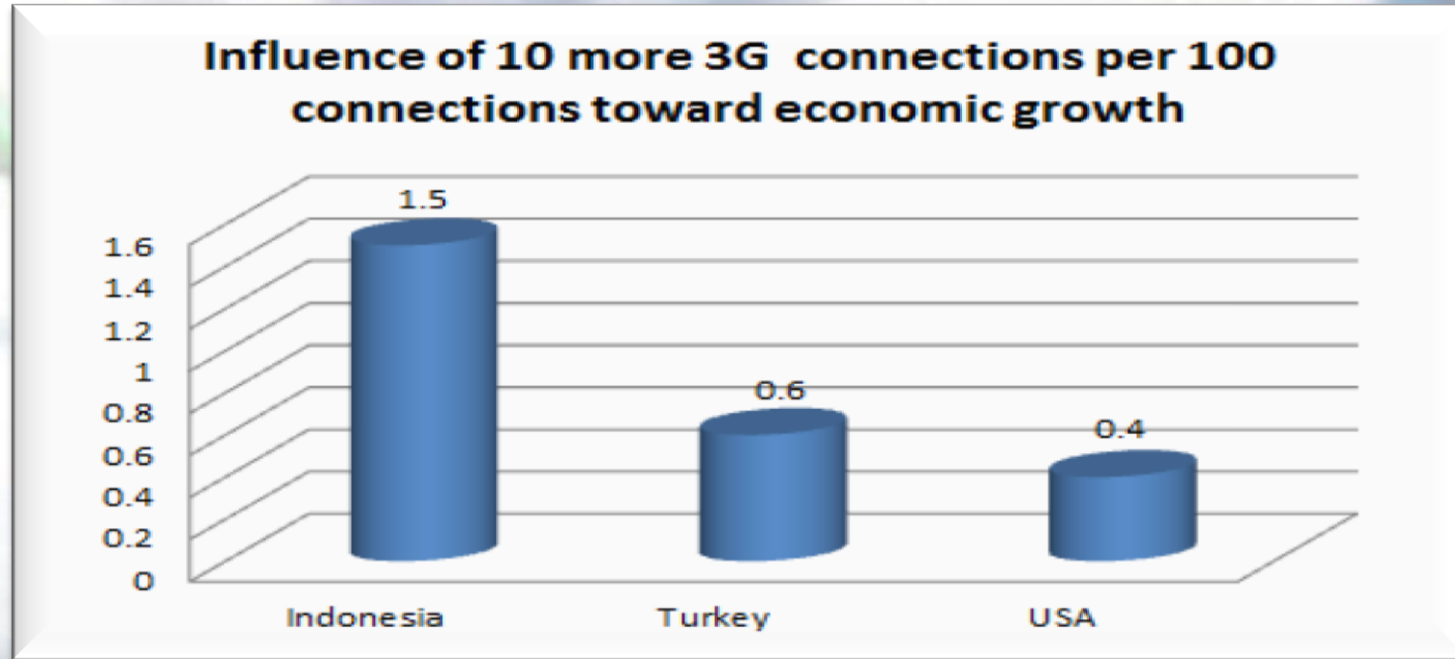
1. Penetration of Internet user :  $\geq 50\%$  population.
2. Penetration of Broadband user :  $\geq 50\%$  population.
3. Penetration of Digital TV coverage :  $\geq 35\%$  population.
4. Number of Districts/Cities served by Broadband networks : 75% from total.
5. Most likely Broadband Development will be covered by Mobile Broadband.
6. Spectrum demand study for National Broadband Development is urgently needed.

**MINISTRY OF COMMUNICATION AND INFORMATION TECHNOLOGY  
REPUBLIC OF INDONESIA**



**Additional Bandwidth for 3G Operators  
in 2.1 GHz**

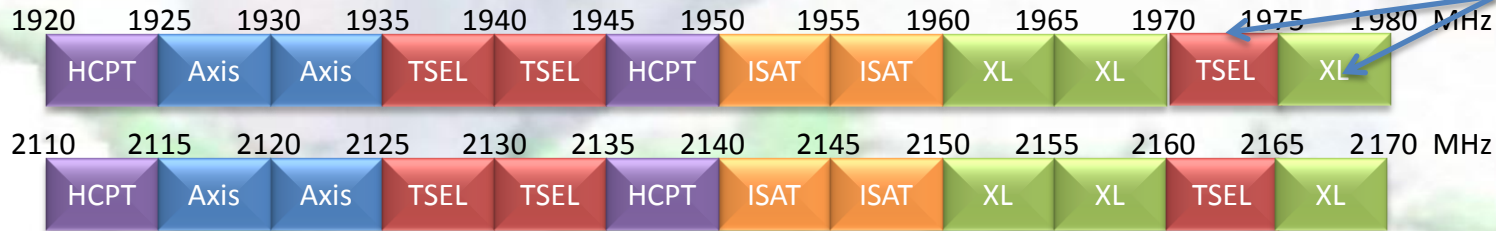
# Impact of Penetration 3G Service on The Economy



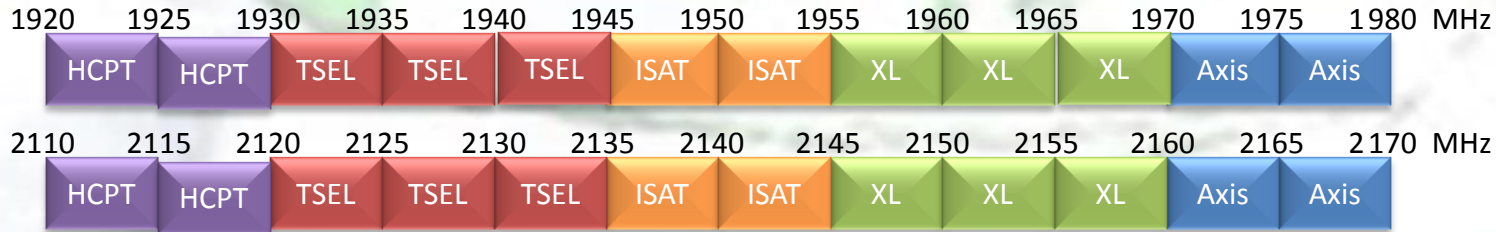
*Source : What is the impact of mobile telephony on economic Growth – Deloitte  
A Report for the GSM Association*

# Band Plan 2.1 GHz

## ➤ Band Plan 2.1 GHz – Indonesia after Auction for 2 Additional Block New Allocation on February



## ➤ Rearrangement to get contiguous



# 3G Spectrum Demand

$$\text{BW req} = \frac{\text{Rsub} \times \text{Market Share} \times \text{No of total subscriber}}{\text{Bit Efficiency} \times \text{no of site} \times \text{Nsec} \times \text{Lbh} \times \text{Of}}$$

## Spectral efficiency :

Technology	Spectral Efficiency per sector
2G – GSM	0.06
2.5G - GPRS/EDGE	0.11
3G - WCDMA (UMTS)	0.55
3,5G – HSPA	0.82
HSPA Rel 7	1.1
HSPA+ Rel 7	1.29
2,5G CDMA	0.17
2,5G CDMA 1xRTT	0.37
3G-3,5G-EVDO	0.82
4G – LTE	1.3
LTE 2x2 MIMO Rel8	1.5

## Dimensioning Parameters :

Parameters	Value
Bit Efficiency	1.29 (HSPA+ Rel7)
Busy Hour average loading (Lbh)	50%
Required user data rate (Rsub)	0.256 Mbps
Overbooking factor (Of)	20
No of sectors per site (Nsec)	3
Bit Efficiency	1.29
Busy Hour average loading (Lbh)	50%



# Dimensioning Calculation

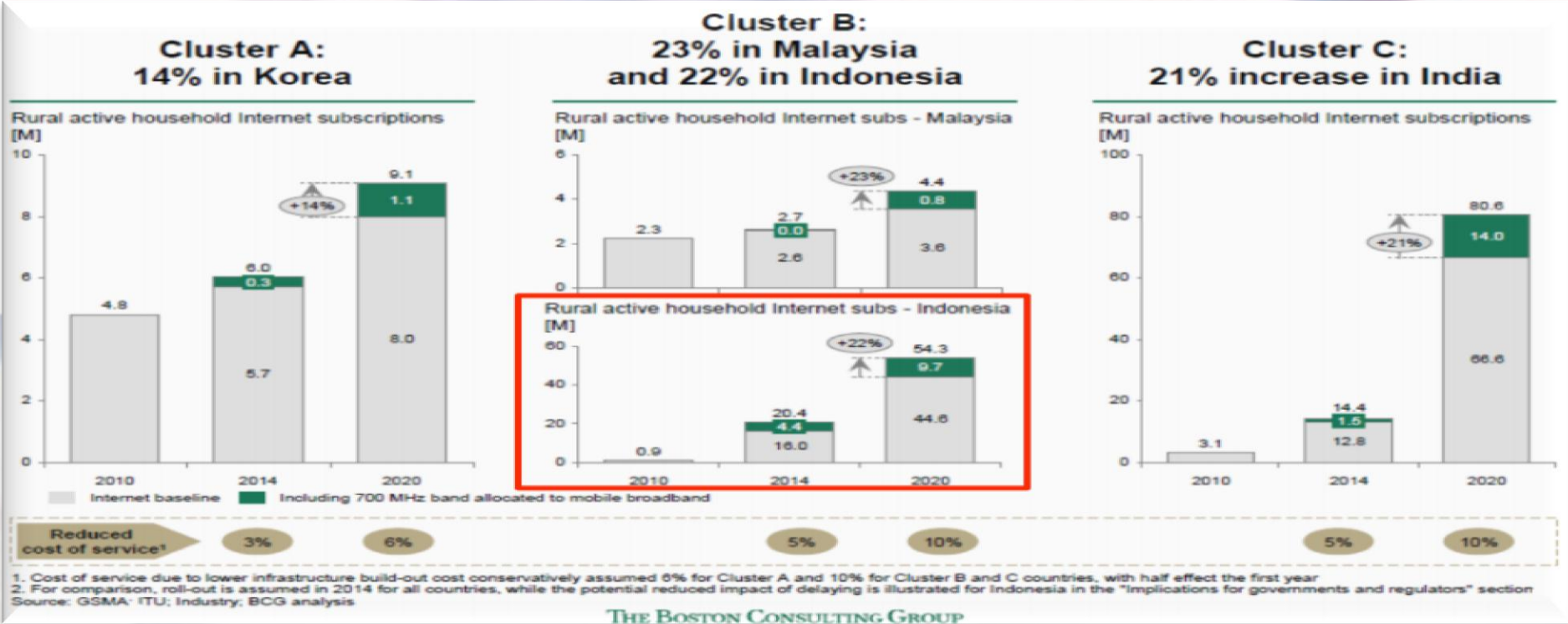
Operator	Band Plan	Technology	U/L	D/L	BW FDD	Spectral Efficiency	Market Share	Total BTS in Jakarta	Total Subscribers in Jakarta	Required BW	Surplus/ Defisit BW
Telkomsel	2100	UMTS/HSPA	2130 - 2135	1940 - 1945	5	1.29	41.10%	1566	4,110,000	17.36	-2.36
	2100	UMTS/HSPA	2125 - 2130	1935 - 1940	5	1.29					
Indosat	2100	UMTS/HSPA	1950 - 1955	2140 - 2145	5	1.29	17.50%	810	1,750,000	14.29	-4.29
	2100	UMTS/HSPA	1955 - 1960	2145 - 2150	5	1.29					
XL	2100	UMTS/HSPA	1960 - 1965	2150 - 2155	5	1.29	17%	756	1,700,000	14.87	0.23
	2100	UMTS/HSPA	1965 - 1970	2155 - 2160	5	1.29					
HCPT	2100	UMTS/HSPA	1920 - 1925	2110 - 2115	5	1.29	4.80%	463	480,000	6.86	3.14
	2100	UMTS/HSPA	1945 - 1950	2135 - 2140	5	1.29					
NTS (AXIS)	2100	UMTS/HSPA	1930 - 1935	2120 - 2125	5	1.29	3%	497	300,000	3.99	6.01
	2100	UMTS/HSPA	1935 - 1940	2125 - 2130	5	1.29					

\*ASSUMED Total Subscriber in Jakarta 10 Million

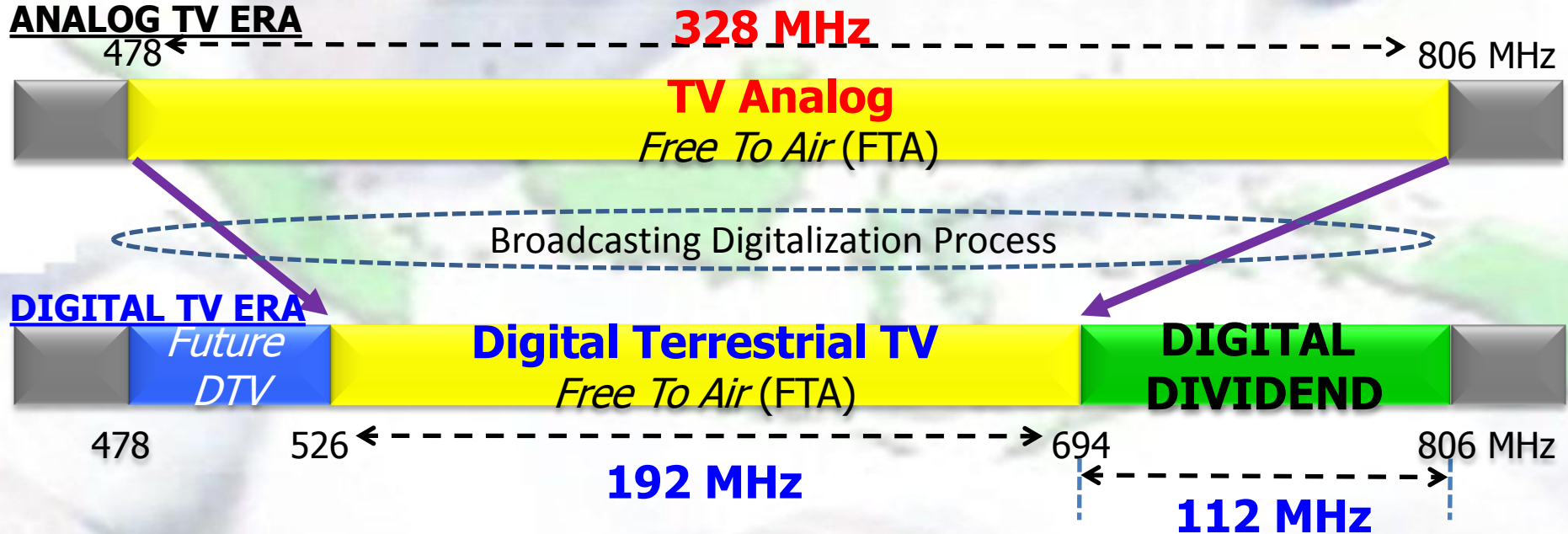


**Digital Dividend in Indonesia**

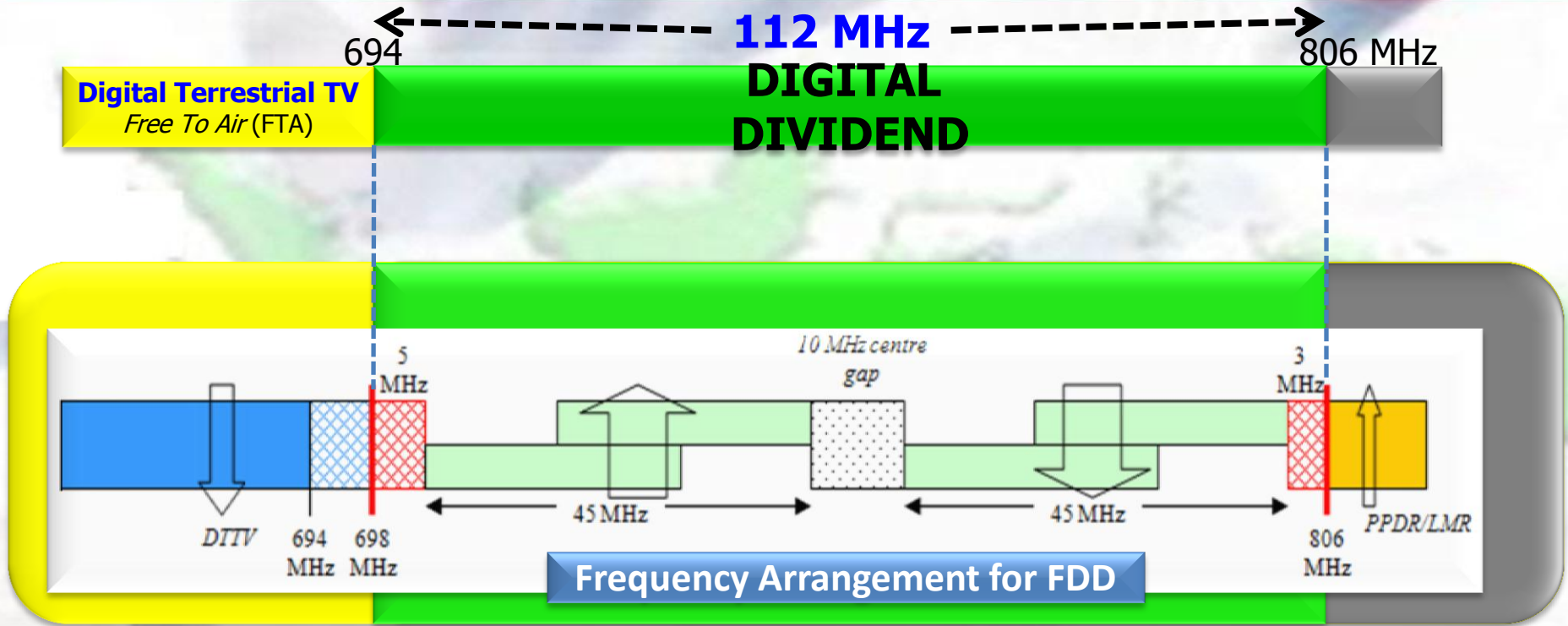
# Impact of Broadband on The Economy



# Digital Dividend



# Spectrum Allocation For Mobile Broadband



# Digital TV Roll Out Plan : 2012-2017



**2012**



Java + Riau Island

**2013**



+North Sumatra  
+East Kalimantan

**2014**



Java + Sumatra +  
East Kalimantan

**2015**



+South Sulawesi  
+North Sulawesi +  
Kalimantan (except  
South Kalimantan)

**2016**



+ South Kalimantan  
& Rest of Sulawesi

**2017**



+ Papua & Maluku

**2018**

**NATION-WIDE  
ANALOG SWITCH-OFF**

 : DIGITAL TV COVERAGE AREA

# Frequency Harmonization With Other Countries

## Recent Developments at National Level in Asia Pacific

### Taiwan:

- Government has announced it will auction 2 x 45 MHz in accordance with the APT 700 MHz FDD band plan (Band 28) by December 2013

### Korea:

- Allocated 2 x 20 MHz in accordance with the APT FDD band plan
- Usage of remaining spectrum officially not yet decided
- Strong support for APT FDD band plan
- Analog switch off complete by end-2012

### India:

- Adopted National Frequency Allocation plan stipulating a requirement for IMT in 698-806 MHz
- TRAI has recommended to auction in accordance with the APT 700 MHz FDD band plan

### Australia:

- Adopted APT FDD 2 x 45 MHz band plan (Band 28); will auction this spectrum together with 2.5 GHz in April 2013



### Japan:

In June 2012, MIC awarded licenses to DoCoMo, KDD, eAccess in accordance with APT FDD 700 MHz (Band 28)

### Papua New Guinea:

Adopted APT FDD 2 x 45 MHz band plan

### Tonga:

Adopted APT FDD 2 x 45 MHz band plan

### New Zealand:

- Considering to auction in accordance with APT FDD 2 x 45 MHz band plan with spectrum rights commencing on December 1st, 2013
- Official announcements on auction/timing expected soon

Source : Qualcomm

# Strategy to Accelerate Digital Dividend in Indonesia

- Only less than 7% Spectrum Fee Revenue been used for ICT Sector. The rest is used for general purposes.
- Most of the spectrum fees coming from mobile cellular industry contribution (more than 90%)
- Possible action to request some portion of that revenues for accelerating spectrum refarming including refarming in Digital Dividend
- Need of comprehensive strategic policy and economy campaign to convinces relevant parties (i.e Ministry of Finance, Parliament, etc), i.e:
  - Mobile Broadband will contribute significant growth in GDP, increasing productivity and efficiency in transportation, reducing energy subsidy.
- Joint Announcement with Singapore, Brunei and Malaysia to commit to adopt APT band plan on 700MHz (18 June 2013, CommunicAsia )



*Thank you  
for your attention...*



**Ministry of Communication and Information Technology  
Republic of Indonesia**