

# **Spectrum and Technology for IMT**

**in**

# **Viet Nam**

**FEB**

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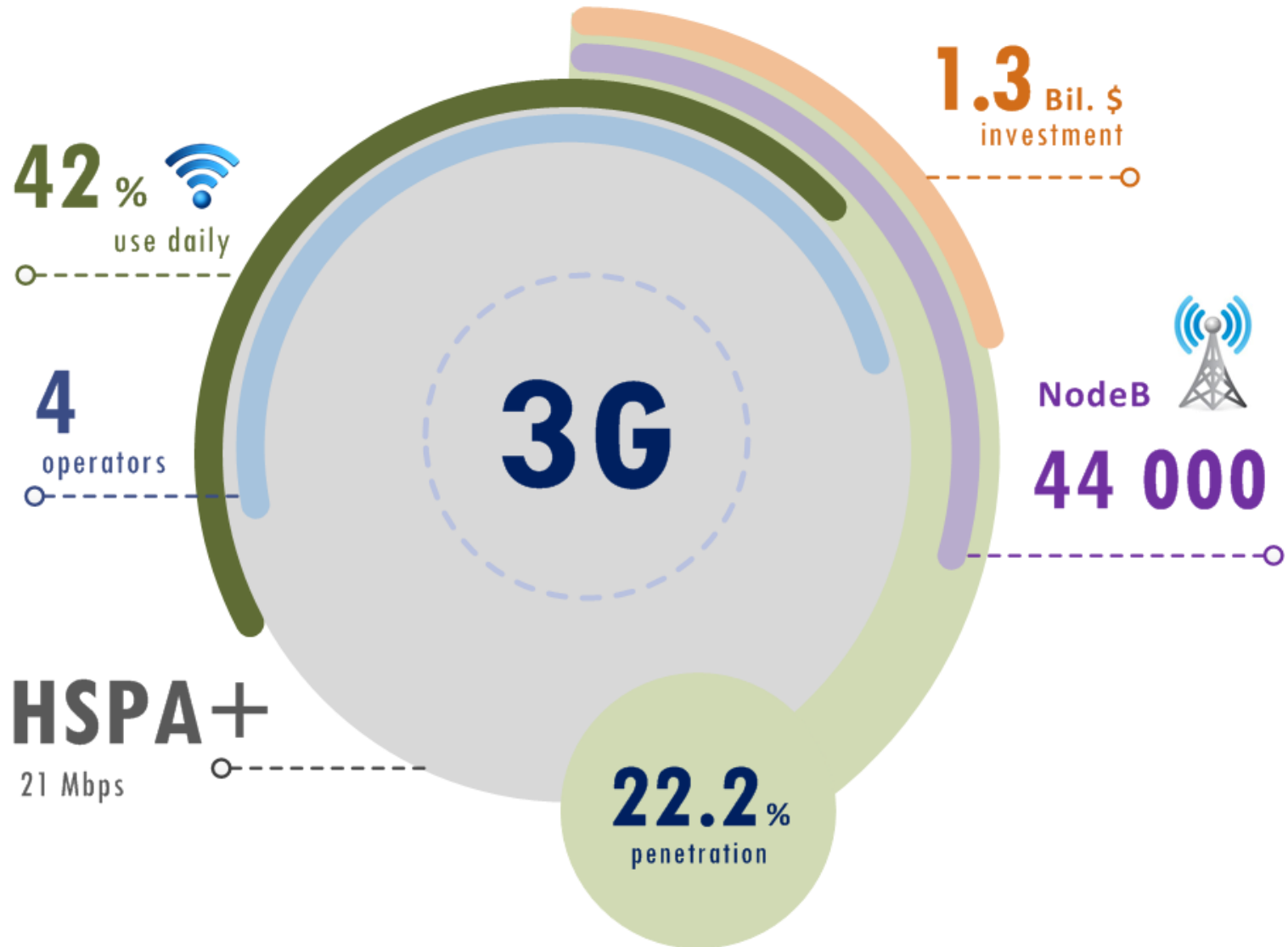
**2014**

Mobile traffic growth

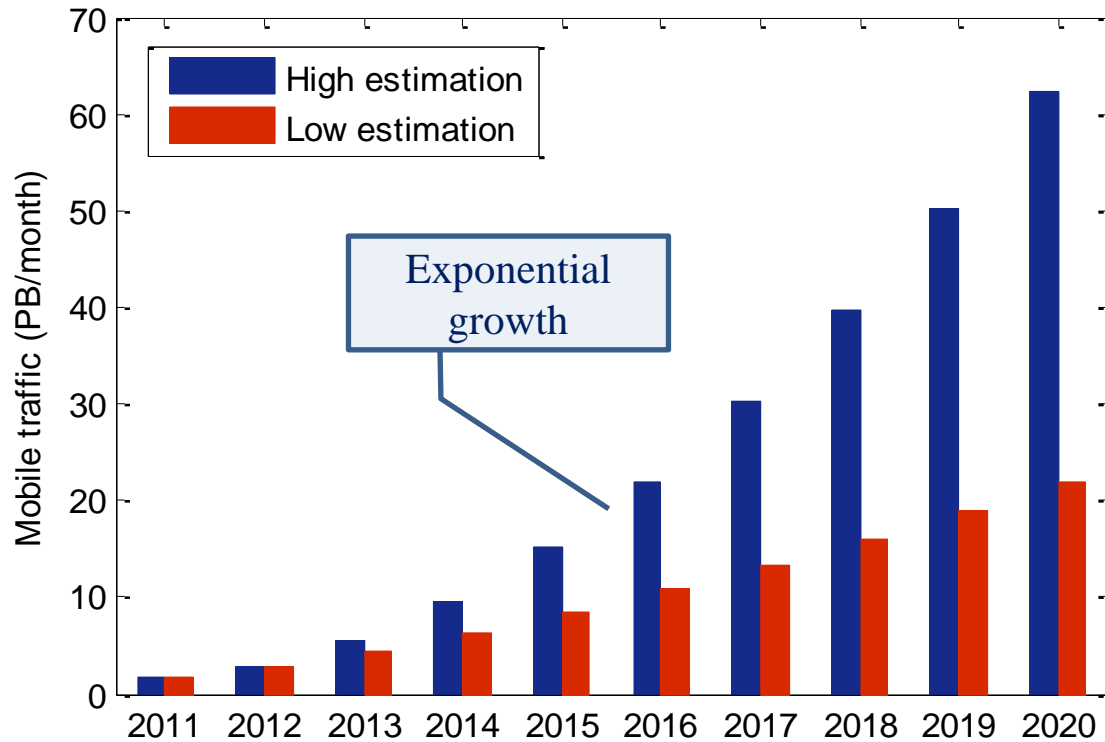
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Spectrum demand

# Mobile broadband overview

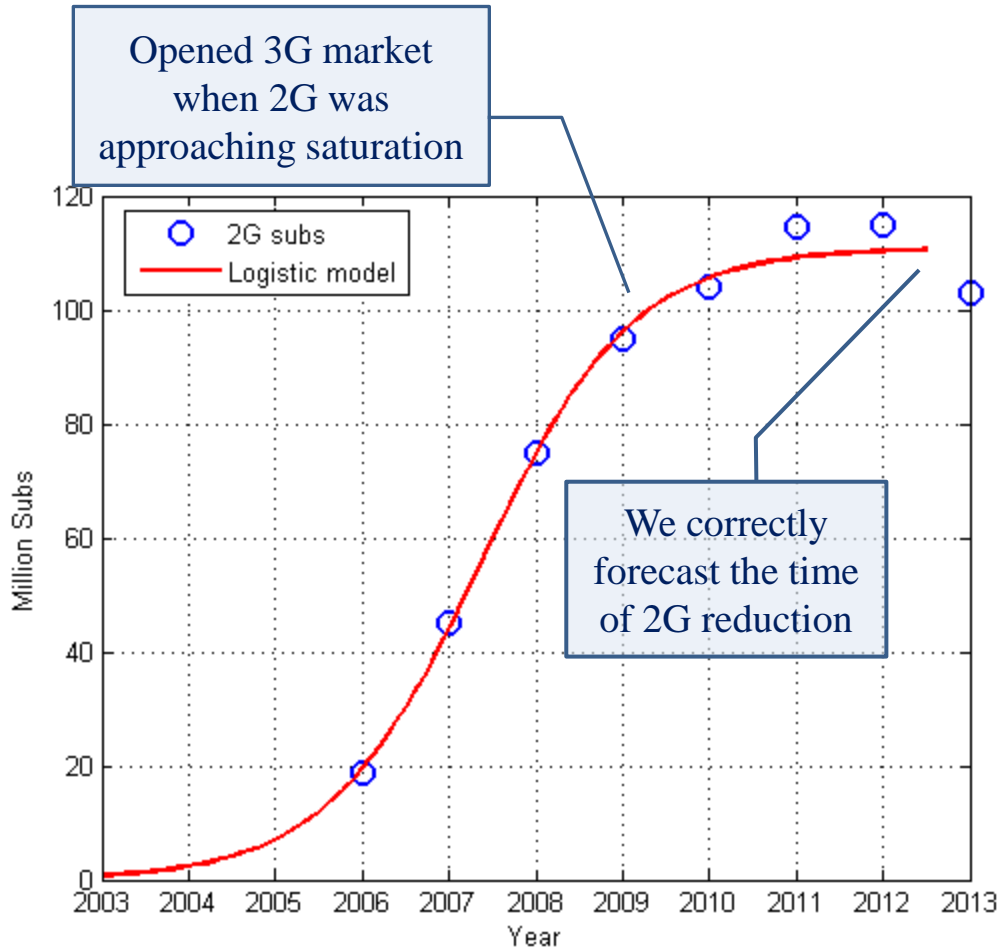


# Mobile traffic projection

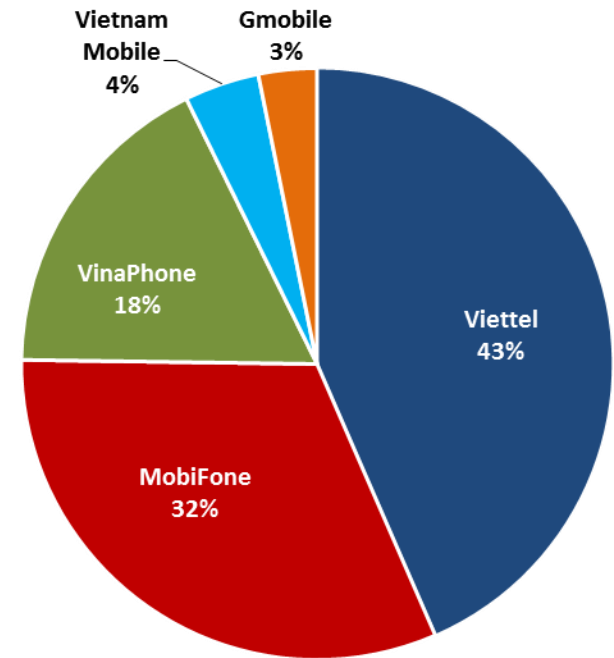


# Mobile growth

## Subs & Market share



Mobile subs. growth



Mobile market share

# Spectrum Demand

## ITU-R estimation toward 2020

	Predicted total (MHz) <i>ITU-R M.2078</i>	5D's recent result (MHz) <i>(* subject to change)</i>
Low	1 280	1 340
High	1 720	1 960

## GSMA estimation toward 2020

UK	Brazil	China	USA
2074 MHz	2080 MHz	1844 MHz	1939 MHz

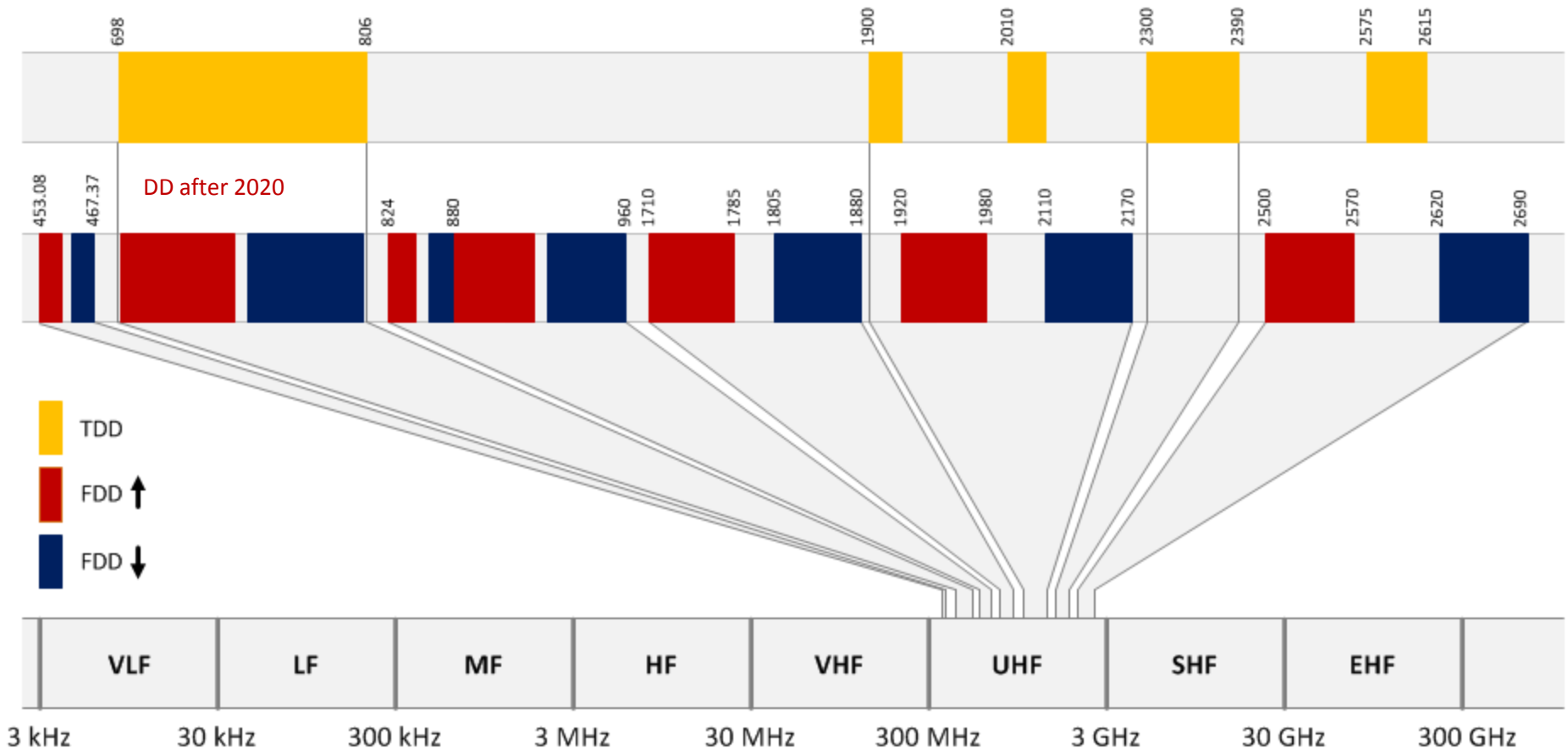
## Country estimation toward 2020

Australia	Russia
1081 MHz	1065 MHz

# Spectrum availability

## Grant view

370,6 MHz in use, 315 MHz ready to use, DD (100 MHz) is planned → NEED MORE?



Sweet Band

# Viet Nam status

## Social factors



Commuting



- Highly competitive markets
  - ARPU: VN < \$5; Japan ~ \$58.46; Korea ~ \$34.20;
- GDP below average
  - Low demand on devices (smart phones, services);
- Lack of local contents
  - E-banking, E-business,... are still not widely used
- Lack of modern transportation



Basic phones are used significantly



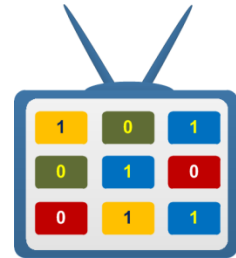
# Mobile Broadband

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# Spectrum Trend

# Digital Dividend Roadmap

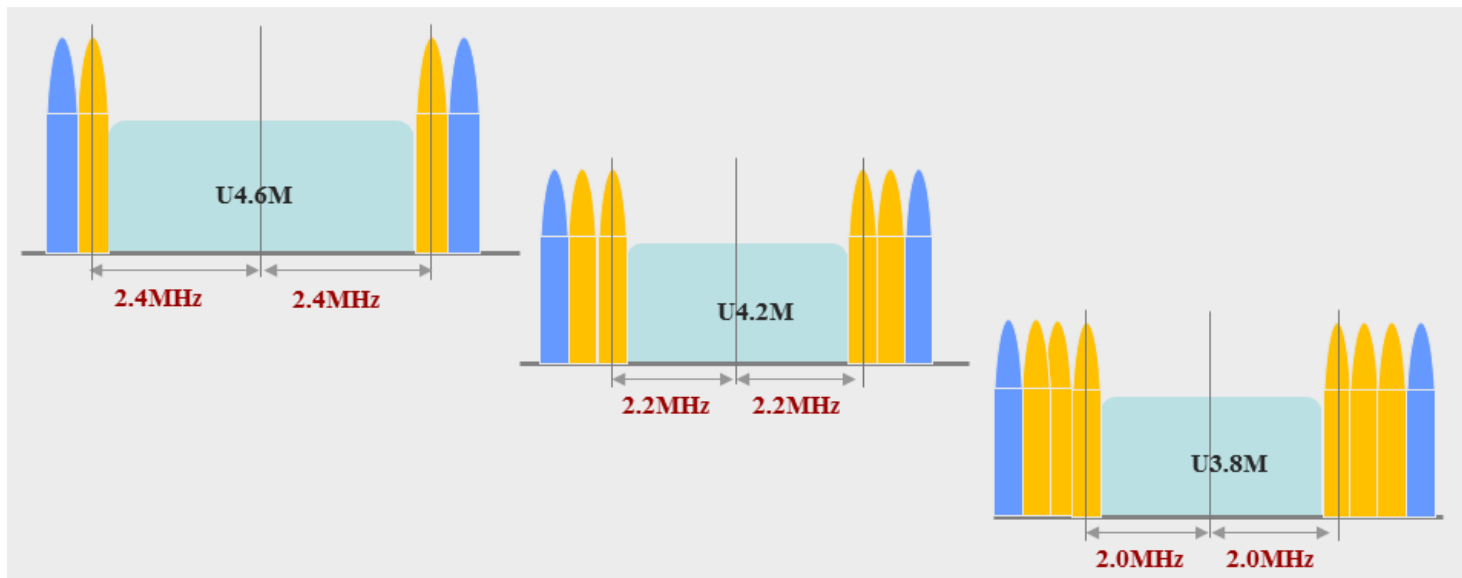
700 MHz getting more support, even in Europe



Align with  plan

# 2G band's Re-farming

Heading toward more efficient spectrum use



- Reused the existing infrastructure effectively
- Set priority to the coverage service in rural areas
  - Moderate smart phone usage

# 2G band's Re-farming

## AWG

Meeting	Date	Venue
15th Meeting of the APT Wireless Group (AWG-15)	27-30 August 2013	Bangkok, Thailand
14 <sup>th</sup> Meeting of the APT Wireless Group (AWG-14)	18-21 March 2013	Bangkok, Thailand
<u>13<sup>th</sup> Meeting of the APT Wireless Group (AWG-13)</u>	12-15 September 2012	Danang, Vietnam
12 <sup>th</sup> Meeting of the APT Wireless Group (AWG-12)	10-13 April 2012	Xiamen, P. R. China
11 <sup>th</sup> Meeting of the APT Wireless Group (AWG-11)	14-17 September 2011	Chiang Mai, Thailand
10 <sup>th</sup> Meeting of the APT Wireless Group (AWG-10)	22-25 March 2011	Bangkok, Thailand



AWG

WG Tech

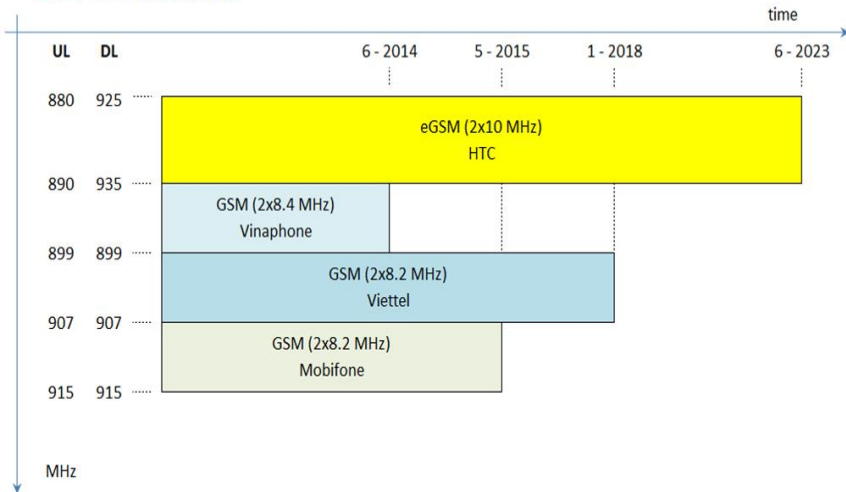
Task Group 3  
IMT

Migration strategy of GSM to mobile broadband  
(Chair by Dr. Dinh Chi HIEU of ARFM)

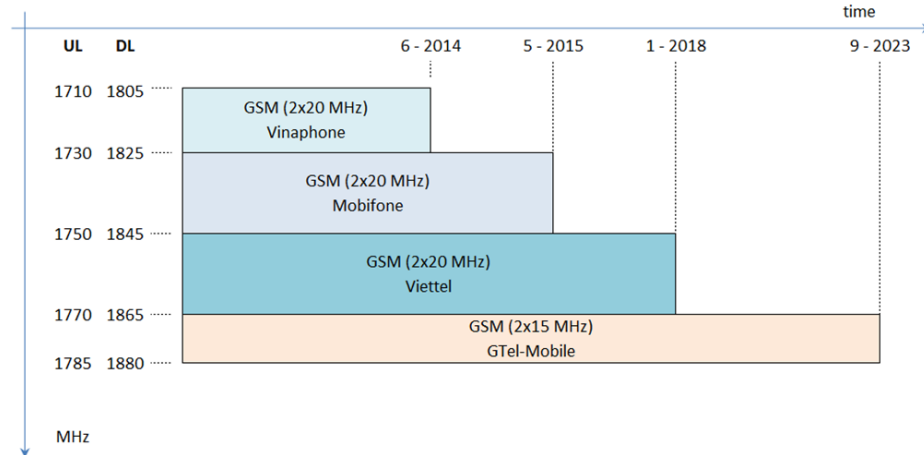
# 2G band's Re-farming

## Vietnam

900 MHz band



1800 MHz band



- Operators do not have multiple 5MHz bandwidth in 900MHz band
- Different license expiration's date

Challenging  
Re-farming issue

- Regulator re-plans all 2G spectrum
- Regulate the migration roadmap of operators. Operators are allowed to re-plan their network.

# 2G band's Re-farming

## Vietnam

- **Operators' proposals**
  - 900 MHz band: HSPA
  - 1800 MHz band: LTE
- **Regulator's view**
  - Support the effort to use spectrum more effectively
  - Support the effort to extend mobile broadband coverage
  - Contribution to WTDC
- **Challenging issues**
  - Do not have multiple 5MHz bandwidth in 900MHz band
  - Different license expiration's date

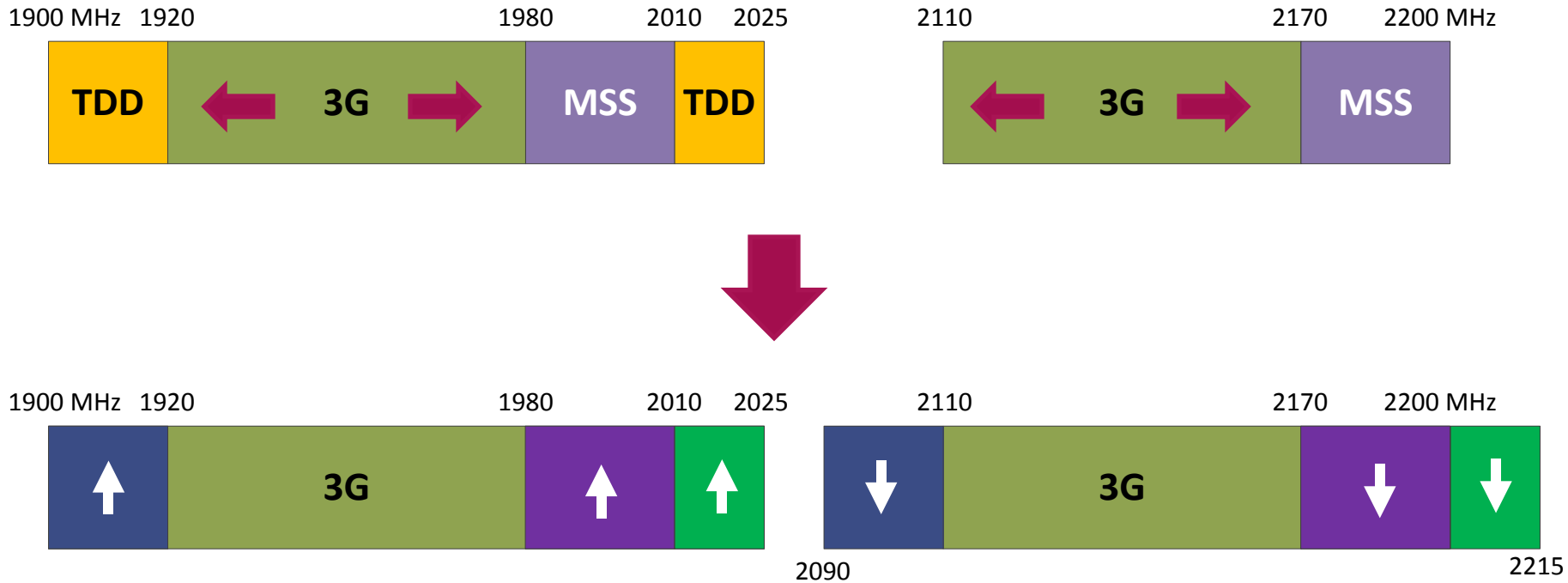
# Challenging issue

## OTT

- **Opportunity**
  - leverage mobile data traffic
  - New business model
- **Operators' concern**
  - shrinking legacy revenue (voice, messaging and especially roaming)
- **OTT will growth**
  - Telcos need to adapt
  - Partnership vs. competition
- **Regulator's view**
  - OTT companies should operate in a responsible manner
  - To develop policies in managing OTT services

# New Trend

## Band extension





# New Trend

## SDL

1 300 MHz

1 525 MHz

CEPT L-band

1452 MHz

1484

1492

Mobile broadband

SDL

Supplemental Downlink  
(Unpaired spectrum, e.g. L-band)

F1'

FDD Downlink  
(Paired, e.g. 2.1GHz)

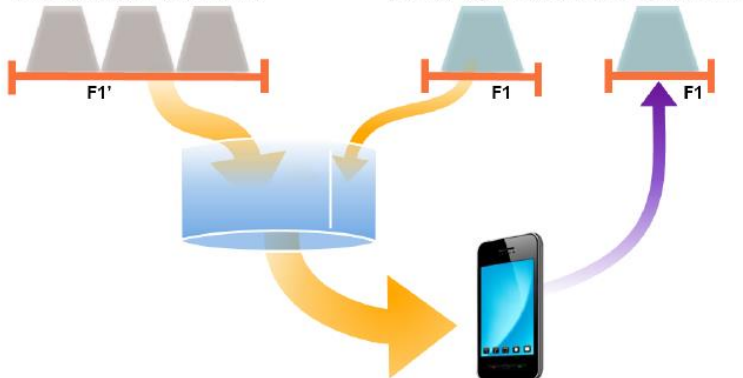
F1

FDD Uplink  
(Paired, e.g. 2.1GHz)

F1

Orange France  
**trials**

from Jun, 2012



SDL: Supplemental Down Link

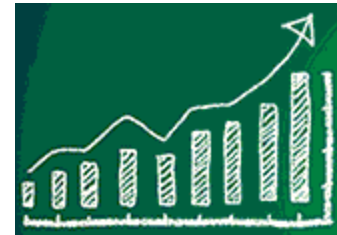
# Spectrum Strategy

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# Main principles

- **Forecast is crucial:**

- Mobile traffic growth;
- Spectrum demand;
- Time to open up spectrum band(s).

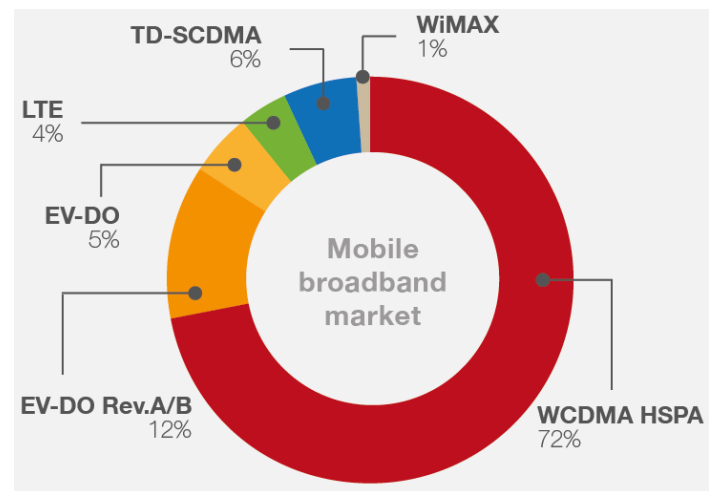


- **Release new band when technology when mass-market has been established:**

- Cost-effective;
- Wide range of handset for end-users;
- Avoid first adopter's pitfalls.

# Main principles

- Global/regional bands plan harmonization:
  - Economic of scale;
  - Competition to reduce price;
  - Greatest economic benefit.
- Re-farming at low cost



# Bands in Study

- Digital Dividend (700 MHz)
- Harnessing the coverage bands
  - Re-farming: CDMA 850, GSM 900, 1800 MHz
- New bands in 2 GHz
- New band in 1.5 GHz

# Summary

- Mobile broadband will be the most active sector of wireless communication in Vietnam
- Re-farming is a prime regulation tool
  - Harnessing the coverage bands
  - Cost-effective
  - Open up new opportunity to operators
- Collaboration effort of regulator, industry and operators
- Regional approach to the common issue