ITU Regional Radiocommunication Seminar 2013 for Asia-Pacific
Nadi, Fiji
28 Oct – 1 Nov 2013

Digital Television Migration

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Agenda

- Why Migrate?
- Some Main Issues
- Migration Status
- Conclusions

Viewers

More programs

Interactive

Better quality

Anywhere

Broadcast Equipments

Contents

New players

Better access

Small players

Competition

Diverse program

Government

Innovation

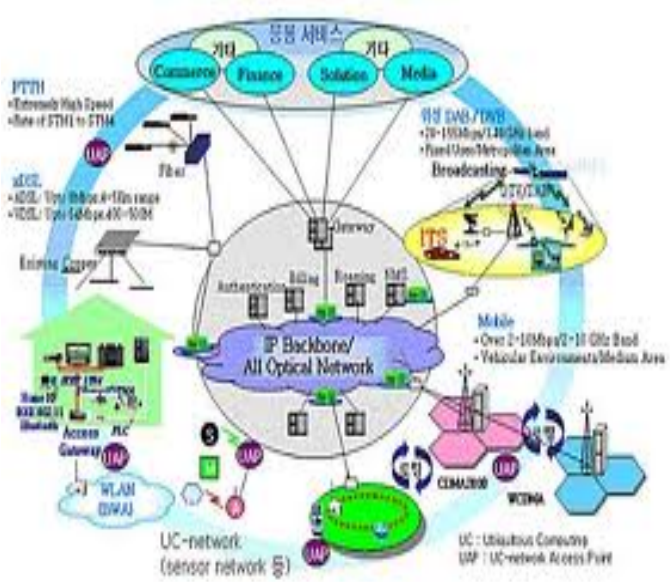
Competition

Market

Revenue

Convergence

CONVERGENCE



Spectrum Efficiency

Digital Dividend

- The digital dividend is the amount of spectrum made available by the transition of analogue television to digital.
- The digital dividend represents very significant amounts of spectrum.

Use of Digital Dividend

- Broadcasting services
  - provision of more programs, high definition, 3D or mobile television)
- Other services, such as the mobile service,
  - in a frequency band which could be shared with broadcasting (e.g. short range devices) or
  - in a distinct, harmonized allocation (e.g. IMT).

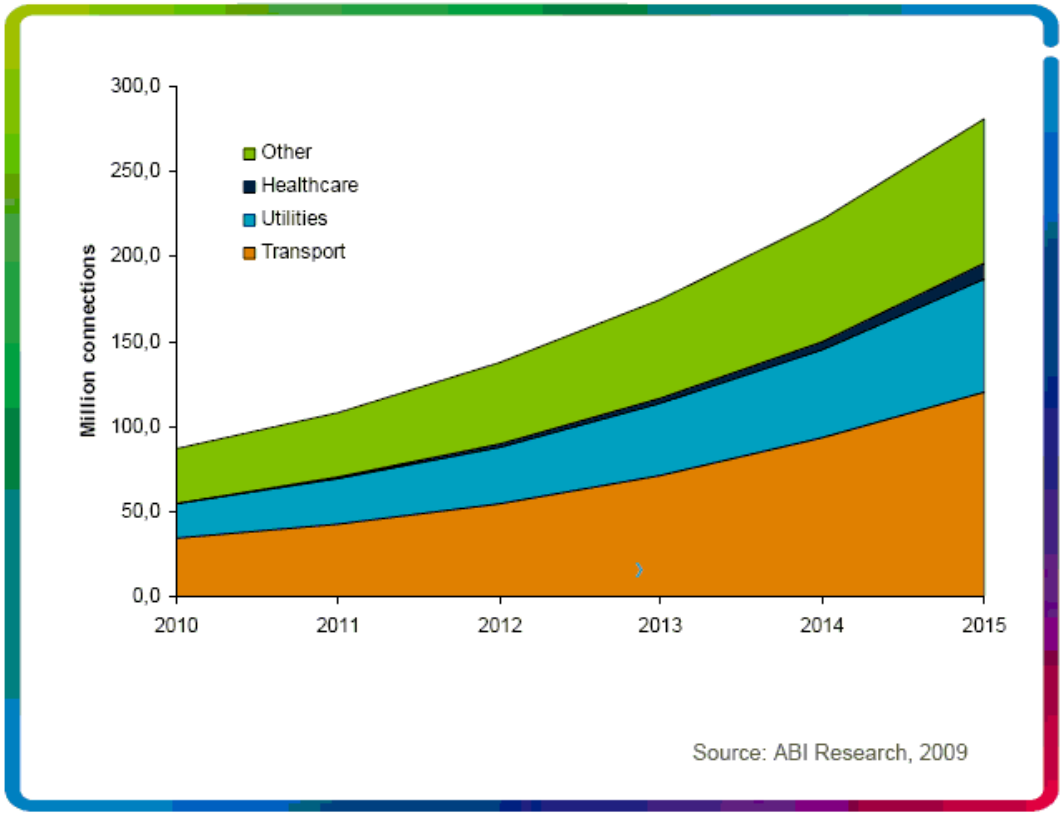
Information big bang!

- In 2010, there was more information put on the web than everything that have been said and written in the history of mankind
- Dr. Ian Goldin, Director of the James Martin 21St century school, Oxford, UK
  - 2 days in 2012
  - 4 minutes in 2016!

M2M

Global M2M market revenue to grow from USD 5 billion in 2008 to USD 250 billion in 2012

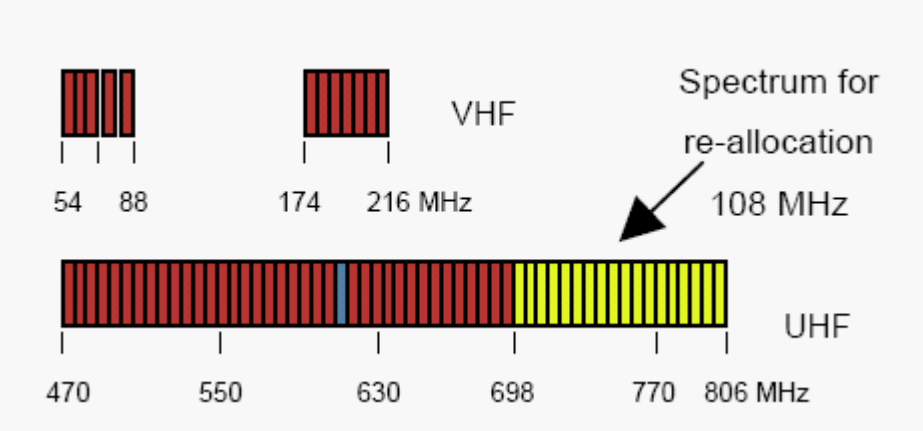
Beecham Research



Future is Broadband Wireless

Spectrum…

The USA



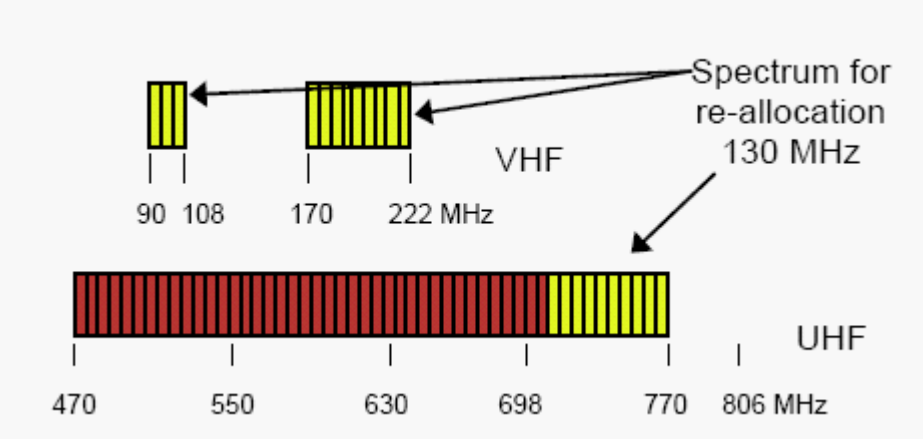
- Early identification
- Sold even before ASO – June 2009
- 18 X 6 MHz = 108 MHz

700 MHz Auction – Mar 2008

(Source: GSMA)

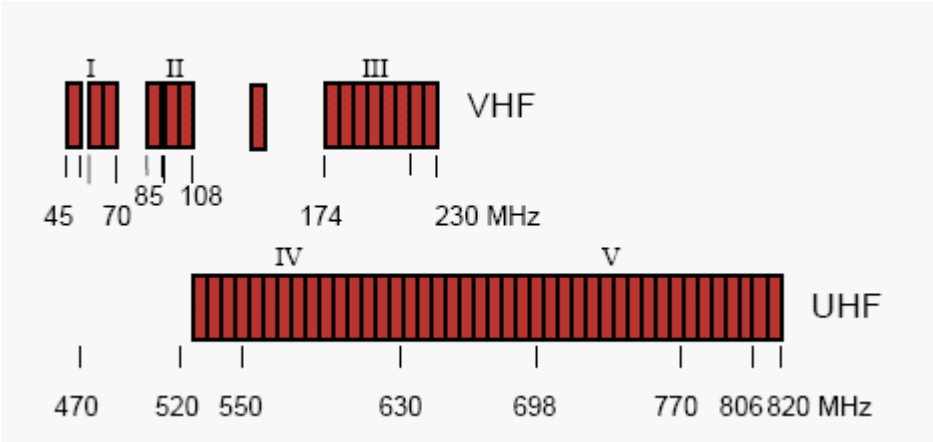
Verizon A, B & C	**$9.4 Billion**
AT&T Mobility B	**$6.6 Billion**
Frontier Wireless	**$711 million**
Qualcomm B&E	**$558 million**

JAPAN



- 10 UHF channels = 60 MHz
- VHF = 70 MHz
- A total of 130 MHz

Australia



- 126 MHz from 694-820 MHz
- Consultation on the digital dividend band configuration, licence design and the method of allocating the spectrum.

MAIN ISSUES

Future TV market?

Digital TV Standards

ITU Recommendations

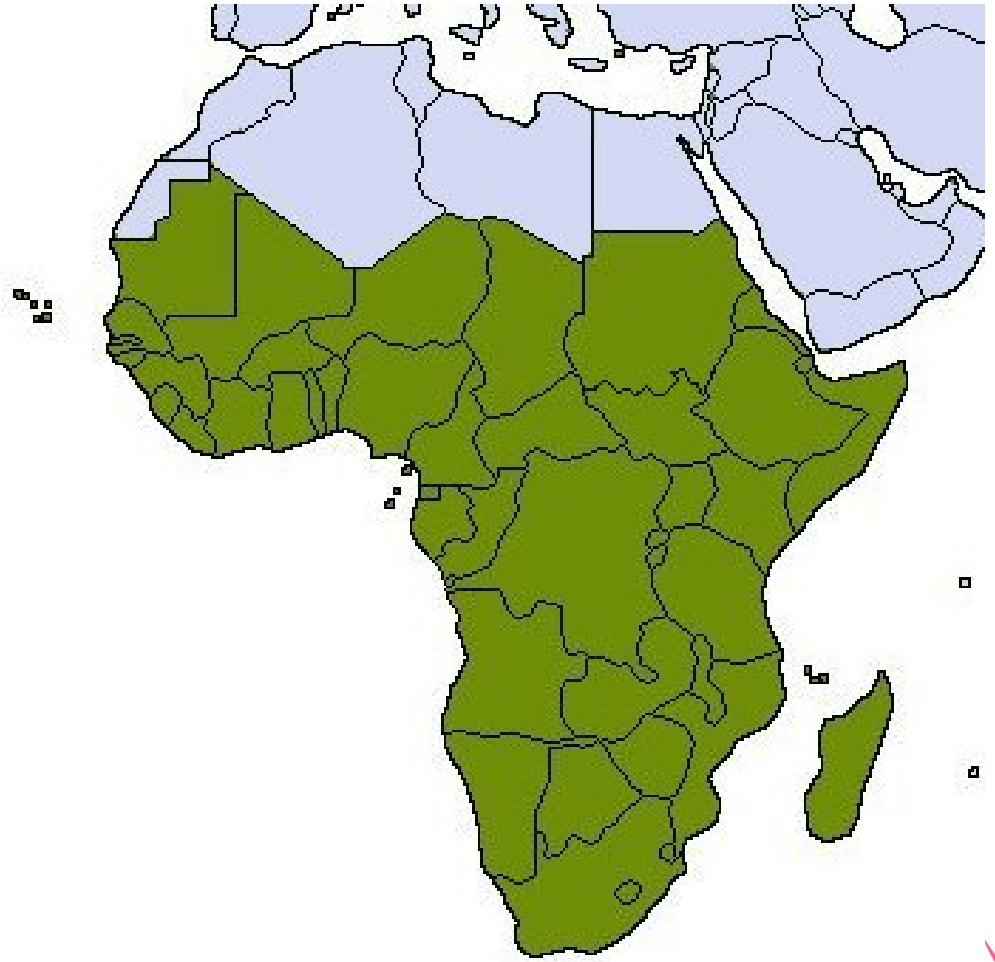
- Recommendation ITU-R BT.1306-6
  Error-correction, data framing, modulation and emission methods for digital terrestrial television broadcasting
- Recommendation ITU-R BT.1877
  Error-correction, data framing, modulation and emission methods for **second generation** of digital terrestrial television broadcasting systems
- DTTB System Selection Guideline ITU-R BT.1306-6

Frequency Planning?

Public Communication!

STATUS

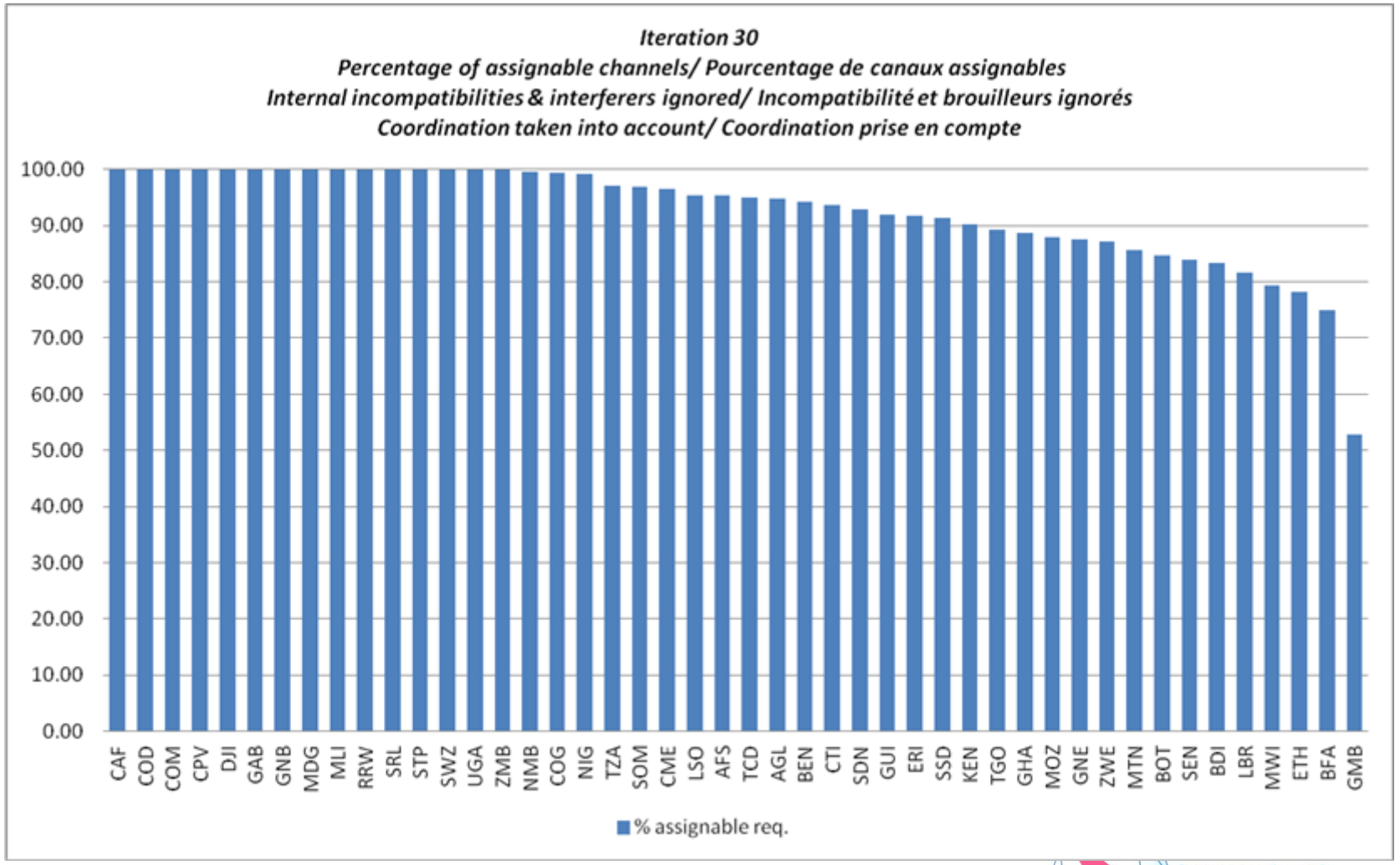
Sub-Saharan Countries



Planning Objective

- To identify a minimum of 4 coverage layers (multiplexes) for the territories of all sub-Saharan African countries
- Above 694 MHz for Mobile service (Digital Broadband)

Iteration 31



Asia Pacific ASO Timetable

ECONOMIES	Year	System	Mobile
AFGHANISTAN	ND		
AUSTRALIA	2013	DVB-T	
BANGLADESH	2015	DVB-T	
BHUTAN	2020	DVB-T/T2	
BRUNEI DARUSSALAM	2015	DVB-T	
CAMBODIA	2015	DVB, DTMB	T-DMB
CHINA, PEOPLE'S REPUBLIC OF	2018	DTMB	CMMB
COOK ISLANDS	2020		
DPRK	ND		
FIJI	2014		

Asia Pacific ASO Timetable..

HONG KONG (CHINA)	2015	DTMB	
INDIA	2015	DVB-T/T2	
INDONESIA	2018	DVB-T	
IRAN, ISLAMIC REPUBLIC OF	2020		
JAPAN	2012	ISDB	ISDB
KIRIBATI	ND		
KOREA, REPUBLIC OF	2012	ATSC	T-DMB
LAOS	ND		
MALAYSIA	2015	DVB-T	
MALDIVES	ND	DVB-T, ISDB-T	

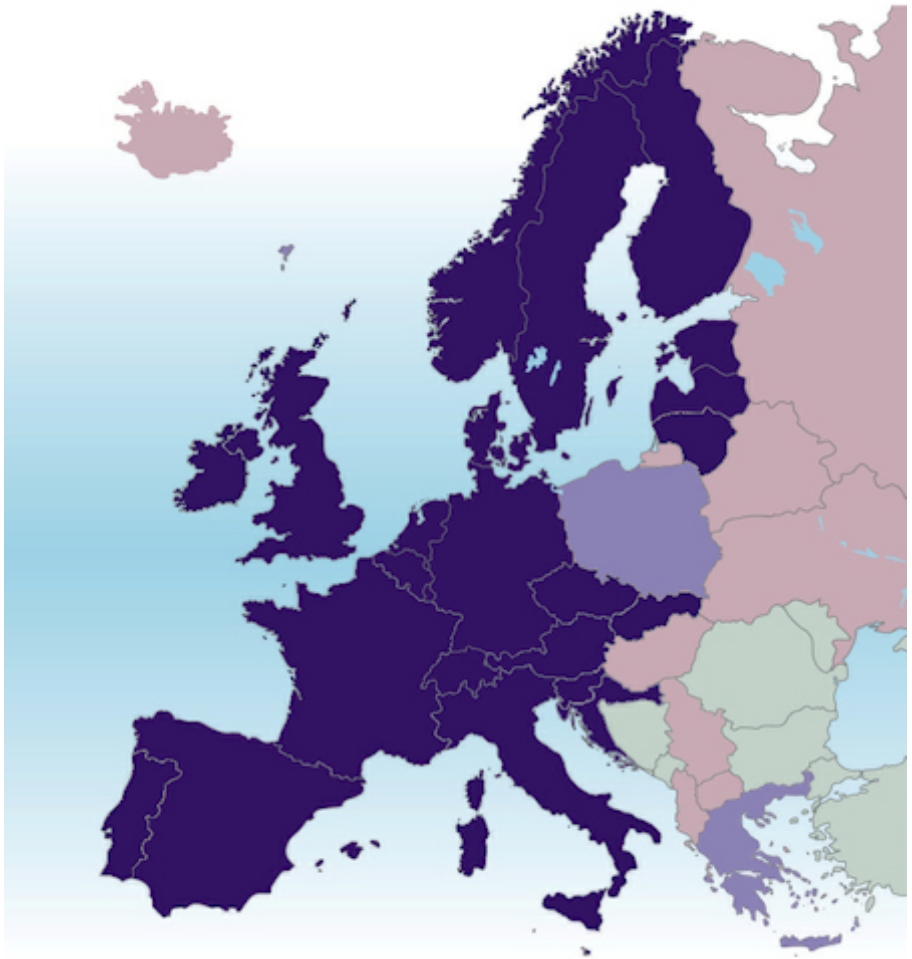
Asia Pacific ASO Timetable...

ECONOMIES	Year	System	Mobile
MARSHALL ISLANDS	ND		
MICRONESIA	ND		
MONGOLIA	2014	DVB-T2 (-T)	CMMB/DMB-T (DVB-H)
MYANMAR	2020	DVB-T2	
NAURU	ND		
NEPAL	2017	DVB-T2	
NEW ZEALAND	2013	DVB-T	
PAKISTAN	ND		
PAPUA NEW GUINEA	ND		

Asia Pacific ASO Timetable

PHILIPPINES	2018		
SAMOA	ND		
SINGAPORE, REPUBLIC OF	2015	DVB-T/T2	
SOLOMON ISLANDS	ND		
SRI LANKA	2017	DVB-T2	
THAILAND	2015		
TIMOR LESTE	ND		
TONGA	2014	DVB-T2	
TUVALU	ND		
VANUATU	ND		
VIETNAM, SOCIALIST REPUBLIC OF	2020	DVB-T	

Europe 2013



Countries which have not yet formally launched

Countries with some DTT services launched

Countries with analogue switch off (ASO) process underway

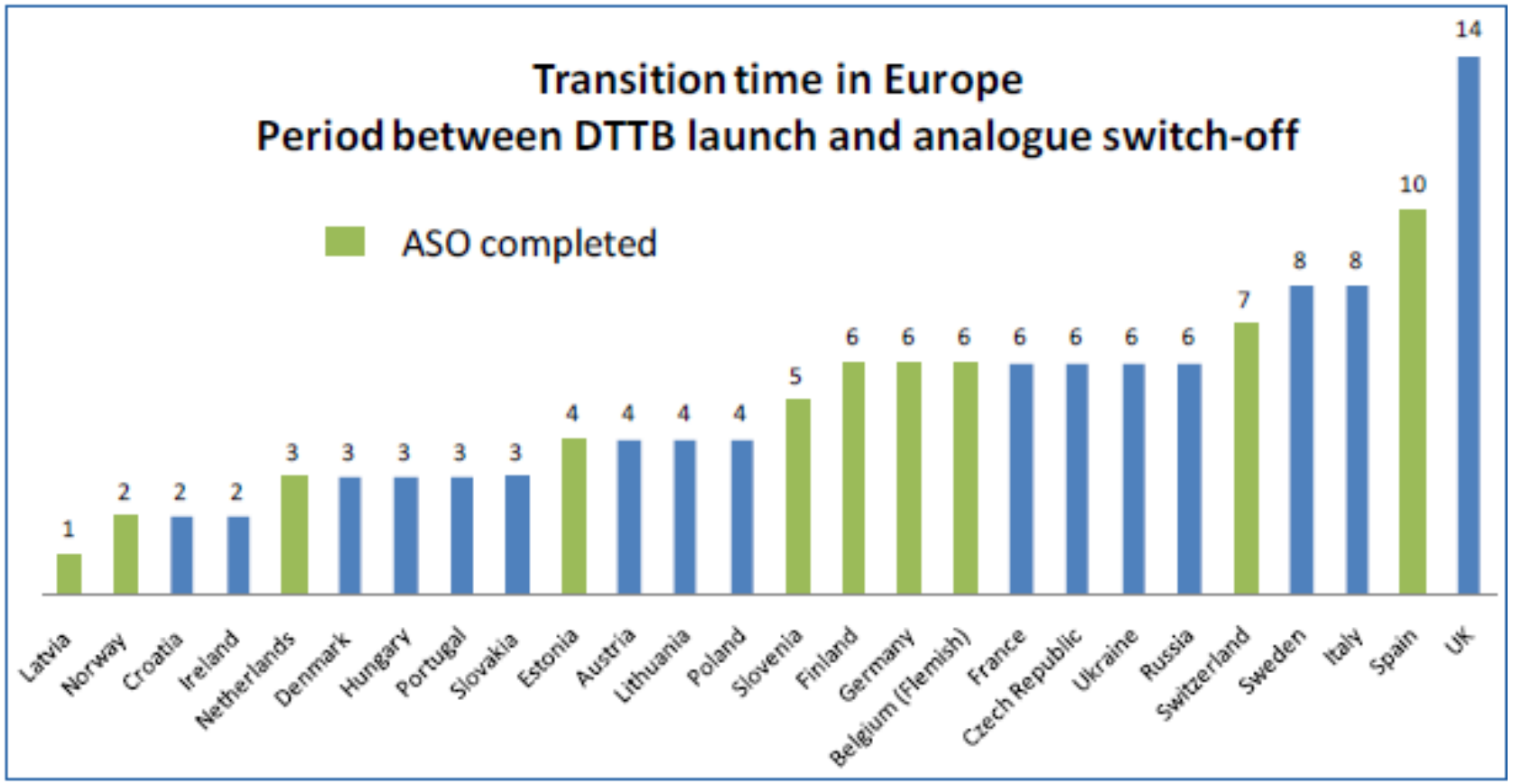
Countries which have completed ASO

DigiTAG

International Telecommunication Union

Committed to connecting the w

Transition Periods



- Preparation and planning time: 2 to 8 years
- Implementation and ASO time: 1 to 14 years
- Countries starting later need in general less time

CONCLUSIONS

Digital television migration is NOT just about Television!

Don’t have to invent your own wheel.

Start NOW!
Work together!

Thank you for your attention!

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