

TV White Space (TVWS)

GSMA Position and Perspectives

Wladimir Bocquet, Senior Director of Spectrum Policy, GSMA

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AGENDA



GSMA overview



Mobile broadband: situation and forecast

TV White Space: basic principles

GSMA view and position



GSMA OVERVIEW



GSMA BY THE NUMBERS



MEMBERSHIP



800

mobile operators in
over **220** countries



230 associate
members

PRESENCE



Offices in
9 countries
serving every region



Staff based in
26 countries
representing
36 nationalities

MOBILE REACH



6.6
billion
mobile
connections



3.2 billion
individual subscribers

MOBILE BROADBAND SITUATION AND FORECAST IN THE ARAB STATES



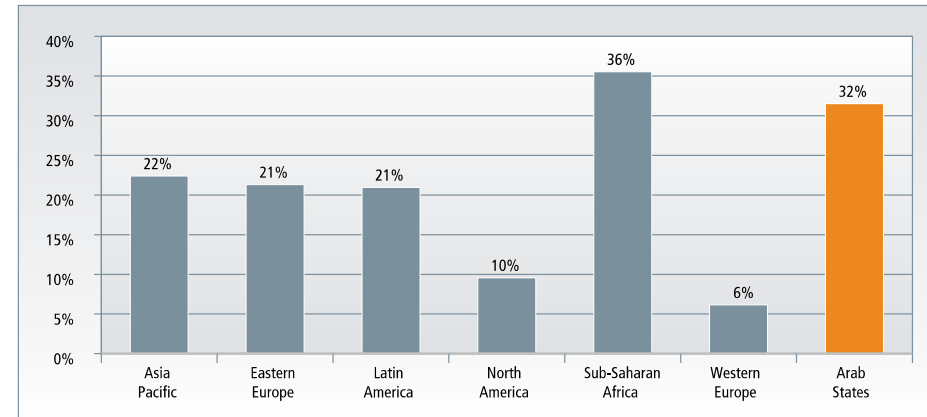
MOBILE MARKETS IN THE ARAB STATES



Significant growth in the number of mobile connections

- The Sub-Saharan Africa region is the fastest growing region
- The MENA region is the second-fastest growing telecoms market globally

Average annual growth in the number of mobile connections (2002–2012)

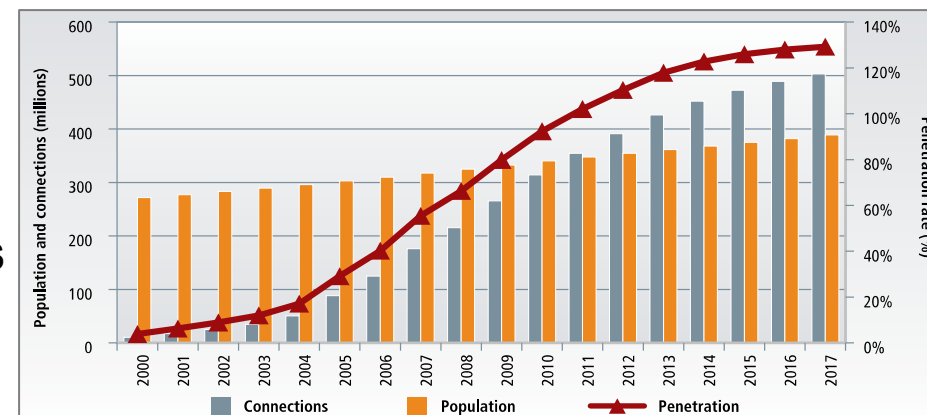


Source: GSMA intelligence

High penetration and sustained growth in mobile connections

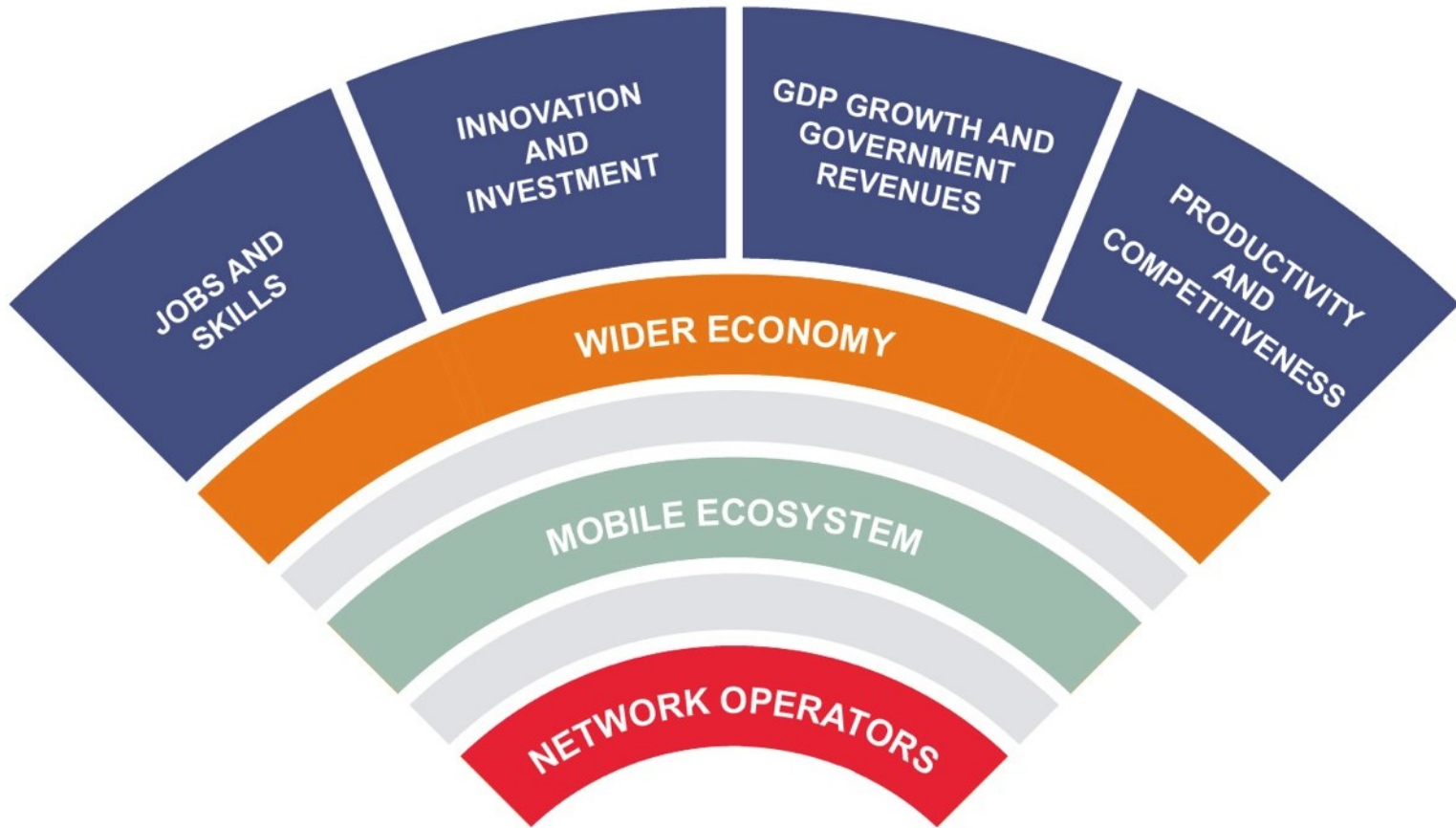
- Mobile penetration has increased rapidly in the past 12 years, from just 3% in 2000 to 105% in 2012, representing an average annual growth rate of over 32%
- Today there are more than 391 million connections in the region

Mobile connections, population and mobile penetration in the Arab States (2000–2017)



Source: GSMA intelligence

IMPACT OF MOBILE BROADBAND



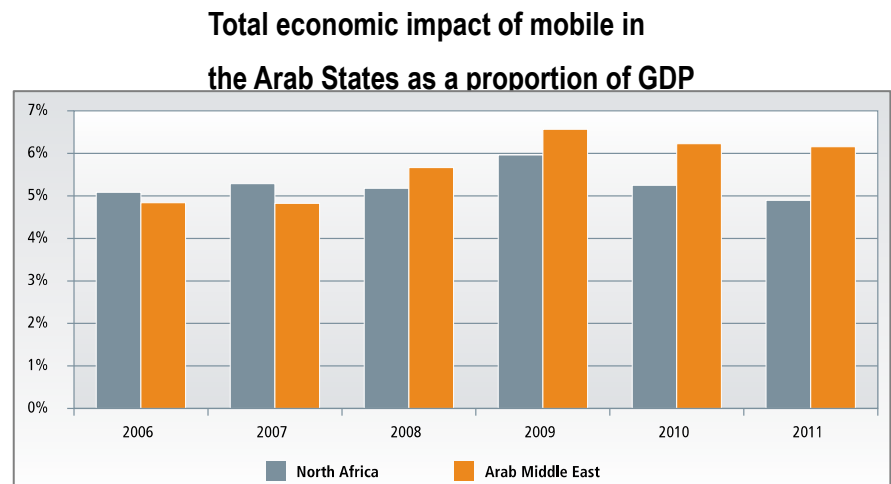
MOBILE : A TRANSFORMATIVE TECHNOLOGY



Mobile, using licensed spectrum, has a significant economic and social impact on the Arab States

Overall estimated economic impact of mobile:

- In 2011, the supply-side impacts were estimated at **2.9% and 4.2% of GDP** in North Africa and the Middle East, respectively
- The benefits of mobile technologies on improvements in efficiency and productivity are estimated at **2% of GDP across the Arab States**
- The mobile industry has contributed more than **1.2 million full-time jobs** across the Arab States in 2011
- **Allocating additional harmonised spectrum** to mobile broadband could create 5.9 million additional jobs by 2025



Source: Mobile Economy 2013

TV WHITE SPACES

BASIC PRINCIPLES



TV WHITE SPACE: BASIC PRINCIPLES



DEFINITION

White space comprises spectrum that is **not used at a particular time and geographic location**. Traditionally the focus has been on TV white space, which consists of unused spectrum in the television broadcasting bands

CONCEPT

It is normally unused due to the necessary geographical separation between TV stations using the same frequency channel and due to unused spectrum by regional TV stations

REGULATORY FRAMEWORK

The TV white space scenario often relies on **the licence-exempt model** with “no individual rights of use” as well as “no individual frequency planning/coordination”. As a consequence, the TV White Space implementation is on a ***non-interfering / non-protected basis***

TV WHITE SPACE: BASIC CHALLENGES

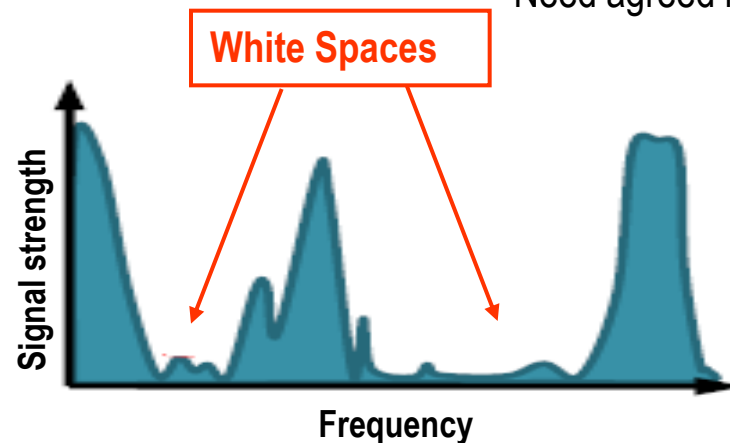


How to determine **whitespace accessibility**

- Balance between reliability and availability
- Adequately protecting incumbent services

How to **measure interference**

- Statements such as “this equipment shall not cause harmful interference...” does not help
- Need agreed monitoring interference method



How to detect **incumbent services**

- Sensing
- Dedicated Pilot Channel (CPC)
- Geolocation & database

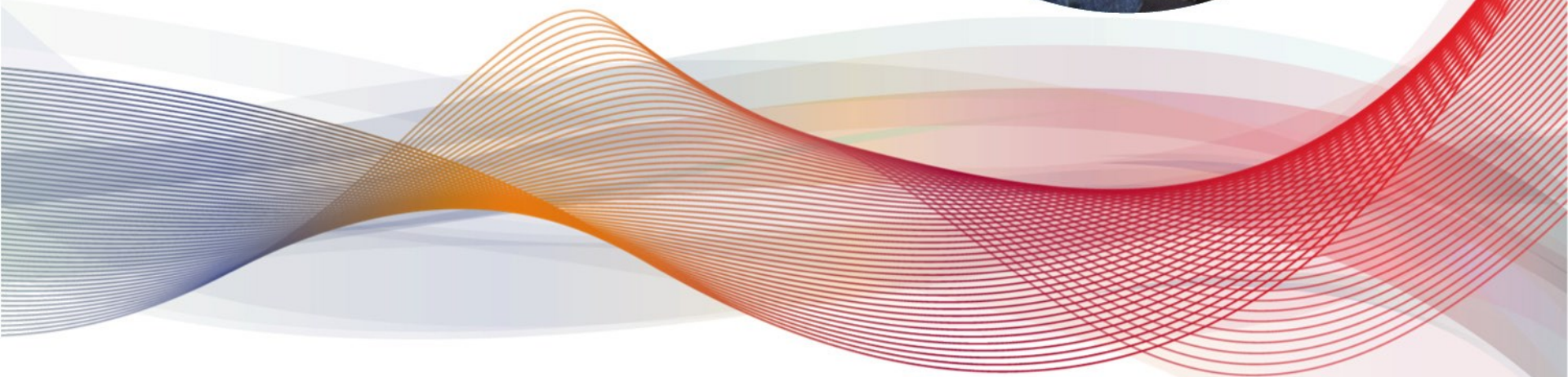
How to prevent **security problems**

- Data can be manipulated to create or enlarge spectrum for whitespace use

TV WHITE SPACE

GSMA POSITION

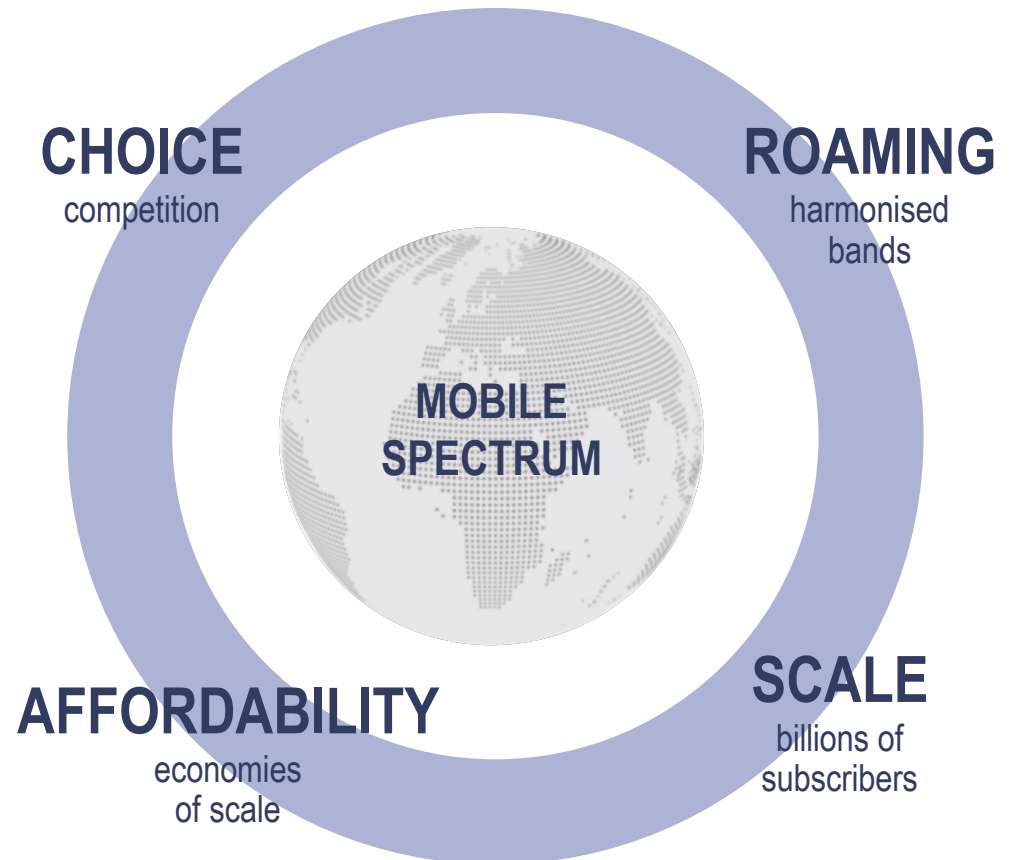
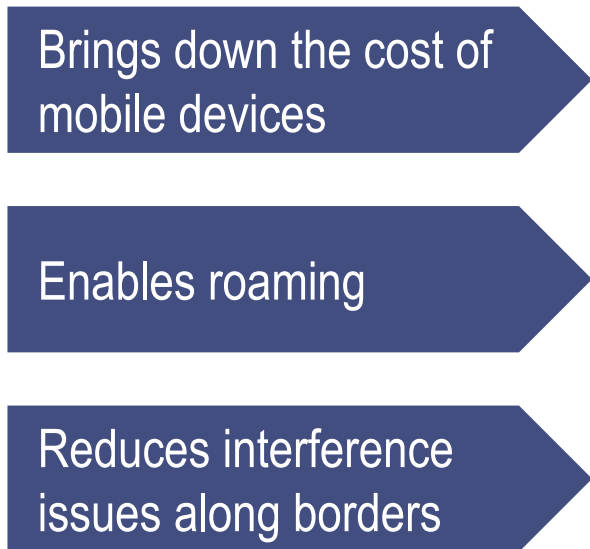
AND VIEW



SPECTRUM HARMONISATION MATTERS



- Need to consider **market harmonisation** to achieve long term benefits
- Importance of following **international spectrum allocations** that have been endorsed at the WRC conferences



Exclusive access remains the main regulatory approach for mobile broadband spectrum — guaranteeing quality of service, safeguarding against interference and providing a higher degree of market certainty to create incentives for investment.

The TV White Space licensing regime should not jeopardize the future of the UHF band including:

- **The implementation of the Digital Dividend**
- **The impact on the preparation process for WRC-15** since the UHF band is going through a number of changes
- **Future spectrum investment** due to uncertainty about licenses and their commercial viability

TV white spaces would not guarantee high-quality mobile data services due to:

- **Non-homogeneous geographical coverage and fragmented bands**
- **Quality of service issues** due to the interference risk (where work is ongoing) and best effort nature of the service
- **Device issues** surrounding availability, cost and technology due to bands and uncertain market

GSMA VIEW ON TV WHITE SPACE



Uncoordinated spectrum sharing could be counterproductive to global harmonisation and reduce the economies of scale in device manufacturing.

ACCESS TO ADDITIONAL SPECTRUM

Urgent need to secure additional spectrum especially sub 1GHz band to support growing mobile data usage in the Arab States. Operators could gain access to complementary spectrum for mobile broadband — in IMT-identified bands.

IMPORTANCE OF HARMONISATION

Spectrum needs to be harmonised to enable low cost mobile equipment, roaming and to minimise interference. The WRC-15 will be a key milestone for the future development of harmonised mobile broadband.

LICENSING REGIME

Exclusive access remains the main regulatory approach for mobile broadband as there are no question-marks surrounding deployment (unlike whitespace) creating an incentive for further investment

GSMA RESOURCES



Digital Dividend Toolkit

www.gsma.com/digitaldividendtoolkit

An online resource offering the latest policies, perspectives and best practices for securing and implementing Digital Dividend spectrum for mobile broadband.

Digital Switchover Guide

www.gsma.com/spectrum/digital-switchover

An interactive tool that describes how to manage the conversion to digital television and release Digital Dividend spectrum for mobile.

Mobile Policy Handbook

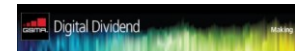
www.gsma.com/publicpolicy/handbook

A portal to GSMA positions on mobile policy issues, including spectrum management and licensing.

GSMA Spectrum Resources

www.gsma.com/spectrum/resources

Our library of research, reports, case studies and collateral.



Introduction Harmonisation and Regional Band Plans

Governments that release harmonised Digital Dividend spectrum and encourage greater broadband connectivity will boost economic growth, create jobs and deliver enhanced social value.

Digital harmonisation of GSM spectrum has been a critical factor in reducing handset costs. Over 8 billion mobile subscribers use GSM technologies over common spectrum bands, creating markets for mobile devices that transcend national borders. International agreements on spectrum use have made mobile phones the most successful consumer device in history, spanning the digital divide.

The Digital Dividend Band



7 Ensure all issues are finalised ahead of Digital Switchover

Detailed planning will ensure that the complex and time-consuming process of Digital Switchover runs smoothly. Realistic timelines need to be set for the introduction of digital TV, the simultaneous period and the final analogue switch-off. This will also be the time when the Digital Dividend frequencies can be allocated to mobile broadband and the full benefits of digitalisation can be felt.

In its Digital Switchover Guidelines, the ITU cites four key factors of coordination for the successful move of analogue to digital TV:

- Cooperation and coordination across the value chain
- Sufficient financial resources for the Digital Switchover operation
- Strong Leadership
- Effective communication strategy

ITU Responsibility Checklist for Digital Switchover
Select a 100 to view the checklist

- Government
- Content Creators
- Content Aggregators
- Digital Multiple Operators
- Content Distributors
- Device Creators
- Viewers

Taken from the ITU Guidelines for the Transition from Analogue to Digital Broadcasting, Section 2.15.1, p.108-109

Download the phm Report

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THANK YOU

