



# Spectrum policy *in a hyperconnected digital mobile world*

Dr Bob Horton  
Senior ICT Expert

**12<sup>th</sup> Global Symposium for Regulators**  
“Why Regulate in a Networked Society?”  
Colombo, Sri Lanka, 2-4 October 2012





## *The Forces of Change*

- Re-thinking spectrum policy : the catalysts
- Digitalization
- Explosive growth of data
- m2m communications, cloud computing, OTT
- Implications for traditional carriers
- Mobile broadband users : smart phones/ tablets



## Penetration of Smartphones

COUNTRY	PENETRATION	COUNTRY	PENETRATION
USA	44%	JAPAN	20%
UK	51%	GERMANY	29%
UAE	61%	EGYPT	26%
SWEDEN	51%	CANADA	33%
SAUDI ARABIA	60%	BRAZIL	14%
NEW ZEALAND	44%	AUSTRALIA	52%
MEXICO	20%	ARGENTINA	24%

Source: Google IPSOS, May 2012



## *Spectrum Policy and Best Practice*

Best practice comprises 2 levels :

- High level Principles
- Implementation of the Principles



## *High Level Principles*

Mostly from Tunisia (GSR05) :

- Facilitate broadband deployment
- Promote transparency
- Technology neutrality
- Flexible use measures
- Ensure affordability
- Timely availability of spectrum
- Efficient management of spectrum
- Level playing field
- Harmonization (International and Regional)
- Broad approach to promoting broadband access



## *The Changed Regulatory Model*

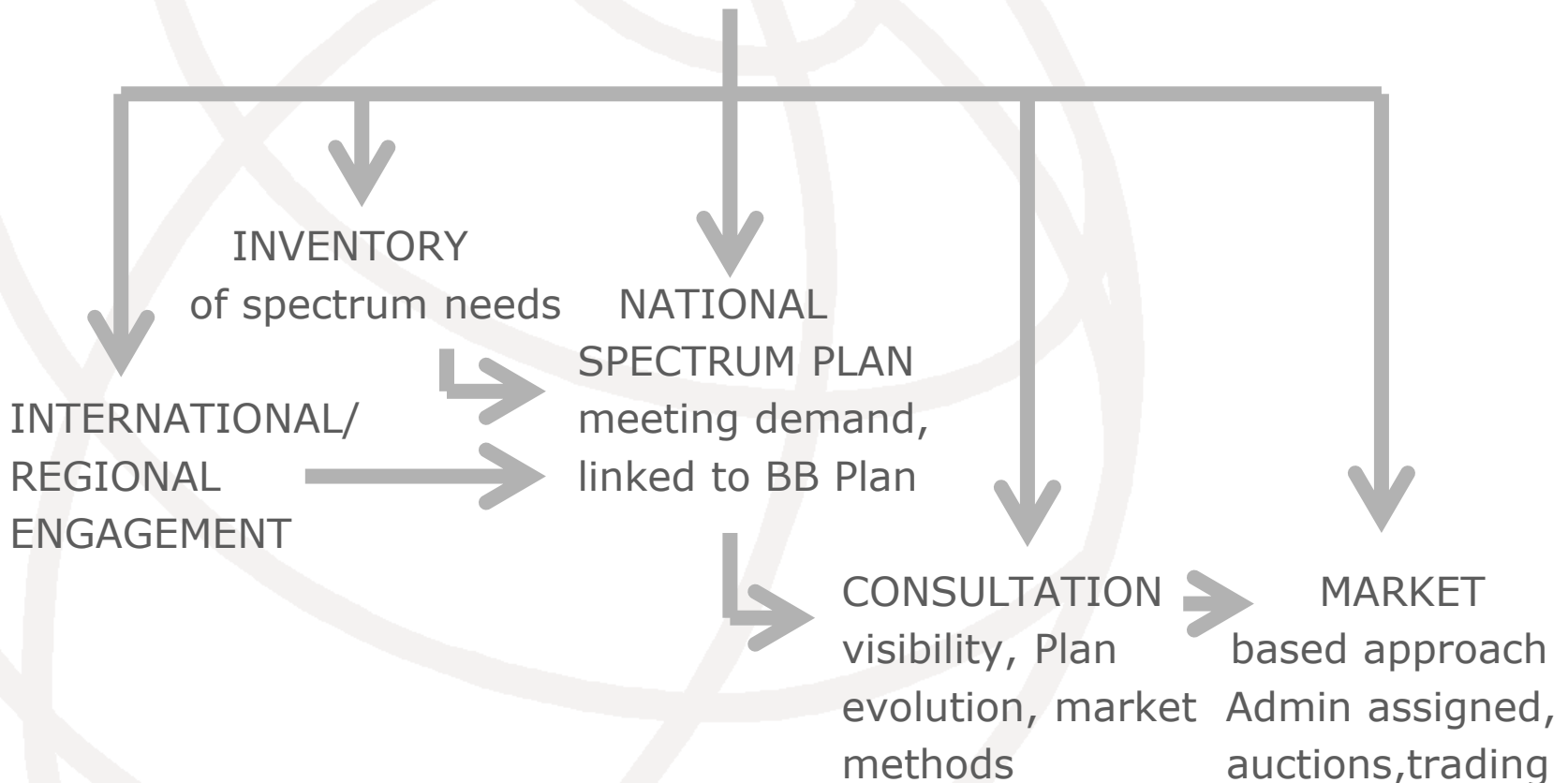
	<b>Regulatory phase</b>	<b>Regulation focus</b>	<b>Spectrum management</b>
<b>1<sup>st</sup> Generation</b>	Regulation of a monopoly	Independent regulation, correcting monopolistic behaviour, price regulation (ROR or price caps)	Separate administrative methods of spectrum allocation and assignment
<b>2<sup>nd</sup> Generation</b>	Infrastructure competition	Resale, pricing, access, call selection, unbundling, bit stream access, cross subsidised universal service	Increasing use of market methods for assignment of spectrum. Some merging of regulatory bodies
<b>3<sup>rd</sup> Generation</b>	Service provider competition	Network and spectrum sharing, net neutrality, more focus on regulation of content, and applications, bit stream access, universal access no longer cross subsidy	Broader integrated spectrum policies. Affordable new spectrum. Re-use of existing spectrum. Sharing and flexibility. Alternatives in using spectrum

Source : Author



## Elements of National Spectrum Policy

HIGH LEVEL PRINCIPLES





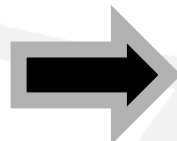
## *International / Regional Engagement*

### **World Radiocommunication Conference – prime focus**

- *Outcomes of WRC 12 and Agenda for WRC 15*
- *IMT Advanced : Agenda Items 1.1 and 1.2 (R1 only)*
- *Conference Preparatory Meetings CPM1 and CPM2*
- *Special Committee on Regulatory/Procedural Matters*
- *Radiocommunication Assembly*
- *Study Groups and Joint Task Group JTG 4-5-6-7*

### **Regional Bodies and Programs**

- APT, ASMG, ATU, CEPT, CITEL, RCC
- Preparatory meetings
- Inter-regional collaboration



feeds into National Spectrum Plan





## *Inventory of Spectrum Needs*

- Forecasts, scenarios and stocktakes
- Categories of future spectrum needs
- Balancing competing needs
  - commercial vs government vs social
  - “highest value use”
  - technical, economic and social efficiency

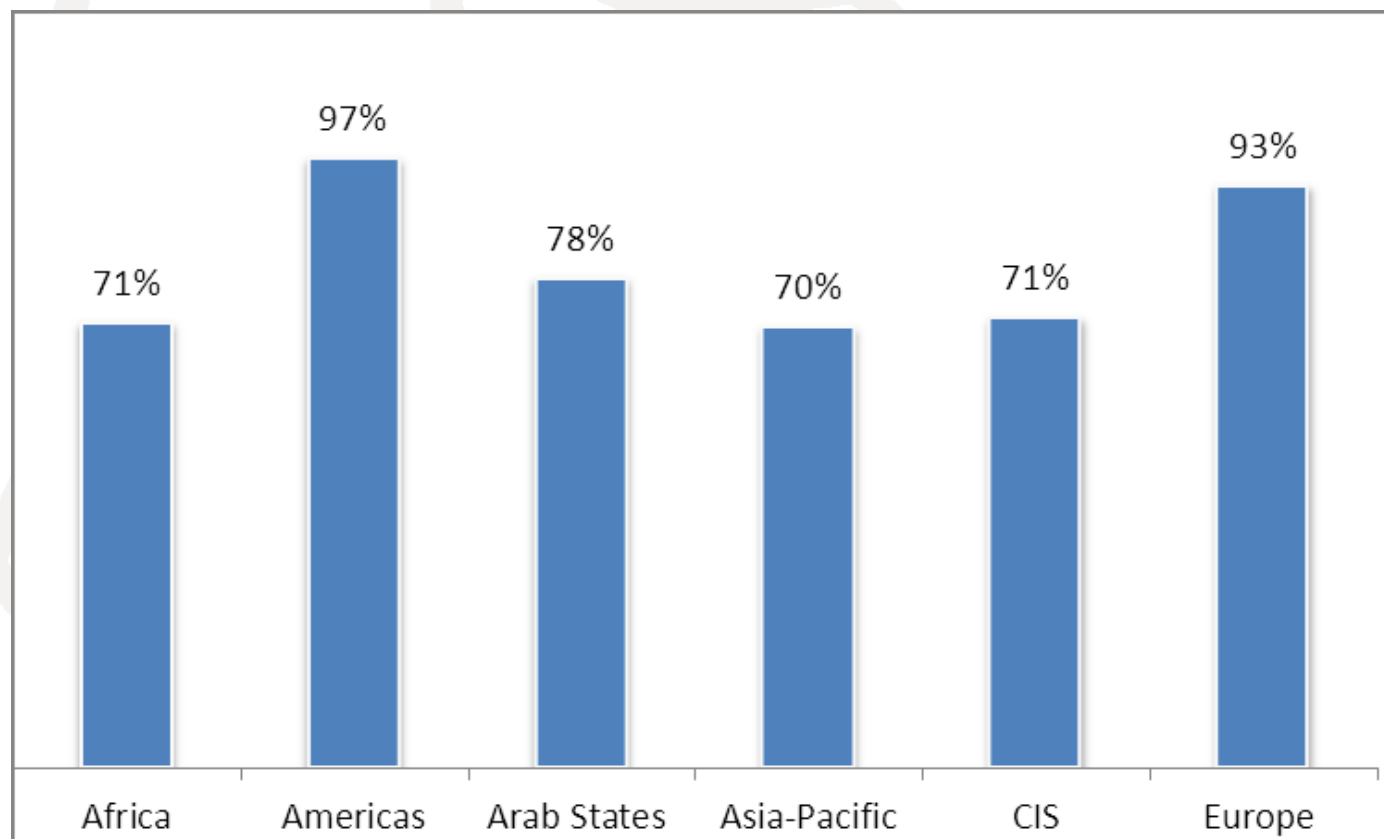


feeds into National Spectrum Plan



## Visibility : Spectrum information made available

Percentage of country responses, by region, 2011



Number of responses:

41

31

18

30

7

40



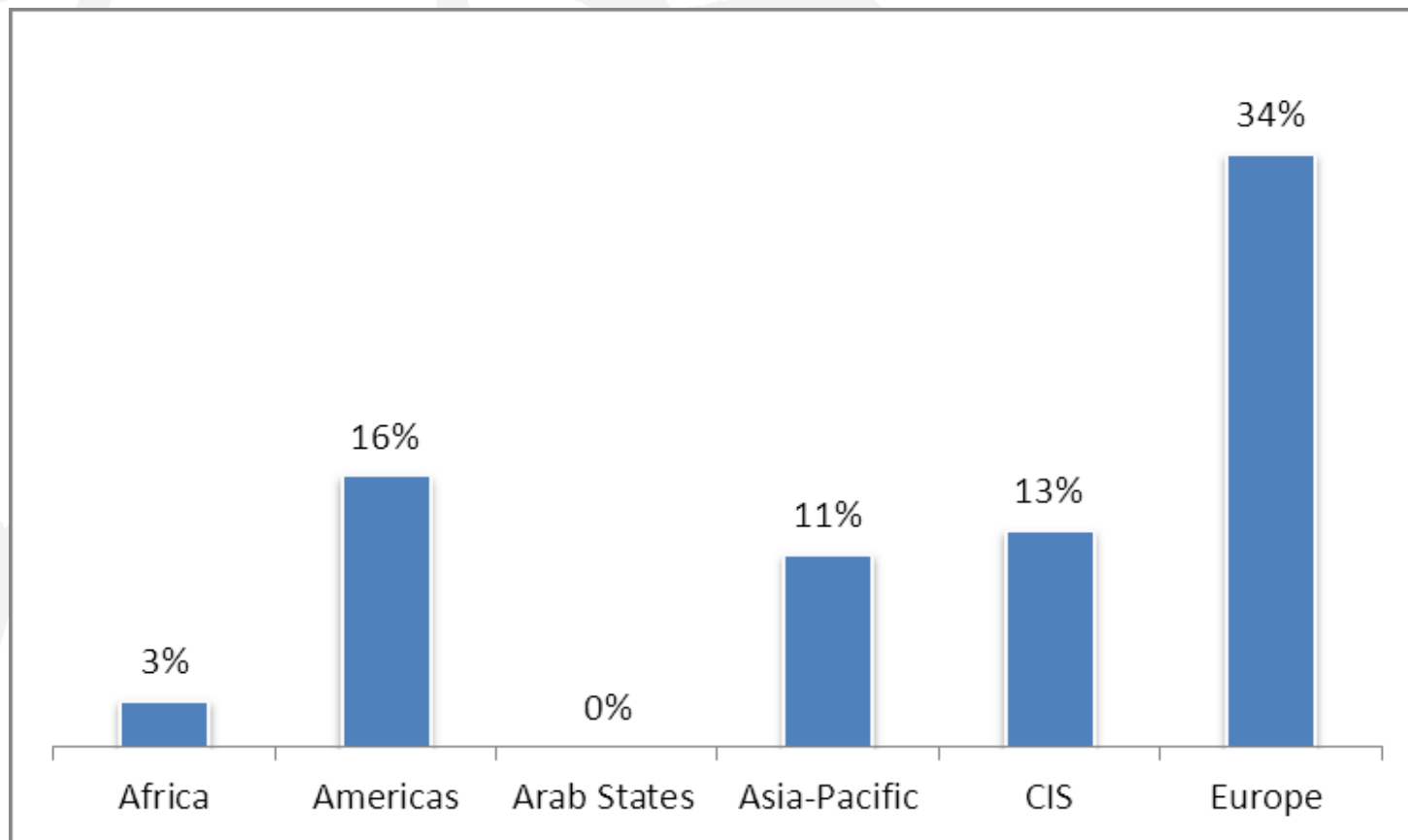
## *Assignment of Spectrum*

- **Increasing market-based and flexible use policies**
  - ratios of administrative prescription / market forces
  - voluntary “incentive” auctions, re-purposing
  - mature auction processes and ground rules
  - transparency of government requirements
  - guiding principles under which auctions are appropriate
  - technology neutrality : flexible evolution
  - dynamic spectrum sharing
  - use of “unlicensed bands” and “opportunism”
  - spectrum trading in its infancy



## *Spectrum (secondary) trading*

Percentage of country responses, by region, 2011



Region	Number of responses
Africa	37
Americas	32
Arab States	15
Asia-Pacific	27
CIS	8
Europe	41



## *Various techniques used in the Americas*

<b>SPECTRUM MANAGEMENT TECHNIQUES</b>	<b>COUNTRIES</b>
<b>Specific coverage obligations</b>	Colombia, Chile, Brazil, Costa Rica, Peru
<b>Use of spectrum caps</b>	Argentina, Brazil, Chile, Colombia, Mexico, Peru
<b>Spectrum trading rights</b>	USA, Mexico, Chile, Uruguay
<b>Flexible use spectrum policies</b>	Argentina, Brazil, Chile, Colombia, Peru Uruguay, USA, Venezuela
<b>Development of incentive auctions</b>	USA
<b>Development of "unlicensed" or "license exempt" rules</b>	USA, Canada, Brazil, Argentina, Chile, Colombia, Costa Rica, Panama, Uruguay, Venezuela.
SOURCE : Connect Americas Summit 2012	