Creating New Spectrum for Mobile Network Operators

10th Annual OOCUR Conference
7-9th November, 2012 – Freeport, Bahamas
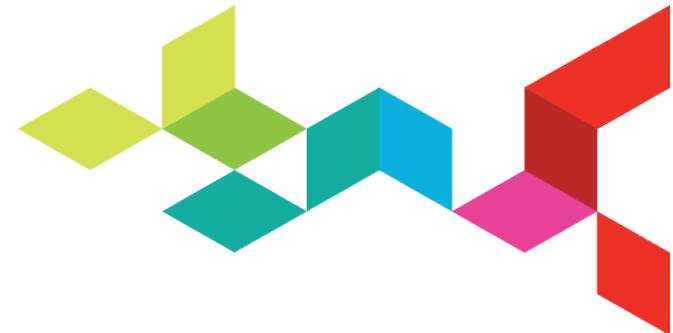### Julian Wilkins – Director, Telecoms Public Policy – Digicel Group

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Creating New Spectrum for MNOs

OOCUR Theme: utility regulation in the Caribbean: A case for the harmonisation of approaches to regulation

- Making more spectrum available for Broadband;
- Spectrum fees;
- Harmonisation of spectrum in the region;
- Conclusions.

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Making more spectrum available for BB

- FCC has pledged to make more spectrum available for Broadband within the next 10 years;

- FCC plan to make 500 MHz newly available for Broadband use within this period;

- It's a signal to mobile providers that spectrum will be available in the future for Broadband services;

- *Question - should our regulators in the Caribbean make similar pledges to allow for local mobile operators to plan for Broadband development?*

Source: http://www.broadband.gov/plan/broadband-action-agenda.html
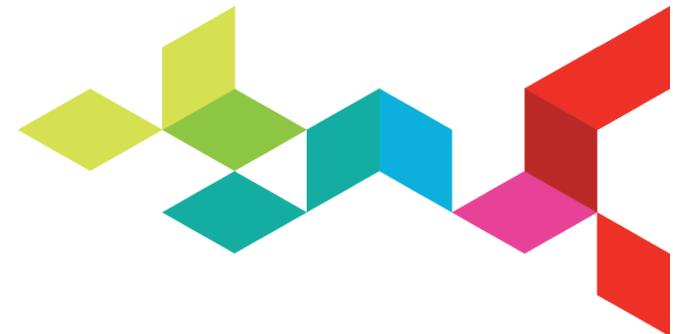
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Maximising the benefits of spectrum

There should be a *'ladder of availability'* – even if the best possible spectrum is not available then a close substitute should be available. This will lead to numerous advantages:


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Ladder of availability advantages:

- Spectrum can be used to deliver Broadband and innovative services. Those will have a multiplier effect for the economy and promote economic growth;

- It will help to reduce the price of spectrum;

- Regulators should feel more free to allocate spectrum to particular operators without fear that by doing so they will prevent others from launching services. In other words 'hoarding' would be less of an issue – since there would usually be spectrum available for all operators;

- Spectrum could be allocated to operators when and as requested.

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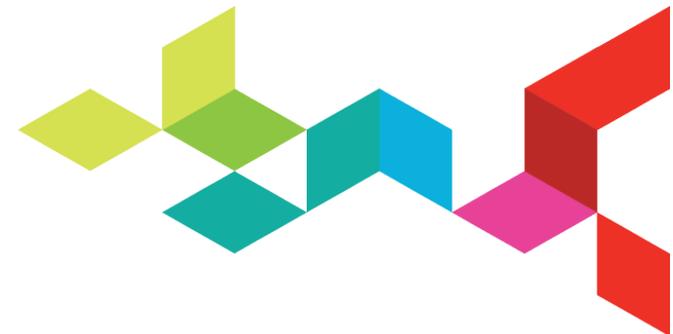
Spectrum fees

- Should not be an opportunity to extract as much money as possible out of the industry;

- Aim: efficient management of radio spectrum;

- Objective: *minimise* fees to *maximise* investment

- If the total monies collected > regulator costs could be carried forward to reduce or pay for costs in future years

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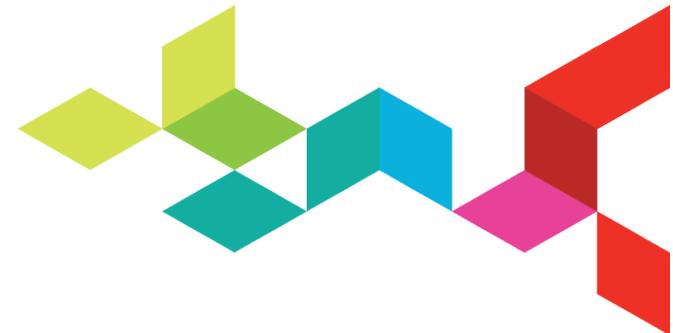
Harmonisation of Spectrum in the region

- Realisation of economies of scale in the production of handsets and their integrated chipsets and antennae, as well as networking equipment that can be designed to deal with a more limited range of frequencies making them simpler and less expensive to build;

- Customer experience – facilitates cross border services e.g. roaming;

- Better to do it right than quickly. HSPA+ provides sufficient speed AND there are now affordable devices in the market. At least 2-3 years to get affordable devices for LTE

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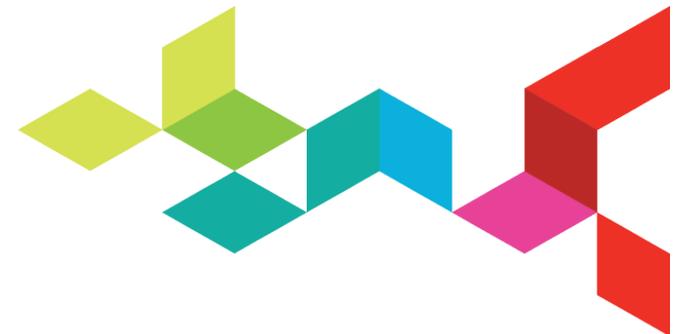
LTE Devices – Cost is a real challenge

E397

B593

LTE FDD 50/25Mbps @ 10M bandwidth
HSPA+/HSPA/UMTS/EDGE/GPRS/GSM
•Receive Diversity, Data service, DL 2*2 MIMO

LTE Cat 3:100/50Mbps @ 20M BW
HSPA+/HSPA/UMTS/EDGE/GPRS/GSM
Up to 32 simultaneous users/devices

Harmonisation – FCC Policy

Make spectrum available for flexible use when it:

I. Will be in the public interest;

II. Will not deter investment in communications services, systems and technology developments;

III. Will not result in harmful interference; and

IV. Is consistent with international agreements

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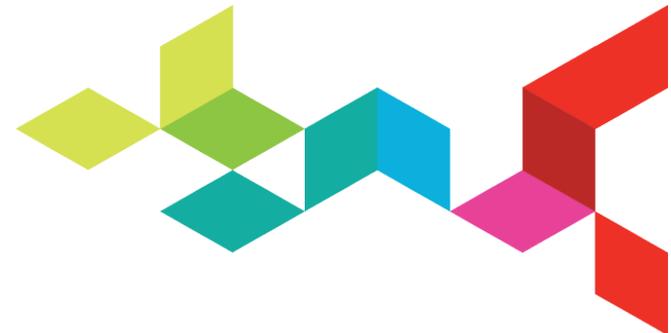
Harmonisation – GSM Association recommendations

- Regulators harmonise their digital dividend spectrum policies with neighbouring countries and with the most closely connected large economies.

- Manufacturers can gain significant economies of scale by producing devices compatible with internationally identified harmonised frequency bands;

- Affordable devices and higher penetration of Broadband.

Source: http://www.gsma.com/spectrum/band-overview/digital-dividend/
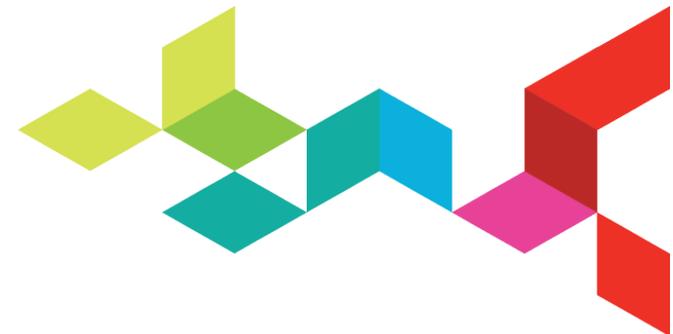
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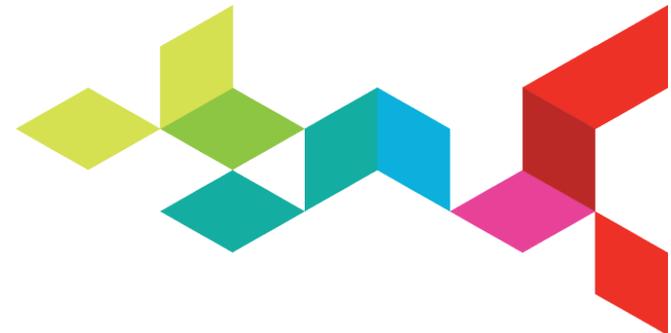
Harmonisation – GSM Association recommendations (July 2012) – 700MHz

- "to realise this immense potential, it is imperative that the region works together to swiftly implement the harmonised 700MHz band plan for mobile services," said Chris Perera, Senior Director, Spectrum Policy & Regulatory Affairs, GSMA;

- "Rapid adoption and alignment would generate huge cost efficiencies in both network technology and devices, and ultimately make mobile services more accessible and affordable for consumers."

Source: http://www.mediawebsite.net/lvbp/story/?catSetID=7007&catID=309987&nrid=161754615&page=1
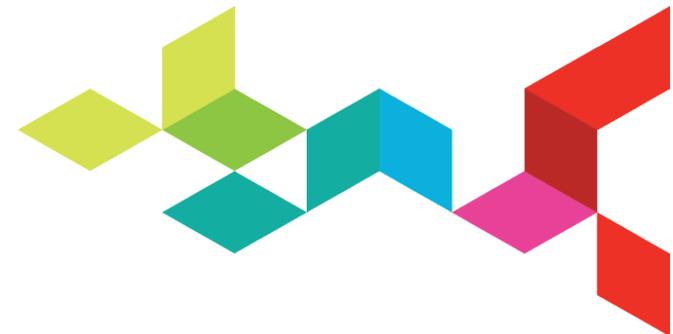
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Harmonisation – Case Study

Studies by Analysys Mason and others have shown the value of harmonisation and the cost of non-harmonisation and regional fragmentation.

Implementation of non-harmonised band plans can create the following issues:

- Lack of vendor support and interoperability;
- Increased service cost to consumers;
- Regional roaming becomes difficult;
- Border co-ordination.

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Harmonisation – Case Study *(Source: Analysys Mason)*

ECTEL: proposed 700 MHz band plan in 2009

- Similar to the US band plan;
- But not fully harmonised because of the variations in the upper frequencies;
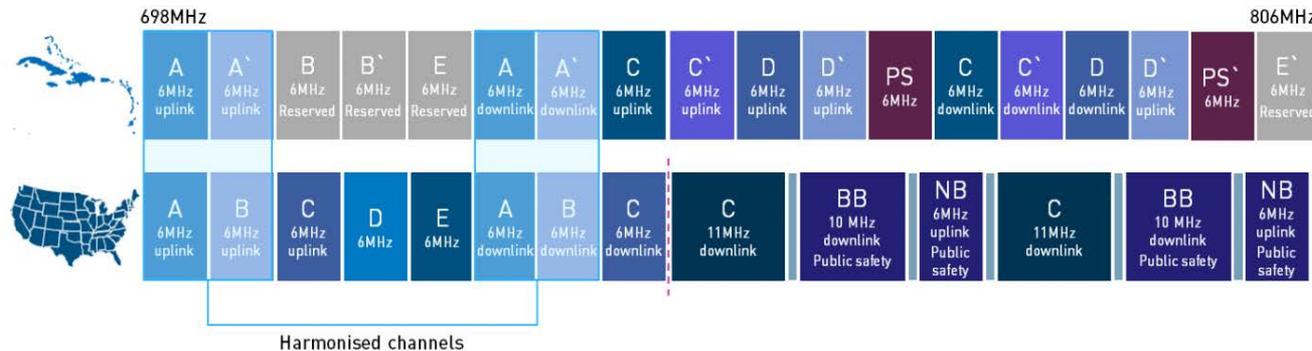

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Efficient assignment of the Spectrum

- Generally - not enough spectrum bandwidth being provided;
- Temptation of awarding insufficient bandwidths to a myriad of applicants;
- Splitting the bandwidth negates LTE speed & capacity advantage over HSPA+
- Future applications will be limited – E learning, Video, no 50 or 60 Mbps experience. Perceived experience will be similar to HSPA+;
- We suggest a minimum award of 2 X 12 MHz and a maximum of 2 X 18 MHz be awarded to proven operators; Max possible is 2 X 20MHz
- 2 X 18 MHz bandwidth will allow Digicel to provide an LTE service comparable to global standards across Caribbean markets;
- Good example: Government of Antigua and Barbuda awarded 2 X 18 MHz to an operator.
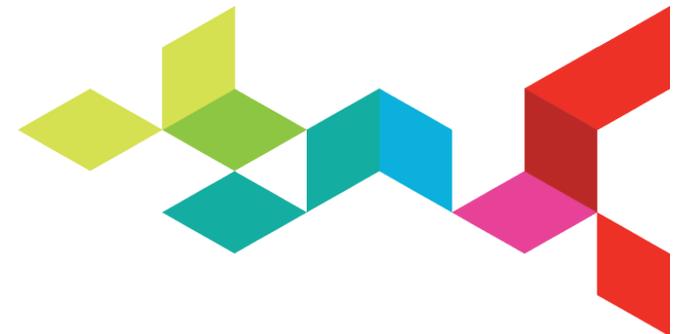
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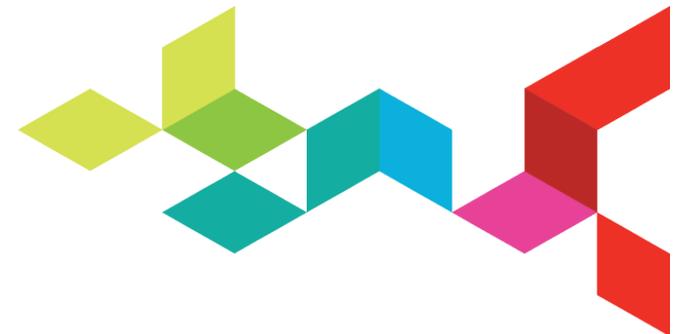
Efficient assignment of the Spectrum

Assigning 2 X 18 MHz bandwidth will allow:

- Improved coverage;
- Better service levels;
- Network expansion;
- Subscriber growth;
- lower cost of network infrastructure;
- Increased availability of compatible handsets for consumers;

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Regulating LTE Spectrum

- **We recommend that this region should**
- Maintain *Regional Harmonization* approach for economic benefits

- **Some regulators may be considering to split LTE Band 12**

- *Splitting Bands reduces network capacity*

  - Reducing LTEs ability to realize the speed or subscriber capacity potential

  - Consequentially, this will impair the potential economic benefits

- **We do not recommend splitting LTE bands**

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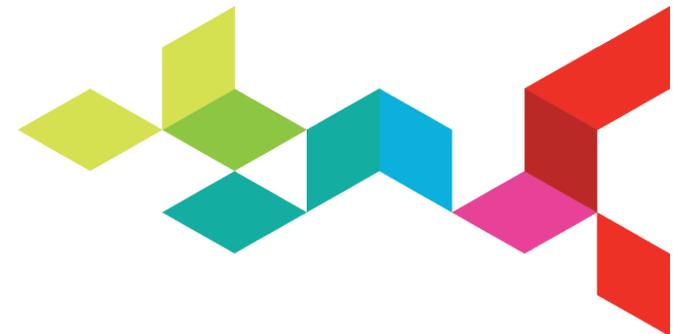
Key considerations

- WCDMA (3G) handsets below US$100 only became available in late 2012
    - Allows Operators to target mass markets, particularly in mid-low GDP countries
- LTE handsets under US$100 are not likely for at least another 2-3 years.
    - Today they are greater than US$500
- Why are American & European Regulators /Operators pushing LTE?
    - They have the economies of scale and GDP to realize commercial benefits of LTE
    - And they can afford device costs of US$500 and greater
- GDP in the Caribbean cannot facilitate mass market take-up at these prices
    - Caribbean operators are faced with ARPUs less than 50%-25% of US Operators
    - Spectrum fees must be set in the context of the conditions in the Caribbean and will have a correlating effect on roll-out, coverage and retail prices
- Rationale for Antigua's LTE rollout :
    - Test the technology in the region, and
    - Partner with the Government to create opportunities - a win-win scenario
- **Allocating LTE spectrum correctly is more important than expediency**
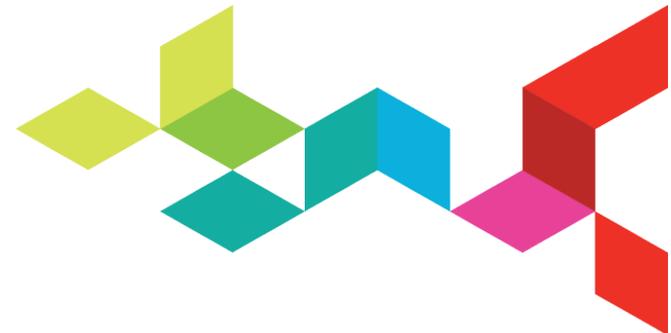
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Antigua and Barbuda

Conclusions (1)

- Effective use of spectrum will enable Governments to meet their ICT objectives;

- A more coordinated approach that provides predictability and timely provision of spectrum to market participants would be most beneficial to our regional development;

- We want to start the process of making spectrum available now as it will take years to accomplish.

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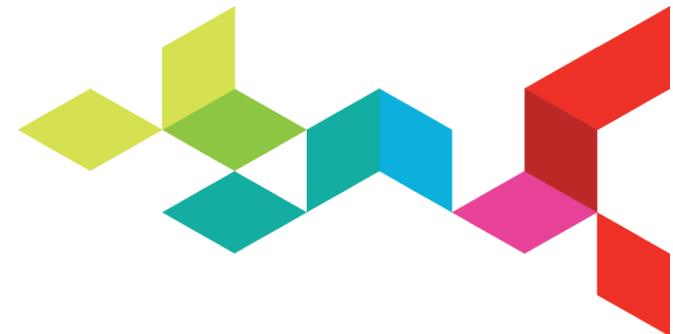
Conclusions (2)

- Consider using the concept of 'ladder of availability'
- Regulators should assign sufficient bandwidth;
- To release and re-farm spectrum so that operators have the spectrum available to meet demand for bandwidth moving forward and to keep spectrum prices down, and;
- To harmonise bands where possible so that equipment and handset prices can be minimised and thus encourage investment.

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Thank you for listening!

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