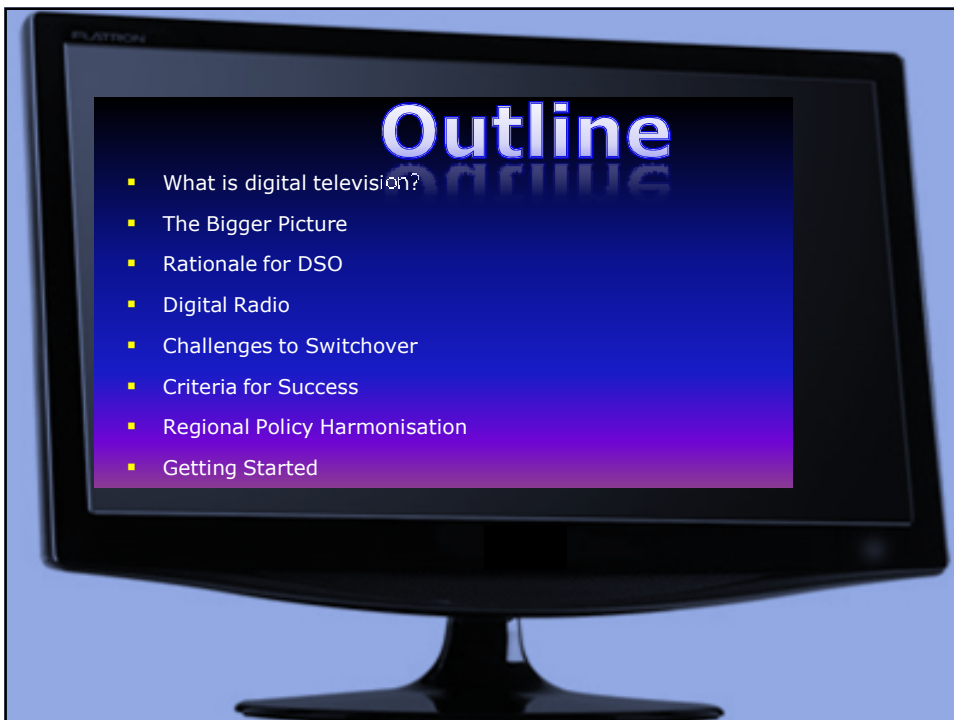# Importance of Digital Terrestrial Television

Cordel Green

ITU Digital TV Seminar
August 8-9, 2011
Barbados

Outline

- What is digital television?
- The Bigger Picture
- Rationale for DSO
- Digital Radio
- Challenges to Switchover
- Criteria for Success
- Regional Policy Harmonisation
- Getting Started

What is digital television?

- **Coding** the video and audio signals into a stream of ones and zeros
- **Transmission and reception:**
  - ➤ The signal is digitally coded and compressed at the transmission end
  - ➤ then decompressed and decoded by a digital receiver.
- **Compression** technique brings the advantage of additional transmission capacity.

What is digital television?

- **More robust and efficient use of transmission capacity than traditional analogue television**
  - ➤ greater number of channels
  - ➤ potential for high definition television (HDTV)
  - ➤ possibility of a range of interactive services

What is digital television switchover?

- Replacement of traditional analogue transmission and reception by digital transmission and reception.

- Marked by the switching-off of analogue terrestrial transmissions on a planned basis, enforced by government.

What is digital television? Summary

- Coding and compression
- More robust signal, greater capacity, more channels
- Potential for interactive services, HDTV, mobile TV, and spectrum savings

The Bigger Picture

- Globalization
- Convergence and Digitalization
- Wireless Communication and Mobility
- Next Generation Broadband Technologies
- Personal mobile devices

The new media landscape
is evolving and ever-changing

The Bigger Picture

web **2.0** (2004-2010)

Has changed everything.
Mass adoption of software and services that offer new possibilities for collaboration, including:

- BLOGS
- PODCASTS
- WIKIS
- FORUMS
- SOCIAL NETWORKING SITE
- MEDIA SHARING SITES
- P2P
- VOIP

ERA OF THE TOTAL
RETHINK

era of the empowered user

MACRO TREND 1:

**"Today, <u>INNOVATION</u> starts at the consumer level, and makes its way back into the enterprise"-
Ken Wirt, VP of Consumer Marketing, Cisco.**

The Bigger Picture

Media Rich Landscape

Eye-catching Technologies

Competing For Attention

➢ e.g. TABLET PCs (Blackberry Playbook, iPad 2, Samsung Galaxy, Morola Xoom, Acer Iconia

➢Increasingly shipped television enabled

➢Functionality for

  ▪Viewing, pausing, rewinding
  ▪Recording and playback

OECD Communications Outlook 2011

The Bigger Picture

Media Rich Landscape

  Eye-catching Technologies

   Competing For Attention

- Download of ABC's iPhone application exceeded 1 million within 17 months

- In September 2010 YouTube reported in excess of 160 million mobile views per day, almost triple the number from a year before

- Electronic Billboards

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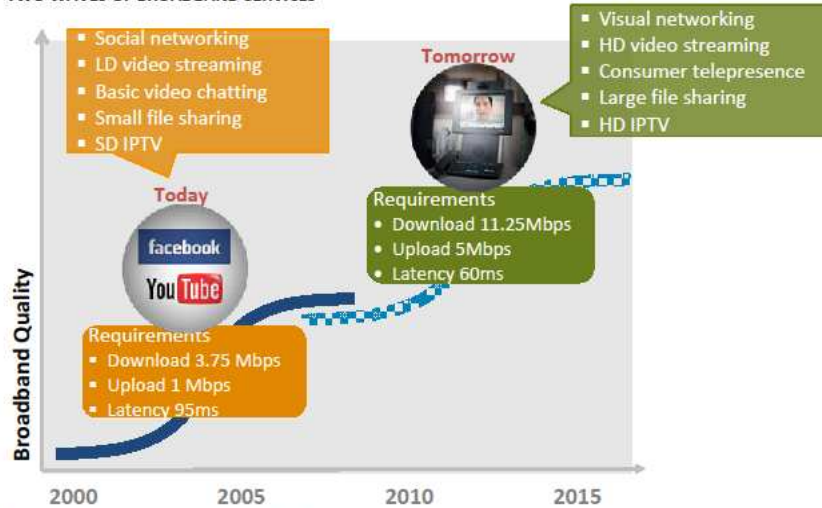
The Bigger Picture

- **Digital Cable Driving Demand**
  - E.g. Regional Triple Play Provider FLOW lunches 3D-HDTV channel packages in 2012 seemingly timed to coincide with London Olympics 2012

A Global Study of Broadband Quality 2009

Service Economies and Web Phases

Phase	Pre-Web	Web 1.0	Web 2.0	Web 3.0	Web 4.0
Timeframe	1600's-1994	1994-2004	2004-2010	2010-2015	2015-?
Description	Era that ushered in media such as newspapers (1605 created and 1814 widely printed and distributed), radio (1896), and television (1930's) – designed for mostly local or regional audiences. Computers developed for businesses, then consumers toward the end of this era. A comic book in 1946, ARPA in 1958, and Stanford students in 1973/74 laid out the vision and the foundation for the Internet.	Decade of creation of digital media that reached wide audiences – creating spam, information chaos and bottlenecks.	Software and services provide tools for collaboration, including blogs, podcasts, wikis, forums, social networking sites, and media sharing sites (photos/videos). Content is king.	Infrastructure and technology improvements that almost eliminate latency, security, scalability, and identity concerns, signaling a large scale move to the network as the computer and paving the way for a vast new wave of productivity and innovation by individuals and businesses. Computing is democratized.	Vast improvements in touch, taste, sight, sound, and smell technologies that introduce the "Social Brain" to completely immersive experiences. Smart technologies track user data and transform the home, education, vacation, and work experience.
Economy	The Agrarian then Industrial Economy	The Digital Economy	The Knowledge Economy	The Cloud Economy	The Experience Economy
Impact	Marketing and PR used to be like "yelling at strangers", per Seth Godin. Audience volume had to be large, because only a small percentage of those reached would buy what was for sale.	Rise of permission-based communication and search engines that aggregated the chaotic information on the Internet. Businesses had to drive the audience to their site to gain attention.	Rise of folksonomies and trusted content requiring businesses to have 2-way or multiple-level conversations with consumers. Audience can find what they need and drive themselves through the tangled Internet. Consumers also engage in multi-level conversations with other consumers.	Rise of macro and micro-bursts of information from a vast "social conscience". Businesses monitor the "social conscience" to deliver relevant and useful information to consumers. Technology so easy to use that anyone can become a developer. IT problems now solved by knowledge workers. The infrastructure for all of this is cloud computing.	Rise of technology immersion, where virtual worlds and technology provide humans experiences that are difficult to separate from reality. Infrastructure and data in the cloud, with only a small necessary amount of data held in small devices for immediate need.
Interaction	1 way	1 way	2 way or multiple dimension	multiple point	Translucent / Virtual
Conversation Driver	Largely local and regional conversation driven by publishers.	Business in charge of the conversation.	Consumers largely in charge of the networked conversation. Businesses are forced to join.	The "Social Brain" dictates the direction of the conversation.	The individual and "Social Brain" in a virtual world (the "Virtual Brain") drives the experience and dictates the intake and sharing of knowledge, as well as the direction of the conversation.
Technology Driver	Heads of business chose technology	Businesses drove technology.	People become technology drivers.	The "Social Brain" becomes the technology driver.	The "Virtual Brain" is the experience driver. ~Ynema Mangum

Internet futures- Cisco Visual Networking Index: Forecast 2008–2013

- 2013 - Internet will be nearly four times larger than it was in 2009.

Internet futures- Cisco Visual Networking Index: Forecast 2008–2013

➢The sum of all forms of video (TV, video on demand, Internet, and P2P) will account for over 91 percent of global consumer traffic by 2013.

➢Internet video alone will account for over 60 percent of all consumer Internet traffic in 2013.

The Growing Use of Video
MACRO TREND 2

The Bigger Picture

- The future of audiovisual goods is inextricably bound with the trade in technology and consumer electronics.

The Bigger Picture

- More and more the traditional media are competing with alternative and new media for the individual's attention and for the advertising dollar

The Bigger Picture

- As international consumers become bombarded by media images, the regional AV sector should be able to compete in terms of relevance, reach and quality

The Bigger Picture

- Content producers, aggregators, and over-the-top players MUST provide content and applications that are quality-aware to ensure a consistent customer experience

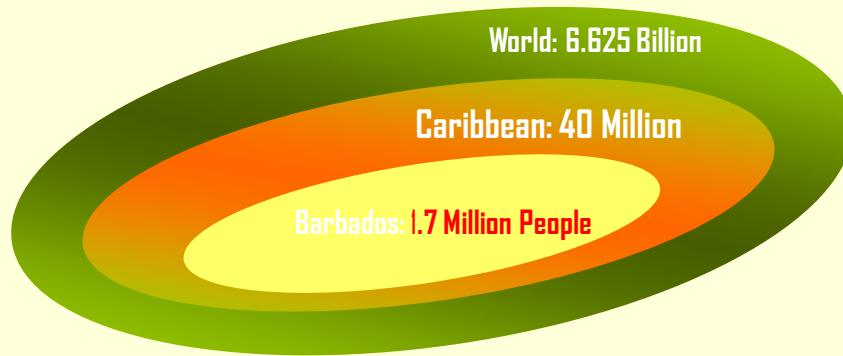# The Bigger Picture

Digital transmission platforms

1. Digital satellite

2. Digital cable

3. Digital terrestrial

4. (For the future) broadband & IPTV

The Bigger Picture

Global Space and Local Market

World: 6.625 Billion

Caribbean: 40 Million

Barbados: 1.7 Million People

The Bigger Picture

- Wireless and compression technologies are lifestyle game-changers
  - ➤ Youth are extremely attracted to these new portable multimedia devices, which are being heavily marketed to youth populations.

The Rationale For Digital Television Switchover

Consumer and cultural benefits

- DTV carries the potential for:

  - new content, including more specialised minority-interest programmes

  - an expansion and streaming of existing content, e.g. a news channel, a sports channel, a children's programming channel etc.

The Rationale For Digital Television Switchover

Consumer and cultural benefits

- new content providers -- and thus greater pluralism and diversity

- more local services

The Rationale For Digital Television Switchover

Consumer and cultural benefits

➢ more data-based services

➢ interactive features (level of sophistication dependent on the platform)

The Rationale For Digital Television Switchover

Consumer and cultural benefits

➢ the option of widescreen and/or HDTV (of appeal in the growing market for large-size flatscreen TV sets)

➢ the option of mobile TV, e.g. on screens on mobile telephones

The Rationale For Digital Television Switchover

Spectrum efficiency benefits

- around six digital terrestrial TV channels can be accommodated in the capacity required for one analogue TV channel

The Rationale For Digital Television Switchover

Spectrum efficiency benefits

- The scope for improved efficiency is considerable.

- It may well be possible to increase the broadcasting provision substantially and still reclaim some saved spectrum.

The Rationale For Digital Television Switchover

Detailed Motives May include:

➢ finding enough frequencies for the introduction of digital terrestrial television at the desired levels of coverage, or for digital radio

➢ finding enough spectrum for the introduction, or extension, of HDTV

The Rationale For Digital Television Switchover

Detailed Motives May include:

➢ utilising saved spectrum for new developments in the field of telecommunications, e.g. mobile TV, wireless broadband etc.

➢ auctioning saved spectrum for a range of competing purposes and securing the financial proceeds from the auction(s).

What about digital radio?

Not as practical as TV because of:

➢ Smaller potential spectrum benefits

➢ No justification for radical disruption given

- the scale of analogue radio in terms of the number of broadcasters and receivers

- impracticality of adapting existing receivers.

What about digital radio?

Not as practical as TV because:

➢ Digital radio seen as likely to coexist with the continuation of AM and FM analogue services, vis-a-vis DTV which is a substitute for analogue technology.

What about digital radio?

Not as practical as TV:

➢ BUT if there is intensive use of and pressures on the FM band consider the possibility of introducing digital radio, without any certainty of ending analogue in the near future, alongside alternative spectrum management approaches.

The challenges of Switchover

➢ **Legal and Political issues**:

  ▪ Licensing, number and ownership of Multiplexes, Network Operators, Public TV services, commercial TV, Analogue Switch Off (ASO), etc.

➢ **Technical issues**:

  ▪ Standards, compression system (MPEG2/MPEG4), end users equipment (Set-Top Box/ D-TV), etc.

➢ **Economic/financial issues**:

  ▪ New/different business model, transition costs, subsidizing vulnerable people, etc.

➢ **Allocation of Digital dividend**

So, Why Bother?

- No country has skipped digital terrestrial
- Analogue terrestrial switch-off is underway world-wide e.g. ITU region 1 mandate for 2015

Criteria for Success

➢Establish a Policy

➢Digital spectrum for analogue broadcasters

➢Free-to-view option (terrestrial and/or satellite)

Criteria for Success

➤ Where terrestrial is dominant, high digital take-up is a pre-condition for switchover

➤ Subsidy can play a role

Criteria for Success

➤ Political risk diminishes if households switch voluntarily, so the consumer proposition needs to be attractive

➤ The value of the free-to-view proposition should match the receiver cost

Criteria for Success

➢ Strong leadership from government

➢ Firm decision that sets the analogue TV switch-off date

➢ Clear and timely regulatory framework (including decision on the Digital Dividend)

Criteria for Success

➢ Stakeholder collaboration

➢ Close cooperation between regulator(s) and market players

Criteria for Success

- Good Communications strategy/Adequate information and assistance to viewers
  - ➢ 'Softly, softly' during period of voluntary take-up?
  - ➢ Why make switch-off compulsory?
  - ➢ Focus on late adopters & research main factors

Criteria for Success

- Understanding that:
  - ➢ The experience of developed societies is only instructive/indicative, and not necessarily a dependable template
  - ➢ The digital revolution will play out differently in developing countries.
  - ➢ Market research centred on local/unique circumstances is critical to development.

Regional Partnership Towards Policy Harmonization

Regional Forum on Policy and Regulation in the Electronic Media Sector July 5-6, 2010 Jamaica

- **Attendees :**

  Belize Broadcasting Authority; Public Utilities Commission –Belize; National Council of Television –Chile; Telecommunications Authority of Trinidad and Tobago; Government Information Service -St. Lucia; Telecommunications Authority of Suriname; Consumer Affairs Commission –Jamaica; Broadcasting Commission-Jamaica; and Turks and Caicos Islands Telecommunications

- **Consensus:** A more futuristic look for the region and a need for common standards for Digitalization

Regional Partnership Towards Policy Harmonization

"we are interested in the continued healthy growth of Caribbean content, of our competencies in policy formulation and in the implementation of these policies within the Caribbean media space…one key outcome would be the early harmonization of Regulatory Policy across the region"

– Professor Hopeton Dunn, Co-Chairman-National Steering
    Committee on DSO, Jamaica

Regional Partnership Towards Policy Harmonization

- Coordinated approach on:

  - Spectrum harmonisation

  - Rationalising ICT regulation as a region

  - Information and expertise sharing

Getting started

- ✓ Gathering of stakeholders
- ✓ Understanding the subject and starting with the question 'Do we need a policy?'
- ✓ Publishing an explanatory paper, including questions for consultation
- ✓ Digest consultation responses
- ✓ Research/Feasibility study

Thank you for your attention

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