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TRANSITION
FROM ANALOGUE TO
DIGITAL
BROADCASTING

Why digital transition

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ITU/BDT/IEE/TND


21 May 2012

ITU Workshop , Barbados

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Viewers



More programs

Interactive

Better quality

Anywhere

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Broadcast Equipments



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Contents



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New players

Better access

Small players


Competition

Diverse program




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Government



Innovation



Competition

Revenue

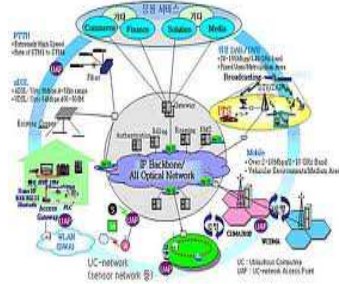


Market

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Convergence




CONVERGENCE




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Spectrum Efficiency



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The challenges of Switchover



- **Legal and Political issues**
 - Program editors, Licensing, number and ownership of Multiplexes, Network Operators, Public TV services, commercial TVs, local TV Standards, Analogue Switch Off (ASO), etc
- **Technical issues**
 - Standards, compression system (MPEG2/MPEG4), Spectrum availability, network planning (MFN/SFN), coverage areas, end users equipment (Set-Top Box/ D-TV), etc.
- **Economical related issues**
 - Introduction of new business model, transition costs, subsidizing vulnerable people, etc.
- **Allocation of Digital dividend**

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ITU Activities for the Transition



- **Regional Radiocommunication Conference 2006 (RRC-06)**
 - Frequency plan for the digital terrestrial broadcasting
 - Deadline to switch over for region 1 countries: 17 June 2015 (some countries and bands 2020)
- **Software Packages for spectrum management**
 - Compatibility analysis in the GE 06 Frequency bands
 - Spectrum Management Systems for Developing Countries (SMS4DC)
- **Recommendations, Reports and Handbooks on digital broadcasting technologies**
- **ITU-D Question 11-3/2**
- **Workshops, trainings**
- **Roadmap assistance to Members States in the developing countries.**

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Digital Migration Background



- **RRC - 04**
 - ITU consultations on Digital broadcasting for regions 1 and part of region 3 of ITU member administrations
 - Draft digital plan was produced for the whole planning region
- **RRC - 06**
 - ITU coordinated Conference on Digital Migration that focused on adoption of the digital plan
 - Adoption of Digital Migration Strategies and Principles
 - Set a deadline for analogue television switch off i.e. June 2015 in UHF band and 2020 for VHF band

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In Europe + Africa: GE06 Agreement. Objectives

- Agree on date for Transition to Digital
- Establish a digital frequency plan (120 countries)
- Adopt an Agreement that sets out the procedures for making changes to the frequency plan and to bring the frequency assignments into operation.

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Europe + Africa: GE06 Agreement

- TV frequency bands in question:
 - VHF Band III: 174-230 MHz
 - UHF Bands IV & V: 470-862 MHz
- Technology : Digital Video Broadcasting (DVB-T)
For television with four reception modes:
fixed, mobile, portable indoor and outdoor

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Europe + Africa: GE06 Agreement

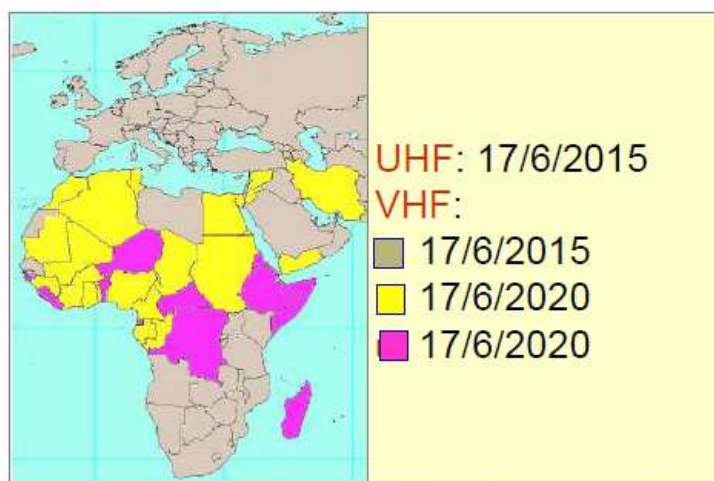
- The Agreement entered into force on 17 June 2007
- Transition: 17 June 2015, but some countries preferred an additional five-year extension for the VHF band (174-230 MHz)
- At the end of the transition period, countries may continue to operate analogue broadcasting stations provided that these stations
 - do not cause unacceptable interference
 - do not claim protection

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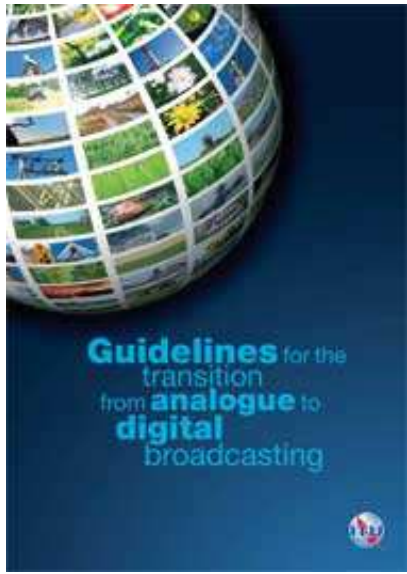
Transition map



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➤ Posted on ITU web for free download

<http://www.itu.int/publ/D-HDB-GUIDELINES.01-2010/en>


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A. Policy & Regulation	2.1 Technology & Standards Regulation	2.2 Licensing Framework	2.3 ITU-R Regulations					
	2.4 National Spectrum Plan	2.5 Assignment Procedures	2.6 License Terms & Conditions	2.7 Local Permits (building & planning)	2.8 Media Permits & Authorizations			
	2.9 Business Models & Public Financing	2.10 Digital Dividend						
	2.11 National Telecom, Broadcast & Media Acts	2.12 Law enforcement & execution	2.13 Communication to consumers & industry					
B. ASO	2.14 Transition Models	2.15 Organizational Structure & Entities	2.16 ASO Planning & Milestones	2.17 Infra & Spectrum Compatibility	2.18 ASO Communication Plan			
C. Market & Business Development	3.1 Customer Insight & Research	3.2 Customer Proposition	3.3 Receiver Availability Considerations	3.4 Business Planning	3.5 End Consumer Support			
D. Networks	4.1 Technology & Standards Application		4.2 Design Principles & Network Architecture		4.4 System Parameters	4.6 Network Interfacing	4.8 Transmitting equipment Availability	4.9 Network Rollout Planning
	4.3/5.3 Network Planning		4.5/5.5 Radiation Characteristics		4.7/5.7 Shared & Common Design Principles			
MTV	5.1 Technology & Standards Application		5.2 Design Principles & Network Architecture		5.4 System parameters	5.6 Network Interfacing & studio facilities	5.8 Transmitting equipment Availability	5.9 Network Rollout Planning
	6.1 DTTB/MTV Roadmap example for regulator		6.2 DTTB Roadmap example for operator		6.3 MTV Roadmap example for operator			
E. Roadmap development	6.1 DTTB/MTV Roadmap example for regulator		6.2 DTTB Roadmap example for operator		6.3 MTV Roadmap example for operator			

Government led
 Market led

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Guideline: Scope and objective

Scope	<ul style="list-style-type: none"> • Guidelines on <ul style="list-style-type: none"> – Transition from analogue TV to Digital Terrestrial Television Broadcasting (DTTB) – Introduction of Mobile Television Broadcasting (MTV) • Identification of <ul style="list-style-type: none"> – The policy, economic and technology choices – Their potential impact DTTB and MTV introduction • Providing many practical examples and references to documents for additional or more detailed information
Objective	<ul style="list-style-type: none"> • To assist the African countries in making their own roadmap <ul style="list-style-type: none"> – To shift smoothly from analogue to DTTB and MTV • To provide information regarding the cost benefit analysis of policy decisions and best practices

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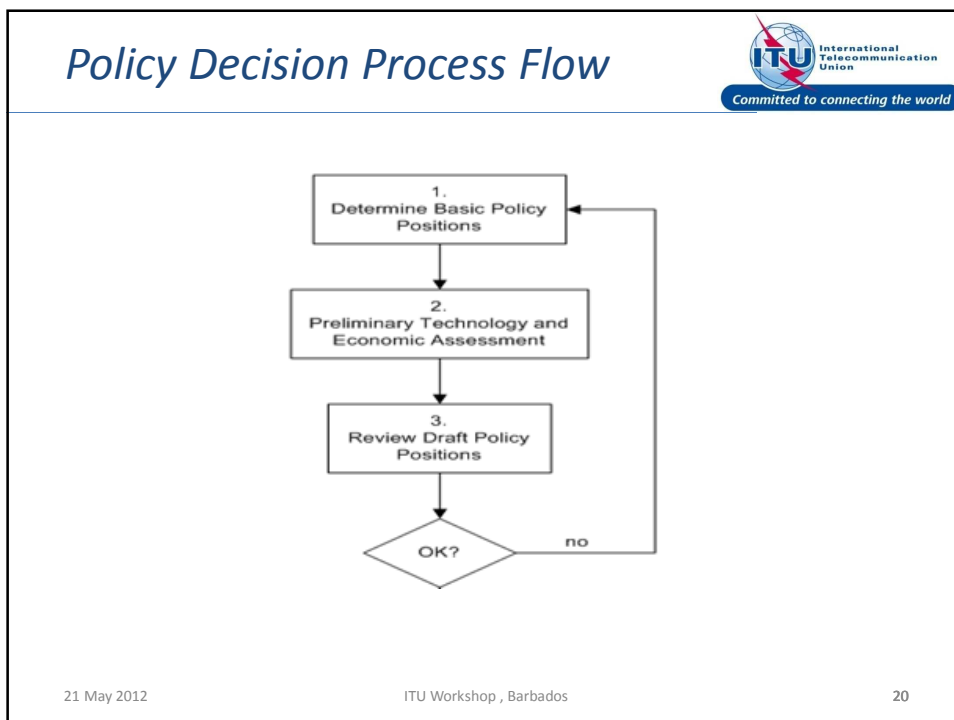
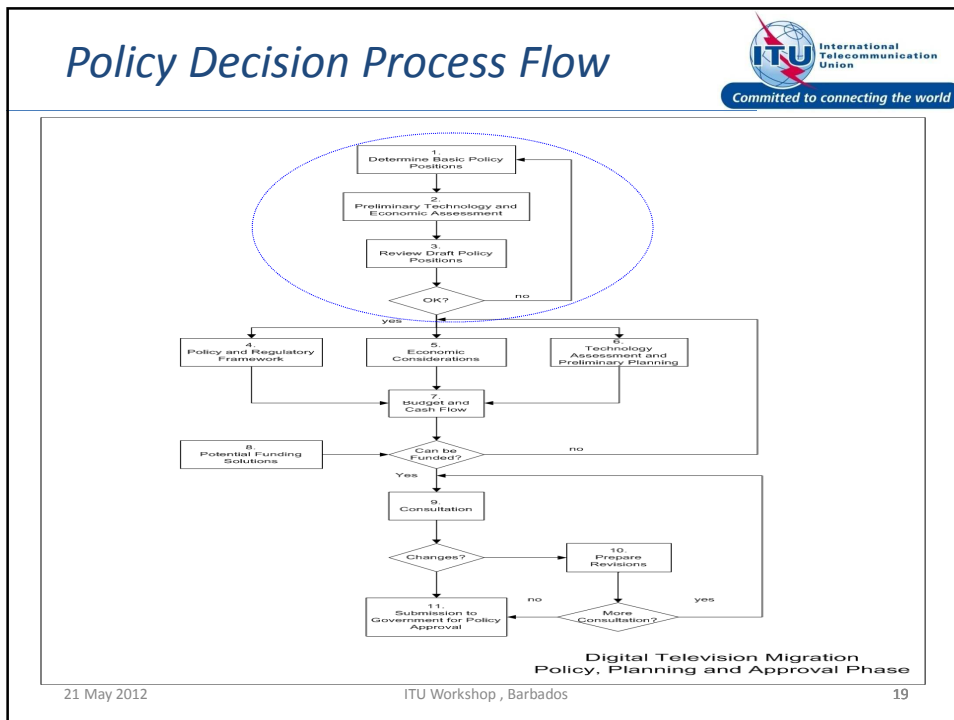


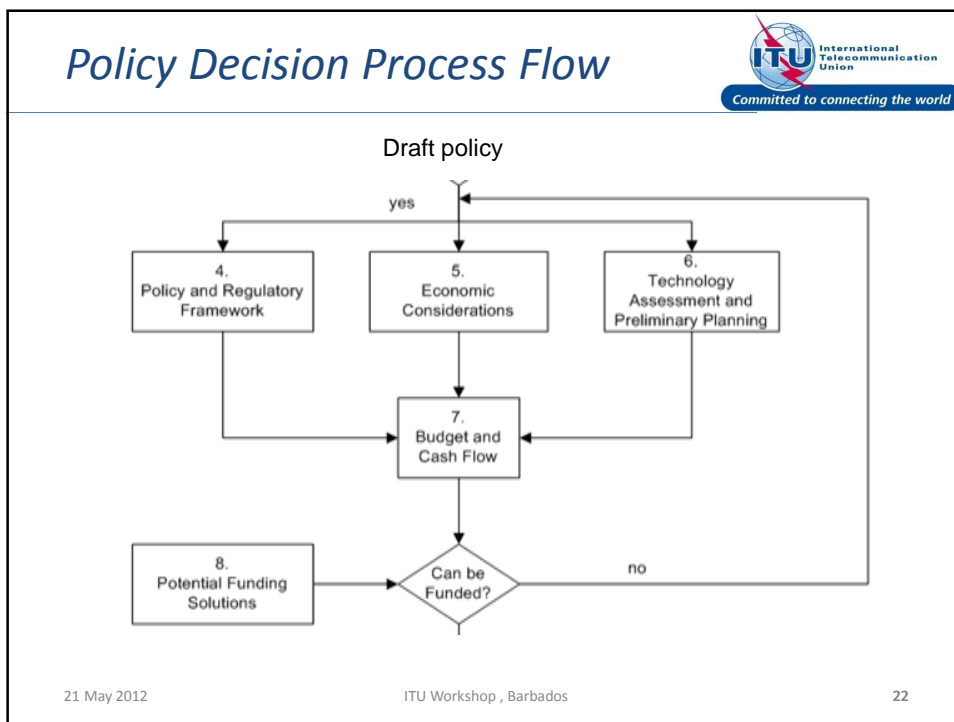
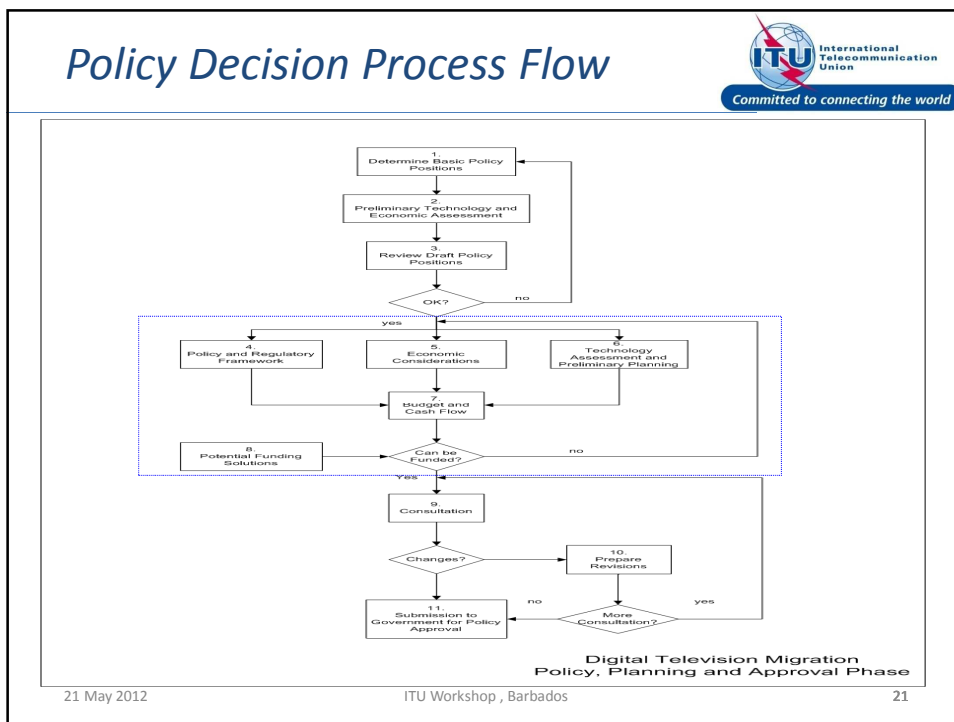
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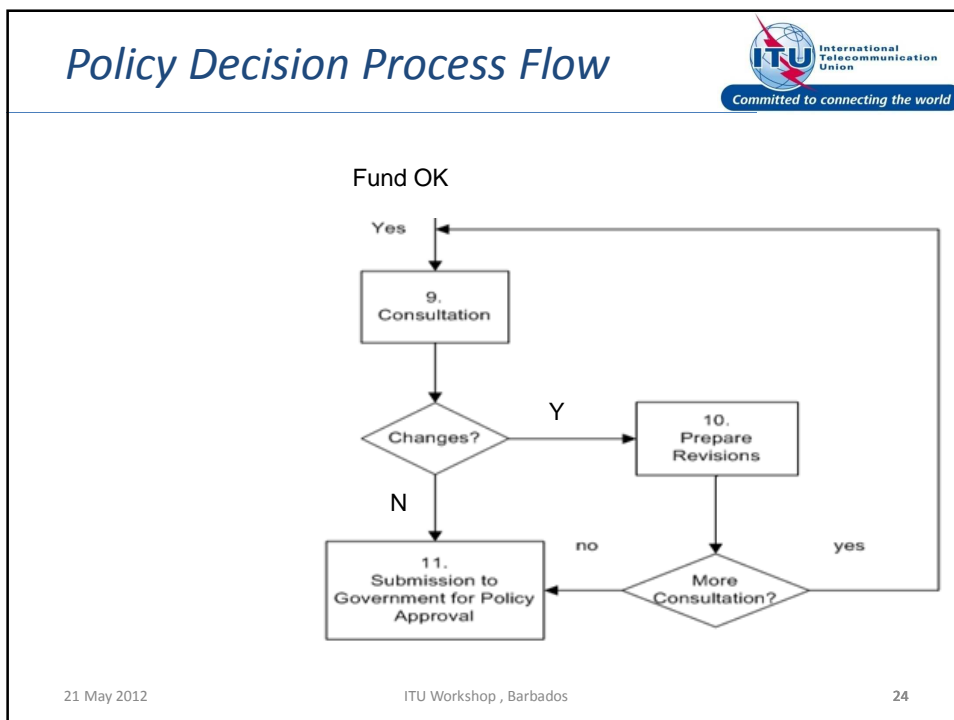
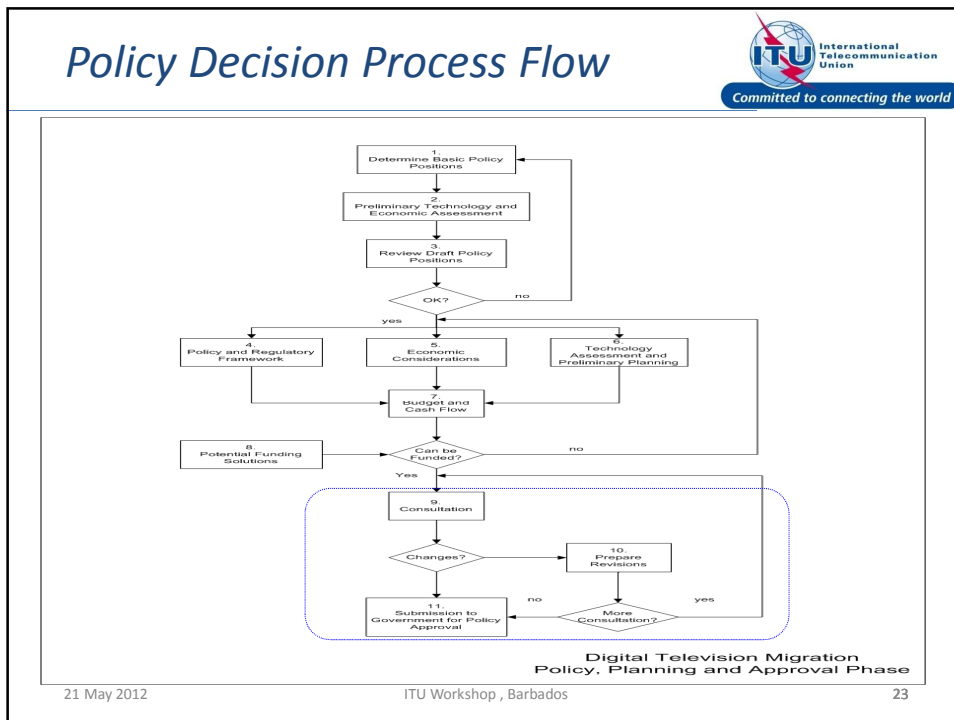
Guideline: Asia Pacific Revisions

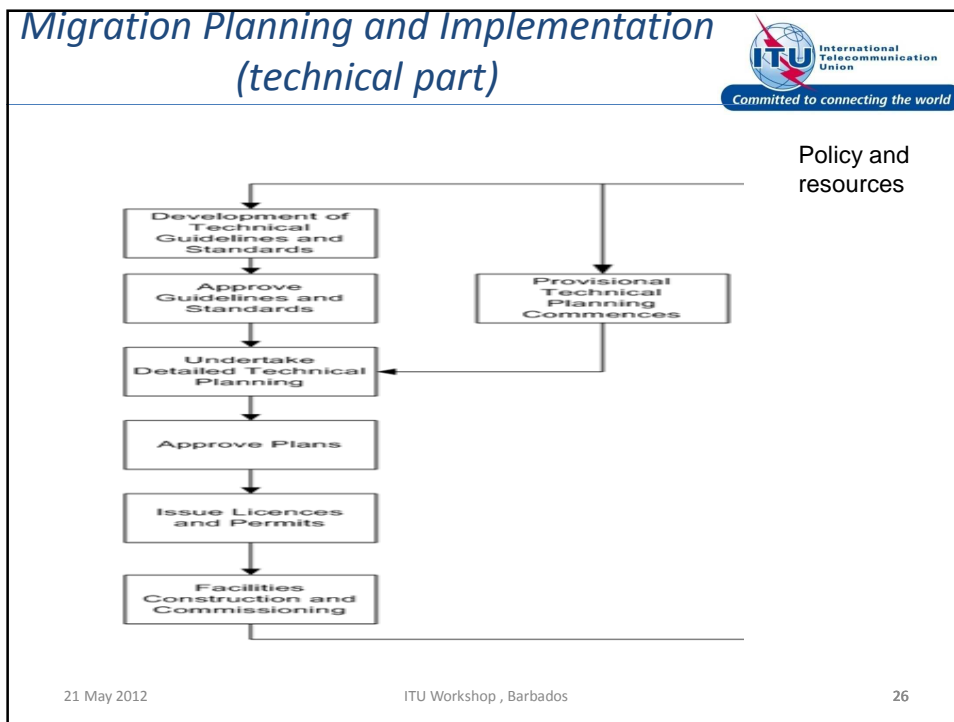
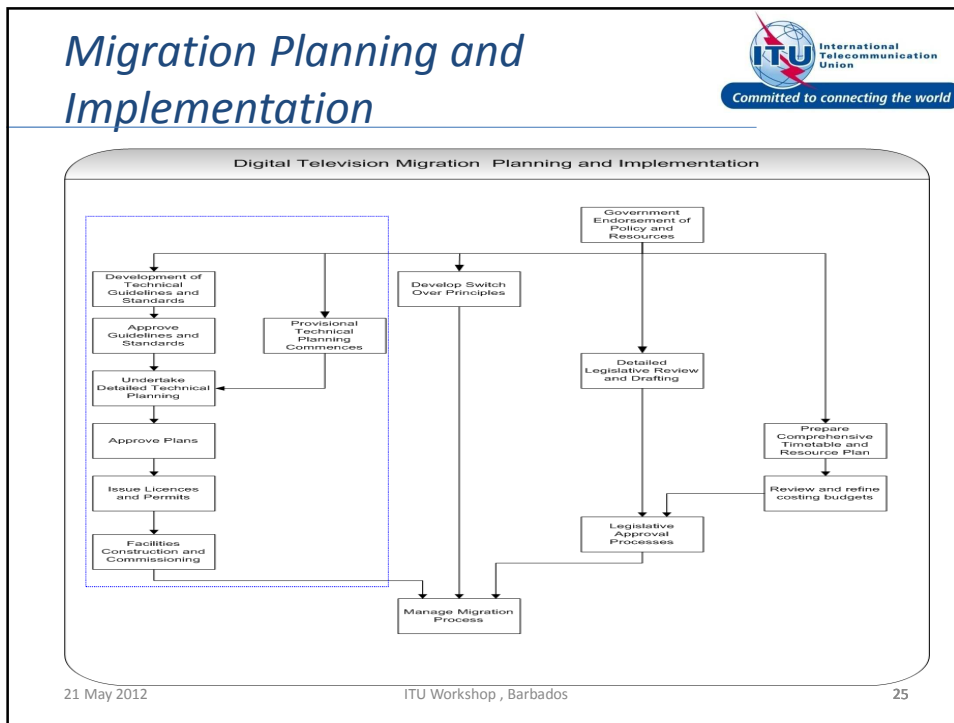
ASIA PACIFIC UPDATE	<ul style="list-style-type: none"> • WTDC 10 assigned priority to assisting developing countries in Asia Pacific on digital migration including archives • Guidelines Updated to reflect the different ITU rules and requirements in Region 3 (Asia Pacific) • Addition of New Chapter on Archives Migration • Survey conducted to identify needs and to select 5 pilot countries with whom to develop migration roadmap models for AP
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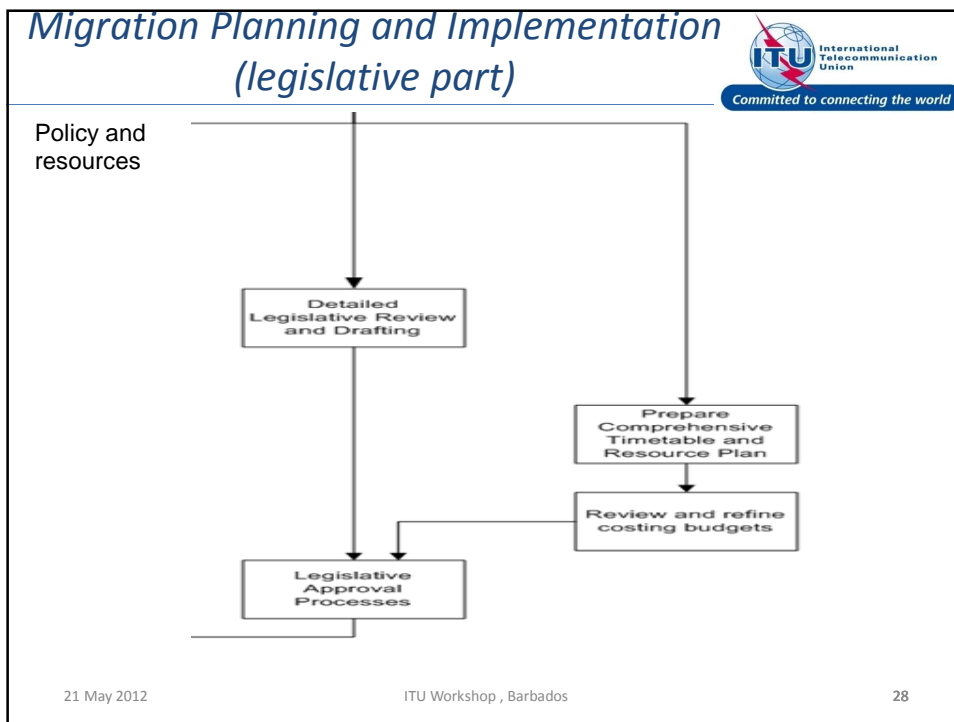
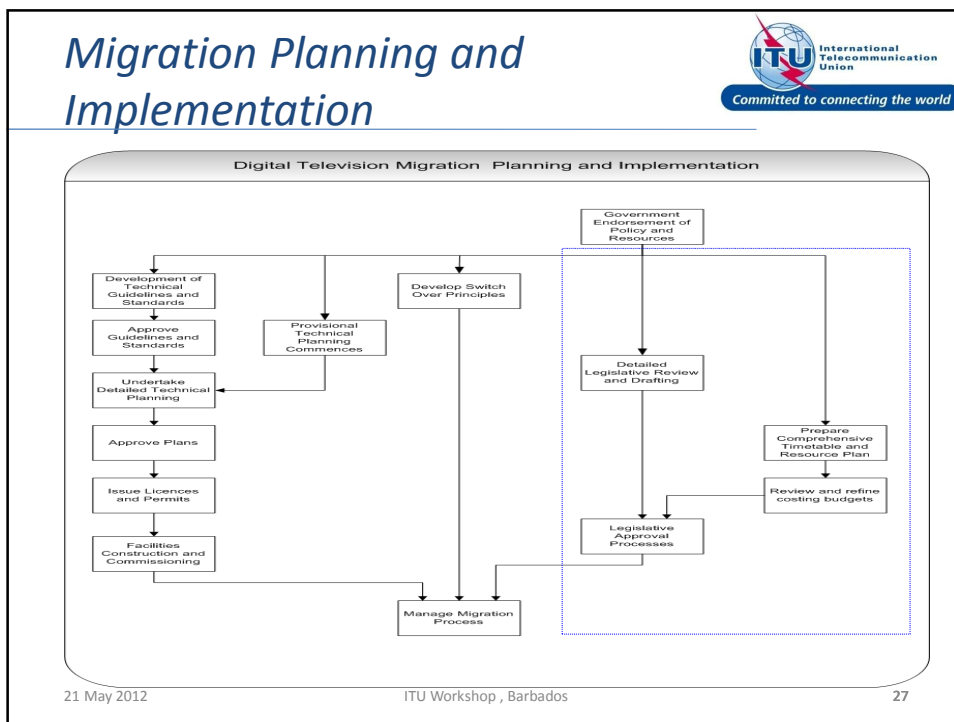
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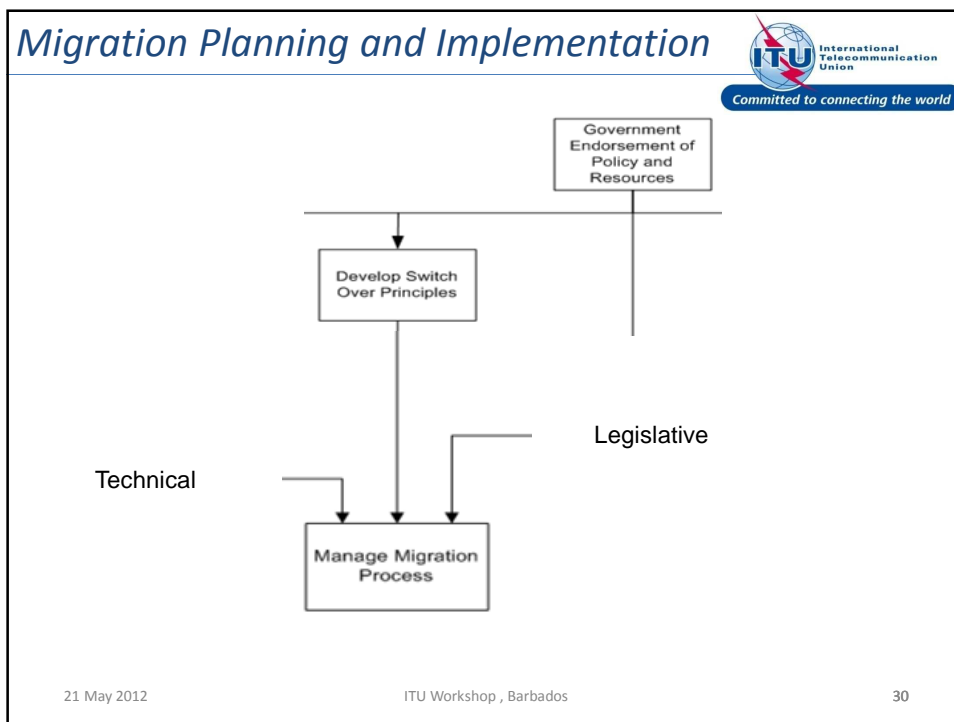
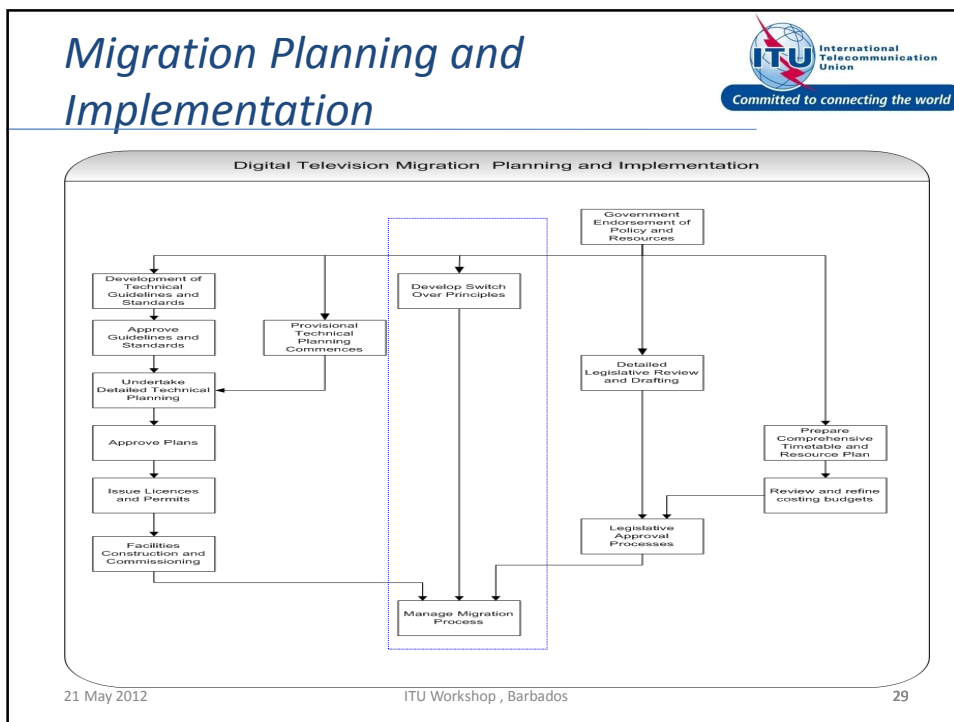
















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Assistance provided by BDT

Africa

- Guidelines
- Three countries selected for implementation of the Guidelines (i.e. preparation of the roadmap)
 - Ethiopia, Mali, Angola
- Additional assistance:
 - Zambia (workshop)
 - Congo, Uganda, Swaziland, Burkina Faso (assessment)
 - Rwanda (policy)
- ITU-ATU Summit and Workshops (November 2011, Nairobi, March and April 2012 Bamako and Kampala)
- Next Summit: 2012 September
- AUB: Afro-vision (planned project)

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Assistance provided by BDT

Asia Pacific

- Guideline extension for Asia Pacific which includes also:
 - guideline for transition analogue archives to digital
- Five countries selected for implementation of the Guidelines
 - Mongolia , Cambodia, Tonga, Sri Lanka, Nepal
 - Cooperation with ABU
- Additional assistance:
 - Bhutan (assessment)
 - Co-organizing workshops, seminars with ABU and AIBD
- Workshop in Vietnam in May 2011
- Training and workshop in Bangkok February/March 2012)
- Cooperation agreement among ITU-ABU-AIBD

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Assistance provided by BDT

CIS

- Assistance:
 - Coordination of terrestrial digital TV broadcasting in the border area of Kyrgyz Republic, Tajikistan Republic and Uzbekistan Republic:
 - solution of the frequency allotments coordination problems in the border areas during the implementation of digital television in the above mentioned countries
 - Georgia (assessment)
 - Organizing workshops, seminars in the region
- Project in Kyrgyzstan
 - Interactive Multimedia Digital Broadcasting (IMDB) Networks in the Kyrgyz Republic (area with mountainous terrain)

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Assistance provided by BDT

EUR

- PP Resolution 126
 - Assisting Serbia
- Ministerial Roundtable in Belgrade, Serbia, 2009
- Regulatory Roundtable in Győr, Hungary, 2011
- Workshops in Romania, Serbia, Poland, Greece
- Web portal (Romania)

Americas

- Suriname: workshop
- Participation at the CBU General Assembly (2010)
- CoE workshops (Jamaica, Trinidad and Tobago, 2010 Dec)
- CBU-ITU workshop in Barbados (2011 August)

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Accessibility




Report

- **Making Television Accessible**

http://www.itu.int/ITU-D/sis/PwDs/Documents/Making_TV_Accessible-E-BAT.pdf

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Regional initiatives



- In all the regions Digital broadcasting and transition
 - Africa
 - Asia Pacific
 - *Arab*
 - Americas
 - Europe (Central and Eastern Europe)
 - CIS

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Conclusions



- Transition to DTTB and the introduction of MTV services is a complex process
 - Involving decisions on key topics and choices of 41 functional building blocks
- A successful transition to DTTB and the introduction of MTV services requires:
 - Strong leadership of government
 - Firm decision of analogue TV switch-off date
 - Close cooperation of Regulator and market parties
 - Clear and timely regulatory framework (including decisions on the “Digital Dividend”)
 - Adequate information and assistance to viewers

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