MOD

QUESTION 2/1

Enabling policies and regulations for adopting digital telecommunication/ICT services and technologies for distribution and broadcasting

1 Statement of the situation or problem

The transition to digital broadcasting presents both opportunities and challenges for policymakers and regulators. As countries adopt innovative broadcasting technologies and services, including IP-based systems, and amid continued interest in cellular network integration, there is a growing need to address the convergence of broadcasting and broadband environments. This convergence demands a holistic approach to policy and regulation that considers the technical relationship between traditional broadcasting, and emerging audiovisual content distribution systems such as 5G Broadcast. The shift in user behaviour – toward diverse, on-demand content consumption – further underscores the importance of inclusive strategies that support public awareness and efficient spectrum management, particularly in the context of analogue switch-off and digital dividend allocation.

To enable sustainable and inclusive digital broadcasting ecosystems, regulatory frameworks must evolve with current trends to support service innovation, co-investment, and cross-platform service delivery. Broadcast networks should be recognized as a foundational infrastructure for delivering innovative applications and services, especially when integrated with other ICT networks. Policymakers must also consider the economic, technical, and regulatory implications of new broadcasting standards and technologies, particularly in developing countries undergoing digital transitions. As the global broadcasting landscape moves toward more integrated and flexible service models, forward-looking regulation will be essential to foster innovation, reduce costs, and support telecommunication/ICT networks that sustain a diverse and competitive audiovisual content market.

Furthermore, ITU Telecommunication Development Sector (ITU-D) can continue playing a role in helping Member States evaluate the technical and economic issues involved in the adoption and implementation of digital technologies and services. On these matters, ITU-D has been collaborating closely with both the ITU Radiocommunication (ITU-R) and the ITU Telecommunication Standardization Sector (ITU-T), thus avoiding duplication.

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In this context, the reports from the last study periods presented best practices that accelerate the transition and narrow the digital divide by deploying new services; adopting communication strategies for public awareness on digital broadcasting; and managing radio spectrum issues related to the analogue switch-off process, among other case studies.

It is also important to acknowledge the relationship between different environments, notably broadcasting and broadband, and the necessity to treat broadcasting in a more general manner and consider the relationship among the various networks which deliver audiovisual content. As well as, the adoption and implementation of new and innovative broadcasting services and applications.

Moreover, the broadcasting arena is changing and the offers to users are evolving. New experiences in accessing audiovisual content are being provided, and one of the consequences of these new offers is that users no longer have only the traditional media services/applications. They are instead starting to experience different ways of watching audiovisual content in their broadcasting services. It is important in this context, to analyse other digital audiovisual service offers, and new and emerging broadcasting/audiovisual content distribution systems, services and applications, including other distribution platforms, such as satellite and cable networks, to assess the television landscape.

Therefore, to implement new broadcasting technologies, services and applications in this new environment, which seems to be heading towards a global media strategy for service providers and not restricting the service offers to the traditional broadcasting market, it seems that consolidation, co-investment and infrastructure-sharing are key trends to reduce costs and allow massive investments in network deployment and content delivery.

Bearing that in mind, it is beneficial to study broadcasting as a key infrastructure for delivering innovative applications and services when combined with other networks and service platforms. Additionally, it is important to consider these interactions from the regulatory, economic and technical points of view, so as to leverage the strengths of each network for the benefit of the users and to make available a more diverse range of services.

There have been developments of broadcasting systems and integration with ICT networks using IP throughout the broadcasting chain, and using cellular networks for media transmission. Such developments and convergence between media and ICT sectors call for special consideration from policy, investment, and technology perspectives and open the door for a variety of services and applications.

Taking into account possible innovations for broadcasting in the UHF band, proposed by new systems like 5G Broadcast, DVB-I, ATSC3.0 and the expected new Brazilian second-generation system, and also with the use of VHF Band III for DAB or DTT, this could lead to new forms of broadcasting services and applications.

The use of the "digital dividend" is an important issue, and continues to be widely debated by broadcasters and operators of telecommunication and other services operating in the same frequency bands. Furthermore, it appears that the availability of the digital dividend and its effective usage, for example, to bridge the digital divide and to provide new innovative broadcasting applications and services is still and important issue that needs to be urgently addressed.

Other issues to consider are the studies from other ITU Sectors, especially taking into account the decisions of the world radiocommunication conferences (WRC-15, WRC-19, and WRC-23) on exploiting the digital dividend in the future. In this regard, it is relevant to consider maintaining study topics related to technical and economic aspects involved in the transition from analogue to digital broadcasting.

Finally, another important issue for the future of broadcasting is the emergence of new broadcasting technologies and standards that could be taken into account when developing countries[1] are adopting digital broadcasting and other audiovisual content distribution platforms. At the same time, traditional broadcasting services, with or without the interaction with other platforms and networks, should also be considered.

2 Questions or issues for study

The focus of the Question’s items of study will be on new and emerging broadcasting and distribution systems and services, including distribution platforms, such as satellite and cable networks. Content regulation is outside the scope of this Question.

Studies under the Question will focus on the following issues:

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[1] These include the least developed countries, small island developing states, landlocked developing countries and countries with economies in transition.

2.1 Continuing topics to consider from Question 2/1 of 2021-2025 study period

1) Analysis of methods and issues for the adoption and implementation of digital broadcasting (sound and television), and the deployment of new services and applications, such as UHDTV, AR/VR, interactive applications, for consumers/viewers in various environments (in possible collaboration with Question 1/2).

2) Analysis of the effects for public broadcasting services in the developing countries of the rapid growth of traditional and online linear TV and video-on-demand subscription services.

3) National experiences on strategies for the introduction of new broadcasting technologies, applications, emerging services and capabilities, including regulatory, economic, financial and technical aspects, reflecting the need for massive cost of the implementation and investments to cope with the ever-growing demand for video content (in possible collaboration with Questions 1/2 and 4/1, where appropriate).

4) Analysis of the development and deployment of broadcasting systems using IP-based technologies throughout the broadcasting chain, including the production, contribution and transmission parts.

5) Best practices and national experiences on spectrum planning for broadcasting and distribution including the use of the digital dividend, technical, regulatory and economic aspects, and other related matters.

6) Analysis of the gradual transition to digital sound broadcasting, study cases, sharing of experiences and strategies implemented, including the use of VHF Band III for DAB or DTT.

7) Analysis of possible innovations for broadcasting in the UHF band, proposed to be used by new systems for broadcasting, such as 5G Broadcast, ATSC3.0, DVB-I and other next-generation systems.

2.2 New topics for this study period

Explore case studies on the use of AI in the technical delivery on the broadcasting chain.(in collaboration with Question 5/2.

3 Expected Output

a) Output reports reflecting the studies outlined the section above, and possible revisions to the Report of the previous study period, as appropriate.

b) Periodic dissemination of relevant data emanating from the organizations and groups listed in § 7 below. Periodic updates on studies taking place in the other ITU Sectors.

c) National experiences on strategies and socio-economic aspects of the introduction of new broadcasting and distribution technologies, services and capabilities.

4 Timing

An annual progress report is expected at each study group meeting. Other deliverables, including interim deliverables and the revision of the report for the previous study period, should be sent for study group's approval when ready, as appropriate.

5 Proposers/sponsors

ITU-D Study Group 1 proposed the continuation of this Question as modified herein.

6 Sources of input

1) Collection of related contributions and data from Member States and ITU-D Sector Members, and those organizations and groups listed in § 9 below.

2) Updates and outputs of ITU-R and ITU-T study groups; relevant Recommendations and reports related to digital broadcasting.

3) Collection of information on the impact on developing countries of transition to digital broadcasting, re-planning and interactivity, and to the implementation across various environments.

4) Outputs of WTDC Resolution 9 (Rev. Kigali, 2022), including relevant Recommendations, guidelines and reports.

7 Target audience

Target audience	Developed countries	Developing countries
Telecom policy-makers	Yes	Yes
Telecom regulators	Yes	Yes
Service providers/operators	Yes	Yes
Broadcasting operators	Yes	Yes
ITU-D programme	Yes	Yes

a) Target audience – Who specifically will use the output

Beneficiaries of the output are expected to be middle and higher-level managers in broadcasters, telecommunication/ICT operators and regulators worldwide.

b) Proposed methods for implementation of the results

Activities include conducting technical studies, observing best practices, and developing comprehensive reports serving the target audience's interests.

8 Proposed methods of handling the Question or issue

a) How?

1) Within a study group:

– Question (over a multi-year study period) ☑

2) Within regular BDT activity:

– Programmes ☑

– Projects ☑

– Expert consultants ☑

– Regional offices ☑

3) In other ways: To be defined in the work plan ☑

b) Why?

To be defined in the work plan.

9 Coordination and collaboration

The ITU-D study group dealing with this study Question should coordinate closely with:

– Other ITU-R and ITU-T study groups dealing with similar issues, and in particular other relevant ITU-D groups;

It is worth mentioning that it is beneficial to the membership that collaboration be incentivized with other study Questions and ITU Sectors in the investigation of other networks and service platforms which can be combined with broadcasting to implement new experiences in content delivery, digital audiovisual service offers, and new and emerging broadcasting and distribution systems, services, and applications, including other distribution platforms, such as satellite and cable networks, to assess the television landscape, for instance ITU-D Questions A/1, 4/1 and A/2; ITU-R SG1, SG5 and SG6; and ITU-T SG21, each of the groups within their mandates and within their scopes of work.

10 BDT programme link

WTDC resolutions: Resolution 10 (Rev. Hyderabad, 2010), Resolution 9 (Rev. Kigali, 2022), Resolution 17 (Rev. Kigali, 2022) and Resolution 33 (Rev. Dubai, 2014).

Links to the ITU-D priorities of the Baku Action Plan, specifically to ''Affordable connectivity'' and ''Enabling policy and regulatory environment''. Further information will be in the work plan.

11 Other relevant information

As may become apparent within the life of the Question.