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Telecommunication Development Bureau

PROPOSED NEW QUESTIONS AND FOLLOW-UP OF EXISTING QUESTIONS FOR THE NEXT STUDY PERIOD

(ABSTRACT)

1 The role of telecommunications and information technology in economic development

2 Universal access/service

3 Interconnection

4 Establishment of an independent regulatory body

5 Regulatory impacts of the phenomenon of convergence within the telecommunications, broadcasting, information technology and content sectors

6 Methods to enhance the viability of public service broadcasting, particularly focusing on developing countries

7 Impact of the introduction and utilization of new technologies on the regulatory environment of telecommunications

8 Factors to create a climate favourable to investment

9 Tariff policies, tariff models and methods of determining the costs of national telecommunication services

10 Technology transfer and information

11 The economic obstacles to access to telematic services

12 Identify study group Questions in the ITU-T and ITU-R Sectors which are of particular interest to developing countries and systematically, by way of annual progress reports, inform them of the progress of work on the Questions to facilitate their contributions to the work on those Questions as well as, ultimately, to benefit from their outputs in a timely manner

13 Examine digital broadcasting technologies and systems, including cost/benefit analyses, assessment of demands on human resources, interoperability of digital systems with existing analogue networks, and methods of migration from analogue to digital technique

14 Examine broadband communications over traditional copper wires on aspects of technologies, systems and applications

15 How to enhance implementation of satellites in developing countries

16 Preparation of handbooks for developing countries:

- Handbook on new developments in rural telecommunications.
- Handbook on new technologies and new services.
- Handbook on the legal, economical and structural aspects for the introduction of a new national radio-frequency spectrum management and monitoring system.

17 Maintenance-oriented investments - information and computer-aided tools for evaluation of expansion/maintenance needs of bids for procurement of equipment

18 Guidelines/procedures for improving efficiency of maintenance of software SPC switches

19 Computer-aided tools and error-free traffic data acquisition procedures for strengthening the traffic administration systems of SPC switches to serve the need of competitive telecommunication markets

20 Communications for rural and remote areas:

a) Communications for rural and remote areas.

b) Development of multi-purpose community telecentres.

c) Penetration and service targets for rural telecommunications.

d) Definition of a set of indicators describing the state of development of a country's rural telecommunications network and services.

e) Sound and television broadcasting and communication for rural and remote areas.

f) Measurement of the impact of Information and Communications Technology (ICT) in rural and remote areas.

21 Human resource management and development to successfully meet the challenges of sector reform and transformation, with special emphasis to employment including consideration of gender issues

22 Fostering the application of telecommunications in health care

23 Telecommunication support for the protection of the environment

24 Using telecommunication and telematics to enhance learning environments for development

25 The development of long-term strategic plans for the future use of the frequency spectrum in developing countries

26 Collaboration between sectors of public interest and telecommunication operators

27 Enhancing the capacity of the NGOs to achieve development aims, through the use of telecommunication

1 The role of telecommunications and information technology in economic development

Question or issue proposed for study

Continue to analyse the available evidence that helps us to assess the impact of information and telecommunications on economic development? Implicitly this would also involve a discussion of the techniques and tools of analysis to quantify the benefits of telecommunications in the information age.

What are the gaps in available evidence and what new evidence needs to be collected. What is the type of evidence that needs to be collected in developing countries which will yield generalizable and comparable results?

How to maximize the benefits on different categories of the population at different spatial locations?

Proposed method of handling this Question or issue

The study shall be conducted within the regular BDT activities, on a project basis with the assistance of consultants. Liaison with UNESCO is foreseen.

2 Universal access/service

Question or issue proposed for study

The study group should establish a set of best practice guidelines for developing countries to take into consideration when developing policies, legislation, and/or regulations to address the critically important issues involving universal access/service. To efficiently and effectively study the issue of universal access/service, the study group should build on the work already done by ITU and in particular work already done for Questions 2/1, 3/1, 4/2, and 6/2 for the 1994-1998 study period of the ITU-D and other available materials, e.g., the 1998 World Telecommunication Development Report. To establish the best practice guidelines, the study group shall:

1) Identify the goals, impacts and expected benefits of existing different universal access/service policies, explaining the rationale for making these determinations.

2) Describe the use and the regulatory implications of new technologies and services in order to maximize the benefits that these technologies can provide for the expansion and improvement of telecommunication services.

3) Identify the most common, as well as the most innovative, approaches to achieving universal access/service goals when the private sector is responsible for implementing the telecommunication development initiatives, describing the advantages and disadvantages of each approach.

4) Identify guiding principles for raising, allocating, and administering universal access/service programmes, such as transparency, equitable distribution and access, competitively and technologically neutral allocation, and targeted to users.

5) Describe the legislative and regulatory frameworks that would be needed to implement universal access/service programmes or initiatives.

6) Identify and analyse the relationship that universal access/service policies have on other key telecommunication issues that arise as countries transition to increased competition, such as access charges, interconnection frameworks and agreements, accounting rates, and tariff rebalancing.

Proposed method for handling this Question

Because the issue of universal access/service is of such great importance to all countries, the study of this Question should be within a study group over a multi-year study period with interim results as indicated above.

3 Interconnection[1]

Question or issue proposed for study

The study group should establish a set of best practice guidelines for countries to take into consideration when developing policies, legislation and regulations to address the critically important issues involving interconnection. The study group should build on the work already done for Questions 2/1 and 3/1 for the 1994-1998 study period and other available materials. To establish best practice guidelines, the study group should:

1) Describe the legislative and regulatory framework that would be needed to implement appropriate interconnection arrangements, unbundling, collocation, and interconnection pricing. Identify the technical facilities major suppliers are required to provide in order to offer interconnection to new competitors.

2) Identify the most common approaches for interconnection pricing, cost accounting, unbundling, describing the advantages and disadvantages of each approach thereby taking into account the guiding principles for interconnection pricing, such as cost-orientation[, long-run incremental costing] and transparency.

3) Identify the most common approaches for arriving at interconnection arrangements, including those set by the regulator and those arrived at through commercial negotiations. With regard to commercial negotiations, identify the most common approaches to dispute resolution procedures, timetables for completion of negotiations, sanctions for failure to comply, likely outcomes if regulatory arbitration or determination is necessary. Take into account the guiding principles for interconnection arrangements, such as non-discrimination, transparency, publication of interconnection charges, availability of cost information.

4) Create a model interconnection agreement.

5) Provide for liaison with ITU-T study groups on key items to be identified, e.g.:

   - Numbering plan of ITU-T SG 2 (E.164) with the new facilities (freephone, premium rate services, international shared-cost services), the data country code of ITU-T SG 7 (X.121), the SANC code assignment for Signalling System No. 7 by ITU-T SG 11 (Q.708) and the non-standard services and facilities of ITU-T SG 8 (T.35).
   - Number portability as studied by ITU-T SGs 2 and 11. For the international freephone there is the ITU-T database for assignment.
   - The interconnection, the establishment of interfaces, the access to networks, the interworking are be studied by ITU-T SGs 2, 11, 13, and 15 - technical standards have already been developed.

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[1] This Question is the result of the combination of Questions 3.1, 3.2 and 3.3 following TDAB request (see Document 73).

Proposed method for handling this Question

Because the issue of interconnection is of such great importance to many countries, the lead study of this Question should be within a study group over a multi-year study period with interim results. The interaction and participation by experts from around the world in this issue will result in a useful product for developing countries. However, some items might be entrusted to focus groups to achieve interim results within an appropriate time-frame.

4 Establishment of an independent regulatory body

Question or issue proposed for study

The study group should identify guidelines for countries to take into consideration when developing an independent regulatory body. To efficiently and effectively study the issue of regulatory reform, the study group should build on the work already done for Question 2/1 for the 1994-1998 study period and other available materials. To accomplish this, the study group shall:

1) Identify methods and criteria that may be used to develop a governmental telecommunication policy and to assess the extent of legislative and regulatory reform necessary to implement a national telecommunication policy.

2) Continue identifying regulatory models for a telecommunication regulatory body, describing the legal, economic, and social factors that may lead to the adoption of one regulatory approach over another.

3) Describe the range of administrative activities that a regulatory body may engage in, such as rulemaking and enforcement, licensing and concessioning, and management of scarce resources.

4) Describe key regulatory issues that a regulatory body may address, such as the provision of service, interconnection, universal access/service, tariffing, quality of service, standardization/type approval, numbering, and competitive safeguards (this may include frequency allocation and assignment as well as broadcasting, however some countries create different bodies for the later issues).

5) Identify criteria that may be used to determine the size of the regulatory body, including staff and appointed members of the decision-making body, taking into account the size of the industry, the scope of the regulator's mandate, the degree of initiative the regulator will undertake, and the level of resources necessary for implementation.

6) Identify sources of funding for resources, including independent funding mechanisms, as well as a multi-step implementation approach that considers resource limitations and the need to develop regulatory credibility at the outset.

Proposed method for handling this Question

Because regulatory reform is of such great importance to all countries, the study of this Question should be within a study group over a multi-year study period with interim results as indicated above. Obtaining the widest possible participation will enhance the study of this Question and because the study group brings together a diverse group of Member States and Sector Members in a unique setting, it is the best forum to address this issue. The interaction and participation by experts from around the world in this issue will encourage active debate and new ideas from the meetings.

5 Regulatory impacts of the phenomenon of convergence within the telecommunications, broadcasting, information technology and content sectors

Question or issue proposed for study

Examine the issues associated with convergence to determine what actions countries may take to optimize their regulatory regimes in order to deal adequately with these issues.

Proposed method for handling this Question

Within a study group.

A study on the phenomenon of convergence should be tightly focused on key issues, especially in regard to the interim report. A review of existing reports and studies should form the basis for identifying the key regulatory impacts and subsequent consideration by Study Group 1 of what recommendations it might wish to make to ITU-D members. While participation in the study of this Question should be open to any member, it may be useful to see if the study could be supported by university researchers and/or regional organizations such as APT, CITEL, the European Commission, etc. In particular, it would be useful to see if experts from the US FCC, NTIA and European Commission would be willing to participate in the Rapporteur's Group.

It would be useful to have the draft report-in-progress available on the ITU-D's Web site so that anyone on the World Wide Web could provide comments and/or inputs to the study.

6 Methods to enhance the viability of public service broadcasting, particularly focusing on developing countries

Draft Question

2.1 What are the key elements in the definition of a model role and mandate for the Public Service Broadcaster (PSB) in developed and developing countries, that will clearly differentiate between the PSB and other broadcasters?

2.2 How can digital and information technologies be used to enhance the production capabilities and to improve economies and efficiency of production of broadcasting services by the PSBs in developing countries?

2.3 In what ways can digital technology best be introduced into the distribution and delivery of the PSBs services, including rural and sparsely populated areas, particularly taking account of the convergence between broadcasting and other telecommunication services, which offers significant operational, economical and performance enhancements?

2.4 How can the emerging GII and other digital networks be used to improve the services of the PSBs especially in developing countries through, for example, the provision of access to shared resources or their use for the collection and distribution of programmes and their elements?

2.5 What other value-added services and products can be introduced to enhance the PSBs performance?

8 Proposed method of handling this Question or issue

a) How? Indicate the suggested handling of the proposed Question or issue

Within a study group as a Question and within regular BDT activity with projects and expert consultants. Joint studies with the UNESCO and WBU may be beneficial.

7 Impact of the introduction and utilization of new technologies on the regulatory environment of telecommunications

Question or issue proposed for study

Continue to study the effects of introducing and utilizing new technologies on the regulation of telecommunication services.

Proposed method of handling this Question or issue

Within a study group. This is a regulatory Question which requires good understanding among all Regulators and Operators.

8 Factors to create a climate favourable to investment

Question or issue proposed for study

To what financing policies, methods and techniques might administrations or operators in developing countries have recourse in order to secure the investment necessary for developing their telecommunication infrastructures?

What conditions must be observed for obtaining certain types of finance?

What factors (national legislation, structural aspects, regulatory framework, price control policy, etc.) might help to create a climate favourable to investment?

Study Group 1, in close liaison with the BDT, should study the possibility of contributing to the emergence, in developing countries where it is difficult to make telecommunications profitable, of regional or subregional telecommunication markets with sufficient critical mass to enable returns on infrastructure investment on a larger scale than on the local level.

It would be useful to encourage the harmonization of the rules governing national and foreign investment, and the implementation of appropriate regulations at regional and subregional level.

Proposed method of handling this Question or issue

Not specified.

9 Tariff policies, tariff models and methods of determining the costs of national telecommunication services[2]

Question or issue proposed for study

Having regard to the outcome of the second ITU World Telecommunication Policy Forum (Geneva, 16-18 March) and to the work of ITU-T Study Group 3 and its Regional Tariff Groups, the study group should:

1) Consider the general evolution of tariff structures in countries which have implemented a policy for rebalancing their telecommunication tariffs, following a preliminary analysis to be carried out by the BDT on the subject.

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[2] This Question is the result of the combination of Questions 9.1 and 9.2 following TDAB request (see Document …).

2) Identify the principal methods of determining and calculating the costs of telecommunication services taking into account, in particular, work already carried out by ITU-T Regional Tariff Groups.

3) Identify, collate and/or develop suitable costing and tariffing models for applying cost-oriented telecommunication tariffs in developing countries and ensuring the provision of universal services.

4) Develop necessary policies and regulations required for ensuring cost-oriented tariffs for national telecommunication services.

5) Prepare appropriate guidelines and recommendations for possible use by developing countries in implementing cost-oriented tariffing of various telecommunication services.

Proposed method of handling this Question

Within a study group for items 1), 2), 4) and 5); Expert Group within BDT activities for item 3).

10 Technology transfer and information

Text under development.

11 The economic obstacles to access to telematics services

Question or issue proposed for study

To consider ways of facilitating access to telematic services, particularly by reducing the economic obstacles.

Proposed method of handling this Question or issue

Within a study group and expert consultants. This is a matter of substance and a crucial problem in which it is necessary to take into account the actual situation of different categories of users, who have to be treated as full partners.

12 Identify study group Questions in the ITU-T and ITU-R Sectors which are of particular interest to developing countries and systematically, by way of annual progress reports, inform them of the progress of work on the Questions to facilitate their contributions to the work on those Questions as well as, ultimately, to benefit from their outputs in a timely manner

Question or issue proposed for study

Identification on a continuing basis of those study group Questions in the ITU-T and ITU-R Sectors which are of particular interest to developing countries based on an agreed set of guidelines.

Proposed method of handling this Question or issue

Within a study group.

13 Examine digital broadcasting technologies and systems, including cost/benefit analyses, assessment of demands on human resources, interoperability of digital systems with existing analogue networks, and methods of migration from analogue to digital technique

Question or issue proposed for study

Identify the economic impact and development aspects of proposed and existing digital sound, television and cable broadcasting systems, with particular attention on receiver costs; identify migration techniques from analogue to digital broadcasting, taking into consideration the experiences of ITU-D Member States and Sector Members.

Proposed method of handling this Question/issue

It is proposed that this Question be handled within a study group.

14 Examine broadband communications over traditional copper wires on aspects of technologies, systems and applications

Question or issue proposed for study

Identify the technical and economical impacts and development aspects of the deployment of broadband communication technologies and applications on traditional copper loops using DSL technologies with particular attention to cost of customer premises equipment, easiness of deployment, and integration with existing and future backbone infrastructure.

Proposed method of handling this Question /issue

It is proposed that this Question be handled within a study group.

15 How to enhance implementation of satellites in developing countries

2 Question or issue proposed for study

The purpose of this issue is to continue to assist developing countries in fully exploiting satellite technologies, with particular emphasis on remote and rural areas. Since the first World Telecommunication Policy Forum was held in Geneva in 1996, there has been a comprehensive examination of the benefits of GMPCS and the technical, financial or regulatory issues concerning access to this new satellite service by developing nations. The output from this industry-administration partnership has included, to date, a series of five regional workshops designed to introduce regulators to this exciting new technology, compilation of a Group of Experts Report initiated and published by the ITU-D, and development of a universal, voluntary Memorandum of Understanding and GMPCS Arrangements which provide a framework for the implementation of GMPCS.

In order to move beyond a discussion of GMPCS per se, these technical, operational and regulatory/policy issues need to be re-defined and explored further in a wider context. Furthermore, once these and other possible issues are examined, then future action can be taken to encourage multilateral education and problem resolution. The ITU-D can continue to serve a useful function in this area, as it has in the wake of the GMPCS World Policy Forum, by further enhancing developing countries' knowledge of the evolving space communications technology and of its potential benefits and applications to their unique national infrastructure development process. The Sector can also

help acquaint the space industry with developing countries' needs as these new technologies are introduced and evaluated by regulators and regional organizations.

Proposed method of handling this Question or issue

It is proposed that the ITU-D handle this issue through its regular activities and programmes that are designed to address regulatory and technical matters, recognizing the excellent work that has already been conducted through the ITU-D to create databases and to gather, analyse and publish technical and regulatory information.

16 Preparation of handbooks for developing countries

A Handbook on new developments in rural telecommunications

Issues to be developed

On the basis of future experience in the operation of telecommunication services and an analysis thereof, the 1994-1998 Handbook should be expanded and improved in the following areas:

a) Introduction of new technological applications for rural telecommunications (provision of service using radio, broadcasting, multimedia …).

b) Study of methods for applying, operating and planning rural telecommunication programmes using new technologies, case studies which take account of economic, financial, tariff and human resource factors.

c) Improving national governments' awareness regarding the establishment of structures, financing funds and operators dedicated to rural telecommunications, using the results obtained from analysis of case studies. To this end, when the 1994-1998 Handbook is issued, all the players involved in rural telecommunications will be sent a questionnaire which will be used to develop guidelines and draw lessons so as to meet expectations more effectively.

Proposed method of handling this Question or issue

The study of this Question involves the review, analysis, and assessment of the experience of many countries with regard to telecommunication services in rural and remote areas.

Work of this nature, involving as it does the careful collection of experiences and opinions from many countries, and noting the relative urgency, can be carried out most effectively and promptly by a focus group of experts. As an alternative, if the formation of a focus group proves to be impractical with regard to a particular issue, some of the work could be carried out by outside consultants.

B Handbook on new technologies and new services

Issues to be developed

On the basis of future experience in the introduction of new technologies and new services and an analysis thereof, the 1994-1998 Handbook should be expanded and improved in the following areas:

a) Introduction of new technologies and their applications in the telecommunication field (for example Internet, intelligent networks, multimedia, telemedicine, distance education, …).

b) Analysis of the methods of application of the new technologies in a telecommunication network (planning, human resources, economic and financial aspects). This analysis will be

facilitated by a questionnaire to be sent to all telecommunication players when the 1994-1998 Handbook is issued.

Proposed method of handling this Question or issue

The study of this Question involves the review, analysis and assessment of the experience of many countries with regard to telecommunication services using new technologies.

Work of this nature, involving as it does the careful collection of experiences and opinions from many countries, and noting the relative urgency, can be carried out most effectively and promptly by a focus group of experts. As an alternative, if the formation of a focus group proves to be impractical, with regard to a particular issue, some of the work could be carried out by outside consultants.

C Handbook on the legal, economical and structural aspects for the introduction of a national radio-frequency spectrum management and monitoring system

At the decision of ITU-D Study Group 2, the draft Handbook has been transmitted to ITU-R Study Group 1. Following its meeting in Santa Rosa (United States) in late 1996, the latter submitted a liaison statement on the subject, requesting that the document be updated to reflect developments in the world radiocommunication market and that the syntax of the English-language version be improved.

After receiving the ITU-D's document and on the basis of the Questions assigned to it, ITU-R has issued a draft "Handbook" on the economic aspects of spectrum management (Document 1/203).

The Special Rapporteurs' Group for ITU-D Question 2/2 has taken note of both documents and will include them in its work.

17 Maintenance-oriented investments - information and computer-aided tools for evaluation of expansion/maintenance needs of bids for procurement of equipment

Question or issue proposed for study

Cost-effectiveness of investments in emerging competitive markets is of crucial importance to telecommunication operators and service providers. It is therefore recommended that ITU-D Study Group 2 develops guidelines of information needs and suitable models to facilitate the evaluation initial costs, equipment, modularity and associated cost of expansion and, operation and maintenance needs over the declared life span of the equipment. The guidelines should aim to identify strategies to improve reliability of estimates of expansion and maintenance costs applicable over the life span of equipment - such as through provision of insurance schemes to protect against technological risks. A typical model is attached at Annex C1 to illustrate generic information needs and approach to evaluate bids received as per criteria aforementioned.

Proposed method of handling this Question or issue

Appoint a focus group of expertise with defined terms and conditions to study and evolve guidelines/models as stated at item 2 and also disseminate the outputs as stated at item 7 c) above. The focus group should interact/coordinate with the users of SPC switches of developing countries of the region and their suppliers - in particular with those participating in the user group meetings convened by the ITU Regional Office Bangkok.

The study may be supported within regular BDT activity if funding from outside resources is inadequate.

18 Guidelines/procedures for improving efficiency of maintenance of software SPC switches

Question or issue proposed for study

Study the inefficiencies/problems of software maintenance arising from lack or inadequate facilities in respect of the issues quoted at items 1(i) to 1(vii) and develop guidelines and procedures to facilitate efficient maintenance of SPC software.

Proposed method of handling this Question of issue

Appoint a focus group comprising expertise within the study group and consultants from outside with defined terms and conditions to study and evolve guidelines/procedures as stated at item 3 and also disseminate the outputs as stated at item 7 c) above. The focus group should interact/coordinate with the users and suppliers of SPC switches of developing countries - in particular with those participating in the user group meetings, convened by the ITU Regional Office Bangkok.

The activities of the focus group may be supported within regular BDT activity if funding from outside resources is inadequate.

19 Computer-aided tools and error-free traffic data acquisition procedures for strengthening the traffic administration systems of SPC switches to serve the needs of competitive telecommunication markets

Question or issue proposed for study

2.1 Develop a data model to facilitate design of traffic administration database - to automate the facilities needed for network planning, identification of network and subscriber inefficiencies, and for application of traffic data to determine market oriented service products and pricing of services- using a general purpose data base.

2.2 Study and implement procedures to overcome errors of counters, monitoring entities of traffic objects - proper to the Figure 4/E.502 of ITU-T E502- bound by specific traffic relations.

Proposed method of handling this Question or issue

Appoint a focus group of expertise with defined terms and conditions to study and evolve guidelines/models as stated at item 3 and also disseminate the outputs as stated at item 7 c) above. The focus group should interact/coordinate with the users of SPC switches of developing countries and their suppliers - in particular with those participating in the user group meetings convened by the ITU Regional Office Bangkok.

The activities of the focus group may be supported within regular BDT activity if funding from outside resources is inadequate.

20 Communications for rural and remote areas[3]

This Question includes six separate projects, all of which have been proposed for study within the context of the Question which addresses "Communications for rural and remote areas".
Since there are substantial relationships and interdependencies among the individual projects, they can be handled most efficiently as components within a single Question.
Short text descriptions of the six projects appear below.

a) Communications for rural and remote areas (continued study from last period)

Question or issue proposed for study

On the basis of current and recent studies and information, analyse the material which is available and formulate conclusions and recommendations on the following topics:

a) the best methods and techniques for selecting appropriate technology options for rural telecommunications;

b) the best methods of planning, implementing and sustaining rural telecommunication development programmes.

Note that topics c), d) and e) from the current study period are not proposed to continue in the next study period.

Proposed method of handling this Question or issue

The study of this Question involves the review, analysis, and assessment of the experience of many countries in the delivery of telecommunication services to the rural and remote areas. From this investigation, "best practice" models will be developed, which will provide the basis for the conclusions and recommendations that will be determined.

Work of this nature, involving as it does the careful collection of experiences and opinions from many countries, and noting the relative urgency, can be carried out most effectively and promptly by a small group of experts, a focus group.

b) Development of multi-purpose community telecentres

Question or issue proposed for study

How to set up and develop services that will involve the rural population? What facilities should telecentres be equipped with and how should they be organized in order to secure the participation of the people in applications for development activities, particularly in the educational and cultural fields? Consideration should also be given at the same time to ways of carrying out an evaluation in order to measure the impact of telecentres in the development process.

Proposed method of handling this Question or issue

With a focus group which reviews specific projects. By means of surveys and questionnaires, seek the experience and opinion of national, regional and international organizations and development-oriented NGOs which are be involved in activities related to multi-purpose community telecentres.

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[3] This Question is the result of the combination of Questions 20.1, 20.2, 20.3, 20.4, 20.5 and 20.6 following TDAB request (see Document …).

It is both necessary and useful to involve development players who are already in contact with the local people in the telecentre projects.

c) Penetration and service targets for rural telecommunications

Question or issue proposed for study

On the basis of studies carried out, experience, and knowledge gained by the ITU-D, and by other organizations including Member States and Sector Members, consolidate the information available and formulate conclusions and recommendations on this Question:

What are the appropriate service levels required for rural telecommunications, when the services are typically provided in a PCO or equivalent, relative to the population of the area served and any other significant factors? What other factors are significant, and how should they be measured?

The intention is to define the service level that best meets the joint goals of fully meeting the service needs of the community, for both outward and inward calling, and that also maximizes the net revenue of the service provider.

Proposed method of handling this Question or issue

Within a focus group which reviews specific projects and programmes.

The task involves the obtaining of possibly elusive facts, not in rounding up opinion. There will be expert judgement involved, establishing legitimate causal relationships, based on the facts which are obtained, and careful evaluation of them. As well as knowledge and experience in telecommunications, expertise in the area of socio-economic factors and relationships is also required.

d) Definition of a set of indicators describing the state of development of a country's rural telecommunications network and services

Question or issue proposed for study

What is the appropriate set of indicators to adequately characterize a country's current and future telecommunication services market, for the information of business analysts, and political and business decision makers? These indicators and their standard determination and expression should facilitate simple information collection in developing countries.

Proposed method of handling this Question or issue

This proposed Question uses the approach to the development of industry information which has proceeded well under BAAP Programme 11, and focuses specifically on communications for rural and remote areas. Once the appropriate key indicators have been developed, agreed on, and have become available, it is expected that the periodic ongoing aggregation and publication of this material will become part of the ITU "routine round" of information publication.

As a component of the work under this Question, it is hoped that it will be practical to address the aggregation of information on rural telecommunications at a finer granularity than the national level. In this regard, the management accounting techniques used by large service providers in developed countries offer valuable examples, both of how such information can be captured and displayed, and of the value that it brings to those responsible for managing and developing the network areas which are reported on.

The nature of this work, which is highly specialized and will require detailed bilateral dialogue and negotiation with many parties, can best be carried out by a knowledgeable and experienced consultant.

e) Sound and television broadcasting and communication for rural and remote area

Question or issue proposed for study

On the basis of completed studies, experience and knowledge gained by the ITU-D and by other organizations including UNESCO, WBUs and the FAO, and by the Member States and Sector Members of the Development Sector, develop conclusions and recommendations on this Question:

How best can the telecommunications infrastructure in the rural and remote areas be planned and used to provide sound and television broadcasting to the population living there? How will this effect the cost of creating telecommunications infrastructure in the rural and remote areas?

Proposed method of handling this Question or issue

This Question can best be addressed through a study carried out by a consultant who is knowledgeable and experienced in the field. The output is intended to provide a "best practice network planning guideline" which provides detailed guidance and successful examples of how best to implement sound and television broadcasting service for rural and remote areas.

f) Measurement of the impact of Information and Communications Technology (ICT) in rural and remote areas

Question or issue proposed for study

What are the appropriate indicators to use, to assess the initial and ongoing impact of the provision of ICT in rural and remote areas, and in previously unserved or underserved urban and semi-urban areas, to measure the impact of the availability of ICT in furthering the economic, social and cultural development of the area?

Proposed method of handling this Question or issue

This proposed Question will require close coordination with other organizations, primarily other agencies within the UN system. The task, and the challenge, will be to obtain and systematize the best possible information profile utilizing an appropriately modest expenditure of resources. To the extent practicable, it will be desirable and appropriate to use existing indicator components, perhaps captured, aggregated and displayed in new ways, rather than establish unique new indicator components.

Once the appropriate key indicators and the resulting profile have been developed, agreed on, and have become available, it is expected that the periodic ongoing collection, aggregation and publication of this material will become part of the "routine round" of periodic information publication currently performed by the ITU and by the other UN Agencies.

As a component of the work under this Question, it is hoped that it will be practical to address the aggregation of the required information at a much finer granularity than the national level. It should be noted that the management accounting techniques used by large telecommunication services providers in developed countries offer useful examples, both of how such information can be captured, aggregated and displayed and of the value that it brings to those responsible for managing and developing the business and network areas which are reported on.

The nature of the proposed work, which is highly specialized and will require detailed bilateral dialogue and negotiation with many parties, can best be carried out by a thoroughly knowledgeable and well experienced consultant.

21 Human resource management and development to successfully meet the challenges of sector reform and transformation, with special emphasis to employment including consideration of gender issues[4]

Question or issue proposed for study

a) How can policy-makers design policies and associated legislation to minimize the negative short-term impacts of sector reform while maximizing the positive overall benefits for the Nation.

b) The management and regulation of operating entities in a commercial or competitive environment requires an organizational culture entirely different from the one generally prevalent in a monopoly framework. This new environment requires a substantial transition that involves the development of new skills, new behaviours as well as new working relationships.

c) The above mentioned new commercial or competitive environment requires the identification of relevant telecommunication technological changes and sectoral reforms as well as associated human resources development and management policies and evaluation of their impact on employment including gender issues in developing countries.

d) Accordingly, it is necessary to formulate:

   1) employment-friendly and gender-sensitive human resource development and management programmes and methods necessitated by telecommunication technological changes and sectoral reforms;

   2) suitable guidelines and recommendations on human resource development and management for use by developing countries to ensure that telecommunication technological changes and sectoral reforms that may be undertaken, fully benefit these economies without creating unemployment and are gender-sensitive.

This Question is designed to help policy-makers, regulators and operators in successfully facing the challenges of sector reform and transformation.

Proposed method of handling the Question or issue

This Question will be pursued as relevant learning experiences are documented in a practical and usual format. Furthermore this Question will also be pursued through the other means such as the development of specific programmes, for example the establishment of a structured approach designed to help members who have decided to reform their sector and need assistance in:

a) setting up a regulatory entity;

b) building the skills required to regulate the policy objectives pursuant to the new legislation and associated policy objectives.

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[4] This Question is the result of the combination of Questions 21.1 and 21.2 following TDAB request (see Document …).

The Question will be handled by an expert group within regular BDT activity and by a classical study group approach.

22 Fostering the application of telecommunications in health care

Question or issue proposed for study

The study group shall:

1) Identify telecommunications solutions to promote health care and to meet its needs, especially in remote and rural areas, for those on the move and for those who might not otherwise have access to the quality of care available in urban hospitals.

2) Take further steps to assist in raising the awareness of decision-makers, telecommunication operators, donors and others about telemedicine and how telecommunications might be able to help solve some health-care needs and provide elements to universal service relating to emergency, health and social services. In particular, support a second World Telemedicine Symposium to be held in Latin America in 1998 and a third Symposium to be held in Asia in 1999.

3) Identify telecommunications pilot projects for telemedicine applications appropriate to developing countries; provide an analysis of project results and help countries to define a policy and strategy in regard to the application of telecommunications to support implementation of telemedicine.

4) Establish a database about the different pilot projects and experience in developing countries, what financing mechanisms and technologies have been used, what services have been provided, what the results of the pilot projects have been, what lessons to learn, what mistakes to avoid.

5) Promote development of telecommunications standards for telemedicine applications in conjunction with the ITU-R and ITU-T Sectors in particular.

6) Develop a directory of companies, institutes, service providers which includes telecommunications facilities and technologies used in telemedicine applications, services and software which would be appropriate and cost-effective in the context of meeting the needs of developing countries. The directory should include, as far as possible, a list of donor institutions in this domain.

Proposed method of handling this Question or issue

The outputs of the Question can be prepared by the study group in close collaboration with the ITU/BDT, taking into account missions by telemedicine experts to developing countries and telemedicine pilot projects. The study group should also work closely with, for example, the Midjan Group, which was established as a consequence of the Question 6/2 following the Buenos Aires WTDC, and a similar Asian Telemedicine Collaboration Group, formation of which is under active consideration. The study group should invite collaboration with other interested international, regional and national organizations. The study group should also establish collaboration with the other ITU sectors in regard to promoting development of relevant standards.

23 Telecommunication support for the protection of the environment

Proposed future study

It is proposed to continue the study through:

- implementing the ITU Global Project "Telecom-Environment";
- conducting the already identified pilot projects by the BDT and continuing to identify further pilot projects appropriate for developing countries;
- continuing disseminating the results of the pilot projects and other relevant information related to telecommunication support in the protection of the environment;
- maintaining an updated inventory of information sources relating to telecommunication and environment which could be accessed by all concerned parties electronically and otherwise;
- taking further steps to increase awareness among policy/decision makers by way of conducting symposiums/workshops at global and/or regional levels in collaboration with the relevant International Organizations such as UNEP, UNDP, WMO, UNITAR, UNESCO, etc.

Proposed method of handling this study

- The ITU/BDT within its regular activity and its Global Project "Telecom-Environment", would continue to undertake the various pilot projects in collaboration with the Member Administrations and Sector Members of developing countries.
- Within the same Global Project, Symposiums and/or Workshops aimed at increasing awareness among the decision makers would be organized in collaboration with the concerned organizations such as UNEP, UNDP, WMO, UNESCO and Ministries of Environment.

24 Using telecommunication and telematics to enhance learning environments for development

Question or issue proposed for study

How can telecommunication and telematics be used to build learning environments that are open and responsive to the different learning needs in developing countries, contributing to the ability of individuals and their communities to adapt to and generate change and participate in society.

In this context, the following issues should be addressed:

– Support for enhanced learning processes:
  - How can telecommunication and telematics help introduce interactivity into the education process to promote authentic social interaction, critical reflection, dialogue, vision-building, problem-solving and creative action?
  - How can telecommunication and telematics support processes of collection, storage, accessibility and sharing of data, information, knowledge and experience in different formats (visual, audio, text, etc.) to benefit learning at the local, national and international levels, including exploitation of learner-generated learning resources?
  - How can interfaces be developed to support culturally sensitive and individually tailored learning, including for illiterates, the handicapped and other disadvantaged groups (e.g. tactile interaction, voice recognition)?

- How can human facilitators, particularly teachers, be trained and empowered to effectively exploit telecommunication and telematics in their work?
- How can learners be guided and enabled to discriminate among the vast number of potentially useful information sources, e.g. through a building of "critical media awareness"?

– Infrastructure and access:

- What are the infrastructure and institutional requirements to enable telecommunication and telematics to contribute to national educational goals?
- What telecommunication policies and regulatory frameworks are needed to promote access of all to education, paying particular attention to the needs of educational institutions in rural and disadvantaged areas?
- How can telecommunication help to bring learning to the people and in particular to rural communities in developing countries (e.g. wireless networks, hand-held devices)?
- What can be done with older communication technologies in which institutions and countries have already invested large sums of money?
- How can local capacity for production and maintenance of telecommunication and telematics based educational technologies (equipment, software and content) be strengthened (e.g. public sector - private sector cooperation)?

Proposed method of handling the Question or issue

Within a study group, with projects and expert consultants.

This Question will require the involvement of specialists in areas of telecommunications, telematics and education at both the policy and operational levels. At the same time, the involvement of local and national partners is required to assess and promote impact within specific development contexts.

UNESCO, ITU and other international agencies, national institutions or non-governmental organizations will cooperate in the implementation of activities to promote, test and assess the potential of telecommunication and telematics to enhance learning.

25 The development of long-term strategic plans for the future use of the frequency spectrum in developing countries

Question or issue proposed for study

1) To examine current trends of the radio spectrum use and its anticipated growth, taking into account the new services likely to want to gain access to the spectrum and other technology changes likely to take place over the next 10 to 15 years.

2) To assess the impact of these changes, in particular for the developing and least developed countries.

3) To prepare a plan of action to ensure that the ITU is adequately equipped to solve today's problems and to meet tomorrow's challenges.

ITU-R should be requested to cooperate in the above studies.

ANNEX

Draft work plan for the development of a long-term strategy for the future use of the frequency spectrum in developing countries

1) To examine current trends in global spectrum use; the anticipated growth in spectrum usage; the technical and operational changes taking place or foreseen.
2) To estimate the requirements in developing countries for radio services, planned or likely to arise within the next 10 to 15 years or so.
3) To assess the impact of probable additional services on overall demands for radio spectrum on a global or regional basis.
4) To report and make recommendations as appropriate.
5) The review should be conducted in stages. The first stage will concentrate on the frequency range [xx MHz to yy MHz] and is to be completed by [ddmmyy].

Proposed method of handling this Question or issue

It will be necessary to undertake a series of studies on different frequency ranges within the radio spectrum, each lasting about two years. Some administrations may wish to contribute to the studies on a regional or subregional basis. The BDT will need a specific programme and may need to find expert consultants to assist some countries in the preparation of their contributions or during the analysis phase of the study. A joint project could be envisaged with ITU-R. Some regional organizations could be expected to contribute.

26 Collaboration between sectors of public interest and telecommunication operators

Question or issue proposed for study

How, in general, to promote cooperation among users and operators in order to clarify the requirements of the former and improve the services offered by the latter? This Question is of particular relevance to public-interest institutions as users, in terms of facilitating their access to telematic resources and improving their contribution to people's cultural, scientific, social and economic development.

Proposed method of handling this Question or issue

Within a study group with expert consultants.

27 Enhancing the capacity of NGOs to achieve development aims, through the use of telecommunication

Question or issue proposed for study

General Question:

What is the actual and potential impact of current telecommunication trends on the activities of development NGOs, and what policies and actions can enhance their capacity to utilize telecommunication more effectively to achieve development aims?

Specifically:

1) Based on existing evidence, what new opportunities have recent events opened up for development-oriented NGOs through communication media and technologies use (e.g. Internet, radio and television broadcast, satellite, video). How do they, and can they, contribute concretely to achieving the development aims of NGOs, especially in least developed countries?

2) What are the current obstacles to the widespread dissemination of these benefits? This might include: lack of awareness regarding benefits; lack of finance; inadequate universal service and access to basic network; restrictive telecommunication regulation; unsupportive broadcast policy including frequency allocation; inappropriate technology and standards, including digital sound broadcasting; etc.

3) What policies and action, from NGOs, governments, ITU, and others, can best address these obstacles? These might include better coordination between NGOs; additional support for non-commercial Internet use; regulation and frequency provision of local development-oriented radio; support for innovative universal service actions, especially in the context of liberalization; access to satellite broadcasting by NGOs; and so forth.

Proposed method of handling this Question or issue

A study group would seem appropriate in order bring together the range of interest represented at the ITU, and to allow a sufficient amount of time to complete the work. A focus group might be relevant only at a certain stage on the work.

A Programme (sharing with other related Questions) would be useful in organizing the Colloquia, and in piloting possible actions towards the end of the study period.

Expert consultancy would be required in developing the methodology to be used, in undertaken the literature reviews and in organizing the interviews.

This work will be completed working closely with the *Platform for Cooperation on Communication and Democratization*, and its member organizations. In particular, the Platform will be willing to prioritize this issue and devote its resources, in terms of time and energy, towards completing and disseminating the work.

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