

Question 6-1/1: Interconnection

1 Present situation

The WTDC in Valletta agreed that Study Group 1 - within the framework of Question 6/1 - establishes a set of best practice guidelines for countries to take into consideration when developing policies, legislation and regulations to address the issues involving interconnection. The study group should build on the work already done for Questions 2/1 and 3/1 in the 1994-1998 study period and other available materials.

Because the issue of interconnection was considered to have great importance to many countries, it was agreed that the lead study of this Question should be within a study group over a multi-year study period with interim results. Unfortunately none of the expected outputs (cf. Document 1/10 - page 3) were achieved. In 1999 a proposal was tabled that some items might be entrusted to focus groups to achieve interim results within an appropriate time-frame. However this approach was never implemented.

At the Rapporteur's Group meeting held in Caracas 5 September 2001 the proposal by the Chairman to establish a special group to deal with regulatory and technical issues of interconnection was agreed upon. This group shall involve experts from both Study Groups.

2 Statement of the problem

The last decades have seen the opening of the telecom sector in many countries including developing countries. The level of competition has increased for services like local, long distance (domestic and international), cellular, paging, satellite and Internet. The successful interworking of these services needs interconnection between different networks and various operators. The key to the development of a telecommunication infrastructure and to the promotion of competition generally is the determination of an interconnection framework and interconnection charges.

The international telecommunications operators will be keen to enter into developing country markets, and due to their long experience in competitive markets and negotiation skills, national regulatory authorities and operators in developing countries may benefit from guidance in negotiations in interconnection arrangements. Points of Interconnections (POIs) exist at the exchange level, at any level in the national trunk hierarchy, or any other transit architecture. All operators must respect the technical characteristics of the network architecture that they are interconnected to.

Some developing countries may still have national plans (switching and routing, numbering, and other master plans) designed for a monopoly market. There is a need to revise these plans in view with POI optimization. Recognizing these elements could provide the best interconnection plan under multi-operator/multi-service environment.

Many developing countries look to ITU recommendations and ITU publications as input to actions and policy decisions. There is a need to provide details and practical suggestions for implementation of interconnection regimes in an increasingly competitive market for telecommunications services, taking into account the problems identified below:

- Competitive markets require incumbent operators to interconnect with other operators. However these operators are not technically or commercially equipped to cope with the management of interconnection problems arising on implementation of the interconnection in question.
- Operators do not always have modern equipment capable of meeting the technical requirements of interconnection and other parameters as may be required for inter-operator revenue settlements.
- The unique characteristics of each developing country may suggest different approaches to interconnection issues.
- There are often insufficient human resources available with the skills required for setting up interconnection regimes, in particular the costs aspects of these regimes.

- Negotiations can be further complicated by the absence of an appropriate regulatory framework and the lack of independence and autonomy of the regulatory bodies.

3 Description of expected outputs

The mandate of the Project Group is to elaborate best practice guidelines and recommendations as follows. The Project Group should:

- 1) Coordinate extensively with ITU-T Study Group 3 on issues within Study Group 3's competence.
- 2) Describe the legislative and regulatory framework that would be needed to implement appropriate interconnection arrangements, unbundling, and collocation. Identify the technical facilities operators are required to provide in order to offer interconnection to new competitors.
- 3) Describe varying approaches for interconnection pricing, including varying approaches for fixed and mobile interconnection, cost accounting, and unbundling. Thereby taking into account the guiding principles for interconnection pricing, such as cost-orientation and transparency and policy that promote gender neutrality in the provision of services.
- 4) Examine cost calculations used in interconnection rates, price and prepare a guideline.
- 5) Develop analytic models to be appropriate to the needs of developing countries. In this context, the project group should coordinate extensively with ITU-T SG 3.
- 6) Create a check list of factors that are useful to consider when negotiations in interconnection agreements.
- 7) Identify the most common approaches for arriving at interconnection arrangements, including those set by the regulator and those arrived at through commercial negotiations.
- 8) To identify technical issues needing consideration among others as follows:
 - Interconnection architecture and location of Points of Interconnection (POIs).
 - Technical interface specifications.
 - c) Signalling architecture including signal transfer points.
 - d) Quality of interconnection.
 - e) Traffic measurement and routing procedures for the planning of interconnection.
 - f) Number portability across inter-connecting networks.
 - g) Need for changes in numbering, charging, switching & routing plans for interconnection among multiple operator providing different service segments like basic, cellular, national and international long-distance services.
 - h) Technical/network up-gradation or modifications to facilitate interconnection.
- 9) Provide for liaison with relevant ITU-T study groups

4 Required timing and expected outputs

After one year, the draft report must be submitted to TDAG and TDAG is requested to confirm the mandate of the project group in the light of this report.

The draft final report and the proposals for draft recommendations must be submitted after two years to TDAG.

The mandate of the project group elapses after two years at the latest.

5 Proposers/Sponsors of the Question

There was a consensus that the issue of interconnection is of tremendous importance to all countries, particularly developing countries.

6 Source of input required for carrying out the study

The major source of input will be the experiences of those countries that have introduced competition and addressed the question of interconnection. Contributions from Member States and Sector Members will be essential to the successful study of this issue. Interviews, existing reports and surveys should also be used to gather data and information for distillation into a comprehensive set of best practice guidelines for administering interconnection. Materials from regional telecommunication organizations and working groups should also be utilized to avoid duplication of work. Close cooperation with ITU-T and other activities within ITU-D is required and highly important.

7 Target audience for the output

- a) Indicate expected types of target audience, by noting all relevant points on the matrix which follows:

	Developed Countries	Developing Countries	LDC's
Telecommunication policy makers	Interested	Highly interested because of lack of experience	Highly interested because of lack of experience
Telecommunication regulators	Interested and experienced with different models	Highly interested and some countries have immediate need for information	High interest but may need specific models
Service providers (Operators)	New entrants, regardless of size, extremely interested. Major suppliers cautious and usually beneficiary of status quo	New entrants, regardless of size, extremely interested. Major suppliers cautious and usually beneficiary of status quo	New entrants, regardless of size, extremely interested. Major suppliers cautious and usually beneficiary of status quo
Manufacturers	High interest as will promote development of infrastructure	High interest as will promote development of infrastructure	High interest as will promote development of infrastructure

b) Target audience - Who specifically will use the output

Based on the foregoing evaluation matrix, a broad range of telecommunication policy makers, regulators, and service providers from LDC's and developing countries will all be highly interested in the results of this Question. Policy makers and regulators from developed countries may be interested in the compendium. Manufacturers will also have a high interest in the Question since appropriate interconnection measures will promote development of infrastructure.

c) Proposed methods for implementing the results

The output of the study (report and recommendation) should be distributed as the results of the ITU-D Study Groups. However, given the importance of this issue, the BDT could also conduct regional seminars and meetings, perhaps in conjunction with regional telecommunication organizations and together with the VAP Programmes concerned, to disseminate the results of the

Question. The results should be transmitted to the ITU-D Global Symposium for Regulators held annually, when the theme corresponds to interconnection. The results could be published by the ITU for wider distribution.

8 Proposed methods for handling this Question

Considering the importance of this Question, the ITU-D Study Groups propose:

- To establish a project group, comprising its representatives from the two Study Groups to undertake the work as described within the Mandate.
- To agree to the working methods of this group.
- To agree to a time-frame and a reporting date for the work of this group.

The project group will be in charge of the work, however the issue of interconnection pricing and cost accounting methodologies shall be considered in the follow-up of Question 12/1 and in ITU-T Study Group 3.

9 Coordination requirements of the study

Because the issue of interconnection is related to other issues being studied by the ITU, coordination will be required within the ITU-D Study Groups and programmes as well as with the Study Groups from other ITU sectors.

Regional organizations such as CITELE and APT are also currently considering issues regarding interconnection. Thus coordination with those organizations shall be undertaken to reduce duplication of efforts.
