INTERNATIONAL TELECOMMUNICATION UNION
TELECOMMUNICATION DEVELOPMENT BUREAU

WORLD TELECOMMUNICATION DEVELOPMENT CONFERENCE (WTDC-98)

Valletta, Malta, 23 March - 1 April 1998

Document 196-E
27 March 1998
Original: English

For action

PLENARY MEETING

FIRST SERIES OF TEXTS SUBMITTED BY THE EDITORIAL COMMITTEE TO THE PLENARY MEETING

The following texts are submitted to the Plenary Meeting:

Source	**Document**	**Title**
COM A	31	Recommendation COMA/A
		Recommendation COMA/B

Lucien BOURGEAT
Chairman of the Editorial Committee

Annex: 31 pages

RECOMMENDATION COMA/A

TELECOMMUNICATION POLICIES

Question 2/1: ***Telecommunication policies and their repercussions at the level of institutional, regulatory and operational aspects of services***

The World Telecommunication Development Conference (Valletta, 1998),

recognizing

the sovereign right of each Member State to regulate its telecommunications and the need to implement the instruments of the International Telecommunication Union (ITU),

noting

the report by ITU-D Study Group 1 on Question 2/1 "Telecommunication policies and their repercussions at the level of institutional, regulatory and operational aspects of services",

taking into account

a) relevant national laws and regulations, including those concerning licensing and frequency assignments;

b) the three regional policy papers, namely the African Green Paper, the Americas Blue Book and the Arab Book, and decisions taken at regional telecommunication development conferences,

convinced

a) that legislative, structural and regulatory reforms in the telecommunication sector should be considered with a view to fostering investments, increasing operating efficiency, broadening the supply of services to meet the objectives of universal access to basic telecommunications and improving service quality;

b) that competitive conditions should be promoted as far as practicable, at least in the terminal equipment, value-added services and cellular mobile markets;

c) that an appropriate regulatory body should be established;

d) that telecommunication markets in many countries are taking on new dimensions, and regulatory solutions tailored to these countries' real needs and possibilities are of critical importance,

recommends

that governments and administrations take account of the following principles when establishing and implementing their telecommunication development policies:

1 in order to restructure the sector on the basis of a number of objectives such as efficiency, interoperability of telecommunication services, better access to services and improving quality of service, countries should:

- after clearly defining them, separate the incumbent operator's telecommunication regulatory (and supervisory) functions from the operational and ownership functions;
- allocate sufficient budgetary and management autonomy to the operator(s) to enable them to act as commercial entities;
- develop a stable legal and regulatory framework promoting:
  - transparency of decision-making;
  - cost-orientated tariffs;
  - investment;
  - provision of universal access/service;
  - fair competition;
  - innovation and development of the network;
  - efficient use of scarce resources;
- encourage the development and management of human resources;
- define the conditions for possible sale of shares in the incumbent operator;
- begin liberalizing market segments such as terminal equipment, value-added services, cellular mobile services and other services based on new technologies;

2 the typical process of restructuring the telecommunication sector, the timing and manner of which can vary, should include all or some of the following steps:

- high-level government commitment to commercialization/liberalization, as exemplified through the establishment of a policy declaration, a strategic plan and/or the initiation of procedures for the adoption of a new or amended law or legal framework;
- continuous development and management of human resources;
- separation of the postal and telecommunication operations, as well as of the operational, regulatory and ownership functions;
- sufficient financial and management autonomy for the operator;
- consider sale of shares in or privatization of the state-owned operator;
- establishment of an autonomous or independent regulatory body; and
- introduction of competition by allowing new entrants to compete with incumbents;

3 various models exist for a country's regulatory body (e.g. self regulation, partially independent body, fully independent body - see Annex 3). The typical functions of an autonomous regulatory body include rule-making and enforcement, licensing, and management of scarce resources. The regulatory body should perform these functions in a transparent manner encouraging public participation. The regulatory body should be autonomous when making its legal decisions and independent from the operator. In performing these functions, the following are some of the key regulatory issues:

- provision of service;
- interconnection;
- universal access/service;
- tariffing policies;
- frequency allocation and assignment;
- broadcasting;
- quality of service;
- standardization/type approval;
- numbering;
- competitive safeguards;

4 the following lessons from the experience of countries which have introduced changes should be considered:

- **Be realistic** - Regulatory expertise is developed gradually. Although development of telecommunications is essential to the overall development of the national economy, the political system, legal framework and availability of human resources largely affect what can be done in practice.
- **Keep it simple** - Although instant regulatory expertise is not expected, the real challenge is to identify critical regulatory functions. A clear statement of government policy and transparent, non-discriminatory procedures are essential in all phases of liberalization or commercialization. Investors show remarkable tolerance for imperfect regulatory arrangements if they have confidence that the regulatory functions will be carried out in a fair and open process.
- **Use existing institutions and knowledge during the transition** - Existing oversight mechanisms for business dealings, such as anti-trust and consumer protection laws, can play an important role in establishing fair rules for telecommunication service providers. Avoid excessive institution-building: a regulatory body with a limited scope of authority is sufficient if it has adequate power to enforce its decisions and rules. The responsibilities and functions of the regulatory body should mirror the evolution of the telecommunication sector.
- **Rely on contracts** - Licences and contracts of sale can be effective tools to establish fair rules for competition. Regulatory efforts during the transition from state to private enterprise can therefore be focused on defining transparent, non-discriminatory licensing and interconnection regimes,

recommends further

that governments and administrations take into account the guidelines set out in the attached Annexes 1, 2, 3 and 4 on general considerations, telecommunication sector reform, the regulatory body and regulating spectrum management, when establishing, implementing and reviewing their national telecommunication policies and regulations.

ANNEX 1

General considerations

Major factors cited by developing countries as influencing the gradual implementation of telecommunication reform, independently of world trends, are:

- Telecommunication services are commercial, which therefore implies significant private-sector participation.
- Shortage of sufficient government funds for infrastructure development.
- Termination of the monopoly, which may be ineffective in certain circumstances.
- Creation of an enabling environment for investment in the telecommunication sector and for manufacturing of telecommunication equipment, where appropriate.

Countries should keep in mind that the telecommunication infrastructure serves a broad public interest because its existence promotes development of the overall economy and communications should be a basic right of all people.

Countries should consider taking advantage of the rapid technological evolution in telecommunications that has brought great opportunities for expanding penetration, lowering costs, and upgrading services, thus giving developing countries an opportunity to leapfrog into advanced stages of network development.

To encourage economic activity, a country's overall economic, social and political environment and its regulatory framework must be sufficiently stable.

Referring to recommendations adopted by international bodies on liberalization makes it easier to build a national consensus towards reforming the telecommunication sector.

All major reforms involve appropriate regulation, private-sector participation and competition. These key elements are closely intertwined in telecommunications, and are essential for success of the reforms in terms of the long-term ability to overcome past constraints on telecommunication development.

The following *principles* should be taken into account when reforming the telecommunication sector:

Transparency

Equitable regulation of the telecommunication sector requires that operators know what to expect. The principles of transparency, objectivity and non-discrimination are applied so that all operators are subject to the same conditions to achieve fair competition. For example, all licensing criteria, as well as the period of time normally required to reach decisions, and the terms and conditions of the individual licences should also be made publicly available.

Clearly defining objectives increases credibility as well as transparency and provides for faster reform and implementation. Reaching those targets within a sector subject to such complicated dynamics, as is the case of telecommunications, demands a clear understanding of how the sector should evolve.

Investment

It has become evident that the demand for telecommunication services surpasses the ability of individual governments to pay for the development of a network to provide such services. If a country is to benefit from the growing number of services that are available, it will need to find financial resources outside of its national treasury including private investment.

One of the prerequisite conditions to obtain investment is stability and assurances. To secure new sources of capital, developing countries must address these issues as soon as possible.

Investment will be deterred if there are unacceptable market barriers that limit the commercial opportunities that can be pursued or that otherwise place the new investor or operator at a disadvantage. Domestic and foreign firms are deterred from investing because of political risk, the possibility of expropriation of assets or profits, foreign exchange controls, and discretional taxation, as well as restrictions on capital repatriation for foreign firms.

The commitment to liberalization in international multilateral negotiations like the World Trade Organization (WTO) signals to investors and lenders that their investments will be secure.

Provision of universal access/service

The provision of universal access/service should be one of the most important objectives of telecommunication policy and legislation in developing countries. The concept of universal access/service, its content and the implementing policy may vary depending on a country's specific needs. The concept and policy must be sufficiently flexible to adapt to the changing needs of the country concerned.

It is important for governments to play an active role to ensure that the provision of universal access/service is successful. However, it is also necessary for governments to examine how responsibilities can be appropriately allocated to telecommunication operators and local authorities, particularly in a competitive multi-operator environment.

There are different approaches to financing universal service obligations, some of which are:

- the telecommunication operator must provide service to rural and remote areas as a condition of the licence;
- new competitors may be required to pay certain charges to interconnect with the dominant telecommunication operator, with some or all of the charges being used to provide service to rural areas;
- a telecommunication operator may have the choice of paying certain charges into a universal service fund or providing the service directly itself;
- when the incumbent telecommunication operator cannot or does not want to provide service to rural or underserved areas, the opportunity will be given to other service providers to attain universal access/service goals;
- a transparent government subsidy financed from its tax revenues helps pay for service to underserved and high-cost areas, including rural and remote areas.

Policies that encourage operators to provide telecommunications in unprofitable areas can be implemented through government incentives.

Some of these incentive schemes may require tax relief in order to enable investment to take place. This is where governments play a major role by offering incentives such as:

– Removing the duty on telecommunication equipment that may be targeted to specific or general areas of telecommunication development.

– Tax concessions, which may take the form of a tax holiday for specific periods or could be geared to a certain level of investment.

– Lifting foreign exchange restrictions and permitting free monetary policies.

In all cases, these incentives should be implemented in a manner that stimulates investment.

If subsidies are used, it is important that the amount of subsidies and their specific application be measurable, identifiable and transparent.

Any WTO Member State has the right to define the kind of universal service obligation it wishes to maintain. Such obligations will not be regarded as anti-competitive *per se*, provided they are administered in a transparent, non-discriminatory and competitively neutral manner and are not more burdensome than necessary for the kind of universal service defined by the Member State.

Establishment of fair competition

Increasingly competitive markets moving to a global scale bring new competitors in all industry sectors, driving all players to increase efficiency, reduce costs and prices, increase economies of scale and focus on their customers.

Assuming that some degree of liberalization and competition are contemplated, the following activities must be undertaken:

– prevent or correct possible abuses of market power by the dominant telecommunication service provider;

– enable new service providers to become operational;

– act as a surrogate for competition and maintain pressure on the dominant operator to perform well until competitive pressures are sufficient to take over this role;

– support distributional goals such as service to disadvantaged geographical areas or segments of society.

If competition is to remain transparent, fair and sustainable in the long term, it is worth considering the possibility of shifting from a policy of indiscriminately applied cross-subsidies to a policy of declared subsidies applicable to specific cases. Examples include the granting of a certain level of service free of charge to low-income users or the construction of networks in areas that are not yet covered.

Innovation and development of the network

Innovation and development of telecommunication networks and services should be left primarily to market forces. Regulation, in this context, should promote innovation and development, *inter alia*, through:

- fast and clear standardization processes;
- unambiguous interconnection interface definitions;
- freedom to select the appropriate technology;
- transparent, competitive procurement practice.

Regulatory body

An independent regulatory body that is separate from, and not accountable to, any supplier of telecommunication services ensures that telecommunication services will be provided in a way that serves the public interest. The regulatory body should establish, within the framework of national legislation and having regard to international rules, processes for regulating the market and monitoring application of the regulations in force. The decisions taken should be impartial with respect to all market participants. Personnel at the regulatory body are best able to be impartial if they do not have a personal or financial interest in the entities which they regulate or oversee.

ANNEX 2

Guidelines on telecommunication sector reform

Strong commitments from top levels of government are essential for any reform process to begin and for the reform to succeed. The political and economic environment of the country thus essentially sets the stage for the design of telecommunication reforms.

The pace of reform and the extent to which its potential benefits can be harnessed will ultimately be contingent on the capability of governments to create an environment that promotes efficiency and enables, *inter alia*, private investment and initiative.

Government disengagement from direct intervention in the telecommunication economy through close control of the sector, towards a system largely driven by market forces and competitive regulation, is one of the main conditions for successful restructuring. The necessary changes can be achieved more effectively through private-sector participation.

Regulatory reform for telecommunications and the resulting institutions will reflect the broader environment of the state or country, and its historical legal, social, political, and economic foundations. The unique national circumstances will modify or influence the method of reforming telecommunications in each country.

The task of beginning to construct basic regulatory processes should encompass the following actions:

1) develop a government policy for the telecommunication sector (or broader information sector);
2) translate the policy into new or modified legislation or decrees;
3) create a regulatory body with a clearly defined mandate;
4) design the method of funding for the regulatory body in such a way that the body established is independent in its decision-making;
5) establish conditions and procedures to be followed by the regulatory body in dealing with matters within its jurisdiction.

Strategic plan

The first and most critical step of developing a government policy for the telecommunication sector (or broader information sector) requires the government clearly to establish a set of basic objectives, both short- and long-term, for the sector. This strategic planning exercise, which should be the result of a public debate, should address issues such as:

1) developing a set of policy objectives and plans related to greater commercialization of national and international telecommunication services, to form an integral part of a policy for liberalization of the sector, with specific objectives;

2) developing a set of policies, objectives, and related plans to divide regulatory responsibility between the prime minister/minister/ministry/government and the regulatory body for functions such as rule-making and enforcement, licensing and management of scarce resources, and for areas of jurisdiction such as application and oversight of rules governing interconnection and tariff approval;

3) publicizing the government telecommunication policy paper which incorporates some of the above plans and objectives, and includes a description of the relationship between the government and the regulator.

The strategic plan should take account of the following factors:

1) the social benefits, including improvements in health care, education or overall quality of life;

2) optimal funding arrangements for the sector;

3) technologies which can be integrated easily into the existing network and lend themselves to fairly rapid implementation, while nevertheless offering a wide range of applications, and which are future-oriented;

4) cost-orientated tariff structures and levels, as part of the planning process;

5) continuous monitoring of changing needs and demands.

Human resources development

Successful regulatory reform requires strong regulatory leadership committed to serving the public interest; good management of the regulatory process, including knowledge of the sector; and qualified professional staff in the various related disciplines.

Core personnel may be recruited from the sector ministry. ITU, regional telecommunication organizations and other interested parties should establish a joint training programme to increase knowledge of telecommunication policy, strategies and regulations. Funds for training activities may be generated through the sector restructuring programmes of international financing organizations.

Legislative reforms

To implement sector reform, it is almost always necessary for a country to pass some kind of new or amended telecommunication legislation. In some countries, constitutional changes are necessary, hence a broad consensus in the society is needed to implement the reform.

Depending on its needs, each country must decide on the best form for the legislation. Some countries may choose to introduce reforms more gradually by passing specific legislation that allows competition in certain segments or sectors of the market. Other countries may introduce changes in an entirely new law that sets forth a different framework for the telecommunication sector in the country.

Telecommunication legislation is most effective when it is broad and establishes the framework for rules and regulations, which set forth the details of implementation (e.g. by ordinances or similar legal instruments). The broader the legislation, the better the chance that it will be long-lasting.

Structural reforms

Despite the fact that service providers can choose from a broad range of approaches to ensure that they are adequately financed as they move into the 21st century, there are certain basic structural attributes of a telecommunication regime that are essential to attracting both domestic and foreign investment.

These structural changes are the ones that global, regional and local investors want to see as they consider investing and the ones to which the operator itself needs to adapt in the new telecommunication environment.

Commercializing operations

To operate more efficiently, telecommunication operating entities perform best when they are run as a commercial business - irrespective of who owns them.

To encourage new service providers, with new sources of capital, to enter the telecommunication market, there are a number of different actions that may be taken to restructure the sector, such as:

a) dividing an existing nationwide monopoly into separate entities designated by geographic service regions or offering different services;

b) providing by law that new services (or new technologies) will be outside the scope of the existing monopoly, enabling new operators to provide these services on a competitive basis;

c) authorizing the existing network operator to subcontract certain areas or services to third-party service providers; and

d) entering into build-operate-transfer (BOT) arrangements (or equivalent) with an experienced third-party operator, ensuring that that expert support is available to train personnel and to supervise the start-up operations.

Increasing private-sector participation

a) Private-sector investment

Private investment is one possible source of telecommunication financing that may be appropriate to an individual country's requirements.

The decision to introduce private investment gives the government the chance to match its telecommunication needs with the development plans of investors (e.g. through the sale to private investors by the government of a minority or controlling share of a sole incumbent operator or the granting of a licence to provide public telecommunication services).

Governments frequently impose certain obligations on an exclusive licensee, such as building out the network within a specified time-frame, to justify its exclusivity. Issues that should be addressed include:

a) level of investment required to meet public/social needs, including universal service obligations;

b) projected timetable for recovery of investment by the operator;

c) ability for the operator to face up to competition in other segments of the telecommunication market during the investment recovery period; and

d) termination date of any period of exclusivity and actions needed to ensure smooth transition to competition.

The government's objective in its discussions with prospective investors should be to limit the scope of exclusivity, both in time and nature of services involved; to define clearly the investment and service obligations assumed by the licensee; and to protect its ability to revoke the exclusive licence if the obligations are not fulfilled.

If clear conditions are established in this process, a firm foundation may be built for the introduction of more or even full competition at a date certain in the future.

It is also important to establish clearly the mechanisms by which state power is to be retained with respect to participation in intergovernmental organizations.

b) Privatization

Privatization is a complex process of introducing private capital and know-how in telecommunication operations, and there is more than one way to time and sequence this process effectively.

Successful privatization of a state telecommunication enterprise depends on a number of factors falling into place:

- Privatization must be supported by the political process.
- The timing and modality of privatization in a given country is largely conditioned by relatively narrow and somewhat unpredictable windows of political opportunity and by broader developments in economic strategy.
- At an early stage, the government must clarify its position regarding trade-offs among conflicting interests arising from privatization, such as among existing operators, employees, prospective buyers, potential competitors, investment bankers, the treasury, equipment suppliers, large users, and the public at large.

Internal reorganization of the enterprise may be undertaken before privatization to enhance the company's value or this reorganization may be left to the new owners. Management contracts could be used to run the enterprise along private business lines, followed later by privatization of assets. If privatization is chosen, the following facets of the privatization process can be distinguished:

- separating telecommunication operations from non-telecommunication activities (for example, posts, manufacturing);
- corporatization, i.e. restructuring telecommunication operations as an independent state enterprise that is administratively and financially autonomous from the central government;
- clear definition of the government organization and the very person representing the state as owner during the whole process;
- internally reorganizing the enterprise in ways that are suited for running it as a business;
- reorganizing the telecommunication enterprise under private company law;

- devising a strategy for privatization or sale of shares including decisions on controlling interest, employee stock ownership, phasing of stock sales, and residual state ownership, as well as changing the company's capital structure to enable implementation of this strategy;
- executing the sale.

It is also necessary to decide on how, and on the procedures according to which, the government or regulatory body will check that the privatized company is fulfilling the commitments made during the privatization process.

Competition

The introduction of competition is not necessarily associated with privatization. Competition can be introduced for all or certain market segments, and can range from duopolies (i.e. two providers) to an unlimited number of service providers.

It is generally recommended to establish a regulatory body to determine the rules of the game before licensing competitive service providers. The regulator must prescribe conditions for easy entry of operators at various levels from network operations to individual value-added services. It may also be necessary to protect new entrants from unhealthy competitive practices and prescribe suitable conditions for interconnection with the networks of the dominant operator(s).

Regulatory reforms

Whatever the specific regulatory structure, successful regulatory reform requires:

1) political will in the government to make it work;
2) strong regulatory leadership committed to serving the public interest;
3) good management of the regulatory process, including knowledge of the sector;
4) qualified professional staff in the various related disciplines;
5) fair and open decision-making mechanisms accessible to all the parties interested; and
6) actions that respond to the broad political goals of the government.

Establishment of a regulatory body

Incorporating the key objectives for the country's telecommunication sector into the legislative mandate establishing the regulatory body is a sound approach for passing a clear and concise message from the government to the regulator.

When establishing the regulatory body, an essential consideration is budgetary autonomy and sufficiency.

Funding may be generated from a general assessment on all regulated operators through annual licensing fees, regulatory fees, spectrum usage fees, etc.

The evolution of the regulatory body should parallel the development of the sector as the telecommunication market becomes more competitive.

Certain periodic duties may be contracted out to expert consulting entities, or specific expertise from more developed regulatory bodies in more mature economies may be called upon to provide short-term assistance to newly formed and developing bodies.

For additional information, refer to Annex 3.

ANNEX 3

Guidelines on the regulatory body

It is widely accepted that a government's regulatory functions should be separated from its operational and ownership functions.

The regulatory body may take a variety of forms, ranging from an office within a larger executive branch entity (or ministry) to a separate agency whose actions are reviewable only by the judicial system:

a) a *regulatory department* within the ministry separate from the policy-making and the ownership functions;

b) a *separate regulatory body* reporting to the ministry or prime minister's office;

c) an *independent commission* or regulatory body, where the term "independent" refers to its reporting procedure and its funding;

d) *no telecommunication regulatory body* - telecommunications are regulated generally under anti-trust, competition and consumer rules and regulations, etc.

Locating the regulatory function within a ministry (case a), rather than in an autonomous agency, may make regulation more responsive to broad government policy directions. However, this must be balanced against the risk that the ruling powers may co-opt the regulator for self-serving political purposes, which may not be consistent with developing truly open and competitive markets or with effectively controlling the operator of monopoly services. As the regulator, the ministry is, above all, responsible for fair competition; in a way, it acts as a referee vis-à-vis all market players involved.

In some countries, the regulatory function is divided among several ministries, e.g.:

– the ministry of transport, posts and telecommunications determines policy and conditions for telecommunication services provision, and has the authority to license certain services;

– the ministry of finance, in conjunction with the ministry responsible, determines tariffs in the area, where a monopoly is still present or where an operator has a dominant position;

– the ministry of trade or commerce is often the representative to WTO and has the responsibility for making commitments to liberalize telecommunication equipment and services;

– ministry of justice makes determinations regarding legal matters;

– ministry of information is often responsible for broadcasting and media.

Locating the telecommunication regulatory authority in a separate or independent agency (cases b and c) that is at least partly insulated from party politics and changes of government is more likely to keep these forces in check and be conducive to increasing investor certainty and reducing investor risk and, thereby, promoting the legal and regulatory atmosphere that encourages investment to meet demand.

Autonomy can be enhanced by full public exposure of all regulatory actions, rules that restrict channels for the government to impose its political will on the regulatory agency's decisions, and financing that is independent from the annual budgetary cycle.

Policy and legislative formulation is typically incumbent upon the government through its ministry. In cases where a formal regulatory function is initially introduced and issues such as liberalization, corporatization and privatization are addressed for the first time, it may be prudent for a government to phase-in regulatory responsibilities gradually in parallel with the liberalization process.

The presence of certain characteristics further strengthens the regulatory authority's independence:

- sufficient budgetary autonomy and resources;
- senior officials that are appointed for a fixed term and are removable prior to the expiration of the term only for grave fault or serious crimes; and
- rules of eligibility and conduct for senior officials and key staff that emphasize financial independence from regulated entities, and encourage selection of individuals with relevant experience.

The regulatory body's independence from outside financial interests and partisan politics also affects its ability to act effectively and inspire public confidence.

The regulatory body should be empowered to exercise broad discretion in the methods it selects, for example, issuing licences for services, operators or facilities, such as telephony, mobile, satellite and broadcasting. This discretion would also include the authority not to impose administrative requirements on certain types of services, operators or facilities.

Typical regulatory functions

Rule-making and enforcement

Prior to making new rules or changing existing rules or regulations, a regulator may enter into a rule-making process. This can be initiated by sources outside the regulator or by the regulator itself. A typical first step in a rule-making is a request or petition for rule-making which is made public, and all interested parties are asked to comment. After reviewing comments, the regulator can issue a proposed rule-making proposing specific rules and requesting public comment. Once the rule-making proceeding is completed, the regulator decides whether to amend its rules/regulations or to make a new rule.

To enable the regulatory body to carry out enforcement functions, the regulator must be given investigative powers and the authority to impose appropriate sanctions and penalties for violations of the telecommunication laws and regulations. Such sanctions or penalties can include fines, or revocation of licences/authorizations, etc.

Licensing

Authority to license may be with the sector ministry, with the regulator, or divided between them. If the sector ministry has the authority to license, licensing would be considered to be the exclusive right of the minister and a matter of public policy. With a division of the licensing function, the ministry may determine the degree of liberalization and in which market segments, while the regulator will determine the number of entrants and the related terms and conditions.

Another option is to grant the minister the authority to give either general or specific directions to the regulator on licensing matters.

A further option is to segment the licensing process by differentiating the approval procedures based on the type of licence to be granted. Under this option, approval for value-added service providers could be granted by the regulator pursuant to a government policy objective to liberalize that particular market segment.

There are four types of licensing procedures:

- free regime;
- registration and other similar regimes;
- class licence or blanket licence;
- individual licence.

Two kinds of conditions can be imposed on the applicant or licensee:

- qualifying conditions, which must be met by the service provider in order to be authorized to provide the service;
- operating conditions, which are rules that must be complied with while providing the service.

Management of scarce resources

Management of scarce resources (e.g. frequencies, numbers, and orbital positions) is an important, permanent element of the national regulatory framework. Procedures for the allocation and use of scarce resources must be objective, timely, transparent and non-discriminatory. To have a mutual understanding, a common economic definition should be elaborated for the limited resources.

The different types of limited resources require different management techniques for their efficient use:

- *natural scarce resources*, like frequencies or orbital positions, may require usage fees and global coordination. Most natural resources should be distributed among countries by consensus based on existing and expected future usage;
- *contemporary scarce resources*, like calling numbers and broadcasting sites, require national, regional and global coordination;

- *technology-dependent bottlenecks*, like shortage of conduits and cable capacity, should be handled under the principle of open network obligation.

Key regulatory issues

Provision of service

The process to select a service provider typically involves the following steps:

1) public announcement that the independent regulatory body or the equivalent will be initiating a process to select a licensee to provide a given telecommunication service, including the selection criteria;
2) all interested parties would have a reasonable period of time within which to apply for the licence, or make suggestions or inquiries;
3) the regulatory body, applying appropriate selection methods, would announce its decision of who will be granted licences;
4) any interested party that considers the decision unjust would have the right to appeal against the decision directly to the regulatory body or to a higher body. Judicial recourse would also be available.

Interconnection

Because the interconnection of one network to another is what allows the subscribers of one network to be able to communicate with the subscribers of another, the interconnection of different supplier networks is fundamental to instituting a competitive environment.

In a fully competitive market, the regulator will still maintain the arbitrator role for interconnection agreements. Any dispute relating to negotiations on an interconnection agreement between two operators may be referred jointly to the regulatory body for settlement. The regulatory authority shall decide on the case, taking into due consideration the interests of both parties. Also, where no interconnection agreement is reached between operators, either of the parties concerned may appeal to the regulatory body.

Of course, in any decision the regulatory body shall take into due consideration the interests of the users and the entrepreneurial freedom of each operator to configure its own network.

Further objectives need to be addressed such as: unbundled access to all network elements, including unbundled access to the local loop, requirements of housing on an operator's premises the equipment necessary for use of the offering ("physical collocation") and granting the user access to the equipment at any time.

Interconnection to the state-owned firm or dominant network operator should be at transparent, non-discriminatory, cost-based rates, and on terms and conditions that are reasonable and fair.

It is also advisable for the regulator to require interconnection to be equal in type and quality to that provided to the dominant public network operator for competitive services, and that interconnection be priced not higher than that provided by the dominant operator to itself or its subsidiaries.

Universal access/service

Typically, governments impose some universal access/service obligations on telecommunication operators, in the form of objectives or parameters for quality of service, ceilings on tariffs, public telephones in rural areas, provision of emergency services, etc.

The role of ensuring that the provision of universal access/service is successful is linked to the regulator's enforcement function. However, its definition as well as the procedures should be as simple as possible.

Regulatory policy can promote cost-effective progress towards the achievement of universal service/access goals in a variety of ways. Choices must be made among the alternative regulatory approaches at several different levels, varying from the broad strategic level to many important matters of detail.

In general, there are six approaches that a regulator can take to translate its vision of universal access/service into practical regulatory policy:

1) broad regulatory oversight;
2) detailed direction by the regulator on universal access/service activities;
3) broad regulatory oversight without payment of cross-subsidy by new operators;
4) broad regulatory oversight with bundled cross-subsidy mechanisms;
5) detailed direction by the regulator on universal access/service activities, with explicit but bundled funding mechanisms;
6) broad regulatory oversight with unbundled funding mechanisms.

Tariffing

Usually, operators should file tariffs for services that are regulated by the regulatory body. The tariffs should be published, thereby reducing the possibility of discrimination.

The regulatory authority should intervene if an operator abuses its dominant position.

To make a competitive regime possible, suitably rebalanced, cost-orientated tariffs are required.

Factors to be taken into consideration include the granting of appropriate service areas to local operators, the application of adequate rules for transport between different urban areas, the establishment of a reasonable access charge (i.e. the charge that long-distance operators have to pay to the local operator to originate or terminate calls), and possibly, in light of the rebalancing referred to above, the introduction of higher tariffs for local communications and truly cost-orientated accounting rates, which would permit fair competition in domestic long-distance and international traffic.

Frequency allocation and assignment

The prime objective of national spectrum management is to enable a country to manage effectively its use of the finite resources of the radio-frequency spectrum and satellite orbits, within the framework of ITU treaty obligations. Regulation regarding the use of the spectrum should be targeted at:

- giving effect to international obligations;
- defining and implementing overall spectrum strategy;
- promoting competition and innovation; and
- ensuring fair and open access to spectrum for a diversity of users, including small businesses, essential services, and cultural, scientific and social uses.

For additional information, refer to Annex 4.

Broadcasting

Broadcasting, which is handled differently in different countries, can be covered by the general telecommunication law or in separate legislation. For some countries, the transmission of the broadcasting signal falls under the telecommunication law, but content issues are dealt with in other legislation. Consequently, the responsibility of the telecommunication regulator varies from spectrum management to the general supervision of broadcasting, including licensing the service provider.

In countries where traditional broadcasting (freely received by the public) continues to be one of the primary sources of information, education and entertainment, it is essential that a balanced and fair relationship be established between these and other audio and video distribution services.

A challenge for governments is to facilitate the introduction of new services for users that result in more diversity of programming, information and choices, while at the same time preserving free over-the-air broadcasting.

Unless a given country has adequate mechanisms or other legal means of ensuring balanced coverage of events such as elections, it may be prudent to have corresponding provisions in the framework of the telecommunication legislation.

The legislation and the regulatory body should avoid encroaching on the freedom of expression of the broadcaster. The broadcaster is also normally required to cover issues that are of importance to the community it is licensed to serve. This very delicate matter involves freedom of expression and is up to each country to produce legislation to provide optimum protection of the public and social interest.

With respect to cable TV, the legislation may establish parameters and procedures and indicate in each case where the regulatory responsibilities lie.

Quality of service

Regulation of the quality of services offered by a dominant or monopoly enterprise is a necessary complement to tariff regulation. For the sake of customer protection, a set of customer oriented parameters should be defined to ensure quality of service (e.g. installation and repair time).

Standardization/type approval

Standardization is becoming an increasingly important economic factor in telecommunications. It plays a crucial role in determining the cost and pace of developing new innovative telecommunication services. The integration of telecommunication infrastructures throughout the world requires that interoperable standards be used, as far as possible. The main focus in telecommunications is put on harmonization required for designing networks and services. Worldwide standardization is also increasingly affected by concerns of national sovereignty.

The approval, placement and availability of telecommunication equipment on the market, its compliance with essential requirements, and its connection to public telecommunication networks may also be assigned to the regulator.

Numbering

Numbers are needed for the provision of switched telecommunication services, including switched telephone services and packet-switched data communications, etc. The government or its designate, taking into consideration ITU Recommendations in this domain, must administer the numbering plan and allocate numbers to operators and service providers in such a way that competition is not affected. The providers of switched services should be able to obtain numbers from the relevant authorities by means of a transparent and non-discriminatory procedure.

Number allocation should occur on the basis of long-term plans drawn up by the government. The plans will seek to ensure, as far as possible, that certain applications are recognizable in certain numbers (e.g. special call rates).

One important issue likely to arise in the near future is number portability (i.e. the opportunity for end-users to retain the same number when they switch to another operator). Such a system is beneficial to the user and promotes competition.

Competitive safeguards

Competitive safeguards are necessary to ensure that dominant or major suppliers do not engage in anti-competitive cross-subsidization, do not use information in an anti-competitive manner, and do not withhold essential technical and commercial information.

ANNEX 4

Guidelines for regulating spectrum management

The prime objective of national frequency management is to enable a country to manage effectively its use of the finite resources of the radio-frequency spectrum and satellite orbits, within the framework of ITU treaty obligations.

The general model for spectrum management organizations is a central authority responsible for national coordination of all frequency use and international representation, with responsibility for specialized government use (e.g. defence) delegated to the department concerned.

For civil use, the spectrum management authority may either undertake all the functions described in this annex, or delegate specific functions to organizations in the private sector or special user groups. Delegation of some routine functions such as frequency assignment and licensing to spectrum management organizations which have a direct financial or operational interest in the use of spectrum may provide the incentive to improve spectrum efficiency and respond better to the needs of end-users.

There is a need for an identifiable authority in each country having the necessary legal powers and resources to carry out spectrum management functions. The organizational structure may differ from country to country according to particular requirements and resources but the following functions will need to be undertaken:

1) Strategic national spectrum planning

The primary goal of strategic national spectrum planning is to determine and periodically update the existing and future requirements for the various radiocommunication services. From this information, long-term national policy and plans relating to the use of the radio spectrum can be developed taking into account factors such as general government policy initiatives, advances in technology, and major changes in user requirements.

Technical and economic studies related to the use of the radio spectrum are important to assist the development of strategic plans and policy. Research should be targeted both to extend the usable spectrum, as new technologies develop, and to make greater use of existing spectrum through better sharing and more efficient modulation and coding techniques.

2) International representation, frequency coordination and technical cooperation

Frequency management cannot be considered in national isolation because of the international nature of radiocommunications. In order to promote and safeguard national interests relating to radiocommunications, participation and representation in world and regional radiocommunication conferences of ITU is important, since the Final Acts of such conferences have treaty status.

International frequency coordination is necessary for many services in order to minimize the possibility of interference with the services of other countries. For some services (especially satellite networks) the ITU Radio Regulations require administrations to undertake notification and coordination procedures via the ITU Radiocommunication Bureau. For other services, bilateral or multilateral arrangements with neighbouring countries may be established to simplify coordination of frequency use in border areas.

A broad oversight of the work of international organizations responsible for the preparation of radio equipment and planning standards should be maintained, although a more detailed involvement is necessary for those parts of standards which have an impact on the efficient use of the spectrum and, in certain cases, interoperability.

3) National coordination of frequency allocations

A table of national frequency allocations should be established, in accordance with national priorities, to contain the detailed subdivision of frequency bands for particular categories of services, for example, emergency, government, public and private-sector services. Appropriate interdepartmental and public consultative machinery must be established to review and make changes to the table which may be required as a result of the outcome from strategic planning exercises or world or regional radiocommunication conferences.

4) Standards-making and conformity assessment

The technical analysis of requests for frequency assignments takes into account planning standards (concerned with the overall system performance requirements) and radio equipment standards (concerned with equipment technical characteristics). The use of some standards is an international requirement (in particular for safety-of-life services) or a national requirement.

In the development of standards, those aspects which have an interaction with the efficient use of the spectrum should be agreed between frequency managers, users and industry.

Some form of assessment for conformity with standards is required. This will usually involve the establishment and authorization of one or more laboratories capable of providing conformance assessment services.

5) Assignment of frequencies and licensing

The assignment of frequencies to stations in accordance with the agreed national allocations for particular user categories is a routine process of application, technical analysis, assignment and recording in a (national) frequency register. For some services, there may be international frequency coordination obligations.

Licensing is the final part of the process which gives the licensee legal authority to use the frequency in accordance with the licence conditions. Fees are normally charged for the issue of a licence.

6) Spectrum pricing

The aim of spectrum pricing is to ensure, in the interests of spectrum efficiency, and of increasing the economic benefits derived from radio, that users pay an amount for spectrum that more closely matches the cost of its national and international management or the value that they, or alternative users, place upon it. They will also take the value of the spectrum into account at the time they make investment decisions, for example, on whether to invest in more spectrum-efficient technology, to move to a less congested band or to switch to an alternative service or communication medium. It should be noted, however, that there are differing views with regard to spectrum pricing, whether it should take place at all in some parts of the radio spectrum, and if it does, who should pay, what spectrum should be priced (e.g. domestic versus international services), and what spectrum pricing model should be used. This matter is under study in the ITU-R.

7) Monitoring and enforcement

Monitoring is closely associated with inspection and compliance in that it enables the identification of interference sources, the verification of proper technical and operational characteristics of radiated signals and the detection of illegal transmitters.

RECOMMENDATION COMA/B

IMPACT OF THE INTRODUCTION AND UTILIZATION OF NEW TECHNOLOGIES ON THE COMMERCIAL AND REGULATORY ENVIRONMENT OF TELECOMMUNICATIONS

Question 3/1: ***Impact of the introduction and utilization of new technologies on the commercial and regulatory environment of telecommunications***

The World Telecommunication Development Conference (Valletta, 1998),

recognizing

a) the sovereign right of each Member State to regulate its telecommunication sector and the need to implement the instruments of the International Telecommunication Union (ITU);

b) the importance of maintaining a fair and competitive telecommunication market and guaranteeing fair network access to all players on an equitable basis;

c) the need for regulation in developing countries so as to ensure that new monopolies are not created,

noting

the report by ITU-D Study Group 1 on Question 3/1 "Impact of the introduction and utilization of new technologies on the commercial and regulatory environment of telecommunications",

noting also

a) that the more important common features and characteristics of new telecommunication technologies and applications are portability, globality, and the ability to support the convergence of different media (multimedia);

b) that some measures to regulate integration between operators and/or "content providers" may be required so as to ensure that old monopolies are not simply replaced by new ones,

considering

a) that interactivity, intelligence in systems and global mobility (e.g. global mobile personal communications by satellite - GMPCS) are features inherent in new technologies and applications that provide additional and enhanced capabilities for improved communication;

b) that new technologies increase accessibility of communication;

c) that certain systems are essential for services such as home-banking, home-shopping, telemedicine, etc., and that other services facilitate access to remote areas not currently served by existing terrestrial networks,

recommends that governments/regulators

1 ensure a fair and competitive telecommunication environment and prevent anti-competitive practices;

2 continue to study the regulatory implications of new technologies in order to maximize the benefits that these technologies can provide for the expansion and improvement of telecommunication services;

3 guarantee access to networks;

4 ensure that access costs are fair, non-discriminatory and cost-based.