Telecommunications Regulation Handbook

Module 1

Overview of Telecommunications Regulation

edited by
Hank Intven
McCarthy Tétrault

infoDev

Telecommunications Regulation Handbook

Summary of Contents

Note: Detailed Tables of Contents appear at the beginning of each Module

Appendices

© 2000 The World Bank
1818 H Street, Washington, DC 20433, USA

The World Bank enjoys copyright under Protocol 2 of the Universal Copyright Convention. This material may nonetheless be copied for research, educational, or scholarly purposes only in the member countries of the World Bank. The findings, interpretations, and conclusions expressed in this document are entirely those of the authors and should not be attributed to the World Bank, to its affiliated organizations, or the members of its Board of Executive Directors or the countries they represent.

The modules of this book are distributed on the understanding that if legal or other expert assistance is required in any particular case, readers should not rely on statements made in this book, but should seek the services of a competent professional. Neither McCarthy Tétrault nor The World Bank accepts responsibility for the consequences of actions taken by readers who do not seek necessary advice from competent professionals, on legal or other matters that require expert advice.

First printing November 2000
ISBN 0-9697178-7-3

Table of Contents

Module 1 — Overview of Telecommunications Regulation

Boxes, Figures and Tables

Boxes

Figures

Tables

Telecommunications Regulation Handbook

Principal authors:

Hank Intven
Jeremy Oliver
Edgardo Sepúlveda

Funding for the preparation of this Handbook was provided
by the *info*Dev Program of The World Bank

*info*Dev

Additional funding was provided by

McCarthy Tétrault
Telecommunications Lawyers and Consultants
www.mccarthy.ca

The authors gratefully acknowledge the support and assistance provided
in the preparation of this Handbook
by the International Telecommunication Union (ITU)

The modules of this Handbook are available electronically at
www.infodev.org/projects/314regulationhandbook

MODULE 1

OVERVIEW OF TELECOMMUNICATIONS REGULATION

1.1 Regulatory Objectives

1.1.1 Why Regulate Telecommunications?

The last decade of the 20th Century saw unprecedented changes in the global telecommunications industry. Numerous state-owned telecommunications operators were privatized, and a wave of pro-competitive and deregulatory telecommunications policies swept the world. New market-based approaches to the supply of telecommunications services were introduced in scores of countries.

This liberalization of telecommunications markets was motivated by various factors, including:

- Increasing evidence that more liberalized telecommunications markets were growing and innovating faster and serving customers better
- The need to attract private sector capital to expand and upgrade telecommunications networks, and to introduce new services
- Growth of the Internet, which caused data traffic to overtake voice traffic in many countries, and led to the introduction of many new service providers
- Growth of mobile and other wireless services, which provided alternatives to fixed networks and introduced new service providers to telecommunications markets
- Development of international trade in telecommunications services, which are increasingly provided by transnational and global service providers

As market-based approaches were adopted during the 1990s, the number of national telecommunications regulatory authorities increased from 12 to over 90 around the world. To some this appears ironic. Shouldn't the market-based supply of telecommunications be accompanied by less regulatory intervention, rather than more?

The consensus answer around the world is yes – in the long run, but no in the short run. The successful transformation of monopolistic telecommunications markets into competitive ones requires regulatory intervention. Without it, viable competition is not likely to emerge. In fact, the times when privatization and the introduction of significant competition occur can be the busiest periods in the life cycle of a regulatory organization.

Regulatory intervention is required for a variety of reasons. Typically, regulators must authorize or license new operators. They must often remove barriers to market entry by new operators. They must oversee interconnection of new entrants with incumbent operators. Regulatory intervention may

also be required to ensure competitive markets do not fail to serve high cost areas or low income subscribers.

The objectives of telecommunications regulation vary from country to country. Governments in most countries continue to see telecommunications as an essential public service. Even after telecommunications networks are no longer run by them, governments normally retain a regulatory role to ensure that telecommunications services are supplied in a manner consistent with national perceptions of the public interest.

With the widespread adoption of market-based approaches to the supply of telecommunications services, there is a growing consensus that regulators should not be involved in detailed "management" of the sector. Instead, the regulators' role is seen to involve maintenance of a regulatory environment conducive to the efficient supply of telecommunications services to the public. The service suppliers will generally be private sector operators.

The trend today is toward deregulation. Some traditional forms of telecommunications regulation are now viewed as having been more damaging than beneficial to the development of national telecommunications infrastructure and services. Today, when regulatory measures are proposed or reviewed, governments and regulators must generally ensure that (1) there is a demonstrated need to regulate, and (2) the most efficient measure is selected to meet the specific regulatory objective.

While regulatory measures vary from country to country, the main objectives of telecommunications regulation are often similar. Box 1-1 lists some regulatory objectives that are widely accepted around the world today.

Box 1-1: Widely Accepted Regulatory Objectives

- Promote universal access to basic telecommunications services
- Foster competitive markets to promote:
  - efficient supply of telecommunications services
  - good quality of service
  - advanced services, and
  - efficient prices
- Where competitive markets do not exist or fail, prevent abuses of market power such as excessive pricing and anti-competitive behaviour by dominant firms
- Create a favourable climate to promote investment to expand telecommunications networks
- Promote public confidence in telecommunications markets through transparent regulatory and licensing processes
- Protect consumer rights, including privacy rights
- Promote increased telecommunications connectivity for all users through efficient interconnection arrangements
- Optimize use of scarce resources, such as the radio spectrum, numbers and rights of way

1.1.2 Expansion of Telecommunications Regulation

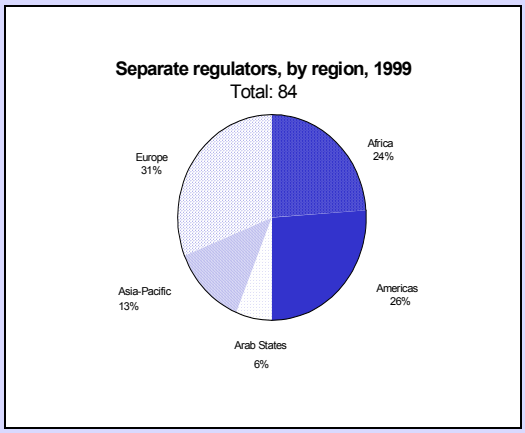
Government regulation of private sector telecommunications operators began in the US and Canada in the late 19th Century. However, in most of the world, telecommunications networks were operated by government administrations for most of the 20th Century. In most countries, governments ran telecommunications operations in the same way as government postal, rail or highway transportation services. This situation changed dramatically over the past ten years, as dozens of countries privatized their telecommunications operations.

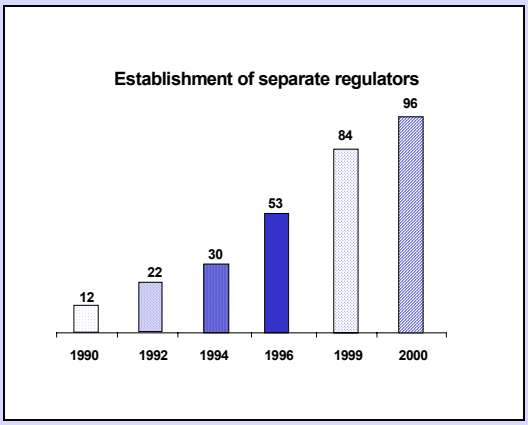
The number of telecommunications regulators has increased rapidly over the past few years. Several factors precipitated this growth in regulation. The major factor is the implementation of telecommunications reforms that led to the separation of the policy, regulatory and operational functions of telecommunications.

Regulatory agencies were established at the same time that many government telecommunications administrations were privatized. The overall objective of these new regulators was to ensure that public policy objectives for the sector continued to be met. While government monopolies are not perceived to require regulation, private monopolies generally are. Introduction of competitors in many newly privatized markets also increased the need for new regulators, to act as referees between the new entrants and incumbent operators.

ITU data indicate that in 1990, 12 countries had telecommunications regulatory agencies that functioned separately from telecommunications operators. The term "separate regulators" generally refers to agencies that operate separately from government ministries or PTTs that are also responsible for the provision of telecommunications services. By August 1999, that number had increased to 84. Nine new regulators were established between mid-1998 and mid-1999. In late 2000, the number was around 96 and increasing. The growth in the establishment of separate regulators is illustrated graphically in Figure 1-1.

Figure 1-1: Growth in Number of Regulators





Source: ITU (1999a) and (2000)

While the growth of regulatory authorities is remarkable, it should be kept in perspective. In many cases, new regulators replace existing PTT or Ministry functions. Therefore, in some countries, the establishment of separate regulators may not result in an increase in the number of government officials with regulatory functions. Also, while there is likely to be an increase in regulatory activity around the time of privatization and the introduction of competition, the level of regulatory intervention can be expected to drop significantly once competitive markets are established.

1.1.3 Implementing Telecommunications Sector Reform

While government policy officials usually introduce telecommunications sector reforms, regulators must implement many of these reforms. Good regulation is required to ensure the success of sectoral reforms. Table 1-1 summarizes major reforms that have been introduced, and are continuing to be introduced around the world. The table also lists major objectives for the introduction of these reforms.

Table 1-1: Major Global Telecommunications Sector Reforms and Associated Objectives

Reforms	Major Objectives
Privatization of PTTs	➢ Attract financing to expand telecommunications infrastructure ➢ Increase sector efficiency, introduce new services ➢ Generate government revenues from privatization proceeds
Licensing of Competitive Operators	➢ Expand range of services; serve unserved markets ➢ Increase sector efficiency through competition ➢ Decrease prices, improve range and supply of services ➢ Stimulate innovation and introduce advanced services ➢ Generate government licensing revenues
Introduction of Transparent Regulatory Processes	➢ Increase success of licensing processes & government credibility ➢ Increase government revenues from licensing new services ➢ Increase market confidence, attract more investment
Mandatory Interconnection and Unbundling of PSTN	➢ Remove barriers to competition ➢ Promote competition in advanced services (e.g. broadband Internet)
Price Cap Regulation	➢ Better incentives for efficient service supply by dominant firms ➢ Simpler method that ROR regulation to prevent excessive pricing ➢ Reduce regulatory lag; ensure timely price adjustments
Targeted Universal Access Funds	➢ Increase efficiency and effectiveness of universality policies ➢ Replace less transparent and potentially anti-competitive cross-subsidies
Removal of Barriers to International Trade in Telecommunications	➢ Increase investment in telecommunications sector ➢ Improve competition in telecommunications markets ➢ Improve global communications

While a number of these reforms were perceived as radical when they were first proposed 10 or 20 years ago, many have become the generally accepted standards today. As these reforms were introduced in an increasing number of countries, some have become incorporated into trade agreements and international trade policies. Most significantly, the *WTO Agreement on Basic Telecommunications* (ABT) and its Regulation Reference Paper incorporate a number of these reforms. The ABT is discussed in several Modules of this Handbook and the Reference Paper is reproduced in Appendix A.

1.2 Regulatory Organizations

1.2.1 The Role of National Government Authorities

Until recently, in many countries, a single Ministry or other government administrative unit performed the roles of telecommunications policy maker as well as owner and operator of the national telecommunications network. No need was perceived for a regulator in this environment. The same government officials were often involved in policy decisions, policy implementation and operation of the telephone service.

Privatization and market liberalization has led to a re-organization of the government institutions involved in the telecommunications sector. The most common institutional model used in developed market economies around the world today, is illustrated in Table 1-2.

The structure set out in Table 1-2 is compatible with the market-based supply of telecommunications services, rather than government-based supply. It also facilitates compliance with the *WTO Regulation Reference Paper*, in that it provides for a regulator that is separate from the telecommunications operator, and that can resolve interconnection disputes. This structure has the following features:

- Government officials can set policies in the national interest, without conflicting concerns based on their role as owners, managers or employees of telecommunications operators. In particular, governments are more inclined to introduce significant competition in telecommunications markets if they do not also run the main operator.

- Separate regulatory authorities can implement government policy in an objective and impartial manner. Separation from state-owned telecommunications operators increases the ability of regulators to act impartially toward all market participants, for example in matters involving competition policy or interconnection.

- Market confidence in the impartiality of regulatory decisions generally increases with the degree of independence of regulators from both operators and governments. Such market confidence promotes increased foreign and domestic investment in both incumbent operators and new entrants in the sector.

- Privately owned operators can make rational economic decisions about the supply of telecommunications services, without conflicting concerns arising from government ownership.

Table 1-2: Standard Institutional Structure in Developed Market Economies

Function	Responsible Organization
Policy Development	Government Ministry or Executive Branch
Regulation	Separate Regulatory Authority
Network Operations/Service Provision	PTOs (privately or commercially operated)

- For example, some PTTs traditionally maintained excessively large work forces for political or other non-economic reasons. This resulted in inefficiency and added costs for consumers. In most cases, privatization of telecommunications operations has increased the supply of telecommunications services and reduced costs. "Commercialization" of state-owned operators can also increase immunity from government interference, relative to traditional PTTs. However, the degree of immunity depends on the degree of independence granted to the "commercialized" state operators.

While there continue to be different views about the best institutional structure for the telecommunications sector in different countries, the model described above has clearly become the standard one. Other models are often seen as transitional, with recognition that the "standard" model will ultimately be adopted.

In some countries, other government ministries or agencies may play key roles in the telecommunications sector. For instance, a competition authority may be an important component of the institutional structure (the respective roles of a general competition authority and a sector-specific telecommunications regulator are discussed in detail in Module 5). Other organizations that may play a significant role in determining the overall economic environment of the telecommunications sector include ministries of finance and ministries of planning, as well as privatization and tax authorities. All of these institutions can play particularly important roles at the time of privatization. However, once privatization is completed, they often take on a more secondary role to the three entities described in the "standard mode".

1.2.2 The National Regulatory Authority

An increasing number of governments have developed an institutional structure of the type illustrated in Table 1-2, which includes a separate national regulatory authority. A variety of approaches have been developed to establish and operate such regulatory authorities. In the following sections we consider five major issues that frequently arise:

- Independence of the Regulator
- Funding of the Regulatory Process
- Single Regulators and Collegial Commissions
- Multi-Sector Regulators
- Organization of Regulatory Staff

1.2.2.1 Independence of the Regulator

As illustrated in Table 1-2, the standard institutional structure for the telecommunications sector around the world today includes a separate regulator. What is most important in this regard is separation of the regulator from the telecommunications operator(s) in the market. Such separation inspires market confidence and promotes compliance with international trade obligations.

Of equal importance in the eyes of many experienced telecommunications experts is independence of the regulator from governments. In practice the degree of such independence varies considerably from country to country. It depends on the legal, political and institutional structure of each country. Regulators in few, if any, countries enjoy complete independence from governments. At a minimum, most regulators are appointed and paid by governments, and have budgets established or controlled by them.

There are good reasons for increasing the degree of independence of regulators from governments. Such independence increases perceived neutrality and insulation from political or operational pressures. This perception of independence is particularly important where a government retains ownership of the PTO.

Telecommunications operators and investors will generally have greater confidence that an independent organization will regulate a market objectively and transparently. This can lead to increased investment in the sector and to related benefits for the economy. Such confidence will, however, depend on the credibility of the regulator. It must have a demonstrated capability to regulate in a professional and impartial manner.

In some countries, separation of regulators from the general government administration also provides an opportunity to pay higher salaries to regulatory officials. This can be important in developing and transitional economies where extremely low government pay scales can make it difficult to attract and retain highly qualified and non-corruptible staff. The best staff of regulators in such countries can easily be lost to the private sector if the regulators' pay scale is not competitive.

Finally, it must be clear that "independence" of the regulator does not mean independence from the laws and policies of a country. The mandate of an independent regulator should be clearly spelled out in national laws. Regulators should be accountable to legislatures or other government bodies. Such accountability should include mechanisms, such as annual reports or legislative hearings, in which the regulator must demonstrate in a transparent manner that it has properly exercised its mandate.

1.2.2.2 Funding the Regulatory Process

It is essential to provide adequate funding for the regulatory process. Funding is required to hire good calibre professional staff and consultants that can implement regulatory objectives. Without adequate funding, regulation will not usually be effective. Regulatory objectives related to the opening of competitive markets and the establishment of a level playing field are not likely to be achieved.

Separate regulators can be funded in a number of ways. Traditionally, regulatory functions were funded out of general government budget appropriations, particularly when the functions were carried out within Ministries of Communications or PTT Administrations. Budget appropriations are also used for many separate regulators. However, licence fees and spectrum fees paid by operators provide an increasingly common means to fund the regulatory function.

A typical approach to levying licence fees is to distribute the costs of running the regulatory functions among all licensed telecommunications operators in proportion to their gross telecommunications revenues. Thus, in the early years, the incumbent operator (e.g. the former PTT) may pay 90% of the regulator's costs because it earns 90% of telecommunications revenues in the sector. Over time, however, the licence fees payable by the incumbent will decrease, as other operators gain market share.

There are advantages to funding a regulator through licence and spectrum fees rather than government appropriation. Licence fees provide a way of recovering the costs of government services on a "user pay" basis. Telecommunications sector licence fees can generate a sufficiently large source of revenues to ensure the regulatory function is carried out in a professional manner, something that cannot always be assured by cash-strapped governments in developing economies. Other segments of society and the economy are not burdened with the regulatory costs. There is some accountability and greater transparency to determine when regulatory budgets are being spent well, and when they are not. The issue of licence fees is discussed further in Module 2.

1.2.2.3 Single Regulators and Collegial Commissions

Telecommunications regulators first emerged in the US and Canada at the end of the 19th Century. These regulators were structured as quasi-judicial boards or commissions. While these regulators were led by a chairperson, they were essentially collegial organizations. Decisions were typically made by consensus or, in case of controversy, by a majority vote. As the complexity of regulation increased, these regulators eliminated some of their judicial trappings, and hired an increasing number of technical, professional and support staff.

When new telecommunications regulators were established around the world in the 1990s, many were headed by a single director general, or other official. This structure was similar to other government organizational models used in some of the countries where the new regulators were established. An early example was Oftel, the UK regulator, which was established in 1984, when British Telecommunications was privatized. As with the commission model, regulators headed by a single official are usually assisted by various technical, professional and support staff, as well as outside consultants.

In the latter part of the 1990s, the commission approach became more popular again. The 1999 ITU Trends Report indicates that six of the nine new regulators established between July 1998 and August 1999 were collegial bodies, composed of between five and eleven members. New regulators established in Albania, Bulgaria, Egypt, Greece, Kenya, Malawi and Malaysia are all collegial bodies.

There are advantages and disadvantages to both the hierarchical and collegial approaches. Neither can be said to be superior in all cases. However, several observations can be made:

- Single regulators can act more quickly and decisively than collegial bodies.
- Collegial bodies provide checks, balances and collegial support for the decision-makers. Decisions can therefore be more thoroughly debated and considered.
- Large collegial bodies can lead to less cohesion and consistency than small ones or single regulators.
- Some countries with large collegial bodies have reduced them in size to increase decision-making efficiency (e.g. the US).
- Some collegial bodies, especially large ones, have part-time members. Such members usually find it more difficult to keep abreast of developments in rapidly changing telecommunications markets.
- Collegial bodies are somewhat less susceptible to "capture" by regulated companies. However, financially insecure regulators of both types may be motivated by future career prospects in the industry. Government tenure or other forms of security can mitigate this concern.

In practice, both single regulators and collegial commissions often rely heavily on professional staff and consultants for fact gathering, analysis, and recommendations. In some cases, regulatory staff are empowered to make some types of regulatory decisions. This is the case, for example, for staff Bureau Chiefs of the FCC in the US. Thus, while the final decision on important regulatory matters and directions will rest with the single regulator or commission, depending on the model, much of the staff work and more routine decision-making can be very similar under both models.

1.2.2.4 Multi-Sector Regulators

Telecommunications regulators usually have sector-specific regulatory functions. In most cases, they are responsible for regulating only telecommunications markets. In some cases, they also have regulatory functions in adjacent markets. Examples include broadcasting (e.g. Canada and the US) and information services generally (e.g. Singapore and Malaysia). South Africa has established a merged telecommunications and broadcasting regulator (ICASA) on 1 July 2000.

A different approach that is well worth considering involves the establishment of a multi-sector regulator. Such an agency typically regulates telecommunications as well as other industry sectors with similar economic and legal characteristics. Examples of such sectors include electrical power generation and distribution, oil and gas pipelines, postal services, transportation and water utilities.

Multi-sector regulators, often referred to as public service commissions, existed for many years in Canadian provinces and states of the US. They have also been established in some developing economies, such as Bolivia, El Salvador, Jamaica and Panama. The multi-sector approach was also seriously considered, but recently rejected in the UK. Box 1-2 sets out some of the advantages and disadvantages of the multi-sector regulatory approach.

Other considerations are relevant in deciding whether a multi-sector regulatory approach works in any particular country. In most countries, reform occurs at different times in different industry sectors, such as telecommunications, energy, and water. It may be impractical to establish multi-sector regulatory agencies , for example, where the telecommunications industry has been privatized, but energy and water services continue to be supplied by government administrations.

Box 1-2: Advantages and Disadvantages of Multi-Sector Regulators

Key Advantages

- Reduce risk of "industry capture" because the creation of a regulator with responsibility for more than one sector can help avoid the rule-making process being captured by industry-specific interest groups
- Reduce risk of "political capture" because a regulator with responsibility for more than one sector will necessarily be more independent of the relevant line Ministries. The broader range of entities regulated by such a regulator will be more likely to resist political interference in a decision on, say, price regulation in one sector since that could set a precedent for other sectors
- Create more precedents, and therefore less uncertainty, for investors because a decision by an MSR in relation to one sector on a regulatory issue common to other sectors (e.g. the application of price cap regulation or cost accounting rules) will set a precedent that is valuable to potential investors in those other sectors
- Economies of scale in the use of one set of high-calibre professionals (e.g. economists, lawyers, financial analysts). Such economies are particularly important during the early stages of liberalization and privatization in a TDC when there is likely to be a scarcity of regulatory experience

Key Disadvantages

- Increase risk of "industry capture" by a dominant industry player not only of the single sector regulator but of the entire MSR body
- Increase risk of "political capture" by a dominant ministry of not only the single sector regulator but of the entire MSR body
- Increase risk that a precedent set in relation to one sector could be applied inappropriately in another sector (although this can also be mitigated by creating strong sector-specific departments underneath a central cross-sectoral decision-making body)
- Dilution of sector-specific technical expertise required where, for example, the skills of a tariff expert for one sector are not transferable to similar tariffing issues in another sector, or, for example, of a frequency engineer

Other Advantages

- Economies of scale in administrative and support services (e.g. computers, office space, support staff), particularly important where the costs of regulation can have a real impact on the affordability of basic services
- Flexibility in dealing with "peak load" periods, such as periodic price reviews, where intensive regulatory expertise is needed which may be spread across sectors if a multi-sectoral approach is adopted
- Economies of scale in the development and implementation of the regulatory agency whereby, for example, uniform rules on licence award or dispute settlement procedures can extend to more than one sector and, therefore, avoid the need to "re-invent the wheel" for each sector

Other Disadvantages

- Failure by the regulator cascades to other sectors
- Difficulty in achieving acceptance by relevant line Ministries of the concept of having an MSR
- Subsequent difficulty in achieving consensus from the relevant line Ministries on the type of MSR to be established
- Greater complexity in establishing the legal framework for the MSR, including the level of independence and allocation of functions as between the Minister and the regulator
- Potential delays in the reform process due to the disadvantages mentioned above

Box 1-2: Advantages and Disadvantages of Multi-Sector Regulators (cont'd)

- Transfer of regulatory know-how between regulators responsible for different sectors; again, this is particularly important when a country has limited experience in regulation
- Effective means of dealing with converging sectors (e.g. telecommunications and broadcasting where it is increasingly difficult to decide what is a telecommunications and what is a broadcasting service, for example video-on-demand, or telecommunications and posts, for example email and fax re-mailing)
- Effective means of dealing with the bundled provision of services (e.g. provision of both telecommunications and electricity by the same company) and with co-ordination requirements between sectors (e.g. where companies from a number of different sectors all need to dig up the same roads to construct their networks)
- Avoidance of market distortions due to the application of different rules to competing sectors (e.g. electricity and gas, or road and rail)

- Merging existing agencies may be problematic

Source: Schwartz, T. and Satola, D. (2000)

Finally, many variations are possible on the theme of multi-sector regulation. The choice is not simply between one single multi-sector regulator and a series of single-sector ones. As indicated above, Canada's CRTC regulates two similar and converging sectors, telecommunications and broadcasting, but no others. The CRTC's predecessor, the Canadian Transportation Commission, regulated a variety of industries, including telecommunications (but not broadcasting), air and rail transportation. However, at that time, gas pipelines, electrical power and other infrastructure industries fell under the authority of different regulators. Other combinations are possible.

1.2.2.5 Organization of Regulatory Staff

There are many ways to organize the decision-makers, management, staff and other advisors of a regulatory agency. No one approach is ideal. Much will depend on the institutional structure and the workplace culture of a country. The structure of the regulator will also play a role. For example, the staff of collegial commissions may be, but is not always, structured differently from that of an organization reporting to a single director general. Multi-sector regulators will have different structures from single-sector regulators, since professional staff such as economists, lawyers and accountants will deal with telecommunications issues one day, and electrical power regulation the next.

The main factors determining organizational differences are the functions and objectives of different regulatory agencies. Some telecommunications regulators are responsible for spectrum management, licensing of new operators and regulation of broadcasting and other content services. Others are not. Some must actively regulate prices. Others are merely responsible for verifying compliance with a price cap regime prescribed in a long term licence, or adjusting the X-factor in a price cap regime every

few years. Different functions and objectives require different types and levels of professional assistance.

For these reasons, it would not be useful to prescribe an ideal model for a regulatory organization. However, some general observations can be made:

- Regulatory decision-making requires multidisciplinary skills. Specific types of regulatory decisions require qualified economists, engineers, lawyers, accountants and financial analysts. However, many other decisions benefit from having a range of different professional skills and perspectives brought to bear. Where high-calibre professional skills are not immediately available within the public service, outside experts should be brought in. Experts with hands-on experience with established regulators can be particularly valuable. Outside experts can be replaced as good permanent staff are hired and trained.

- The telecommunications environment is changing rapidly. Accordingly, regulatory organizations should not establish rigid hierarchies; they should be flexible and adaptable. Many effective regulatory organizations employ a "task force" or "working group" approach to staffing teams to advise on important regulatory decisions. These task forces are often selected from different branches of the regulatory organization. They are frequently brought together solely for a specific project.

- Consideration should be made to contracting out specific regulatory functions, rather than building large permanent staff organizations. This approach is recommended by the authors of the regulatory strategies checklist for developing economies (Table 1-4). They provide the following examples. Audit firms can monitor compliance with operating licence conditions. In Argentina, a private contractor monitors compliance with radio spectrum rules. External experts can also resolve operator disputes, leaving final decisions to the regulators. Many other examples exist.

1.2.3 International Agencies

The following sections describe the organization and functions of various international organizations that play an important role in telecommunications regulation.

1.2.3.1 International Telecommunications Union (ITU)

Overview of the ITU

The ITU was founded in Paris in 1865 as the International Telegraph Union. It changed its name to the International Telecommunication Union in 1934, and became a specialized agency of the United Nations in 1947.

The ITU is a global organization which includes public and private sector participation on telecommunications matters. The ITU's mission covers the following areas or "domains":

- **technical domain:** to promote the development and efficient operation of telecommunications facilities, in order to improve the efficiency of telecommunications services, their usefulness, and their general availability to the public;

- **development domain:** to promote and offer technical assistance to developing countries in the field of telecommunications; to promote the mobilization of the human and financial resources needed to develop telecommunications; and to promote the extension of the benefits of new telecommunications technologies to people everywhere;

- **policy domain:** to promote, at the international level, the adoption of a broader approach to the issues of telecommunications in the global information economy and society.

As of 1 July 2000, the ITU comprised 189 Member States and over 600 Sector Members. The latter include scientific and industrial companies, public and private operators, broadcasters and regional/international organizations.

Structure of the ITU

Under its constitution, the ITU's organizational structure comprises the following elements:

- The **Plenipotentiary Conference**, which is the supreme authority of the Union. It meets every four years to:

(a) adopt the strategic plan and fundamental policies of the organization;

(b) amend the Constitution and Convention as required; and

(c) adopt a financial plan for the next four-year period.

- The **Council**, which is composed of 46 ITU Member States (representing 25% of the Union's membership). The Council acts on behalf of the Plenipotentiary Conference and meets annually to consider broad telecommunications policy issues in order to ensure that the Union's policies and strategies respond to the constantly changing telecommunications environment. The Council is also responsible for ensuring the efficient co-ordination of the work of the Union and the approval of its budgets.

- **World Conferences** on International Telecommunications, which are convened periodically to review and revise the *International Telecommunication Regulations*. The Regulations are an international treaty governing the provision and operation of public telecommunications services, as well as the underlying transport mechanisms used to provide them. The Regulations provide a broad, basic framework for telecommunications administrations and operators in the provision of international telecommunications services.

- The **Radiocommunication Sector** (ITU-R) is charged with establishing technical characteristics and operational procedures for wireless services. The Sector also plays a key role in the management of the radio frequency spectrum. In its role as global spectrum co-ordinator, the Radiocommunication Sector develops the *Radio Regulations*, a binding set of international rules that govern the use of the radio spectrum by some 40 different radiocommunications services around the world. The Sector also acts, through its Bureau, as a central registrar of international frequency use. It records and maintains the Master International Frequency Register which currently includes around 1,265,000 terrestrial frequency assignments, 325,000 assignments servicing 1,400 satellite networks, and another 4,265 assignments related to satellite earth stations.

  In addition, the ITU-R is responsible for co-ordinating efforts to ensure that communications, broadcasting and meteorological satellites can co-exist without causing harmful interference to one another's services. In this role, the ITU facilitates agreements between operators and governments, and provides practical tools and services to help frequency spectrum managers carry out their day-to-day work.

  The legislative and policy functions of the Radiocommunication Sector are performed by world radiocommunications conferences, which adopt and revise the *Radio Regulations*, by regional radiocommunications conferences, and by radiocommunications assemblies supported by study groups.

- The **Telecommunication Standardization Sector** (ITU-T) co-ordinates the international telecommunications standards-setting activities which result in the ITU-T Recommendations. The Standardization Sector carries on the standardization efforts of the ITU which span more than 130 years. Today, these efforts include development of standards for Internet Protocol (IP) networks, and IP-based systems.

  The majority of the membership of the ITU-T comes from the private sector. Given the rapid pace of technical and market developments, the Telecommunication Standardization Sector's main challenge is in speeding up time-to-market progress of its Recommendations. The legislative and policy functions of the Standardization Sector are carried out through World Telecommunication Standardization Assemblies, supported by study groups.

- The **Telecommunication Development Sector** (ITU-D) discharges the ITU's responsibilities as a United Nations specialized agency and as an executing agency for implementing projects under the United Nations development system or other funding arrangements.

The ITU calculates that a lack of reliable access to basic telecommunications services affects around two-thirds of its 189 member countries. It is the task of the ITU-D to help redress this imbalance by promoting investment and the implementation of telecommunications infrastructure in developing nations throughout the world.

The ITU-D maintains a regional presence via 11 offices located in Africa, the Arab States, Asia, the Caribbean and Latin America. The Telecommunication Development Sector's two Study Groups discuss key telecommunications development issues and policies. They also establish best business practices for the deployment, management and maintenance of networks and services. Special attention is paid to the needs and concerns of the UN-designated Least Developed Countries.

Sector activities range from policy and regulatory advice, advice on the financing of telecommunications and on low-cost technology options, assistance in human resource management, as well as well as the development of initiatives targeting rural development and universal access. The ITU-D emphasizes partnerships with the private sector.

ITU-D also produces a range of information resources which provide analysis of trends in the global telecommunications sector backed by official statistics from the world's leading source of telecommunications information. Examples include the *World Telecommunication Development Report* (WTDR), which provides a comprehensive overview of transition in the telecommunications industry and the annual *Trends in Telecommunication Reform* (Trends). Trends is based largely upon the annual *Telecommunication Regulatory Survey* conducted by the Telecommunication Development Bureau. The Bureau monitors world telecommunications reform and maintains a regulatory database for governments reforming their telecommunications sectors.

The policy functions of the Development Sector are fulfilled by World and Regional Telecommunication Development Conferences supported by study groups.

- **The General Secretariat:** Manages the administrative and financial aspects of the ITU's activities, including the provision of conference services, the management of the IT infrastructure and applications, long range strategic planning, and corporate functions (communications, legal advice, finance, personnel and common services).

  The General Secretariat is also responsible for organization of the world and regional TELECOM Exhibitions and Forums.

1.2.3.2 Other International Organizations

Organizations Interested in Telecommunications Regulation

A large number of international organizations play a role in telecommunications regulation and regulatory reform. For some, telecommunications regulation is a major part of their mandate. Others deal with it as an ancillary matter. An example of the latter is the WTO, which has dealt with telecommunications regulation as a means of promoting its core objective of facilitating international trade.

The focus of the organizations listed below varies considerably. Some have regional or global mandates to improve regulation, or to carry out specific regulatory functions. Some promote regulatory reform. Others provide technical assistance and fund consulting resources, studies, workshops and other activities to increase regulatory know-how. Still others act as focal points for the exchange of information between regulators and other stakeholders in the telecommunications regulatory process.

International organizations with a major role in telecommunications regulation are listed in Table 1-3.

Table 1-3: Selected International Organizations Interested in Telecommunications Regulation

Organization	Activities
African Development Bank (AFDB) http://www.afdb.org	Like its Asian and Inter-American counterparts, the Asian Development Bank provides financial and technical assistance for the establishment, expansion, improvement and integration of public telecommunications systems in Africa. Its programs are aimed at infrastructure development, increasing access to telecommunications services and improving the contribution of the telecommunications sector to its members' economic growth. It also aims to improve the competitiveness of Africa's telecommunications industry, and provide the conditions for its participation in the information economy. Among the main activities of the bank is the provision of support for privatization and strengthening of institutional frameworks.
African Telecommunications Union (ATU)	ATU co-ordinates the development of an African telecommunications networks. It promotes telecommunications development in Africa by serving as a regional discussion forum. (Formerly known as Pan-African Telecommunications Union.)
Caribbean Telecommunication Union (CTU) http://www.ctu.org	CTU promotes telecommunications development and regulatory reform by serving as a regional discussion forum. It also promotes co-ordination of the international policies of its 13 English-speaking Caribbean member states.
Common Market for Eastern and Southern Africa (COMESA) http://www.comesa.org	COMESA serves the English-speaking sub-regions of Eastern and Southern Africa. In collaboration with the ITU, COMESA's Transport and Communications Division provides technical assistance in several areas, including network connectivity and tariffs.
European Bank for Reconstruction and Development (EBRD) http://www.ebrd.org	The EBRD is an international financial institution established along somewhat similar lines as The World Bank Group, and particularly one of its members, the International Finance Corporation (see description of The World Bank below this table). The EBRD supports telecommunications privatization in Central and Eastern Europe and in the former Soviet Union (FSU) through the provision of equity or long-term debt financing to newly privatized companies and by providing pre-privatization finance. The EBRD provides support for new network operators in local, domestic and international long distance, and mobile telephone services. It also supports regulatory reform through its Technical Co-operation Programme, which has provided assistance to national authorities in establishing and improving the telecommunications legal and regulatory framework.
European Conference of Post and Telecommunications Administrations (CEPT) http://www.cept.org	CEPT's Telecommunications Committee (ECTRA) promotes co-operation between member administrations and bodies responsible for telecommunications policy and regulation. Its activities include harmonization of licensing conditions, spectrum management and numbering.

Table 1-3: Selected International Organizations Interested in Telecommunications Regulation (cont'd)

European Commission – DGIS http://www.europa.eu.int	The EU shapes telecommunications law and policy in Europe through legally binding instruments. Its directives on different aspects of telecommunications liberalization aim at developing a common market for telecommunications service and equipment throughout Europe. The Directorate-General for the Information Society (DGIS) implements the European Commission's policies in the area and elaborates the economic, political and social analyses on which such policies are based. The DGIS supports telecommunications sector reform through programs and initiatives, which include monitoring activities and assistance in the establishment of regulatory frameworks consistent with the Commission's policies. The European Union provides additional support for economic reform in Central and Eastern Europe through development programs such as PHARE and TACIS.
European Telecommunications Office (ETO) http://www.eto.dk	ETO supports the establishment of new regulatory regimes for liberalized telecommunication markets and promotes the harmonization of existing regulations. It promotes the establishment of common procedures for licensing and numbering. ETO also provides a forum for discussion and analysis of national situations and undertakes studies on issues of topical concern. Recent ETO studies cover the areas of licensing, pricing, numbering and mobile number portability.
Gulf Co-operation Council (GCC)	The Telecommunications Department of the GCC has assisted Persian Gulf member states to co-ordinate telecommunications services tariffs, adopt the GSM mobile telephony standard and harmonize the curriculum taught at academic institutions and training centres in GCC member states. It also works with the ITU to promote harmonization and standardization processes.
Inter-American Development Bank (IADB) http://www.iadb.org	The IADB provides financial assistance for the establishment, expansion, improvement and integration of public telecommunications systems. It also provides technical assistance at all stages of the projects it finances and supports its member countries in the rationalization of telecommunications activities, with special emphasis on institutional reform and strengthening of regulatory capabilities. Its areas of involvement include local networks and rural telephony.
Inter-American Telecommunications Commission (CITEL) http://www.citel.oas.org	As the principal advisory body to the Organization of American States (OAS) on matters related to telecommunications, CITEL's main objectives are to facilitate and promote the development of telecommunications in the Americas, in order to contribute to the overall development of the region.
International Finance Corporation (IFC) http://www.ifc.org	A member of The World Bank Group (see separate description below this table). Together with the World Bank, IFC works through the new Global Information and Communications Technology Group (GICT) to promote the development of the telecommunication sector in emerging economies, particularly through private participation. The IFC has financed a large number of telecommunications projects throughout the developing world in areas such as basic wireline services, cellular telephony, equity funds for telecommunications service providers and equipment manufacturers, as well as satellite, wireless local loop and cable television operations.

Table 1-3: Selected International Organizations Interested in Telecommunications Regulation (cont'd)

International Institute of Communications (IIC) http://www.iicom.org	The IIC is a multidisciplinary organization that brings together policy makers, regulators, academics and industry players. It provides a forum for the exchange of ideas on topics related to telecommunications and their commercial, cultural, political and social implications. It maintains an active publication program, hosts an annual conference and organizes international fora on a regular basis.
International Telecommunication Union (ITU) http://www.itu.int	See separate description of ITU above this table.
Latin American Forum of Telecommunications Regulators (REGULATEL) http://www.regulatel.org	REGULATEL encourages co-operation and co-ordination of efforts among 16 Latin American telecommunications regulatory agencies and promotes the development of telecommunications in the region. It provides a forum for discussion and for the exchange of information and experience in telecommunications policy and regulation.
Mercosur (Southern Common Market) http://www.mercosur.org.uy	Mercosur supports telecommunications liberalization among its members (Argentina, Brazil, Paraguay and Uruguay). Through its Public Telecommunications Services Commission, Mercosur promotes regional telecommunications development, harmonization of spectrum management and equipment certification and homologation as well as the exchange of information on telecommunications topics.
Organization for Economic Co-operation and Development (OECD) http://www.oecd.org	The OECD publishes data and studies on telecommunications markets. It promotes telecommunications reform as a means to achieve sustainable growth and employment that contributes to economic and social welfare, as well as to the expansion of world trade.
Pacific Telecommunications Council (PTC) http://www.ptc.org	PTC membership includes individuals, businesses and non-profit entities. It provides a forum for discussion and exchange of information on telecommunications in the Pacific area. It promotes regulatory reform and general awareness of the telecommunications sector in the area. PTC organizes conferences and seminars and interacts with national, regional and international organizations responsible for telecommunications policy and regulation.
Regional African Satellite Communications Organization (RASCOM) http://www.rascom.org	Among RASCOM's main objectives is the improvement of inter-urban communications in its member states through the establishment of direct satellite links between African countries. It also promotes the provision of telecommunications service to rural and remote areas.
Regional Commonwealth in the Field of Communications (RCC)	RCC co-ordinates network development, technical standards and spectrum management activities in CIS countries. It also co-operates with its members in the development of principles governing tariff policy as well as network interconnection and interoperability. In addition, the RCC is involved in joint research and development programs, and the training of communications specialists.

Table 1-3: Selected International Organizations Interested in Telecommunications Regulation (cont'd)

Telecommunication Regulators Association of Southern Africa (TRASA) http://www.trasa.org	TRASA's main goal is to increase communications and co-ordination between regulatory authorities in the Southern Africa region. TRASA seeks to encourage investment in the telecommunications sector by supporting the creation of a common enabling environment. The member states of the Southern African Development Community (SADC) are committed to undertaking initiatives to improve the economic and social well-being of their populations through telecommunications sector reform.
West African Telecommunications Regulators Association (WATRA)	WATRA was formed in September 2000 by West African telecommunications regulators, as a regional organization similar to TRASA (see above).
The World Bank Group http:www.worldbank.org	See separate description below this table. Members of The World Bank Group provide loans, equity and guarantees to developing countries. They also provide information, advice and assistance on telecommunications sector reform and national information infrastructure strategies.
World Trade Organization (WTO) http://www.wto.org	The WTO is the international body responsible for the administration of the *General Agreement on Trade in Services* (GATS), which includes an Annex on Telecommunications and a Protocol regarding basic telecommunications services. This Protocol, officially known as the *Fourth Protocol to the GATS Agreement*, is referred to throughout this Handbook as the *WTO Agreement on Basic Telecommunications* (see Appendix A and Appendix C: Glossary). The WTO provides a global forum for trade negotiations and dispute resolution. The WTO also monitors national trade policies and provides technical assistance and training for developing countries concerning the implementation of their WTO commitments, including required regulatory reforms.

Multilateral and Bilateral Development Organizations

A number of multilateral and bilateral development organizations have an interest in telecommunications regulation. These organizations focus on countries with developing and transitional economies. The goal of such development organizations is generally to assist in establishing a regulatory framework that will promote telecommunications sector development – and with it, general economic development.

These organizations generally provide technical assistance to governments and regulators to promote the development of a sound regulatory structure. Such technical assistance may include advice from expert staff resources, payment for independent telecommunications advisors (economists, lawyers and other consultants), training programs, seminars, workshops and staff exchanges.

Some major multilateral development organizations active in promoting telecommunications sector restructuring and regulatory reform are listed in Table 1-3. These organizations include:

- The World Bank Group, including:
  - International Bank for Reconstruction and Development (IBRD);
  - International Development Association (IDA);
  - International Finance Corporation (IFC); and

- Multilateral Investment Guarantee Association (MIGA).

- European Bank for Reconstruction and Development (EBRD);
- Asian Development Bank;
- African Development Bank;
- Inter-American Development Bank; and
- Andean Development Corporation.

Many bilateral development organizations also play a role in promoting regulatory development. These include national development organizations such as US AID, Denmark's DANIDA, and Canada's CIDA. They also include regional programs aimed at promoting telecommunications development, such as the European Commission's PHARE program.

A comprehensive review of the role of multilateral and bilateral development organizations in telecommunications sector regulation is outside the scope of this Handbook. We will describe one key institution, The World Bank, in greater detail. The World Bank has been active in the telecommunications field for many years, and a description of its changing role illustrates a trend common to some other major development organizations.

The World Bank

The World Bank Group has played an important role in telecommunications sector reform, including regulatory reform, in developing and transitional economies.

In the past, the Bank provided a significant source of direct financing for the expansion of telecommunications infrastructure by PTTs. Since the mid-1990s, Bank lending to state-owned enterprises has been contingent on a firm commitment from its client governments to sector reform. Such commitments have included a clear exit strategy for government's involvement in the ownership and management of telecommunications operators. Alternatively, commitments have included specific progress in reform aimed at commercializing, privatizing, facilitating entry into the sector and making the sector more efficient.

The Bank has been a catalyst in promoting privatization and market-based solutions to the development of the telecommunications sector. The Bank's goal has been to create a sustainable environment to attract private investment required to accelerate and sustain telecommunications sector development. Accordingly, Bank policy advocates using scarce official funds mainly to support sector reforms, including regulatory reform, that are likely to mobilize private capital and management to develop the sector.

In terms of a regulatory framework, the Bank advocates separating the government's policy and regulatory functions from telecommunications operations. It supports (a) strengthening the government's capacity to formulate and oversee policy, and (b) creating a regulatory regime and institutions that emphasize competition while keeping regulatory intervention to a minimum.

Consistent with its poverty-reduction goals, the Bank encourages governments to develop strategies to extend telecommunications services throughout the population, including the least privileged groups.

Today, the Bank is leading the way in supporting solutions to alleviate the effects of the digital divide. The Bank's aim is to encourage investments as well as policy and regulatory reforms to create a liberalized environment which will foster the development of communications infrastructure. Such an environment should also promote access to and use of the emerging knowledge-based global economy in the fight against poverty.

The Bank is also active in the development and dissemination of information resources to promote regulatory reform and to strengthen regulatory capabilities. For example, *info*Dev, a multi-donor grant facility administered by the Bank, provides funding for innovative projects that use information and communications technologies to facilitate economic and social development at the local, national, regional and global levels.

*info*Dev, through its networking with governments, multilateral and bilateral donors, the private sector

and not-for-profit organizations, provides links to technical, informational and communications expertise available throughout the world. The program has provided funding to support the ITU Regulatory Colloquia and other initiatives to expand regulatory knowledge and experience, including the preparation of this Telecommunications Regulation Handbook.

1.3 The Regulatory Process

Regulators employ a variety of regulatory procedures. Depending on the legal framework, they may issue different types of "regulatory instruments", such as regulations, decisions, orders, decrees, rules, policies, notices, resolutions. In general, the effect of these instruments is to make "decisions" that implement regulatory policies, resolve disputes, or deal with other matters within the regulators' mandate. In this section, we focus on the general process used in making regulatory decisions. The discussion in this section disregards the country-specific legal form that such decisions may take.

Regulatory decision-making can be difficult. Interested parties may vigorously promote and lobby in support of different outcomes for many regulatory decisions. In most cases, some parties will be happy with a regulatory decision, and others will not. Decisive regulators necessarily create winners and losers in some situations. Indecisive regulators may try to avoid offending anyone by delaying decisions, or creating unworkable compromises. Such indecision and compromises can damage development of the sector and ultimately help no one.

The principles of good regulatory decision-making are well known. They include:

- Transparency;
- Objectivity;
- Professionalism;
- Efficiency; and
- Independence

The laws and jurisprudence of most countries provide guidance and constraints on the regulatory decision-making process. Procedural rules vary from country to country and legal system to legal system. However, there are common trends.

Two "fundamental rules" of procedural fairness in common law countries are worth noting. While they are not legally binding on regulators in many other countries, they are widely respected. Adherence to them will often alleviate political and public relations problems as well as legal challenges. These rules are:

(1) Provide all interested parties with an opportunity to comment or otherwise make their case, before making a decision that affects them. This rule is sometimes expressed by means of the Latin maxim *audi alteram partem* or "hear the other side". Breach of this procedural rule will lead the courts to quash regulatory decisions in some common law jurisdictions. In other jurisdictions, this rule is part of the unwritten code of basic procedural fairness applied by regulators. The rule has a pragmatic basis, as well as a legal one. Unless perspectives of all interested parties are taken into account, regulators risk making decisions that ignore important factors. Taking those factors into account can lead to different and better decisions. Application of this rule promotes transparent decision-making.

(2) "Don't be a judge in your own cause". This rule is based on another Latin legal maxim: *nemo judex in sua causa debet esse*. The rule has been interpreted to mean that regulators should avoid bias as well as the perception of bias. They should not make decisions on matters in which they have a personal interest. Nor should they make decisions on matters where a reasonable person, knowledgeable of all the facts, would perceive a real likelihood of bias. In the words of the jurisprudence: "justice must not only be done, it must be seen to be done". Perceptions of regulatory bias can stem from any number of factors, from a relative's financial interest in a matter, to a former position as part of the management of a PTO that is the beneficiary of a regulatory decision. Application

of this rule promotes objectivity and credibility of the regulatory process.

While these common law rules are not mandatory and do not cover all the bases of good decision making, they will promote credible and impartial good decision-making. Various other rules and principles for good regulatory decision-making have been promulgated by different regulators. A good example of such principles was developed by the Australian regulator. These principles are summarized in Box 1-3.

A variety of procedures are available to assist regulators to make better regulatory decisions. The choice of procedures will vary with the objectives of the decision-making process. Depending on the circumstances, the following approaches should help regulators achieve the hallmarks of good decision-making, namely: transparency, objectivity, professionalism, efficiency and independence:

- Use public processes, wherever time permits. Issue public notices inviting comments on proposed rules or approaches to regulating the industry and other major decisions. Publish ads in newspapers or other media to let the public know about such opportunities.

- Design public processes that will improve the quality of public input. Provide background information and options for the decision to be made, in notices or consultation documents. This approach helps to focus industry comments and to provide more useful input on the issues to be determined by the regulator. This approach has been used successfully in a wide range of countries, such as Jordan, South Africa, the US, the UK and Colombia.

- Publish all significant regulatory developments on a regulatory web site. The web site can also be used to invite the industry and other members of the public to comment on pending regulatory decisions. Publish decisions, rules, procedures, notices, and consultation papers on web sites. Provide links to other useful sites for parties wishing to participate in the regulatory process. Require major operators to provide useful public information, such as rates, service options and complaint procedures, on their web sites.

- Provide written information requests to major operators on complex matters. Have them provide the regulator with technical, financial

Box 1-3: Principles of Proper Decision Making

1. Decisions must be within legal authority of regulator
2. The regulator must consider all relevant matters and disregard irrelevant ones
3. Decisions must be made in good faith and for proper purposes
4. Factual underpinnings of decisions must be based on evidence
5. Decisions must be reasonable
6. Those affected by a decision must be accorded procedural fairness (including the right to respond to prejudicial arguments and evidence that may be taken into account)
7. Government policy must be properly applied
8. Independent regulators must not act on the direction of other persons

Note: These principles were adapted from those developed by the Australian Communications Authority

and economic information necessary to make informed decisions. Ask them to provide detailed arguments and evidence on actions that the regulator is considering.

- Encourage electronic filing of applications, comments and all other material filed by interested parties. If necessary to protect sensitive confidential information, provide for secure electronic filing. In other cases, encourage public filings that are accessible and transparent to the industry and other interested parties.

- Use alternative dispute resolution techniques to resolve complex issues. These include mediation and arbitration. Consider hiring independent experts as mediators and arbitrators. They can report to the regulator for guidance or a final decision, where necessary.

- Follow the basic steps to informed decision-making. Decide what type of information would be relevant in making a decision. Determine the best means to gather appropriate information (e.g. staff research, consultants studies, information requests to operators, etc.). Provide an opportunity for comment on the evidence by interested parties and the public; and make a decision based on the public record, wherever possible.

- Streamline decision-making where possible. Establish and publish schedules for decision-making processes – and stick to them.

1.4 Principles for Effective Regulation

Although telecommunications markets around the world are in transition, the basic direction of change is similar in most countries. It is therefore not surprising that the principles of effective regulation around the world are converging. However, application of these principles will vary considerably, depending on the structure and state of evolution of a particular telecommunications market, the resources of the country, its legal framework and regulatory capabilities.

In the following sections, we review basic principles for effective regulation that can be applied in different circumstances.

1.4.1 Minimize Regulatory Intervention After Competition is Established

Regulation should be kept to a minimum, particularly in competitive markets. The evidence from around the world indicates that freely competitive markets are better able to meet the demands of consumers than government controlled ones. The advantages of privatization and liberalization can be lost, or severely limited by burdensome regulatory measures.

The extent of regulation should be geared to the state of development in a market, and particularly the level of competition. As competition increases, regulation should decrease.

However, there must often be decisive regulatory intervention in the early stages of market liberalization, in order to ensure effective competition has a chance to emerge. Clear decisions to remove barriers to competition early in the process will stimulate competition and permit greater deregulation down the line. While markets are being opened to competition, regulation should normally be focussed on the incumbent operators, whose networks must be open to interconnection and unbundled to permit new entrants to be viable.

There is a tendency among new regulators to try to be “even-handed” and to treat incumbent operators and new entrants the same. This approach can actually increase regulatory intervention over the longer term. It can impose unnecessary burdens on new entrants, and prevent implementation of “asymmetrical” regulatory initiatives that will open the PSTN to competition.

This lesson has taken some time to learn. Initially, for example, many regulators have declined to intervene decisively in interconnection disputes, suggesting that competitive entrants and incumbent operators should “freely negotiate” the terms of interconnection with the PSTN. It took years for some regulators to realize that most incumbent PSTN operators had few incentives to negotiate favourable interconnection agreements with their would-be

competitors. Rather than minimizing regulation, this hands-off approach can lead to repeated regulatory intervention on interconnection issues over a protracted period of time.

Over the years, more and more regulators have realized that decisive regulatory intervention is required to implement interconnection arrangements that will substantially increase competition. Such intervention includes proactive regulation, that is advance guidelines, as well as dispute resolution. Regulatory thinking is evolving on this subject.

Regulation of interconnection represents one of a small number of exceptions to the general rule. In most cases, regulation can and should be minimized. Interventionist measures should always be assessed against their objectives. Are the objectives valid? If so, are the measures the least intrusive means of achieving the objectives?

A recent European case provides an example where these questions were asked, and a less interventionist regulatory approach was adopted. For many years governments in various countries have administered testing and certification programs for terminal equipment attached to telecommunications networks. This approach was reviewed by the EU in an effort to reduce unnecessary regulation. As a result, the EU recently decided to abandon its previous approach to regulation of terminal equipment in favour of industry self-reporting. The 1999 EU *Directive on Radio and Telecommunication Terminal Equipment*, requires only manufacturers' declarations of conformity with essential requirements. This type of regime should permit new technologies to be introduced more quickly, with fewer regulatory delays or other barriers.

This European example may not be applicable in some developing countries, where, for example there is no effective frequency spectrum monitoring. However, in all countries, new regulatory measures should be assessed carefully to ensure they provide the most efficient means of achieving valid objectives.

1.4.2 Harmonize with Regional and Global Regulatory Standards

The basic technologies and economics of the telecommunications industry are the same around the world. Today, a small group of manufacturers is responsible for producing the majority of switching, transmission, terminal, software and related network facilities used almost everywhere. Even where there are variations in technology or local applications, the same basic network architectures are employed. The trend to harmonization of telecommunications technology is increasing.

The basic economics of telecommunications service markets is also the same in most countries. Businesses and consumers all demand telecommunications services, with increasingly advanced features, at the lowest possible price. Other things being equal, suppliers that meet that demand best will succeed. Those that fail to compete successfully will be bypassed by consumers and their competitors. While the ability of businesses and consumers to pay for services varies greatly, this variation does not account for the large differences in approaches to regulation around the world. Equally rich countries have often taken very different regulatory approaches, as have equally poor ones.

Regulatory differences are often ascribed to differences in the legal, institutional, political or cultural framework of different countries. These differences are important, but generally do not justify substantial differences in technical or economic aspects of regulation.

Telecommunications markets are increasingly becoming regional and global markets. While successful telecommunications service providers will always be close to their customers, they must think globally in terms of their business and competitive strategies. Regulators should do the same.

Regulators that impose uniquely local regulatory burdens, or more costly requirements than other countries, can handicap players in their national markets. Similarly, regulators that protect national operators from regulatory disciplines that apply in other countries are doing them no favours. Such regulators will retard competition, service innovation and possibly economic growth by failing to

implement the same pro-competitive regimes as neighbouring countries.

Over time, global regulatory standards or "best practices" are emerging. Some of those are evident from the list of major global telecommunications sector reforms in Table 1-1. Others are discussed throughout this Handbook. Examples of such standards are price cap regulation and targeted universal service funds (as opposed to inter-service cross-subsidy by incumbent PSTN operators). Other regulatory practices are newer, such as the various approaches to requiring unbundling of the local loop.

Some regulatory standards or practices are being adopted in trade agreements and other international accords. Prime examples are the regulatory disciplines included in the *WTO Regulation Reference Paper* (see Appendix A).

In this context, it is interesting to note that in late July 2000, the US announced that it would request WTO consultations with Mexico regarding that country's alleged failure to implement its commitments under the *Agreement on Basic Telecommunications*. This is the first time a country has taken a dispute on barriers to competition in a telecommunications market to the WTO. The three issues put forward by the US for the consultations are: 1) lack of effective disciplines over the former monopoly, Telmex, which is able to use its dominant position in the market to thwart competition; 2) failure to ensure timely, cost-oriented interconnection that would permit competing carriers to connect to Telmex customers in order to provide local, long-distance, and international service; 3) failure to permit alternatives to an outmoded system of charging U.S. carriers above-cost rates for completing international calls into Mexico.

Regulators that are concerned about maintaining the competitiveness of their domestic telecommunications markets should monitor international regulatory trends and become early adopters of trends that will increase efficiency and competition in their markets. Telecommunications regulation can be complex without re-inventing the wheel in each market. In most cases, economic and technical regulatory techniques that have proven themselves in some markets will work in other similar markets. Increased communication between regulators and regulatory organizations to harmonize regulatory approaches can certainly improve regulation.

1.4.3 Introduce Competition

It is widely recognized that the benefits of competition in the supply of telecommunications services and facilities far outweigh any disadvantages. Today, telecommunications markets have been opened to varying degrees of competition in most countries around the world.

Over the last decade, the most dramatic progress in liberalizing telecommunications markets occurred in Europe and other OECD countries. Most telecommunications services in Europe were provided on a monopoly basis at the beginning of the decade. By the end of the decade, over 96 per cent of the OECD market, measured by total telecommunications revenues, was open to competition.

Significant liberalization has also occurred in telecommunications markets in other economies throughout the Americas, Eastern Europe and the FSU, Africa and the Asia-Pacific region. Based on ITU data for 1999, the most open telecommunications markets globally were in cellular services (67 per cent) and Internet services (72 per cent). Basic telecommunications services markets remained fairly closed. About 73 per cent of global basic telecommunications markets continued to have monopolies at the beginning of 1999. However, there is no doubt about the trend. Basic telecommunications markets are being opened to competition in all regions. It is in this area that regulators will face the greatest challenges.

Regulatory involvement is generally required to ensure the establishment of viable competition. This is not the case in all industries. However, the structure of the telecommunications industry and the nature of telecommunications networks are such that regulation is required. Regulatory intervention is required to meet a number of objectives related to the introduction of competition. Key objectives discussed in detail later in the Handbook are:

- To license new competitors and existing operators on terms and conditions that will provide a

clear and certain basis for both to attract investment (see Module 2).

- To ensure interconnection of networks and services, and to resolve interconnection disputes (see Module 3).
- To prevent incumbent operators from abusing their dominant position to drive new competitors out of telecommunications markets (see Module 5).
- To prevent dominant operators from charging excessive prices for services over which they have market power, and using the proceeds to cross-subsidize their services in competitive markets (see Module 4).
- To ensure universality objectives are achieved in a competitive environment (see Module 6).

Without regulatory intervention to achieve such objectives, there is a good prospect that competition will fail to produce the benefits that have been achieved in the world's more competitive markets.

1.4.4 Regulate by Principle

Regulators are prone to regulate "after the fact". Sometimes, they wish to avoid regulatory intervention. In other cases, they are unsure of the right approach to take on a disputed regulatory issue. In some cases they do not have the resources and professional advice necessary to rule confidently on complex issues.

Delays in deciding major regulatory issues can retard development in the sector. Interconnection issues provide prime examples. If regulators do not provide clear advance guidance on interconnection principles, parties may negotiate for months or years, and service introduction will be delayed.

Regulators will understandably want to be careful to avoid decisions on complex issues without careful consideration. However, in many cases they can establish principles to be applied by the industry, without spending an undue amount of time on the details of implementation. Those details can often be left to the industry. Announcement of the principles in advance can often expedite industry discussions.

Good international practices are emerging on the principles for dealing with many types of regulatory issues. An example is the pricing of unbundled interconnection facilities. The calculation of telecommunications costs can be very complex and time consuming for a regulator. However, making a decision in principle that interconnection facilities should be priced at a level equal to estimated LRIC (Long Run Incremental Costs) plus a mark-up for forward looking common costs, is not that difficult. General principles and practices for such costing and pricing decisions have been adopted in many countries. Best practices are often clearly established and it is not that risky to adopt them.

Regulatory decisions, even ones to adopt general principles, should always be made in a transparent manner. Providing opportunities for public comment on whether a regulatory principle should be adopted will generally improve the quality of the decision as well as the credibility of the regulatory process.

1.4.5 Establish Operational Efficiencies

Sharing experiences with other regulators can often lead to operating efficiencies. Regulatory operations can clearly be more efficient today than ever before. The Internet, electronic filing of regulatory applications and electronic publication of regulatory decisions have vastly improved the efficiency and transparency of regulation. The costs of establishing a regulatory web site and arranging for electronic

Box 1-4: Highlights of 1999 Plan to Overhaul the FCC

- Receive 70% of filings electronically within two years, and by 100% within five years
- Reduce backlogs of pending items for action by 60% in two years; and by 100% in five years
- Reduce staff by authorizing "buyouts" of surplus FCC employees
- Authorize use of "nonagency experts and consultants"

filing of reports, applications and other regulatory communications has declined to a level where every regulator can use such approaches to increase regulatory efficiency.

Regulators have adopted many different approaches to improve operational efficiency. An example of one regulator's approach is set out in Box 1-4, which includes highlights of the FCC's plan to expedite its internal processes in the US.

1.4.6 Strategies for Effective Regulation in Developing Economies

While the principles of effective regulation are similar in most countries, some may be applied differently in developing economies. There are significant differences in resource and other constraints in developing economies from those of OECD economies. This obviously has implications for regulation. Regulators in developing and transitional economies have a greater need for practical and straightforward approaches.

Table 1-4: Regulatory Strategy Checklist: Primary (•) and Secondary (√) Benefits

Measure	Reduce Need for Agency Decisions	Enhance Regulatory Credibility	Use Resources Effectively
Accelerate competition	•	√	√
Prepackage regulatory rules	•	√	√
Establish rules for interconnection	•	√	√
Keep operators' obligations reasonable	•		√
Focus licensing on the main operators	•		√
Rebalance prices early	•		√
Reduce regulation as competition develops	•		
Adopt transparent process		•	
Harness public support		•	
Lock in principles through international commitments		•	
Outsource regulatory functions			•
Adopt alternative dispute resolution	√	√	•
Put the operators to work		√	•
Consider multisectoral agencies			•
Create regional capacity			•

Source: Smith, P. and Wellenius, B (1999)

The principles listed above can generally be adapted to the needs of developing and transitional economies. However, telecommunications experts with experience in telecommunications regulation in such economies have developed additional strategies, which have proven to be effective there. A good paper on such strategies was published by the senior telecommunications experts of The World Bank in 1999. The regulatory strategies checklist from this paper is reproduced in Table 1-4.