GUIDELINES ON REGULATION

United Nations Development Programme
International Telecommunication Union

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FOREWORD

The Regional Programme RAS 93/035 for the Governments of the Developing Countries of Asia and the Pacific is funded by the United Nations Development Programme and executed by the International Telecommunication Union. The programme addresses the subject of Economic Reforms through enhanced Transport and Communications Services. The objectives of this programme are to assist the reform of the telecommunication sector to facilitate the introduction of competition and a commercial approach. Under this programme, a set of guidelines on regulation, legislative issues, commercial options, tariffs, network and corporate planning, and procurement and project management are being issued, appropriate to the developing countries of the Asia-Pacific Region who have undertaken, or propose to implement sector reforms.

ITU Headquarters is conducting separate studies on a global basis on major topics under the Buenos Aires Action Plan.

This handbook on Regulation has been prepared by Mr. William John Withers, Senior Expert, attached to the programme RAS 93/035. This handbook will be supplied, to all member countries of the ITU in the Asia-Pacific Region, for their use.

P.K. Roychoudhury
Coordinator ITU RAS 93/035
ABSTRACT

‘HANDBOOK ON REGULATION GUIDELINES’

This ‘Handbook on Telecommunication Regulation’ was prepared and published by the ITU in 1995 for the Governments of the Developing Countries of Asia and the Pacific as part of a programme which addressed the subject of Economic Reforms through enhanced Transport and Communications Services. One of the components of this broad programme focused on telecommunications reform and was funded by the United Nations Development Programme and executed by the International Telecommunication Union.

The objectives of this programme were to assist the reform of the telecommunication sector to facilitate the introduction of competition and a commercial approach to service provisioning.

The handbook contains a set of telecommunication reform guidelines that discusses why some form of regulation in today’s telecommunication marketplace is required and also the broad historical perspective of economic regulation (Chapter II). In addition, the handbook presents a contemporary framework for telecommunication regulation (Chapter III), and an overview of regulatory issues in an environment of a reformed telecommunications market (Chapter V).

These guidelines are intended to address the issues of telecommunications policy and regulation in the context of a developing country and a reformed market. A brief explanation of the term “reform” may be appropriate as the application of such terminology is at times misunderstood.

While the term ‘reform in telecommunications’ may encompass a broad range of developments, it generally relates to a lessening of the role of monopolies (liberalisation) in the provision of services and, in the case of the Asia-Pacific Region, the lessening of the role of state-owned monopolies (privatisation). The terms - ‘corporatisation’, ‘privatisation’ and ‘liberalisation’ are also generally employed to describe certain ‘reform’ activities. For example, the ‘corporatisation’ of a state-owned operator may involve the application of more ‘commercial’ or ‘business-oriented’ practices in managing the business, and also a more precise separation of the business from the government’s policy and regulatory activities.

This handbook on telecommunication regulation was prepared by Mr. William John Withers, Senior Expert Telecom Policy and Regulation, ITU.
Regional Office for the Asia-Pacific Region located in Bangkok, Thailand.
ATTACHMENT

I A MODEL TELECOMMUNICATION ACT

II BUDGETS AND STAFFING LEVELS OF NATIONAL REGULATORY BODIES

III JURISDICTION OF MAIN TELECOM REGULATORY BODY IN THE CASE-EXAMPLE COUNTRIES

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CHAPTER I - INTRODUCTION

1.1 GENERAL

This handbook contains a set of telecommunication guidelines that discusses not only why we require some form of regulation in today’s telecommunication marketplace, but also the broad historical perspective of economic regulation, a contemporary framework for telecommunication regulation, a guide to the regulatory activities which should be addressed, and an overview of regulatory issues in an environment of a reformed telecommunications market.

The history of regulation in the telecommunication field is both lengthy and diverse. It has roots in many different socio-political and economic gardens. As a result, one may find a broad and expanding range of regulatory models. In fact, one of the less recognised by-products of telecommunication technology development during the last decade, is the development of a of diverse range of policy and regulatory models.

There is one underlying guideline which must be appreciated in developing a regulatory structure, that is, “THERE IS NO SINGLE ‘BEST PRACTICE’ REGULATORY MODEL!”

However, rather than models, there are some attractive characteristics such as transparency, objectivity, efficiency and relevance, that are critical to the effective functioning of any regulatory institution.

Therefore, while the structure and resulting model are important features, the critical operating characteristics are:

1) transparency,
2) objectivity,
3) efficiency, and
4) relevance.

Current literature on regulation, such as the recent ITU publication ‘World Telecommunication Development Report’ (1994), provides an excellent overview of the regulatory structures for a number of countries.
For purposes of discussion, it may be convenient to classify all regulatory frameworks into one of four different categories; namely, 1:

a) self-regulation by the state-owned monopoly operator,

b) separation of operator from policy-making and regulatory functions, with the regulatory role continuing to be carried out within the Ministry of the government which is responsible for policy, and in some cases retains overall responsibility for the dominant operator,

c) an independent regulatory function which either reports to a government Ministry, such as that in the UK and Australia, or an independent commission, such as in Canada and the United States,

d) no formal telecommunication regulatory function, for example in New Zealand where other legal structures such as the Commerce Commission or general government policy are relied upon to govern the industry.

As with the very nature of the systems that govern different geographical areas, the variation in regulatory models is the natural result of the environment in which they evolve. The differences in the functioning of the CRTC in Canada and the FCC in the United States may be largely explained by the differences between the British constitutional tradition and the US tradition. The latter laying an emphasis on maximising the separation of powers between different branches of government.

In summary, the historical roots of today’s regulatory regimes, whether they be in Europe, Asia or North America, lie in the social, economic, political and legal foundations of their respective states.

Regulatory institutions evolving in the developing countries of the Asia-Pacific Region, will also reflect their own historical roots from a legal, political, economic and social perspective.

A good example of the evolutionary aspects of regulation may be found when one compares the North American and the European models. Generally in Europe, including the UK, the economic history is, that telecommunication operators were state-owned, whereas in North America they were primarily investor-owned, except for three provincial-owned systems and the formerly federally owned international carrier Teleglobe in Canada. During the 1980’s, one of the provincial systems - Alberta, as well as the international carrier Teleglobe were privatised.

However, the preponderance of investor-owned systems in Canada and the United States led to a very different regulatory approach from that in Europe. Prior to the 1980’s and the privatisation of British Telecom, the telecommunication services in Europe were essentially provided by state-owned monopolies, except perhaps in Finland where a substantial number of co-operatives and also a state-owned operator provided service.

The result was that governments of stated-owned Operators naturally assumed the role of policy-maker and Regulator. Similarly in the Asia-Pacific region until the 1990’s, with the rise in liberalisation and privatisation, the provision of telecommunications was generally by a state-owned monopoly. As in Europe, there was little or no division between the state as owner, policy-maker or regulator.

These guidelines are intended to address the issues of telecommunications policy and regulation in the context of a developing country and a reformed market. A brief explanation of the term “reform” may be appropriate as the application of such terminology is at times misunderstood.

Reform in telecommunications may encompass a broad range of developments, however, it generally relates to a lessening of the role of monopolies in the provision of services and, in the case of the Asia-Pacific Region, the lessening of the role of state-owned monopolies. The terms - ‘corporatisation’, ‘privatisation’ and ‘liberalisation’ are also generally employed to describe certain ‘reform’ activities. The ‘corporatisation’ of a state-owned operator may involve the application of more ‘commercial’ or ‘business-oriented’ practices in managing the business, and also a more precise separation of the business from the government’s policy and regulatory activities.

In addition, the ‘corporatisation’ of the state-owned operator may be the first step in a process that leads to some degree of privatisation.

Therefore, the process of reform may involve both institutional and market structure changes. The following comments on the subject of reform are contained in a World Bank report:

‘The economic and political challenge of raising these funds and meeting the underlying demand for services, has given birth to a new pragmatism in sector policy. The role of state-owned monopolies is receding, and investment by private companies in

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the telecommunications sector is growing; the range of telecommunications suppliers is also increasing, specially for wireless services (i.e., cellular radio), and regulation is being refashioned'.

One final clarification may be useful and it relates to two terms - Policy and Regulation. Frequently these terms are employed incorrectly as homonyms. However, the division between policy and regulation is neither clear nor consistent. The division between policy and regulation is at times defined by way of explicit legislation. Given the rate of change in telecommunication and information technologies, the ability of legislators, policy makers and regulators, to not only keep abreast of developments, but also to anticipate them and take action is somewhat limited. This takes into account the nature of politics and bureaucracies.

However, with the rise in liberalisation and privatisation, there is not only a need to separate these functions, but also a demand that they be separate and distinct. The World Bank’s 1993 publication, entitled 'Telecommunications: World Bank Experience and Strategy', states the problem as follows:

“The single most troubling issue in recent reforms is slow progress in developing regulatory capabilities. Building up regulatory institutions where none exist, in countries with little or no regulatory tradition in any sector, is proving to be an arduous and long task.”

Notwithstanding these constraints, these guidelines will, hopefully, assist in making the task of regulatory development somewhat less arduous and more expeditious, than it has proved to be in the past.

There are a number of references throughout these guidelines to the subject of politics. These references are generally to the overall political process, both formal and informal. Concerning the general political process, it is imperative that both policy makers and Regulators recognise, that for meaningful and sustainable reform to occur, there needs to be the necessary political will to initiate and implement such reforms.

CHAPTER II - THE NEED FOR REGULATION

2.1 POLITICS, POLICIES AND REGULATION

The debate of whether economics is a science or an art may also be applied to the process of regulation. However, unlike economics, regulation is largely a function of politics, policies and reasoned judgement. One may argue that underlying economic principles of price regulation, provide a basis for claiming that there is at least some scientific influence on the regulatory price-setting process. However, even a cursory review of the extensive record of regulatory rate decisions in the most developed environments, reflects a continuous absence of the application of fundamental economic pricing principles to the setting of tariffs. That does not mean that they are not discussed and even extensively debated, but in the end one rarely observes a well-reasoned economic rationale for the final level of approved rates - the result of policies, politics or both.

The focus today has shifted from that of setting the overall rate of return and establishing cost-based rates, to that of fostering competition and employing some form of price-caps to establish overall tariff levels for the dominant supplier. This objective of unleashing the power of the marketplace is at times in conflict with another of the historical goals of regulation, that is, the achievement of universal service or other distribution goals. Some of the 'historic' regulatory issues such as rate of return, incremental versus fully distributed costs, allowable operating costs and appropriate depreciation rates, have been replaced in the era of reform, with other issues. These relate to the introduction of competition, such as appropriate interconnection charges, revisions in rate structures, and the need to increase basic penetration in the least developed and developing economies. They also relate, in the developed economies to the need to maintain the current level of penetration.

From a historical context, one must appreciate the evolving nature of state-owned telecommunication operators as they move through the corporatisation - commercialisation process. The separation of the government's role as owner and regulator and also as owner and policy maker will unleash new forces that will require new relationships to evolve. In addition, the rise of private interests will also unleash new forces that must be understood to appreciate the role of regulation in a reformed industry structure. More specifically, the 'Why' of regulation in a
restructured industry needs to be re-examined to reflect the new needs of
the marketplace. Therefore, it is not adequate to simply examine the historical nature of
economic regulation in the telecom industry and develop an appropriate
model based on this experience.

There are three forces that come into play when one considers an
appropriate regulatory model for both developed and developing
countries. These apply to those countries that are in the early stages of
structuring both a reform-oriented telecom policy as well as initiating a
corporatisation process, coupled with the commencement of a process to
separate the operations aspects of telecommunication from the policy
and regulatory responsibilities. These three forces may be seen in Figure
1 - The Forces of Change. They at times overlap one another while at
other times they are distinct from each other, and have their own particular
agenda and issues to be resolved.

In addition to these broad forces that interact and influence the “why” of
regulation, there is also another set of interactive relationships that
collectively formulate the core of the regulatory environment (see Figure 2 -
Why, What and How). Generally the ‘Whys, Whats, and Hows of
regulation are, or at least should be, interrelated and interactive. These
circles of activities overlap and when, and if, the general
telecommunications policy is defined or revised, there is, or should be, a
review and revision of the Why, What and How of regulation.

Therefore, from a broad perspective, not only are the reasons for
regulating influenced by economics, government policy and a country’s
historical institutional framework, but also the matters that are subjected to
regulation, as well as the regulatory process itself, are also influenced by
these three forces. For developing countries, that are embarking on the
establishment of an initial regulatory framework, it is essential that these
interrelationships be understood and taken into account when
establishing a policy and regulatory framework. This will ensure that
adequate resources are available to undertake the tasks identified in the
government’s policy statement.

2.2 WHY IS REGULATION NECESSARY

The notion of regulation may mean many different things depending on
the context in which it is used. For instance, in the transportation industry
the purpose of regulation for safety standards is as important, or even
more important, as that of setting rates. A similar statement may be made
for the electrical generating and transmission industries. Historically, however, regulation in the telecommunications industry has been associated with technical rate-setting and standard-setting with the emphasis generally on the
FIGURE 1

THE FORCES OF CHANGE

CORPORATISATION

LIBERALISATION

SEPARATION OF OPERATIONS REGULATION POLICY
FIGURE 2

WHY, WHAT AND HOW

- WHY REGULATE
- HOW TO REGULATE
- WHAT TO REGULATE
financial and accounting aspects of regulation such as rates, costs and rate of return. The broad answer to the question - why regulate - may be demonstrated by referring to the following quote:

"...it has long been accepted that some industries, in which competition is not fully effective, must be regulated by the government to protect the public interest."

One should note the phrase, '...industries, in which competition is not fully effective, ..' as it is the basis of not only economic regulation in a monopoly environment, but is also relevant to the environment of a reformed industry structure, which is more important to the task at hand.

Technology has lowered the barriers to entry and investors are prepared to gamble. However, these are not sufficient conditions to satisfy the public purpose with respect to the outputs of the telecommunication industry. Left to its own devices, the telecommunication marketplace following the liberalisation path, and in the absence of effective regulation, will revert to either one of monopoly supply or become a contested market. The shares of such a market will essentially be determined by the dominant operator. However, one should not conclude that the sole basis for the evolution of regulation was for purely economic reasons. Phillips describes it as follows:

"Yet, if economic power is not to be controlled by the market, it must be controlled by public authority, for a firm's contribution to the general welfare, rather than being the result of voluntary choice, must be compelled. Some regulation, moreover, may be undertaken for social or political reasons, such as promoting regional development or for national defence purposes. There is a high degree of public interest attached to the services rendered by the regulated industries - a fact that is the primary legal basis of regulation. Finally, regulation is undertaken by administrative commissions that have been established with jurisdiction over the rates and services of these industries."

In summary, the answer to the question - why regulate - when placed in the historical context of a monopoly telecommunication marketplace may be answered as follows:

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1 Charles F. Phillips, Jr., 'The Economics of Regulation', Irwin-Dorsey Ltd., Georgetown, Ontario, Canada, 1969, p.3.
2 Ibid, pp. 4 and 5.
a) competition not effective therefore a need to protect the public interest;

b) regulation undertaken for social or political reasons - regional development or national defence purposes;

c) high degree of public interest attached to 'infrastructure' industries such as electric power, public transportation and telecommunications is the legal basis for regulation, and

d) government policy delegates powers to an administrative commission to regulate rates and services of 'public utilities'.

However, in response to the question - Why Regulate - in the contemporary context of a government policy to liberalise the provision of new telecommunication services, such as cellular or other services that may historically have been provided by a monopoly supplier, the response may be as follows:

a) to facilitate successful competitive entry,

b) combat abuse of market power over 'bottleneck' services such as local exchanges,

c) to act as a "surrogate" for competition by keeping dominant PTO under pressure until competitive pressures are sufficient to perform the same function, and

d) to redistribute benefits through rate structures for the purpose of achieving social objectives such as universal service through lifeline rates or the provision of services to the hearing and physically impaired.

Therefore, in responding to the question - Why Regulate - one should first determine whether it is being raised in the context of a monopoly environment or in the context of an environment, where Government has decided to liberalise the provision of some or all telecommunication services.

While historically the focus of economic regulation in the telecommunications industry was generally on setting both tariffs and rates of return at 'just and reasonable' levels, the mandate for 'new era' Regulators such as Austel in Australia tends to focus on the introduction of competition, that is, the regulation of multiple suppliers as opposed to the tariffs and earnings of a single supplier.

Therefore, the reasons for undertaking some form of regulation are usually neither simple nor singular. In part, regulation is undertaken for economic purposes because a particular market is considered inadequate in setting efficient prices. In part, regulation is often undertaken for political and social purposes. While these may be the general reasons for undertaking some form of public regulation, to respond to the question of -Why Regulate - in a more particular fashion, it is necessary to examine the specific mission of the regulatory body in question. The role which the State has defined for the particular regulatory body is the more specific answer to the question. The State must define the expectations it has, for its duly appointed administrative tribunal. The clearer and more concise that definition, the higher the probability, that an efficient and effective regulatory process will evolve.

2.3 Current Situation in the Asia-Pacific Region

Historically there has not been an extensive formal economic regulation of telecommunications in the Region. Generally rates have been set in an informal political environment with final approval located in the Ministry of Finance. A preliminary survey of 24 countries in the region revealed the following:

<table>
<thead>
<tr>
<th>ITEM SURVEYED</th>
<th>RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major policy decisions</td>
<td>In the government with Regulator playing a role in a few cases</td>
</tr>
<tr>
<td>Initiation of Policy</td>
<td>Ministry of Telecommunications with a very few cases involving public hearings</td>
</tr>
<tr>
<td>Location of regulatory authority</td>
<td>Generally within the sector Ministry or in a semi-autonomous government body.</td>
</tr>
<tr>
<td>Regulatory functions</td>
<td>Rates, spectrum management standards and performance.</td>
</tr>
<tr>
<td>Regulatory financing</td>
<td>Mostly by government vote on</td>
</tr>
</tbody>
</table>
In most cases surveyed in the Region, the Regulatory Authority rests in the Ministry either directly or through the agency of a Director-General. In a few cases semi-autonomous bodies have been set up. In one case an independent body has been set up. Outside the survey, one case is known where there is no specific regulation within the telecommunication sector, regulation being effected by application of the general laws relating to trade and commerce.

As far as liberalisation is concerned, the survey revealed, that, whilst various degrees of liberalisation are taking root in an increasing number of specific telecommunication sub-markets, such as wireless access and customer equipment, substantially less liberalisation has taken place in the domestic and international long-distance market. Competition in the local telephone sector is extremely rare.
CHAPTER III - THE FRAMEWORK

3.1 CORNERSTONES FOR A FRAMEWORK

One way of presenting an overview of the regulatory process, is to consider or classify the major elements or the basic foundation of the regulatory environment as a framework (see Figure 3 - Regulatory Framework/Cornerstones) made up of the following four elements:¹

1) LEGAL INSTRUMENTS
2) THE REGULATORY ORGANIZATION
3) REGULATORY BODY RELATIONSHIPS
4) REGULATORY BODY WORKING METHODS

These basic elements may be considered as the sides of the regulatory framework. They form the essential limits of the environment within which the regulatory process functions. It should be noted that as a regulatory body develops a record of decisions, these will also become important elements of the framework. However, they may be considered to be included in the legal or the working methods element, for simplification.

Each of the elements defines certain parameters of the regulatory environment and, as a result, determines the boundaries of the process. For example, where does the elusive subject of Telecommunications Policy fall?

The simple answer is that it depends entirely on the scope of the policy. For instance, an extensive policy would probably influence every element from the legal aspects to the working methods. Whereas, a very limited and focused policy may only impact 'legal instruments' and the 'relationship' elements.

This matter of telecommunication policy versus regulation deserves some attention at the outset to avoid confusion later on in the process. First, policy matters are generally addressed by the government and not the Regulator. In the case of telecommunications, policy objectives may range from the liberalisation of the industry, which is a very broad and somewhat general objective of the government, to issuing a license and

specifying the terms and conditions for a new long distance voice operator. An example of different
FIGURE 3

REGULATORY FRAMEWORK/CORNERSTONES

ORGANISATION

POLITICS

Policies

PUBLIC PURPOSE

WORKING

RELATIONSHIPS

METHODS

LEGAL
approaches in distinguishing between what is policy and what is regulation, is that of Australia versus Canada on the matter of regulating local exchange rates.

In Canada, the matter of setting specific rates is delegated to the Regulator by way of government legislation. The Canadian Telecommunications Act (1993) refers to the matters of rates under Section 7 (Canadian Telecommunications Policy), Part (b), which reads as follows:

"(b) to render reliable and affordable telecommunications services of high quality accessible to Canadians in both urban and rural areas in all regions of Canada;"

In addition, the Act also contains a more explicit direction to the Regulator on the matter of setting rates. Part II (Rates, Facilities and Services) of the Act contains the following paragraph:

"27. (1) Every rate charged by a Canadian carrier for a telecommunications service shall be just and reasonable".

However, in Australia, the matter of setting rates is the direct responsibility of the Minister. As described in a recent APEC report which reads, in part, as follows:

"Part 6 of the Australian and Overseas Telecommunications Corporation Act allows the Minister to determine price control arrangements for Telstra. The Minister determined on 26 June 1992 that Telstra comply with a schedule of price cap arrangements for telephone services."1

Thus one of the most fundamental tasks of economic regulation - the setting of rates - is performed by the Regulator in the case of Canada and by the Minister in the case of Australia. Therefore, based on the notion that the government makes policy whereas the Regulator implements policy, one could conclude that the setting or rates in Australia is a matter of policy whereas in Canada it is a matter of regulation. As a further example of the diverse nature of the approach to setting rates, in the UK,

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the regulator, Oftel, sets the level of rates using the price-cap approach, as in Australia; however, the rates are set as a condition of British Telecom’s license.

Another approach to “regulating” basic telephone rates is that employed by the Government of New Zealand. While no ‘formal’ telecommunication regulator exists, the Government of New Zealand, prior to the privatisation of the operator, established three “residential service obligations” on the Telecom Corporation. These obligations contained three rate-setting principles which were as follows:

1. local ‘free’ calling will remain a tariff option for residential customers;
2. the rate for a residential line will not rise faster than the Consumer Price Index unless operator profits are unreasonably impaired; and
3. rural residential rates will be no higher than urban rates and residential service will remain as widely available as it is at present.

These four examples of the rate-setting process, illustrate the degree of overlap which exist between matters of policy and matters of regulation. Each government will determine “as a matter of policy” the rate-setting method they intend to apply and the amount of authority, if any, they intend to delegate to a formal telecommunication regulatory body. For example, some countries may like to set the rural rental rates at a lower level as part of their social objectives.

The purpose of these examples is to demonstrate the importance of putting the entire matter of Regulation in a definable context within which all the individual pieces and programs may be placed. Thus by using the framework one may "allocate" to one of the four basic elements such activities as Public Notices, Rules of Procedures, the Regulator’s annual report, the Ministers’ statement on Policy or the funding of the regulatory process.

Therefore, when embarking on the building of a regulatory process, one of the initial tasks is to determine whether any components of the four elements of the framework already exist. For example, it is necessary to identify and review all existing legal instruments that relate to telecommunications in general or to telecommunication companies.

This inventory of legal instruments and related documents, such as the existence of a license for the current operator, is an essential early step in the process of developing an independent regulatory body.

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1 Ibid., Volume 2, p. 92.
Returning now to the matter of differentiating between policy and regulation (See Figure 4 - Policy/Operation/Regulation), the decision to either delegate functions such as rate-setting to a Regulator or retain them as a Ministry responsibility is a matter of policy and each government makes such decisions and implements them by way of legislation.
FIGURE 4

POLICY/OPERATION/REGULATION

POLICY

OPERATION

REGULATION
Therefore, while the setting of rates is generally considered a economic function of regulation, it is at times performed by a Minister and not a Regulator appointed by the government.

### 3.2 LEGAL INSTRUMENTS

Given the quasi-judicial nature of the regulatory process, or at least the desired nature of the environment, it is to be expected that the nature of the legal instruments will form an important aspect of the overall framework. In fact, because of the critical nature of the legal instruments, a separate set of guidelines is available to address this aspect of the framework (see Attachment I).

It is most appropriate to have placed the matter of legal instruments first in the list of cornerstones for building a regulatory framework; however, one should not fail to keep these legal instruments in perspective. These elements of the framework are expressions of government policy and, as such, may be subject to amendment or retraction by the government.

It should be noted that the existence of these legal instruments whether they be referred to as laws, statutes, ordinances, decrees, declarations or proclamations, introduces into the regulatory process the discipline of law. Each individual countries’ legal structure will determine the process for adjudicating disputes, should they arise.

### 3.3 THE REGULATORY ORGANIZATION

The size of the regulatory body, which includes all staff and appointed or otherwise selected members of the decision-making body, should be determined by the following three factors:

1) scope of Regulator’s mandate.

2) degree of initiative by Regulator to set agenda and conduct public proceedings.

3) overall industry size and degree of liberalisation.

The scope of the organisation’s mandate, as set out in the telecommunications legislation, will determine, for instance, whether their jurisdiction is limited to only telecommunications operators providing basic telephone service or if there is a broader mandate, that
encompasses activities such as broadcasting and/or cable television. In order to simplify this discussion, the assumption is made that the scope of the jurisdiction is limited to telecommunication operators. Therefore, it will be a function of the basic telecommunication legislation and the rules and procedures, if any, adopted by the Regulator. The scope, as defined by the legislation which defines the powers and duties of the regulatory body, may include such activities as licensing, tariff approval, frequency management, interconnection approval, and quality of service monitoring.

However, as previously noted, the scope of the Regulator may be more limited should the government retain the authority for one or more of licensing, tariff approval, interconnection and/or frequency management functions. Therefore, the resources required to implement the regulator’s mandate will be, in part, a function of the authority delegated to the Regulator by the government. Another factor which defines the scope of activities, is the degree of initiative which the Regulator elects to exercise by setting priorities. For instance, in the case of operator interconnection and the introduction of competition in the long distance segment of the market and assuming the Regulator has been given jurisdiction to approve interconnection terms and conditions, the scope of activities may be limited if the Regulator simply directs the respective parties to negotiate an interconnection agreement and submit it for approval. However, the scope of the activities would be substantially extended, should the Regulator elect to conduct an extensive public proceeding on the matter of the terms and conditions of interconnection. Notwithstanding the approach taken with respect to interconnection, a broader parameter for the sizing of the regulatory organisation is the size of the industry that is to be regulated. For instance, the volume of activities for a national Regulator in India with a 1994 population of some 913 million, and annual telecommunication revenues of some 2.1 billion (U.S.) in 1993 should be considerably larger than that required for Sri Lanka with a 1991 population of some 18 million and annual telecommunication revenues of some 172 million in 1994.

In terms of planning an initial budget for a regulatory agency, Attachment II presents the 1991-92 fiscal year budget and staffing for four countries, Canada, France, UK and USA. While the budget and staffing levels presented in Attachment II provide a reference point, it should be noted that each of the regulatory bodies has a somewhat different mandate. Therefore, any meaningful comparison is not easy, given not only the

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differences in mandate, but also the size and structure of their respective industries.
3.4 REGULATORY RELATIONSHIPS

An effective regulatory body will be one, that is aware that it is a member of a much larger organisation and, as a result, must function as an integrated part of the overall government organisation. Its members must also ensure that both formal and informal lines of communication are established and maintained with all relevant government departments and agencies (see Figure 5 - Regulatory Relationships). The key relationships should be that between the senior Regulator, possibly the Chairperson of the board or the Director-General, and the Minister responsible for telecommunications, as well as with the Permanent Secretary or Deputy Minister responsible for telecommunications. The telecommunications legislation may define some of these relationships, by specifying the process for appointing members to the regulatory body or requiring the filing of an annual report by the regulatory body with the national legislature.

Notwithstanding the importance of the relationship with the Minister and the Legislature, the one relationship which should be paramount, is that between the agency and the consumer. The objective of regulation is generally to ensure that the consumer receives services of good quality in a non-discriminatory fashion at just and reasonable prices. Therefore, the onus is on the Regulator to maintain good channels of communication between itself and the marketplace which it regulates.

In cases where certain markets are liberalised, the Regulator may have the added responsibility of ensuring that the consumer has a choice between a number of suppliers and that market participants do not employ anti-competitive practices.

Another set of relationships which exist in the regulatory environment, are those with the Courts of Law. There are three general ways in which the courts play a role in regulation. One is, as an avenue for appeals against certain regulatory decisions, as is the case in Canada, New Zealand, and the United States. For example, a plaintiff may complain to the courts that a particular decision-making process followed by a Regulator was unfair and/or discriminatory. A second way the courts may become involved is in settling matters of jurisdiction between different regulators, such as those at the Federal and Provincial or State levels.
FIGURE 5

REGULATORY RELATIONSHIPS

CONSUMER
- SERVICE
- PRICE
- CHOICE

REGULATORY BODY

COURTS OF LAW

MINISTER

OPERATORS REGULATED UNREGULATED

COMMERCE COMMISSIONS ANTI-COMBINES POLICY

INTERNATIONAL RELATIONSHIPS
A third way the courts may become involved, is by enforcing the competition or anti-trust laws. Examples of this type of involvement have occurred in Chile, New Zealand and the United States.

Besides the influence of the legislature and the courts on telecom policy and regulation, a third area of influence is that which originates from agencies that implement and administer competition or antitrust policy. One example is the Commerce Commission in New Zealand, that has had a very direct involvement in telecom policy and regulation, due to the absence of a formal telecom Regulator and the adoption of the 'light handed' approach to telecom regulation by the government.

A final set of relationships are those in the international arena. These involve the matter of addressing international issues and relationships with International Institutions.

In cases where the Regulator is part of the Ministry, and not an autonomous agency, the co-ordination and administration may be more easily achieved. However, no matter which type of structure exists, it is essential to recognise that international issues such as tariffs, accounting rates, and settlement procedures, cannot be separated from domestic telecom regulatory matters.

### 3.5 REGULATORY WORKING METHODS

The general requirements of good management dictate, that matters to be addressed by any regulatory body need to be reviewed, analysed and decided upon, in an orderly manner. Given the list of issues and the volume of material which may be placed before it, a regulatory body, particularly one in both the early days of its evolution and in the midst of demands for industry reform, liberalisation and/or commercialisation, must establish a prioritised agenda and some basic rules of procedures, to organise the related workflow.

This last 'side' of the Regulatory Framework, shown in Figure 3, is essential for the good management of the regulatory organisation.
The subject of 'Working Methods' may be divided into a number of interrelated activities which may be described as follows:

1) Agenda setting,
2) Informing the public,
3) Process of Consideration,
4) Process of Decision Making,
5) Appeals,
6) Implementation, and
7) Enforcement.

Turning to the subject of how the Regulator may process the items on the agenda, the subject of 'Working Methods' encompasses both the process of developing the regulatory agenda, as well as managing the process itself.

The process of informing or communicating with the public is one of the fundamental requirements of an open system and defines whether a particular administration not only functions in the public interest, but also strongly conveys the positive picture, of functioning for the public purpose.

As mentioned in the 'Introduction', one of the attractive characteristics of good regulation is 'transparency'. Without a sufficient degree of clarity, neither the regulated organisations nor the public, can optimise the performance of the regulator. Therefore, a lack of transparency may not only will lead to a loss of efficiency in the regulatory process, but also a loss of relevance. For if the Regulator fails to take into account the views of the marketplace - those of both buyers and sellers - and thereby, does not consider all the relevant facts, it will, over time, become less relevant in terms of meeting its' obligation of serving the public purpose.

The remainder of the processing activities are; the process of consideration, process of decision-making, the appeals process, the implementation and enforcement mechanisms. While there are a number of approaches for each of these activities, it is important to note, that whichever is selected will reflect a certain aspect of the Regulator’s style. Therefore, if the intention of an administration is to retain the maximum amount of control over both the items which appear on the agenda, as well as the final outcome, a very informal approach to consideration and decision-making could be adopted. This may limit the amount of information being made available to the public, and the overall process becomes more private and suffers from an absence of transparency.
On the other hand, a more open or public process will foster participation, and a formal set of procedures will inform interested parties, of both the issues to be considered and the agenda, in terms of dates and the scheduling of the various submissions and replies.

The other underlying consideration in establishing a regulatory style is that of cost. Generally, the more formal and extensive the consultation process, the more costly the process. Therefore, the general trade-off in style is between 'openness' and 'costs'.

The debate of openness vs. costs will be explored further in the next section, but for the moment it is sufficient to simply be aware of the issue in terms of its influence on the regulatory framework. One further aspect of this issue relates to a previous discussion on regulatory organisation and its related costs. Clearly, the present size of the industry to be regulated in terms of the number of operators, total revenues and number of market segments, for example, cellular, radio-paging, etc., will have some bearing of the regulatory needs. However, the current size and complexity of the market(s), and the scope of the Regulator’s mandate are the more predominant variables of regulatory costs. For example, a Regulator with a mandate for both telecommunications and broadcasting may realise some economies of scale and scope. Similarly, a Regulator with responsibility for the setting of rates, interconnection, licensing and spectrum management may also benefit from economies of scope and scale.

Therefore, three of the significant variables in the regulatory cost function are the size and complexity of the marketplace(s), and the scope of the regulatory mandate.

These factors are particularly critical to governments of developing countries where professional resources are limited and regulation is being undertaken for the first time.
CHAPTER IV - THE MISSION, ORGANIZATION AND FUNDING

4.1 WHAT IS THE MANDATE OR MISSION

We are now at the point in the process where the State, the Government and/or the Minister delivers the mission statement to the Regulator. This mission statement or mandate from the government may be contained in a number of different forms. For instance, it may be contained in a policy paper on the telecommunications industry in general. In addition, it may be contained in legislation which sets out the role of the regulator. What should be noted is that, whatever form the mission statement takes, it is imperative that it be a public document. Ideally the document will also be the product of a public process which permitted all interested parties to comment on the government’s proposed policy initiatives. Recently there have been examples where the telecom mission statement of the State, which included their objectives for the telecommunications industry, was embodied in the legislation itself. Two recent examples of this approach are Australia and Canada.1 Another technique is for the government to issue a telecommunication policy paper which sets out its’ objectives for the industry. An example of this approach being applied to a group of countries is the European Community’s Green Paper adopted in 1987.2

Certainly from the standpoint of passing a clear and concise message from the government to the Regulator, the incorporation of the key objectives for the country’s telecommunications industry into the legislative mandate of the regulatory body is a sound approach. However, if such objectives are incorporated into the enabling legislation, they should be broadly based goals which will remain relevant, notwithstanding the rapid changes in technology. As a result, the enabling legislation will permit a certain degree of flexibility which will permit the Regulator sufficient discretion to address issues which may arise due to technological changes in the future.

Before turning to the specifics of the regulatory mandate, it is important to appreciate the broader environment within which a regulatory model is formulated. Each set of unique national circumstances (see Figure 6 - Modifiers of the Regulatory Model) will determine the eventual components

1 Australia Telecommunication Act 1991, Section 3; Canadian Telecommunication Act 1993, Section 7.
of the mission statement which the government issues to the regulatory organisation as well as the process employed to communicate the objectives to
FIGURE 6

MODIFIERS
OF THE REGULATORY MODEL

HISTORIC INSTITUTIONS
LEGAL, STATE-OWNED
MONOPOLIES, GOVT. ADMINISTRATION

GOVERNMENT
TELECOMMUNICATIONS
POLICY

WHY
WHAT
HOW
OF REGULATION

ECONOMICS/FINANCE
- PRICING
- FINANCIAL - RISK/REWARD
- OVERALL ECONOMIC DEVELOPMENT
- STATE OF DEVELOPMENT OF
NATIONAL NETWORK

INTEREST
GROUPS
the Regulator. These unique, country-specific set of characteristics may be described as follows:

1. **OVERALL LEVEL OF ECONOMIC DEVELOPMENT**, 
2. **STATE OF DEVELOPMENT OF THE NATIONAL NETWORK**, 
3. **HISTORICAL FRAMEWORK OF INSTITUTIONS**, 
4. **CONSTITUTIONAL PROVISIONS**, 
5. **LEGAL SYSTEM**, 
6. **NATIONAL TRADITION OF PUBLIC ADMINISTRATION**, and 
7. **THE ROLES AND DIVERSITY OF INTEREST GROUPS**.

As a result of the role of these modifying factors, there is no single model that may be considered ideal for all developing or developed countries. There are, as a result, a broad range of general models from that of New Zealand where no formal telecom regulation exists to that of Canada where the model for telecommunication regulation has been evolving for many decades. Even if one groups the developing countries or the less developed countries, there is still no single model for countries in these particular groups. While countries grouped together by economic criteria may have some very similar characteristics including the state of development of their national networks, they may differ considerably when one examines their institutional frameworks and legal systems.

One factor not listed in the above-mentioned list of modifiers, is that pertaining to the government’s position on liberalisation. The discussion in this paper is based on the assumption that there will be some degree of liberalisation permitted, for example, competition may be permitted in the terminal equipment market and also in the cellular telephone market or in the enhanced services market.

Therefore, given the assumption that some degree of competition will be permitted, the mission for the Regulator may be further defined. In an environment with an element of liberalisation, particularly where competition is initially being introduced, a number of issues are raised

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which the Regulator must address. These issues may be described as follows:\footnote{\textit{Options for Regulatory Processes and Procedures in Telecommunications}, ITU, Geneva, Switzerland (1993), op. cit., pp. 9 and 10.}

- PREVENT OR CORRECT ABUSES OF MARKET POWER BY THE DOMINANT PTO,
- ENABLE NEW PTO AND SERVICE PROVIDERS TO BECOME ESTABLISHED,
- THE REGULATOR ACTS AS A ‘SURROGATE’ FOR COMPETITION AND MAINTAINS PRESSURE ON THE DOMINANT PTO TO PERFORM WELL UNTIL COMPETITIVE PRESSURES ARE SUFFICIENT TO TAKE OVER THE ROLE, and
- THE REGULATOR MUST SUPPORT DISTRIBUTIONAL GOALS SUCH AS SERVICE TO DISADVANTAGED GEOGRAPHICAL AREAS OR SEGMENTS OF SOCIETY.

While the above objectives are suitable broad goals for regulators operating within an environment of liberalised markets, a more specific list of particular reasons to regulate may generate a mission statement with the following items:

1. UNIVERSAL SERVICE,
2. USER INTERESTS,
3. CHANGE INDUSTRY STRUCTURE,
4. MOVE TO LEVEL PLAYING FIELD,
5. SUPERVISE DOMINANT PTO,
6. STIMULATE INNOVATION,
7. TECHNICAL PRE-CONDITIONS,
8. MANAGE COMMON RESOURCES, and
9. STIMULATE INVESTMENT IN THE NETWORK.
Another approach to responding to the question of - 'What to Regulate' - is to refer to the government’s specific legal mandate or decree which may require the Regulator to do one or more of the following:

1. SET TECHNICAL STANDARDS,

2. LICENSE CARRIERS,

3. REGULATE CARRIERS’ PRICES (TARIFFS),

4. MONITOR QUALITY OF SERVICE AND INITIATE CORRECTIVE ACTION IF NECESSARY,

5. APPROVE PROGRAMMES FOR CONSTRUCTION AND CAPITAL INVESTMENT,

6. SET FINANCIAL, ADMINISTRATIVE AND TECHNICAL TERMS FOR INTERCONNECTION,

7. CONTROL THE TYPE-APPROVAL OF CUSTOMER PREMISE EQUIPMENT AND ITS CONNECTION TO THE PUBLIC NETWORK, and

8. CONSIDER COMPLAINTS FROM USERS AND TAKE CORRECTIVE ACTION IF NECESSARY.

To demonstrate the relationship between the general policy objectives identified in a mission statement and the list of specific regulatory activities identified in a legal mandate, Schedule I presents both the general policy matters and a related list of legally mandated activities.

### Schedule I

<table>
<thead>
<tr>
<th>WHY</th>
<th>WHAT</th>
<th>HOW</th>
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<tr>
<td>General Policy Statement</td>
<td>Legal Authority</td>
<td>Model Telecommunication Act'</td>
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<tr>
<td>1. Universal service</td>
<td>Conditions Of License</td>
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<td>2. User interests</td>
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<td>3. Change industry structure</td>
<td>License Carriers</td>
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<td>4. Move to level playing field</td>
<td>Monitor QOS, set prices,</td>
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<td></td>
<td>approve interconnection</td>
<td>S.60-63</td>
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<tr>
<td></td>
<td>and capital plans</td>
<td></td>
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<tr>
<td>6. Stimulate rivalry</td>
<td>License carriers interconnection terms</td>
<td>Part IV, S.27-38</td>
</tr>
<tr>
<td>7. Technical pre conditions</td>
<td>Type approval of customer</td>
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<td></td>
<td>equipment</td>
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<td>8. Manage common resources</td>
<td>Spectrum Management</td>
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</tr>
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</table>

While the above lists of activities and mission goals may appear extensive, it should be noted that the process of setting priorities, particularly for newly created regulatory bodies in both developed and developing countries, is a crucial activity. This has been the case in both the UK and Australia where regulatory bodies were formed during the 1980’s in concert with privatisation and liberalisation initiatives. The Regulators in both these countries have continued to evolve in response to changing government policy and in recognition of the needs of the marketplace for such matters as setting interconnection terms and administering a national numbering system.

The need to maintain a flexible and dynamic policy development and regulatory process, in order to effectively address both the rapid technological changes and resulting service offerings, must be an essential feature of both the policy mandate as well as regulatory process. What is frequently lacking in the policy/regulatory process of established economies, is this essential element of flexibility.
A further set of activities may also be considered when formulating a plan for implementing a regulatory body. These activities relate to the following:

1. the control and use of radio frequencies,
2. the licensing and/or otherwise regulating broadcasters,
3. the licensing and regulation of cable TV, and
4. the economic regulation of other public utility industries such as electric power and transportation.

While these activities may be governed by different government policies from different ministers or departments, they may be considered for inclusion under a single Regulator along with telecommunications for the following reasons:

1. that technology changes are leading to the convergence of telecommunications, computers and broadcasting,
2. the limited resources available in developing countries for staffing regulatory bodies, and
3. the enhanced ability to coordinate and integrate policies and regulation in telecommunications, broadcasting, multimedia with other infrastructure industries.

An example of the range of regulatory activities in the nine case-example countries studied in the 1993 report of the ITU (see Attachment III) demonstrates the range of responsibilities delegated by the various governments to their respective regulators.

The strongest case for combining telecommunications and broadcasting rests with the technological reality of convergence. This reality, coupled with that of economising on the resources available, requires the matter to be given due consideration, particularly, in cases where governments are developing an initial regulatory framework for telecommunications and there is scarcity of regulatory skills.

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This concept has been raised by other observers and writers, as reflected in the following:  

"It is also clear that distribution technology for broadcasting is converging with that for telecommunications. Similarly, distinctions between radio-based telecommunications networks and those based on fixed-wire and fibre are converging. A regulatory framework based on artificial boundary lines between different forms of contents and methods of distribution will therefore become increasingly ineffective. This is the case in most jurisdictions now."

Therefore, the task of beginning to construct an initial regulatory process should encompass the following five steps or activities:

1. develop a government telecommunication policy, and/or broader information industry policy,
2. translate the policy into legislation/decrees,
3. construct a regulatory organisation to reflect the mandate,
4. ensure the method of funding is established and independent,
5. establish regulatory procedures to govern the processing of matters subject to jurisdiction.

An overview and checklist of the policy, regulatory and legislative issues associated with liberalisation, corporatisation and privatisation, is presented in Attachment IV. However, as indicated above, the first and most critical step in the process is the development of a government telecommunication policy, or if a broader view is desired, an information industry policy. For developing countries, this policy document need not be a comprehensive document covering all aspects of the telecommunication or information industry. However, it should certainly identify and, if possible, quantify a few key government objectives for the industry and delegate certain responsibilities for achieving them. Generally, the most pressing matters for the lesser developed and

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developing countries is increasing the availability of basic access and lowering of the high tariff levels for international calls.

4.2 REGULATORY RESOURCES

The labour and capital resources required to implement the government’s mandate for the information industry, are generally overlooked, underestimated, and are as a result inadequate. Although these are not large relative to the magnitude of the overall industry resources or to the loss in efficiency, if the factors of production are not optimised, they require to be properly considered. On the other hand, allocating excessive labour and capital to the regulatory process, under the guise of effectively implementing the government’s telecommunication mandate may also result in less than optimum results from the industry as a whole.

Therefore, the dilemma is reaching an effective balance between the inadequate and excessive extremes. However, the risk of the latter in the lesser developed and developing countries is extremely remote. One of these reasons is that the availability of highly technical regulatory resources in the less developed countries is limited. This matter was commented on in a number of papers in the past. As early as 1989, the following comments on the subject of the shortage of human resources was commented on as follows:

“3. The Major Issues

3.1 Human Resource Development

3.1.1 Possibly the most significant issue underlying almost all the problems in developing countries is human resource development. Shortages of skills at all levels, including technical, operational, managerial and planning frustrate the performance of most aspects of telecommunication system improvement and expansion. Despite major efforts at training programmes by ITU, the UNDP, the World Bank and other agencies, shortages of skilled personnel remain severe. Often the most skilled staff in developing countries are attracted to higher paying positions in the telecommunication field in the wealthier countries, or to other sectors within the country.

3.1.2 The creation and establishment of conditions to promote human resource development is the key to resolution of most, if not all, of the other problems. Policies and institutional arrangements must be established that will permit human
resources to be nurtured along the learning curve to the stage of maturity, and employed for the benefit of each country’s telecommunication system development.1

This issue of a scarcity of skilled resources for regulation was also commented on in a recent World Bank publication which reads, in part, as follows:

“The regulator’s staff lack the essential technical qualifications and training (e.g., in accounting, financial modelling, law, engineering) to perform crucial tasks, and budgetary or civil-service rules prevent timely recruitment of qualified personnel to remedy the situation.”

The World Bank paper2, in addition to identifying regulatory staffing as a shortfall, also listed the following five other “regulatory shortfalls”:

1. **autonomy** regulator within ministry or, if separate, lacks a firm legal mandate and/or the necessary political independence due to inadequate legislation or decree, the power of special interests, staff limitations or uncertain funding;

2. **mission** lack of mission statement which may reflect a lack of political independence and therefore without an agreed set of goals and priorities, it is unlikely a newly appointed Regulator will acquire the appropriate resources, either human or capital, to fulfil their mission;

3. **price control and accounting rules**;

4. **interconnection rules**; and

5. **oversight of corporate transactions**.

Smith and Staple also suggest that the first three shortcomings - autonomy, mission and staffing - are often the cause of the other

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ibid. p. 70.
weaknesses. In addition, they suggest these latter shortcomings may also be due to a shortage of accounting, financial and other data.

This list of shortcomings and their related analysis, certainly identifies the human resource problem as being central to addressing the overall strategic gap in the building of an effective regulatory model in low income and developing countries.

It should be noted that they also link the staffing issue with the issue of “autonomy” when they observe that the absence of autonomy is due, in part, to “staff limitations, or uncertain funding”.

Uncertain funding will no doubt contribute to, if not cause, both a lack of autonomy and staff limitations. Therefore, it is crucial that the process of funding and resourcing a regulatory process be given particular attention at the outset, in the initial planning and implementation stage. The repair and re-construction of a flawed regulatory process due to a lack of adequate and independent funding, while not impossible to achieve, may plant sufficient doubts, such that the long term credibility of the process is permanently tarnished.

In Section 2.1, the matter of differentiating between Policy, Regulation and Operation was discussed. The above-mentioned shortcomings, particularly the first three, are related to the need for governments, in formulating both policy and regulation, to provide a clear and concise mandate to the Regulator and respect the independence of the function. Figure 7 presents a ‘before’ and ‘after’ representation of these relationships. Certainly, there will always remain a degree of overlap in policy and regulatory activities. In fact, such an overlap is essential to ensure an effective relationship between the two functions.

4.3 FUNDING AND RESOURCE SHARING

The issue of regulatory autonomy and consequently, as suggested by the above-mentioned World Bank Report (No. 232), certain other shortcomings such as price control, accounting and interconnection rules may be due to either uncertain and inadequate funding or the absence of a clear and concise legal mandate. In terms of the latter, the development of a formal policy document and the inclusion of the key policy objectives in the Regulator’s legal mandate will, in most cases, address this shortcoming. However, the matter of funding and the resulting staff and other resource limitations require more explicit and decisive action if an
An effective, efficient and autonomous regulatory process is to be established.

While the regulatory process will always be subjected to pressure and influence from special interest groups, the regulated firms and, at times, the political process, it will be substantially more vulnerable to undue influence in the absence of independent and adequate funding. The independence of funding may be achieved in a number of ways and be defined by describing it as funding not generated by government vote in the manner which other departments and some government agencies are allocated their required operating funds. Therefore, the funding is not derived from general tax revenues, but may be generated from either a general assessment on all regulated operators by way of an annual licensing fee or from a combination of regulatory user fees and spectrum management fees.

This latter method of funding regulation with a combination of operator licensing fees and spectrum management fees is the method currently employed by the Telecommunication Authority of Singapore (TAS). The result of such an approach was that for the year ended 31 March 1993 the TAS generated ‘operating income’ of (S)$17.7M versus an operating expenditure of (S)$14.1M (TAS Annual Report 1992/1993, page 43).

Another example of regulatory funding is that of the Federal Communications Commission (FCC) in the United States. As required by the U.S. Budget Reconciliation Act of 1993, the FCC, in 1994, proposed a new schedule of fees for 1995. The annual fees were to be paid by local and long distance carriers, cellular service providers, cable television providers, television and radio operators as well as other FCC license holders. The FCC expects to collect close to US $95M in 1995 or approximately 57 percent of its’ proposed 1995 operating budget of $167 million.1

The matter of regulatory fees in Canada is addressed in legislation. The Canadian Telecommunications Act (1993), Section 68, reads, in part, as follows:

“...The Commission may, with the approval of the Treasury Board, make regulations prescribing fees, and respecting their calculation and payment, for the purpose of recovering all or a portion of the costs that the Commission determines to be

1 Regulatory Research, Global Digest, Bell Canada, March-April 1994, (p. 23).
attributable to its responsibilities under this Act or any special Act."
FIGURE 7

POLICY/REGULATION/OPERATIONS

BEFORE

AFTER

POLICY
REGULATION
SPECTRUM
MANAGEMENT
OPERATIONS
Notwithstanding the ability to adequately fund regulatory activities, it remains essential that the regulatory function be performed in an efficient as well as an effective manner. One method of limiting the cost of regulation is through the sharing of certain common resources. For example, the review and analysis of periodic rate requests or proposed interconnection agreements may be "contracted-out" by lesser developed countries' which may lack the special skills required, to regulatory agencies in more mature economies, or specific expertise from more developed regulatory organisations may be retained to provide short term assistance to newly formed and developing agencies. These types of resource-sharing arrangements may be best facilitated through regional regulatory associations and would benefit the process of developing regulatory expertise both from the standpoint of the providers and the receivers of such services. Regulatory associations such as the National Association of Regulatory Utility Commissioners (NARUC) in the United States and the Canadian Association of Members of Public Utility Tribunals (CAMPUT) are good examples of how such organisations have enhanced the strength of their individual members.

The benefits of fostering discussion and debate on regulatory issues within a regional organisation should not be underestimated, for as the advances in information technologies continue to support the integration of individual country-economies into both regional and world-wide economic systems, the need for establishing and/or revising both regional and world information industry policies and regulation will increase.

The recent establishment of the ASEAN Telecommunication Regulators' Council (ASEAN-TRC) is a positive step towards fostering such cooperation and support within the region in terms of regulatory initiatives.
CHAPTER V - REGULATORY ISSUES IN A CHANGING ENVIRONMENT

5.1 SETTING THE AGENDA

In a 1989 paper\(^1\) commissioned by the ITU, the issues for policy development and regulation were identified as follows:

a) careful drafting of explicit telecommunication policies to guide the development of the telecommunication system;
b) determination of the appropriate structure and tasks of a regulatory authority;
c) determining the appropriate role for competitive and collaborative forces within an overall regulatory framework;
d) determining methods for developing useful cost analysis;
e) designing appropriate tariff structures;
f) analysing division of revenue principles and options;
g) the applicability of experiences in developed countries to developing countries.

The publication\(^2\) goes on to identify the functions of a Regulator in a competitive environment to be:

a) licensing,
b) interconnection,
c) administration of competition policy,
d) ensuring operators fulfil their obligations, and
e) protection of user rights.

In addition, the publication highlights the two key regulatory issues in a liberalised environment as being:

a) rate rebalancing, and
b) interconnection.

\(^2\)Ibid., p. 67.
The above lists of policy and regulatory issues demonstrate the scope of the challenges which must be addressed in the process of managing these matters in a liberalised environment. Given the range of the matters and their potential impact on not only the telecommunication industry but also on the country’s overall economy, the development of a sound plan to accomplish this task is essential. In this Section (Setting the Agenda), the process of agenda-setting will be discussed in terms of the key issues and priorities.

The matter of setting priorities for the regulatory agenda is always challenging even in developed countries with a lengthy history of regulation. This is due, in part, to the nature of the industry itself. Given the rapid rate of technological development coupled with the convergence of technologies - communications and computers, radio-based systems with wired systems, as well as media-based markets such as cable TV with telephone service markets - the ability of even the best equipped regulators in the developed countries to keep pace with industry developments is severely strained.

Therefore, in the case of developing countries in the low and lower middle income categories where overall telephone service availability is relatively sparse - low income countries had an average ratio of 0.80 and lower middle income countries an average ratio of 7.05 telephones per 100 inhabitants\(^1\) - the need to carefully set priorities is crucial.

The World Banks’ Discussion Paper 232 (p.76) presents the following four items on a list of priorities for the regulatory agenda;

a) Interconnection,
b) Price-setting,
c) Frequency management, and
d) Public Participation.

Combining the lists of key regulatory issues from the 1989 ITU document and the 1994 World Bank Paper (232) mentioned above and having regard to the scope of each issue, a contemporary list of regulatory/policy priorities may appear as follows:

1. Licensing,
2. Interconnection,
3. Price-setting,
4. Frequency management,

5. Public participation

Before leaving the matter of agenda setting and regulatory issues, it is necessary to return to that grey area between government policy and regulation. As previously observed, government policy is whatever a particular government defines it to be and matters to be regulated are those explicitly delegated to the Regulator by way of government legislation or in some cases as directed by the responsible Minister.

However, the overlap or grey area between policy and regulatory matters is neither clearly defined nor static. For example, notwithstanding the existence of a government telecommunications policy document and the related legislation, there may be issues brought before a regulatory body for which there are not clear policy directions but are matters which under the legislation may be brought before the regulator. Depending on the magnitude of the issue, the Regulator may elect to address the matter and render a decision based on the empowering legislation or seek direction from the government. (see RAS 93/035 Handbook on Sector Reform Legislative Guidelines - Chapter 2 - Model Telecommunications Act, Sections 20, 21 and 22 for an example of the process governing directions by the Minister and consultations by the Regulator).

Therefore, what one finds in some jurisdictions, such as Australia and Malaysia, is that the function of price-setting is performed by the Minister, whereas, in other jurisdictions such as the United States and Canada, the setting of rates is delegated by legislation to the regulator. The decision on which powers the government wishes to retain and which ones it delegates to a regulatory body is a matter of government policy and whatever decision is reached will have a significant impact on not only the list of items on the regulatory agenda but also the issues to be addressed and the resources required by the regulator.

For example, in the case where the government decides to retain responsibility for licensing and price-setting and the Regulator only intervenes in interconnection issues when parties are unable to reach agreement and the spectrum management function is performed by the Ministry, the resulting activities of the Regulator may be limited to monitoring both technical standards and the quality of service as well as administering the approval of customer-premise equipment. As a result, the type and quantity of resources will be much less than in the case where the licensing, price-setting and interconnection functions are delegated to the regulator. However, whether such functions are retained by the government or delegated to the regulator, resources will be required to address them in an effective manner.
In the case where a country is introducing an independent regulator body for the first time, a sound approach would be to have the government retain responsibility for licensing and thereby overall control of the type and degree of liberalisation to be permitted. However, as is the case in the UK, the Regulator could be given a role as an advisor to the Minister in such matters.

With respect to the following functions, the government may wish to initially delegate them by way of legislation to a regulatory body.

1. interconnection,
2. price-setting, and
3. spectrum management,

The function of spectrum management may have historically resided either within the state-owned operator or the Ministry and the reasons for delegating this function to the new regulatory body are twofold. First, some much needed and limited technical resources will be in a position to provide a foundation for development of technical expertise within the regulatory body and second, the fees and revenues associated with this function may be employed to offset certain regulatory costs.

Another approach would be to gradually phase-in matters to be delegated to a formal Regulator over a three to five year period as part of the government’s overall telecommunication policy implementation plan. Determining which approach to select should take into account the scope of the regulatory matters needed to be addressed, the human resource skills available and other government policy objectives and plans for the information industry.

Apart from these fundamental policy decisions on which functions are to be delegated and which are to be retained by government, the other key decision in terms of regulatory agenda-setting, relates to the matter of regulatory tools and techniques. Just as in the case of spectrum management, the process of economic regulation and the administration of the price-setting and interconnection functions by the Regulator requires both capital and human resources.

After human resources, the most vital resource required by the Regulator is INFORMATION! This issue is addressed by Smith and Staple in the World Bank paper, in part, as follows:

Moreover, to carry out these tasks properly, the Regulator must have access to detailed accounting and financial information on the economy, the dominant carrier and prospective competitors. Yet, in most LIC's (lower income countries), such information is sketchy, rarely disaggregated to a sufficient degree, of uneven quality, and frequently outdated. The cooperation of the telephone operator may also be limited, at best. Hence, until this information deficit is addressed - and in a comprehensive, consistent, and sustained way - it may be unrealistic to expect a significant improvement in the performance of the regulator.

The need for relevant and timely cost and revenue data is fundamental to resolving not only the matter of setting efficient prices, but also to ensuring an optimum course in moving from a monopoly to a liberalised marketplace. Based on a recent review of a number of current operators in the lesser developed countries, the single most significant shortcoming in terms of managing the enterprise is the absence of timely and reliable accounting and operational data. When the added information requirements of a liberalised market are added to the equation, the regulatory information deficit becomes even larger. Whether the issue before the policy maker and/or Regulator is licensing, interconnection or price-setting, the need for timely, accurate, and relevant information on which the decision-makers, both within the operators’ organisation and with the policy maker and/or Regulator, may confidently rely is imperative. This information issue is of such magnitude and relevance that it is reasonable to conclude that even with an adequate level of human resource skills, the regulatory process may be both ineffective and inefficient when confronted with a significant information resource deficit. Therefore, in setting the regulatory agenda, it is imperative to develop a plan for the development of both the necessary human resources, as well as the development of an information database, upon which regulatory decision-makers may rely to effectively and efficiently carry out their mandate.

5.2 PRICING

The debate of whether economics is a science or an art may also be applied to the process of regulation. However, unlike economics, regulation is largely a function of politics, policies and reasoned judgement. One may argue that, underlying economic principles of price regulation provide a basis for claiming that there is at least some scientific influence on the regulatory price-setting process. However, even a cursory
review of the extensive record of regulatory rate decisions in the most developed environments, reflect a continuous absence of the application of fundamental economic pricing principles to the setting of tariffs. This does not mean that they are not discussed and even extensively debated, but in the end, one rarely observes a well-reasoned economic rationale for the final level of approved rates - the result of policies, politics or both.

The focus today, has shifted from that of setting the overall rate of return and establishing cost-based rates, to that of fostering competition and employing some form of price-caps to overall tariff levels of the dominant supplier. This objective of unleashing the power of the marketplace is at times in conflict with another of the historic goals of regulation which is the achievement of universal service or other distribution goals. Some of the 'historic' regulatory issues such as rate of return, incremental versus fully distributed costs, allowable operating costs and appropriate depreciation rates, have been replaced, in the era of reform, with issues that relate to the introduction of competition, such as appropriate interconnection charges and rate rebalancing and the need to preserve universal service.

From an historic context, one must appreciate the evolving nature of state-owned telecommunication operators as they move through the corporatisation and commercialisation process. The separation of the government’s role as owner and regulator and also as owner and policy maker will unleash new forces which will require new relationships to evolve. In addition, the rise of private interests, will also unleash new forces that must be understood in order to appreciate the role of regulation in a reformed industry structure. More specifically, the ‘Why’ of regulation in a restructured industry needs to be re-examined to reflect the new needs of the marketplace.

Therefore, it is not adequate to simply examine the historical nature of economic regulation in the telecom industry and develop an appropriate model based on this past experience.

There are three forces which come into play when one considers an appropriate regulatory model for both developed and developing countries, that are in the early stages of structuring both, a reform-oriented telecom policy, as well as initiating a corporatisation process, coupled with the commencement of a process to separate the operational aspects of telecommunication from the policy and regulatory responsibilities. These three forces (see Figure 1 - The Forces of Change) are at times congruent in that they overlap one another, while at other times they are distinct from each other and have their own particular agenda and issues to be resolved.
In addition to these broad forces which interact and influence the “why” of regulation, there is also another set of interactive relationships which collectively formulate the core of the regulatory environment (see Figure 8 - Why, What, How and Who). Generally the 'Why's, What, and How 's of regulation are, or at least should be, interrelated and interactive. These circles of activities overlap and when and if, the general telecommunications policy is defined or revised, there should be, a review and revision of the Why, What and How of regulation.

**FIGURE 8**

**WHY, WHAT, HOW AND WHO**
The setting of prices for various telecommunication services, particularly for local access, is one of the most sensitive aspects of the policy and/or regulatory process. Generally the first issue to be addressed after concluding that telecommunications’ rate-setting is to be performed as a government and/or regulatory function, as opposed to being left to the marketplace, is where the responsibility should rest (Who? - see Figure 8). As discussed in Section 3.1 (Cornerstones for A Framework), the rate-setting function may be performed by a Minister or government department as opposed to being delegated by way of legislation to a formal regulatory body. The use of the ‘price-cap’ approach to rate-setting in recent years, as opposed to using the rate of return/revenue requirement approach, has simplified the mechanics of setting rates to some extent and thereby permitted the establishment of longer term rate-setting criteria. The choice of whether the responsibility for rate-setting is to rest with the government or be delegated to a Regulator is a matter to be addressed in the governments’ telecommunication policy. The governments’ decision will, in part, depend on whether a government elects to maintain more direct control over telecommunication matters or is of the view, that such matters are best delegated to a formal regulatory body which will be adequately equipped to address the rate-setting process.

In cases where a formal regulatory function is being initially introduced and issues such as corporatisation, privatisation, and liberalisation are also being addressed, it may be more prudent for a government to gradually phase-in certain regulatory responsibilities in order to evolve the function in an orderly manner using a step-by-step approach to expanding the regulators’ responsibilities. For example, in the case of a developing country establishing an initial telecommunication regulatory body in an environment with some degree of liberation and having regard to the magnitude of the three key issues previously identified; namely, interconnection, price-setting and spectrum management which could be delegated to a Regulator, it may be more appropriate to employ the step-by-step or gradual “phase-in” approach. One such method would be to initially delegate the responsibility for spectrum management and interconnection to the Regulator for an initial period of two to three years following which, and subject to adequate resources having been developed, the rate-setting responsibilities could then be delegated to the regulator. This gradual or step-by-step approach not only addresses the resource limitation issue but also the need to develop regulatory credibility at the outset.
5.3 INTERCONNECTION

While the issue of interconnection has become somewhat more publicly controversial with the rise of liberalisation, first with the terminal equipment attachment and subsequently with system interconnection due to multiple operators for cellular service and in the public long distance (toll) marketplace, it has been a critical telecommunication issue since the early days of the industry some one hundred years ago. This historic aspect of interconnection was put in context in a paper by Walker and Solomon which read, in part, as follows:

“The earliest form of supervised interconnection was international - national monopoly to national monopoly. It had little to do with competition and protected the interconnecting monopolies. For over a century the task of devising the technical and financial framework to guide international interconnection of the world’s wire and wireless networks has been the responsibility of the intergovernmental agency, the International Telecommunication Union (ITU). Today the financial system underpinning the international interconnection of networks, i.e. the international accounting rate regime, is under attack. The existing system has been dogged by negotiating inertia, the lack of a cost nexus and the absence of new thinking. In the recent past, in a context of breaking down tariff and non-tariff barriers, we have seen the initiation of action on all three of these fronts. Bodies such as the OECD have forced the international carrier community to view the interconnection of international networks in new ways. In the case of the OECD it has challenged the carrier community to view the exchange of telecommunications traffic in trade, particularly GATT, terms (OECD Working Party on Telecommunications and Information Services, Pricing Principles and International Telecommunications, DSTI/ICCP/TISP(91)3, OCED, Paris, April 1991). However, it is to the domestic model of interconnection in an environment of network pluralism, in particular that which evolved in the USA, that we must first look to identify the seminal issues, principles and debates on the subject.”

The above comment identifies several important features of the interconnection issue which Regulators need to recognise. First, interconnection is both an international and domestic matter. The connection of domestic operators with international carriers requires the establishment of both technical and financial conditions and, as mentioned, the ITU has played a major role in this process. The historic roots of that role may be described as follows:

"In 1864, for example, there were several regional conventions including agreements providing for the interconnection of networks between the various groups.

In view of the expansion of telegraph networks in an increasing number of countries and the growth in the use being made of this extraordinary communication tool, 20 European States decided to meet in order to work out a framework agreement. They also decided on common rules to standardise equipment in order to guarantee generalised interconnection, adopted uniform operating instructions which had hitherto been different from one country to another and laid down common international tariff and accounting rules.

On 17 May 1865 after two and a half months of arduous negotiations, the first International Telegraph Convention was signed by the 20 participating countries and the International Telegraph Union was set up to enable subsequent amendments to this initial agreement to be agreed upon. This marked the birth of the ITU. Today, nearly 130 years later, the reasons which led to the establishment of the Union still apply and the fundamental objectives of the organisation are basically unchanged."¹

The second feature to recognise is that system interconnection revenue settlements whether for international or domestic purposes have a direct impact on local access rates and, the larger the magnitude of such settlements relative to an operators' overall net revenue, the greater the impact on the absolute level of local access rates.

The area of international interconnection, particularly, the financial arrangements for dividing these revenues, is one which will become more sensitive for domestic regulators. This is particularly the case in lesser developed countries where outbound calling-prices are unusually high and local access prices are also above-average relative to per capita

¹ The International Telecommunication Union, Press and Public Relations, March 1993 (p.3).
income. These characteristics generally reflect a combination of two factors. The first, is an above-average underlying cost function for the operator and the second, a low penetration rate. These price and cost level issues will become magnified as the prices for international calls continue to decline due to competition and as a result substantial growth in supply, particularly on the heavy routes. As domestic regulation in developing countries becomes more active, the impact of international settlement arrangements on domestic prices will come under more intense scrutiny. The following observation outlines some of the concerns about current international settlement arrangements:

“If the present arrangements are not reformed it is not the developed countries which will suffer, even though individual carriers in these countries may. Rather, the effect will be to encourage the rise of private networks and of new common carriers which can bypass the accounting rate regime. This in turn will erode the universally available, globally interoperable network, condemning the developing countries to an increasing marginal role.”

A third feature of system interconnection which Regulators need to both recognise and address is that in a liberalised environment or to use the terminology employed by Walker and Solomon, in an environment of “network pluralism”, sound interconnection arrangements are the essential ingredients for efficiency. This feature was commented on as follows by Lewin and Kitchen in a recent publication:

“For a competitive industry to work effectively, sound interconnect agreements are essential. Telephone users need full interconnect between competing networks for access to all other users; new entrants cannot offer a viable service without interconnect. Moreover, the level and structure of interconnect charges will be major determinants of how efficiently the industry uses scarce network resources, how well end-user prices reflect underlying costs, how rapidly incumbent operators improve their efficiency and how responsive the industry is to changing market needs.

The features of interconnection mentioned above are only the broad aspects of the issue which regulators must recognise and address. Like

many other telecommunication regulatory issues ‘interconnection’ is neither a simple stand-alone issue nor resolved by simply applying a standard best practice solution. It is one of the many regulatory issues which are intertwined with other regulatory issues such as price-setting, licensing, and frequency management. In a liberalised environment, the issue of interconnection must be considered at the same level as licensing and price-setting given the potential impact it has on both the efficiency of the marketplace and the quality and price of services offered to consumers.

5.4 LICENSING

The act of licensing telecommunication service providers becomes, as does interconnection, a somewhat more delicate and crucial issue in a liberalised environment. The licensing function in a monopolistic market essentially set certain terms and conditions which the single-supplier was required to meet. Historically in many economies, no formal direct licensing of monopoly operators occurred but instead service providers were simply regulated by either a general or specific piece of legislation.

However, with the movement towards liberalisation and also the increase in the practise of granting geographic franchises, particularly in a number of the developing countries, in order to amplify the penetration rate, the practise of licensing service providers has become more wide-spread.

The initial matter to be addressed with respect to the licensing process is where the responsibility will be located. As discussed in paragraph 5.1 (Setting the Agenda), the licensing authority may be with the Sector Minister, with the Regulator or divided between them. In the former case, licensing may be considered to be the exclusive right of the Minister and a matter of public policy. In the latter case with a division of the licensing authority, government policy may determine whether there should be some degree of liberalisation and in which markets, 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 third option is to segment the licensing process by differentiating the approval procedures based on the type of license to be granted. For example, licenses for value-added service providers which may consist of simply having them register and make an annual filing, could be granted by the Regulator pursuant to a government policy objective to liberalise that particularly market segment. Whereas, the licensing procedures for international gateway providers and over domestic long distance (toll) providers would be retained by the Minister with the Regulator being responsible for the specific terms and conditions of the interconnection agreements.
These various approaches need to be evaluated and adopted having regard to the historic and current nature of a country’s institutional structures (see discussion in paragraph 4.1 - ‘The Mandate/Mission - What’, and Figure 6 - ‘Modifiers of the Regulatory Model’).

5.5 SPECTRUM MANAGEMENT AND PRICING

The management of the spectrum, whether it be for broadcasting or any other form of radiocommunications, is becoming a key factor in the development and implementation of a country’s information industry policy. As previously discussed, given the trend in technology convergence, the issue of funding, and the scarcity of regulatory skills in the developing economies, this function should be the first to be delegated to a newly formed regulatory organisation.

Spectrum management consists broadly of management functions, allocation of various radiofrequency bands, and the charges relating to their usage. For readers interested in a more detailed discussion on spectrum pricing, you may wish to refer to another recent ITU publication entitled ‘Study of Spectrum Pricing’ (RAS/94/013). This publication covers the above three topics. The main chapters in this publication are as follows:

1. Introduction
2. Objectives and Principles
4. Spectrum Allocation Approaches
5. Allocation Mechanisms
6. Fee mechanisms
7. Examples

1 Dr. Z.E. Kalman and Mr. M.K. Nunas, ‘Study of Spectrum Pricing’, ITU Asia Regional Office for Asia and the Pacific - Bangkok (1994).
8. Implementation Issues

9. Conclusions

This is one of the first ITU publications that discusses the question of spectrum pricing and the possibilities of raising significant revenues from this resource. In particular, fee mechanisms are discussed in detail. Methods on which the fixation of fees can be based are described. The sources of revenues are also discussed. Briefly these sources and mechanisms are as follows:

Sources of Revenue

- License fees
- Certificate fees
  - Type approval fees
  - Radio operator fees
- Taxation
- Fees for services

Fee Mechanisms based on:

- Administrative costs
- Incentive formulae
- User’s revenues
- Opportunity cost
- Auctions and lotteries
CHAPTER VI - CONCLUSION

6.1 GENERAL

The preceding guidelines are primarily focused on the needs of the developing and lesser developed countries in the Asia-Pacific Region. A number of the observations, conclusions and recommendations are based, in part, on the results of a survey of telecommunication policy, regulation, ownership and market structure in Asia-Pacific countries undertaken by Project RAS/93/035.

The survey was undertaken as part of more extensive project being funded by the United Nations Development Programme which has the broad objective of supporting economic reforms through enhanced transportation and communications services in the developing countries of the Asia-Pacific region. The survey is related to a particular objective which was to provide guidance on telecommunications sector management and regulation after ‘restructuring’ and is being implemented by the International Telecommunications Union.

When, Project RAS 93/035 commenced working on this undertaking in June 1994, it was determined, that, in order to prepare a set of meaningful guidelines, it was essential to acquire a much deeper appreciation of the current institutional and market structures, particularly for the developing countries, in the Asia-Pacific Region.

The results of the survey certainly suggest that there exists, in the Asia-Pacific Region, a broad range of telecommunication regulatory models, policy objectives, market structures and degrees of privatisation and liberalisation. Such a finding is not unexpected given the diverse nature of the history and cultures which exist within the Region as well as the broad range of economic development levels.

There are not only substantial differences in cultural and institutional structures which influence both the policy development and regulatory process but also a dramatic difference in telephone service penetration between the developed and the lesser developed economies.

As a result, the policy objectives of the most developed countries may understandably focus on the information superhighway and access to the ‘infobahn’ whereas the policy objectives of the least developed countries may focus on providing a single basic telephone access line within a half days walk of every citizen.

These dramatic differences were commented on as follows in a recent World Bank report:

“So far as telecommunications is concerned, the situation in developing countries probably is more like that of OECD countries 75 years ago than that in advanced countries today. The core problems involved in getting from one percent penetration to ten or twenty or more are quite different from those of an extensively developed network...”

While the objectives of the information highway and those of improving basic access are certainly not mutually exclusive, the differences between them must be taken into account when general telecommunications policy and regulatory agendas are determined in the lesser developed economies.

6.2 POLICIES AND OBJECTIVES

The process for addressing both the broad issues of telecommunication policy as well as the narrow issues of the regulatory agenda is one which requires the government to clearly establish a set of basic objectives, both short and long term, for the industry. This macro-planning process is not unlike a business entity’s strategic plan. It should involve a listing of the possible actions, the advantages and disadvantages of each alternative and conclude with the selection of a course of action and the related activities to accomplish the identified objectives - both short and long term. This strategic planning exercise should address broad or macro-level issues such as:

1) a set of policy objectives and plans related to corporatisation which are integrated with a set of policies and objectives related to liberalisation;

2) a set of policies, objectives and related plans for the division of responsibility between the minister/ministry/government and the regulatory body for functions such as licensing, interconnection, tariff approvals and spectrum management; and

3) publicise government telecom policy paper which may incorporate some of the above plans and objectives and should include a description of the relationship between the government and the regulator.

A second set of strategic plans should be generated as a result of the above outputs and address more specific or micro-level issues such as:

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1 World Bank Discussion Paper No. 232 - 'Telecommunications Sector Reform in Asia - Toward a New Pragmatism', page 23. (Quote from letter to P. Smith, World Bank from R. Noll, Professor of Public Policy, Stanford University).
a) the drafting and passing of any specific legislation required to implement the actions identified in the macro-plan;

b) the structure of the regulatory agency given the legislated mandate;

c) determine the issues and priorities for the regulatory agenda; and

d) develop procedures for processing matters on the agenda and any others matters which may come before the regulators, for example, customers complaints.

Activity (a) would be undertaken by the responsible ministry, whereas, activities (b), (c) and (d) would be undertaken by the Regulator following the implementation of the required legislation.

The development of a two-tiered strategic plan versus an approach which operates on a case-by-case basis is a preferable alternative as it permits both the government in general and the regulator, in particular, to better manage a very broad-based agenda.

6.3 THE REGULATORY MODEL

As demonstrated by Figure 9, there is a complex set of factors and relationships which will influence the overall process and, as a result, the final outcome in the form of a regulatory model.

These unique set of “forces and modifiers” will influence the final structure of both the policy development and the regulatory process. Therefore, the criteria for evaluating these processes should not be based on comparisons with those models which exist in the developed economies but instead be based on the following operating characteristics:

1. transparency,
2. objectivity,
3. efficiency, and
4. relevance.

There are many positive trends in both institutional developments with respect to both policy and regulation and in the variety of telecommunication infrastructure projects involving private sector participation in a number of the developing countries in the Asia-Pacific region.


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Some of the institutional challenges relate to the separation of policy, regulation and ownership functions in order to more clearly focus on each of these activities and thereby set suitable objectives and develop effective plans for achieving a set of realistic goals in each of these functional areas. Some of the challenges which relate to the state-ownership function are the setting of corporatisation plans and, in particular, the effective implementation of such
plans. Whether or not corporatisation leads to some degree of privatisation is a matter for the respective governments to decide, as no matter which approach is selected, the availability of service, the overall level of rates, and the viability of the industry including the many sub-markets such as wireless and wireline access, customer equipment and the distance-related calling markets will remain the key issues on both the policy and regulatory agendas. The priorities and the plans of more mature information markets such as those in Singapore and Australia are, and should be, substantially different from those of the developing countries where in many cases basic access is available to less than ten percent of the population.

But what is most striking about the characteristics of the Asia-Pacific information industry infrastructure is the broad diversity of approaches not only in terms of institutional structures for policy and regulatory activities but also in terms of supply where, as the results of the survey show, there are a variety of approaches being taken to increasing the availability of access. Some of these approaches are the Build-Operate-Transfer (BOT) concessions employed in Thailand, the incentive type of approaches being undertaken in the Philippines where new operators licensed for the more profitable cellular and international gateway markets are required to provide basic lines in areas of the country which are under-served and the extensive use of wireless access in Cambodia.

An examination of the level of wireless access compared to wireline subscribers in countries such as Singapore, Thailand and Cambodia and a comparison of the average price for a three minute mobile call of below US 20 cents in such countries as Cambodia, Indonesia and Singapore versus US $1.50 in Europe are other examples of not only the richness of the diversity in approach to addressing the availability of access issue but also of the successful outcomes from a consumer standpoint.

Hopefully these guidelines will contribute to a better understanding of the policy/regulatory process needed in both the developing and lesser developed economies. The diversity of models in the Asia Pacific Region and the focus on the operating characteristics of the policy and regulatory process - transparency, objectivity, efficiency and relevance - will provide a meaningful contribution to the advancement of information policy and regulation in all countries.

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A MODEL TELECOMMUNICATION ACT

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## EXHIBIT 7.1

**BUDGETS AND STAFFING LEVELS OF NATIONAL REGULATORY BODIES**

FY 1991 - 2 unless otherwise indicated

<table>
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<th>COUNTRY</th>
<th>REGULATORY BODY</th>
<th>BUDGET</th>
<th>STAFFING LEVEL</th>
<th>ACTIVITIES COVERED IN BUDGET</th>
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<td>National Currency</td>
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<tr>
<td>Canada</td>
<td>CRTC</td>
<td>$Can 31 million (FY1990-91)</td>
<td>$24.1M</td>
<td>Over 400</td>
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</table>

Note:

* At exchange rates prevailing during budget period
** Not including 22.3 million F Francs for international organisation contributions but including 22.5 million FF for data processing and information systems investments (mainly for radio regulation)
*** Current approved ceiling is 150

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### EXHIBIT 3.2

**JURISDICTION OF MAIN TELECOM REGULATORY BODY IN THE CASE-EXAMPLE COUNTRIES**

<table>
<thead>
<tr>
<th>COUNTRY</th>
<th>COMMUNICATION SERVICES INCLUDED IN TELECOM REGULATOR’S JURISDICTION</th>
<th>OTHER ASPECTS OF TELECOM REGULATION</th>
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<tr>
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<td>Fixed Public Telecom Networks</td>
<td>Private/Corporate Fixed Telecom Networks</td>
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<td>CANADA</td>
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**Notes:**

- "Main telecom regulatory body" is considered to be agency named in Exhibit 3.1
- 1. Department of Communications (DOC) regulates spectrum
- 2. In certain circumstances, private networks with their own transmission facilities do not need specific DRG consent
- 3. DRG works with other agencies
- 4. Separate agency within same Ministry, and approved private testing agency
- 5. Separate agency within same Ministry
- 6. Separate agency
- 7. Private corporate networks in the US are subject to minimal regulatory supervision, mainly concerned with use of radio frequencies
- 8. Local governments also play a significant role in cable TV regulation

9. See discussion in the text of roles of NTIA, IRAC, etc.

TABLE 1
ELEMENTS OF TELECOMMUNICATION POLICY, REGULATION AND LEGISLATION

A. Market Structure
- Facilities and Services reserved for monopoly operator
- Facilities and Services opened to competitive suppliers

B. Ownership of Operating Entities
- Government or public sector - 100% state ownership
- Mixed ownership
- Private sector participation

C. Conditions and Rules of Market Entry and Exit
- Designation of authorized operating entities
- Franchises; licenses
- Facilities licensing - rights of way; radio spectrum; cables
- Obligations of the operating entities
  - Access to services: objectives; definitions (universal service etc.)
  - Service quality: objectives; indicators
  - Medium-term expansion and improvement programmes
    -- Technical standards;
    -- Growth and quality targets;
    -- Interconnection: national; international
      --- With other operating entities
      --- With private or dedicated networks
      --- With subscriber terminal equipment
      --- With information services providers

D. Cost Recovery and Pricing
- Pricing principles: monopoly and competitive services
- Accounting: depreciation; cost allocation
- Allowable rate of return; dividends and re-investment

E. Institutional Roles
- Location of authority
  - President/P.M.; Cabinet; sectoral ministers
  - Independent regulatory agency
  - Process to establish policies
  - Process to monitor/enforce compliance
- Relationship between operators and government
  - Investment approvals; budget; performance targets
  - Application of other government policies
    -- Rural development; manufacturing; procurement
- Regulatory functions: monitor, review, approve, enforce
  - Information requirements; investment; tariffs; service
  - Policy interpretation; sector laws; settle disputes
- Relations between regulatory agency and government
  - Appointments; appeals

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• Relations with judicial system.