CHAPTER III

POLICIES AND STRATEGIES

Contents

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Purpose of this chapter

While the frequently poor state of the telecommunication sector in developing countries can often be attributed to a scarcity of investment funds, it has to be recognised that a principal factor is also the type of management structure and administrative procedures generally found in these countries, and which typically correspond to those of the civil service. Thus there is seldom any financial autonomy nor any flexibility, the system being designed to operate according to government rules and regulations.

In this chapter guidelines on the need for sectoral reform to enable telecommunication organisations to operate efficiently in the future competitive environment are given together with the means by which these organisations can be transformed into customer service orientated bodies run on business lines.

Outputs to be included in this section of the plan

- Market assessment and statement of the future mission of the organisation;
- Business concept and strategy;
- Statement of telecommunication policies;
- Overall commercial and technical objectives, including standards.

Inputs required

- Market information, including demand forecasts;
- Information on future regulatory framework vis-à-vis competition;
- Objective assessment of present performance, strengths and weaknesses of the organisation;
- Guidelines given in this chapter.

3.1 Sector restructuring

Telecommunication Development Conferences organised by the ITU in the last five years have recommended the separation of telecommunication from postal services and that the regulatory function should be separated from the operations of telecommunications. It is important that the regulators have well-defined autonomy and powers.

Furthermore, it is recommended that the telecommunication operating entities should be granted *financial and managerial autonomy*. In the last few years a number of countries have corporatised, or even privatised, their telecommunication operators.

However, in most developing countries telecommunications are still operated as Government Departments, which often implies that substantial parts of the revenues are used for other sectors, rather than reinvested in the development of the telecommunication network and its services. Financial and personnel policies, governed by rigid government regulations, and the civil-service mentality which characterises such organisation cultures inhibit the organisational development and improvement in performance, which are required for the operators to remain profitable in the increasingly competitive environment. Political forces can also inhibit the efficiency of these enterprises.

Investors, whether development banks or private, are therefore unlikely to come forward unless the operator is granted a high degree of financial and managerial autonomy. Moreover, such autonomy is also a prerequisite for the preparation of a credible corporate business plan which is needed to attract the necessary funding for the planned development.

Currently there is a trend towards *service-oriented* rather than *technology-oriented* structures, as was common in the past, and still is in many developing countries. Another way of expressing this trend is to say that Telecommunication operators are now obliged to be *market-,* and *customer-oriented* (i.e., analogous to "one-stop shopping") in order to be competitive.

Furthermore, following a period when *diversification* was the current fashion, there is now a tendency to *focus on the core business*, i.e. the organisation's role as network operator and service provider, and to "*outsource" (i.e. sub-contract)* functions such as cleaning, security and transport or even the installation of local networks.

Finally there is a trend towards the formation of strategic alliances, particularly to compete in the global international telecommunication market. Such alliances are established among Telecommunication operators as well as between these operators and companies using other converging technologies, such as cable TV network providers and information technology (IT) industries. Alliances and joint ventures, Build-Operate-Transfer (BOT) and other similar schemes are also increasingly used in developing countries as means of accelerating the development of telecommunications.

3.2 Laws and regulations

This section is intended to examine how laws and regulations might affect the preconditions on the telecommunication market. The planning group should carefully define the present and future infrastructure, laws and regulations in the actual country, so that the roles of all participants are clearly known. In some cases, there may be alternative courses of development of the regulatory situation in the country. In that case, corresponding scenarios should be prepared. The more the Administration knows about these aspects, the better will be the chance of influencing the development.

The main participants in the telecommunications field, apart from the subscribers, are:

- The government and its associated telecommunication enterprises.
- Private companies providing telecommunication services.
- The telecommunication equipment and system suppliers, through a close liaison with their customers.
- Financial institutions and investors.
- Research and development institutions.
- A possible range of network operators. There may be different operators for different hierarchical levels in the public network and/or for different niches such as CATV, MAN, Cellular etc., and of course also for the

private networks, e.g. for various dedicated and corporate networks. Thus the network operators may be characterised by either the **technique** they use or by the **segment** in which they operate.

Telecommunication networks are becoming more and more global, which actually favours a national telecommunications policy. There are few sectors in the infrastructure where interdependence between countries is so strong as in telecommunications. Also, trade and technology exchanges in telecommunications have increased dramatically all over the world and so has the suppliers' dependence on world markets for the sale of related products and services. The prices of telecommunication equipment and standard software are becoming lower and lower, but new concepts, i.e. the development of systems and generic services, are becoming more and more expensive. This means that suppliers have to cooperate to some extent, and it means also that only the largest network operators will be able to master an effective network development without assistance.

The common trends, usually described by words such as **deregulation** and **liberalisation**, have forced countries to remove trade barriers and to open their national market for more or less free competition. This also applies for telecommunications, but many countries have only taken a first step so far, dividing the service domain into two main sectors, **Reserved Services**, and **Non-Reserved Services**. Often, **Transport Services** and **"Basic" Voice Services** are reserved services, while **Data Communication**, **Mobile Services**, **CATV**, **Information Services** and **"More Advanced" Voice Services** are non-reserved services, i.e. may be provided by any one competent company.

Reserved services are however probably just a transitory stage of the market development. After some time, "enhanced" services which are open to competition will be considered as more or less "basic" services, so the distinction between "reserved" and "non-reserved" services will begin to be less clear. Some kind of governmental subsidising, for example to rural areas, will often be necessary, but the **provision** of the telecommunication services may still be open for competition, even if the community pays the bill.

So will we really see **less regulation** in the future? Not necessarily, it is quite possible that we will see **more** regulation, since the future situation of course will be much more complicated with all the new participants and with a network growing very complex and providing a huge range of services. To guarantee a high degree of competition, we will need thorough regulations of many kinds, for example maximum and minimum price regulations, free and non-discriminatory access to the transport network, cross subsidisation etc. The aim of "deregulation" is to open up the telecommunication market to competition, which means that existing laws and regulations that protect the monopolies should be abolished, but some kind of safeguards to protect competition have then to be implemented, which usually results in more regulations than before. There is thus the paradox, that in order to provide a legal environment for the **liberalised** telecommunications market to function as **freely** and **competitively** as possible, we will need **a considerable framework of laws and regulations**.

A new concept is the **"Supertelco",** which is a reformed traditional network operator that has the size, capacity and competence to provide its services to the international market. A common strategy for this type of organisation is to absorb international traffic generated by large multinational enterprises by providing international private virtual networks for them. "Supertelcos" are examples of how traditional network operators use their strength and influence to enter new markets when their domestic markets are being threatened by competition. In the beginning, there is more or less free competition for international business communication, but in order to be able to increase their market power, some supertelcos tend to co-ordinate their strategy, a tendency that might result in a cartel for the maximisation of the total profit. International regulations might prevent that course of development.

Let us look especially into three important concepts of telecommunications: **POTS (Plain Old Telephony Services), Mobility** and **IN (Intelligent Networks).**

POTS are often regarded as **reserved services**, i.e. restricted from competition, it being argued that the monopoly must be guarded so that this socially important service is guaranteed to everyone in society without discriminating barriers, such as high prices for the users. However, the government may actually pay competing companies the difference between the normal price and the cost associated with the special situation to provide POTS and still arrive at a lower **total** cost. The cost difference may then be a matter for bidding.

However, POTS are really capable of generating revenues, and it is actually very interesting for Administrations to increase the efficiency so that they can keep this important and profitable service within the organisation even if the "reservation mark" is removed.

Mobility can be accomplished either by radio access, such as analogue mobile telephony, digital mobile telephony (GSM) etc., or by the facility of using the individual and unique subscriber number in all sorts of terminals,

applying some kind of personal identification code. Thus, as far as mobility is concerned, the regulatory framework has to be divided into two parts: one part for mobile services in the fixed network, and another part for mobile services with radio access. Often, radio access services are **non-reserved**, while the fixed network mobile services are **reserved**, i.e. considered as some kind of **POTS**.

The Intelligent Network **(IN)** is the concept that really makes general mobility possible, and is the key to the design, implementation and provisioning of telecommunication services completely independent of the existing equipment in the network. In the future, customers/end users will require customised services, i.e. they do not want to pay for generic features. At the same time the range and amount of various services will increase. Each individual service will have everything from very few up to very many customers, and each customer will subscribe to everything from very few up to very many services. Not only that: new services will be created all the time, while some services will be cancelled after some time. The range of services and the distribution of services among customer groups will thus be continuously modified. Therefore the **IN** architecture must allow for fast service definition and flexible and cost effective handling for each individual customer independent of his location in the network. It will therefore probably not be possible for **IN** to be effectively utilised without revised regulations.

The primary role of a government is to provide the legal framework on which all economic activity in the country is based. This implies that the government is responsible for the infrastructure, of which telecommunications is one important part. We could define four mechanisms by which the government can exercise its control over the telecommunication market: **Public provision**, **Redistribution**, **Rule making** and **Structuring incentives**.

Public provision means that goods and services can be publicly provided instead of or in addition to private provision. Another possibility is that private enterprises provide the utilities but the government regulates the process.

Redistribution means that the distribution of income and output is being affected by active measures such as taxation, subsidies, and transfer payments in order to fulfil a certain policy. For the provision of domestic services the government often subsidises investments for the extension and updating of the network.

Rule making means that rules and regulations may be implemented to forbid, compel or specify the behaviour of private enterprises. Once enforced, rules must prove effective if they are to achieve the wanted result. Rules can be **proscriptive**, telling the concerned individuals or organisation s what they can and what they can not do, or **prescriptive**, e.g. stating the price of a product, methods of production, market shares etc.

Structuring incentives are formally milder than **rules**, but may have an equally good, or even better, effect by making it profitable for participants in the market to adopt a desired behaviour. The form of incentive can be loans, grants, subsidies, tax exemptions and deductions etc.

There are great differences between different countries in the field of deregulation and liberalisation. This depends very much on tradition. In the United States, the focus for the government involvement has been a policy-making role, confined to regulating the sector rather than operating it. In Europe, on the other hand, the governments used to be involved in almost every aspect of telecommunications. The Council of the European Communities encourages a close co-operation between countries, but there are actually great differences between different European nations' regulatory environments. In Japan, the Ministry of Posts and Telecommunications is responsible for the coexistence among the telecommunication providers, authorised by law to adjust supply and demand to ensure that the market is behaving smoothly. Australia has based the reform work on the belief that competition should be introduced gradually, the first step being to introduce a second, privately owned licensed network operator to compete with the publicly owned Telecom Australia (domestic telecommunications) and OTC Ltd (the international provider). Many useful ideas may be drawn from a thorough study of the deregulation processes and conditions in these countries. A useful summary is given in the World Telecommunication Development Report (ITU, Geneva, 1994).

A very important issue concerns **Telecommunication Standards**, since they constitute a common platform for suppliers to develop new products in a competitive environment which may give the customers flexible, low-priced products. It is important that standards should be defined so as to guarantee compatibility between different generations of equipment. Note that network evolution requires backwards compatibility. The technological evolution creates the need for new standards which in turn set a platform for the new technology generation.

Possibly most of the telecommunication issues to be standardised until now have been processed by international standardisation bodies. Network operators should keep to these standards in order to protect network investments from becoming obsolete. The standardisation processes are however often slow and focus on details which do not always

concern the market needs. If standards due to these reasons are defined outside the international bodies, they should if possible include the international ones in such a way that they fulfil all their requirements.

There are two generic product "standards" known as **GAP - Generic Access Product**, and **PAP - Proprietary Access Product**. Unfortunately, there is no general unanimous definition of them. **GAP** might be defined as **a non-autonomous unit for, at least, POTS, which is digitally connected via an open interface from a local exchange or from a separate O&M network**. **GAP/PAP** might be regarded as a strategic issue concerning how far the network operators can force the suppliers to adapt to certain standardised interfaces between sub-components in a switching system.

In order to create regulatory environments characterised by greater flexibility, open entry opportunities and increased competition, some new concepts have been introduced: **ONP** (Open Network Provision) in Europe, **ONA** (Open Network Architecture) in the USA and **OND** (Open Network Doctrine) in Japan.

The concepts are slightly different but are based on the same principles:

- **Fair and open procedures**, which means that open-network services and capabilities should be defined, developed and made available to guarantee fair and open competition. All service providers should have the same ability to request new network services and capabilities compromising the confidentiality of proprietary information and be served properly according to their requests.

- **Non-discrimination**, meaning that open-networks should be made available to all on equal terms without use- or user-restrictions. Open interfaces should be provided for connection of user terminals.

- **Uniformity** nationally, regionally, and internationally, concerning provision of open-network services and capabilities.

- **Pricing** for open-network services and capabilities should be applied with regard to costs, to guarantee sound and fair competition.

- **Network evolution** should be smooth and with a long-term perspective, so that all implementation of new network technologies promotes the evolution towards new network services and approved capabilities

The main difference between **ONP** and **ONA** is that **ONP** concentrates on the harmonisation between the great variety of telecommunication services in the European Community and that **ONA** primarily aims to solve the questions of free competition in the network. **OND** is somewhat less ambitious.

3.3 Market assessment and mission of the organisation

Under this heading should be summarised the expected markets for the various services, based on the forecast of demand described in Chapter 6 and considering also the expected competition. The value of the markets and the development in terms of revenues should also be summarised in this section (see Chapters 13 and 14).

The regulatory framework should be briefly described together with the expected competition and the risks. The future mission of the organisation as a network, terminals and service provider (as applicable) should be justified.

In many countries, where there is only one monopoly telecommunication operator or Administration, the profitability of running the local network is low or even negative. In contrast, national, (interurban) traffic and international traffic generate usually relatively high revenues which are used to subsidise local traffic. Frequently also business customers' services subsidise private subscribers (see Figure 3.1).

User category / Network	Business customers	Residential customers	All users
International and National	+++	+	++
Metropolitan	++	-	+
Urban	+	- -	-
Rural	+/-	- - -	- -
All networks	++	-	+

Figure 3.1 : Profitability of different user categories and networks

In other countries the telecommunication market may be shared between a central monopoly, operating international, national and rural networks and private operators running the metropolitan and urban networks.

Rural telecommunications are often difficult to make profitable, so a total liberalisation may cause problems for the people living in rural and remote areas unless appropriate legal and regulatory frameworks are established.

In general, however, competition is expected to provide an incentive to performance improvement, as indicated by the following possible market development:

- Deregulation causes competition in international and national traffic and in the business service segment;
- This competition forces the operators to reduce their tariffs which will entail a reduction in the profits in these segments;
- The reduction of the profit makes subsidisation of local traffic and domestic users services impossible;
- All this could start a general revision of the whole tariff structure in order to make all segments bear their real costs;
- This makes it necessary to increase the tariffs for local traffic, especially the fixed services;
- This will eventually make it profitable also to run local networks which will attract private competitors.

Tariff reforms and structures are further discussed in Chapter 13.

3.4 Competitors

Examples of companies that may enter the competition are:

- existing operators of mobile telephony networks;
- cable TV companies;
- electric power distribution companies.

The mobile telephony operators will probably try to grow in the residential market segment. The attraction lies in the mobility, the present weaknesses being high tariffs and thin networks. The development of GSM, the introduction of Personal Communication Services (PCN) and LEO mobile satellite communication systems will bring about radical changes of both tariffs and accessibility of mobile radiocommunication.

Wired networks require huge investment but may be cheaper to run on a large scale.

Electric power distributors now often install optical fibre networks in parallel with the electric power lines for the collection of information about customers and for supervision of equipment. These cables can also be used for public telecommunications, as for example in the U.K. Energis network, one of several competitors to BT.

Cable TV operators have large local networks which could be used also for telecommunications.

Gas distributors and underground railway companies have also an infrastructure suitable for telecommunications.

3.5 Means of competition

As the margins for competing with lower prices is shrinking, the quality of service becomes the most important means of competition.

Another means of competition is to offer customers the possibility to define, design and change the services themselves. This will require intelligent networks (IN) and very well structured service management systems, including, for example, a platform concept (see Chapter 4).

Advanced fault detection and analysis as well as information about the quality and usage of the services would also be attractive for the customers.

Advanced charging functions, which can be used to optimise service offerings, tariffs and profit will also become important factors in the competitive environment.

New technologies, such as Asynchronous Digital Subscriber Line/High Speed Digital Subscriber Line can increase the capacity of copper pairs up to 2 Mbit/s, which means that services such as videotelephony and videoconferencing can be provided with acceptable quality.

New radiocommunication technologies, such as the so-called Digital European Cordless Telecommunication (DECT) may also be used instead of copper pairs for access in the local networks.

With the development of optical fibres and micro-electronics the revenues of transport and basic service (see Chapter 4) will decrease. To some extent increased effectiveness in the use of equipment and human resources will compensate for this but the revenue trend may still be negative.

At the same time investors focus more on short-term return on investment. The capital market is unwilling to support projects with long pay-back periods. As the network operators are forced to find capital externally, this will favour short-term projects and revenue-maximisation.

The marketing function will become more important and influential. On the other hand, the need for planning and engineering competence is also increasing. This calls for improved co-operation between marketing and network divisions.

To meet tomorrow’s challenges, the telecommunication operators should be better structured into specific sectors, for example:

- long distance;
- medium distance;
- local/access;
- business/residential;
- advanced services, etc.(see Chapter 4).

Marketing could be divided into:

- private (residential) customers;
- small and medium enterprises;
- large enterprises.

One person should be responsible for all business contacts with a particular customer.

The old principle of buying and implementing highly sophisticated *integrated* products should be abandoned. Such products will be too rigid to service the emerging information society. More information about the development of technology and services and on different service scenarios is given in Chapter 4.

3.6 Business concept

When formulating the business concept, the strengths and weaknesses of the organisation in relation to the market opportunities must be considered as well as the possibilities of ‘"out-sourcing" activities which are not really the core of the business. The business concept will also depend on the regulatory framework and in particular the degree of liberalisation, and hence, competition.

The *liberalisation* of the telecommunication market, in the first instance, terminal equipment and value-added services, is a global trend that also affects most developing countries. However, this does not necessarily mean that the former monopoly operator should abandon these businesses, only that he will be subject to competition.

In Chapter 4 the possible roles of telecommunication organisations as network provider, service and product provider and as customer to other service providers are considered together with how business strategies are developed through a number of steps, including service scenarios and service implementation analysis.

A typical definition of a business concept is t*o offer telecommunication services and systems which facilitate personal contact between individuals and enable companies and the public sector to develop and operate more efficiently. Services and systems offered should be easy to use, competitively priced and reliable. The network is the nucleus of the operations and products offered must support the network services.*

This statement could be further developed to specify the network services and the products, which are envisaged to be marketed by the organisation (see Chapter 4).

3.7 Overall policies and strategies

Overall policies are, at least partly, determined by the regulatory framework (see 3.2 above) and political decisions.

Some examples of policies are:

- to provide universal access to basic services at the same prices irrespective of geographical location and reach a penetration of x mainlines/100 population by year y;.
- to provide efficient service at lowest possible price;
- to provide uniformly high quality telephone service and good support no matter where the customer is located;
- to pay particular attention to quality of products and services;
- to contribute to the regional balance and develop rural telecommunications;
- to provide access to at least one telephone line for all communities with more than 1000 inhabitants;
- to offer competitive international services for business and residential customers in co-operation with other operators;
- to offer x% of the customers access to digital networks;
- to focus on development of mobile services;
- to give individual attention to each customer from the analysis of his needs to purchasing, installation, training and support.

The process of development of a business concept and strategy is illustrated by Figure 3.2.

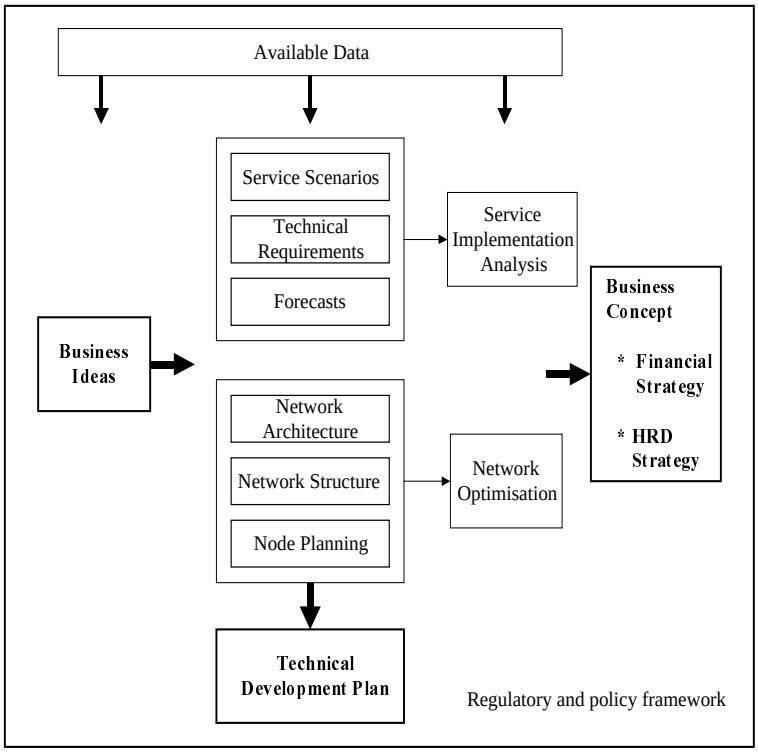

Figure 3. 2 : The process of business concept and strategy development

Strategies should include

- technology and network development strategic plans (a summary of the network development plan);
- financial strategic plans, including investment plans (see Chapter 14);
- human resources development policies and strategic plans (see Chapters 11 and 12);
- a description of the inter-dependence of these plans.

Any strategic alliances or joint ventures envisaged should also be mentioned and justified in this section.

3.8 Objectives

Some examples of performance, and economic objectives are listed below.

- Performance objectives (to be achieved in a 3-year period)

  - Average trunk call success rate during office hours 90%
  - Percentage of exchanges achieving a minimum success rate of 90% for calls to and from individual exchange areas 95%
  - Max number of customer reported faults per 1000 mainlines and year (average) 150
  - Delivery time for installations in permanent dwellings within 5 working days 90%
  - Fault clearing time for telephone service in permanent dwellings no later than one working day after being reported 90%

- Economic objectives

  - A long-term real return on equity of 5% of total capital before taxes
  - A long term dividend requirement of 5% of adjusted equity
  - A minimum productivity increase of 3% per year
  - Equity/asset ratio must not fall below 30%
  - A self-financing ratio of 40%