

## **Regulatory Issues in Pakistan Telecommunication**

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### **INTRODUCTION**

Growth in telecom infrastructure and provision of modern telecom services to consumers at a cost based tariff helps growth of national economy. Modern telecoms serve as the engine of growth of national economy.

Following the global trends of liberalisation and deregulation in telecoms monopolies which have thus far been providing inefficient communication at a greedily high tariffs are falling apart. Mergers in telecoms are not for increasing the size of the monopoly but to provide more efficient and cost effective services to the consumers.

In Pakistan the erstwhile T&T department played a needful role at its time. Conversion of the department into a corporation and then into a company were steps necessary for following the global trends. Need now is to continue this trend further, eliminate the monopolistic approach by allowing more players in the field thus permitting the market forces to decide the provision of better quality of modern services at competitive price.

In this paper, an attempt is made to specify the fundamental objectives of public policy which should govern the supply of telecommunications facilities in Pakistan. The economic perspective for the sector implies that the past approach towards the telecommunication policy in Pakistan was flawed and had required a drastic strategic change.

The paper is divided into four sections. We begin by detailing the changed role of the telecommunications in the rapidly globalise world where information technology has become the engine of growth. Section II provides an economic rational for the role of the regulatory agency for the sector. The performance of the telecommunication sector in Pakistan is analysed in Section III. The last section presents main direction of reform that the Pakistan government needs to implement for reaping benefits from the rapidly changing information technology.

## I. THE ROLE OF MODERN TELECOMMUNICATION IN DEVELOPMENT

Application of modern telecommunications technology is important for the rapid growth of any economy in the age of knowledge-led development strategy. In this perspective, telecommunication can be viewed as an essential "factor of production" for enhancing the productivity of traditional factors of production i.e. labour and capital. The role of the telecommunication technology has three facets.

First, the application of modern telecommunications, including computer based information technology, has the potential of yielding large gains in productivity in a large variety of industries. Every firm that has a large network of distributors, suppliers, and customers spread over large geographical areas would benefit from the use of modern computer networking. For this to happen, it is essential that computer networks are used extensively for data communication. The role of price incentives for encouraging the computer use cannot be over-emphasised.

Second, modern telecommunications, and computer networks, are a key conduit through which Pakistan gains access to ideas and information from all over the world. The Internet is the key vehicle for this to happen on a large scale to enhance the skills of Pakistan's citizens for raising productivity in Pakistan's economy. It should be noted that the establishment of Internet connectivity is an inexpensive proposition and can lead to widespread dissemination of ideas from the world over.

Lastly, telecommunications is substantially cheaper as compared to roads or railways. For example, the telecom infrastructure required to support movement of a document over a computer network would involve a small fraction of the cost of the physical infrastructure over which a person would need to carry a physical copy of the document. This is so even when there are no traffic jams in cities. It is more efficient to work over cellular phones and other radio based media than to use traditional modes of transportation.

In these ways, telecom can often plug the gaps in weak infrastructure and help raise productivity at a lower cost than would be possible by improving the physical infrastructure.

One common feature of the potential benefit from the telecommunication services is the joint use of telecommunications and information technology. Telecommunications is the hand-maiden of the computer revolution, and a key to obtaining the full productivity gains that flow from computer technology. The true importance of telecommunications cannot be measured by the number of telephone connections alone, but in terms of the extent to which data communications is done over the telephone lines and other telecom channels such as leased lines.

## II. AN ECONOMIC CASE FOR REGULATING A MONOPOLY

The public policy stance for a monopoly telecommunication company that is a profit-maximising entity requires understanding its behaviour in terms of its pricing

decisions. The monopoly is expected to artificially raise prices to earn super-normal profits at the expense of its consumers. At a higher price monopolist sells a smaller quantity of telecommunications services but makes more than normal profits to be made at lower competitive prices. Clearly, this situation may be good for the monopoly company but not for the economy as lower telecommunication services would be used leading to lower productivity gains for the economy.

Given this peculiarity, it is natural to raise the issue of the introduction of competition in the telecommunication industry. Once markets discover that the monopoly company is making extra-ordinarily high profits, other companies need to contest the monopolist's position by offering telecom services at prices lower than monopoly prices. There are a variety of reasons why this market may not be contestable. One serious problem lies in the interconnection. The monopoly could simply refuse to let customers of the new companies place phone calls to its subscribers. Here in the telecom law and the regulator play the vital role. A fair interconnection agreement is the key to the layout wherein all players play the game as per laid down rules. If the situation starts off with 100 percent market share for the monopoly, and if the monopoly refuses to admit phone calls which originate from customers of the newer company, then the new company would get no business, and would be forced to fold up. Milder forms of such tactics, such as high cost of interconnection, can also be used to attain the outcome of killing a company.

It is clear that higher prices of the monopolist cannot be brought down by the normal forces of entry and lack of competition does not restore the economy to a state of optimality as the monopoly supplier of telecommunication services continues to earn non-zero economic profits.

In such a structure, there is a clear role for public policy to maximise the benefits for the society. The specific actions to be taken can take many forms. These action could range from breaking of a monopoly, to forcing low cost interconnection privileges for the competitors from the incumbent service provider by regulating the prices charged by a service provider to prevent the prices from being too high or unreasonable.

### **III. STRUCTURE AND PERFORMANCE OF THE TELECOMMUNICATION SECTOR IN PAKISTAN**

Barring a few areas like cellular mobile phones, pagers and data communication Pakistan's telecommunication sector is dominated by the Pakistan Telecommunications Company Ltd. (PTCL) which for all practical purposes is a monopoly. Until the establishment of Pakistan Telecommunication Authority, there was no independent institutional set-up to regulate the sector and to safeguard the interest of the consumers.

The telecom system has grown at an impressive rate in the last few years, with an average growth rate in the number of connections of 15 percent per year between 1990-91 and 1995-96. This is an extremely rapid growth rate as compared with rates of

growth in other parts of the economy. The liberalisation of the telecom policy in early 1990s, when private sector, including foreign investors, were allowed in the basic services such as cellular mobile telephone and paging services, was instrumental in improving the coverage as well as the quality of telecom services. Notwithstanding the monopolistic environment, an attempt was thus made to initiate some competition.

Despite the seemingly rapid growth, difficulties in Pakistan's telecommunication sector have been many. It is to successes as well as to difficulties faced in the sector that we now turn to.

Many observers in the early 1990s have pointed to three signs of health in Pakistan's telecom: The number of telephone connections grew by 15 percent per annum on average from 1991-92 to 1995-96. This led to the near-elimination of waiting lists for telephones in urban areas. For people who were used to waiting for a number of years to get a telephone, it was great relief when the Pakistan Telecommunication Corporation was able to cut down the waiting time to a few months.

Comparisons have often been made between the growth rate of telecom prices and the inflation rate, both of which have experienced similar growth rates. This is held up as evidence that the rate at which the PTCL has raised prices is not out of line with the broad-based inflation rate.

The PTCL has succeeded in cutting down its over-staffing from the level of around 150 employees per-1000 lines as of 1976 to around one-third this figure as of 1994-95.

These comparisons are flawed, primarily because telecom is a sector where technology world-wide has made astonishing progress in the last twenty years. These advances have generated manifold increases in the quality of telecom services coupled with manifold reduction in prices in many countries of the world. It is a very unsatisfactory state of affairs in Pakistan if the telecom system is unable to deliver the fruits of these technological advances. For example, it should be pointed out that the well-run phone companies world-wide use ten to twenty employees per 1000 phones: a reduction from 150 to 50 employees per thousand phones over a period of nearly twenty years should not be considered as a satisfactory state of cost minimisation.

We should evaluate Pakistan's telecom sector in terms of three criteria: egalitarian availability (quantity), product quality, and reduction in prices. These three dimensions capture the fuller quality of the telecommunications sector from the viewpoint of the economy.

### **Quantity**

Telecommunications services are simply unavailable to most of Pakistan's citizens. There are huge waiting lists of people who want to obtain telephone connections. As of 1995-96, there were 1.8 telephones per hundred persons in Pakistan. This is around one-sixth of that seen amongst other countries at Pakistan's level of GDP per capita (measured in terms of PPP dollars).

## Quality

For those consumers who have telephone connections, *quality* is a major hurdle. Downtime is high, and the lines are often noisy and unusable for data communications. The PTCL has often followed a policy of giving out more connections than its underlying infrastructure can support, so that the *call completion rate* is poor: many times, a number dialled does not go through even though the called number is not busy.

The high prices charged by the PTCL have helped the corporation to be amongst the most profitable companies in Pakistan. It is also apparent to most observers that PTCL *efficiency* in terms of cost minimisation is far from optimal. In this sense, the overall mark-up as compared with the welfare-maximising price is likely to be much larger than that implied by bringing the operating profit margin closer to that consistent with zero economic profit. In a similar vein, PTCL is unique amongst government departments in having a large surplus of revenue over expenditure.

The three criticisms, on the dimensions of quantity, quality and price relative to what is possible by modern technology, constitute the basic failures of Pakistan's telecom. The agenda for telecom policy in the future should address these aspects.

Broader perspective than merely the supply of telephone on Telecom facility in Pakistan is required. On this count, Pakistan's telecom sector is plagued by failures on many other fronts, such as high-speed digital communications and satellite-based telecom, all of which are vitally important to high productivity of *firms* in Pakistan. This is most visibly manifested in the area of computer networking and information technology.

The growth of information technology in Pakistan has been hampered by four basic constraints. It is to these issues that we turn to.

## High Prices of Leased Lines and VSATs

- Leased lines and VSATs are the key technology used to create wide-area information technology. Currently, the prices of these lines are around ten times above the international prices.
- It may be useful to observe here that prices of leased lines world-wide have dropped sharply and that VSATs are considered an obsolete technology which are not a viable option for data communications. It is remarkable to find VSATs being used on a large scale in Pakistan for wide-area networking including locations in the same city. This reflects not only an abnormal pricing regime but reflects adversely on the low reliability of leased lines that the PTCL is able to offer.

## Restrictions on Use of Lines: Closed User Group Policy

- Using leased lines and VSATs, small networks can be created in Pakistan (albeit at elevated prices) and hundreds of such networks have been created

in Pakistan in the last few years.

- Once numerous small networks exist, the logical next step is to interconnect these to produce networking of enormously larger scope. It is through such private efforts that the Internet first came into existence. In Pakistan, however, the PTCL's has a "Closed User Group Policy" which explicitly prohibits the interconnection of any two information technology. Hence, organisation-wide computer networks can be created, but the fuller benefits of networking cannot be realised.

The PTCL's objectives in this area appear to be to protect the revenues obtained by the high prices charged for long-distance voice-grade calls. It is feared that if information technology is successful, then revenues would be lost in the long-distance business. This is the behaviour of a monopolist who attempts to block the progress of technology, and is far from the stance that public policy ought to adopt.

There is a broader idea here that deserves elaboration. The job of telecom companies is to sell *bandwidth*, i.e., lines of a certain capacity and the job of telecom policy is to ensure that this bandwidth is sold at the lowest prices possible in the world. Once a consumer buys the bandwidth, whether he uses it for voice or fax or computer networking or anything else: the telecom provider should have no role in influencing that decision by "permissions" or altered prices. In this sense, the prohibitions upon computer network inter-connections are examples of telecom companies overstepping their due role.

The Closed User Group policy leads to inflicting of enormous costs on the Pakistan's economy. For example, if a bank establishes its own wide area network connecting up branch offices all over the country, and if the bank becomes a depository participant, then the simplest connectivity imaginable is for the bank to obtain *one* leased line connection to the depository, and for all the branches to offer DP services over the interlinked network. This is forbidden under the current policy which completely defeats the purpose of computer networking in the first place.

### **Restrictions on Use of Lines: Dialup Services**

Internationally, a key vehicle through which computer networking has grown has been a "cottage industry" of small companies buying a few phone lines, and establishing "modern banks" through which users dial in and obtain useful services such as massaging and information access to free software. Many of these services are entirely voluntary, non-commercial operations which charge their users nothing.

### **Impediments for the Growth of the Internet**

- The Internet is a fundamental part of the world of computers and communications. PTCL policies have reserved Internet services to particular

users. Internet services are enormously more expensive as compared with international prices, and are only available in a few cities.

Each of these policies serves to diminish the extent to which Pakistan's economy can obtain productivity gains using modern communications and computer technology.

#### **IV. POLICY DIRECTIONS AND THE WAY FORWARD**

The policy debate in Pakistan for the telecommunication sector has been restricted to relatively minor issues such as the mechanics of auctions and/or reductions in the interconnection price and has avoided the fundamental problem of telecommunication being controlled by the incumbent monopoly, the existence of a variety of licence fees and restrictions on the use of lines and the continuation of monopoly in the long-distance communication for computer networking and the internet messages.

Some of the specific suggestions for bringing economic/rationality into the telecom policy are given below:

First, the top-most priority should be assigned to establishing rules for low-price interconnection privileges. Incumbent service providers, and all future service providers, should be required as part of the telecom policy to offer low-price interconnects to any client.

Second, all "value-added services", which do not involve the frequency spectrum, such as mail, free or priced bulletin board services, internet services, modem banks, etc. should be completely outside the purview of government regulation. This should facilitate setting up of a computer and a modem bank and a dialup service, without government entering the picture. Such modem banks should not be subject to any special rules, permissions, regulations or licence fees.

Third, long-distance telecommunications, within Pakistan and internationally, is an ideal area where pure competition can be successful. All entry barriers into this area should be abolished, and government should enforce rules governing interconnection so that entrants can easily connect into existing networks.

Fourth, all service providers should have no powers over the content that is carried over their wires. Whether a line carries voice or data or fax or is used for some kind of computer networking: the service provider should have no locus standing in dictating how bandwidth can (or cannot) be used. This principle would end monopoly over the internet as well as end the "Closed User Group" policy.

Fifth, the frequency spectrum is a scarce resource which requires resource allocation between applications like cellular phones and pagers. These usage rights should be auctioned to the bidder who offers the lowest prices charges to end-consumers. Government should not view its regulatory control as a source of revenue.

Sixth, local telephone services should either use free entry (subject to interconnection regulations), or auctions should be used to allocate licences to those operators who promise the *lowest price* charges to end-consumers.

Last and not the least, the Internet is a key technology which can have enormous implications for the growth of Pakistan's economy. Government should oversee the growth of internet, to ensure that no monopolies develop, to ensure that Pakistan's Internet grows using public domain protocols and technologies and to ensure that service providers deliver interconnection to each other at low prices. Government should take the initiative in the creation of switching facilities to smooth the interactions between different of internet service providers.

Use of internet for global commerce is increasing at a rapid pace. Matching the growth and quality of service of Internet Pakistan will stay in live will global trend of electronic commerce, electronic banking and electronic entertainment.

## Comments

Sarfraz Qureshi in his paper has reviewed the historical developments leading to economic regulation of the telecommunication sector in Pakistan. Agreeing that with privatisation and liberalisation of telecommunication services, healthy transformation takes place, he has emphasised the role of Pakistan Telecommunication Authority (PTA) to promote the availability of a wide range of high quality, efficient, cost effective and competitive telecommunication services throughout Pakistan. The Pakistan Telecommunication Company Ltd (PTCL) has exclusivity over basic telephone service in Pakistan till 2002. By adopting prudent policies and encouraging the existing business in the telecommunication sector, PTCL can expect to improve its services as well as revenues and at the same time prepare itself to effectively compete with other operators when its monopoly period ends. It can pass the benefit of such efficiency gains to its customers and thus create a firm consumers base.

The paper enunciates the problems of Internet Service Providers in Pakistan. Dr Qureshi should have analysed these issues on the basis of report from PTCL. The picture as painted by PTCL is different. A number of complaints have been received by PTA about the misuse of capacity leased from the PTCL which is allegedly being used by some service providers for voice telephony. VSAT is allowed to be used for domestic data communication only but both data and voice are being allegedly communicated through this media to international destinations. Pornography and security issues still remain to be resolved. PTCL, therefore, feels that the private sector service providers are bypassing its traffic and thus resorting to illegal practices. Fair business is, therefore, the need of the hour to promote Internet and the application of information technology in Pakistan. However, it is for PTCL to upgrade its standards to be able to cultivate healthy business relations with its partners and thereby increase its revenues. Moreover, the future lies in the data communication and voice services are being considered less rewarding commercially. The role of PTA in this environment can hardly be over looked. The Authority has taken necessary steps to streamline the position to allow the use of Internet to grow. The paper fails to describe all such steps taken by PTA including the non-application of 5 minutes pulse for Internet use, non-intervention by PTA in setting up tariffs, exemption from tax/CED etc.

It has rightly been stated that interconnection is the foundation for the success of privatisation. The paper should have described the international practice and enunciated the economic basis for determination of interconnection prices. PTA has

taken some important steps in this direction and an ITU expert has been commissioned to study and assist the determination of guidelines for interconnection.

A clear picture of the telecom infrastructure could only emerge after all these critical aspects have been fully appraised. The sector is so rapidly developing that only a policy framework which is flexible and alive to the changing conditions will survive. Regulatory regime, therefore, has to be established on dynamic basis which can sustain advances in technology and admit global competition. Ultimately it is expected that it would be possible for PTA to introduce the level of interconnection price to be based on costs. In most countries the concept of incremental costs has been introduced to achieve a level playing ground for the growth of competition. Perhaps Pakistan may have to adopt this measure. PTA certainly believes that its regulation can only prove effective if it can enforce measures that discourage the dominant telecommunication operator (PTCL) from (a) restricting output (b) applying discrimination in provision of services to the customers and (c) exploiting its market power contrary to the public interest.

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