Indian telecom pricing methods

TELECOM PRICING CONSULTATION PAPER ON CONCEPTS, PRINCIPLES AND METHODOLOGIES III.

EXECUTIVE SUMMARY I. OBJECTIVE OF THIS PAPER 1. This paper introduces various concepts, principles and methodologies for determining telecom tariffs and interconnection charges (i. e. charges paid by one operator to another for use of the latter’s network in delivering the telecom service).

The purpose is to provide a basis for comments and suggestions from interested parties and the public to take forward the process of developing pricing mechanisms for telecom tariffs and to provide guidelines for interconnection charges. Besides explaining the main features of different methodologies, a number of options have been listed and questions posed to focus attention on clarifying various aspects for discussion on a comprehensive pricing methodology for the telecom sector. II. IMPORTANCE OF TELECOM 2. The progressive transformation of telecom technologies and products has resulted in a large decline in world-wide telecom costs and emergence of a variety of new markets and opportunities.

Due to these developments, the telecom sector has become connected with a growing number of activities, and has emerged as a major modernizing and dynamic influence in several parts of the world. An efficient and widespread telecom network is increasingly becoming a necessary infrastructure to utilize and develop various technologies, and to achieve both economic and social goals. 3. For India, the gap between the actual situation and the likely opportunities is highlighted starkly by its low

teledensity, both at present and as expected at the turn of this century. This suggests an urgent need to invigorate the telecom sector in India.

Pricing methodology is an essential component of any attempt to infuse dynamism in this sector. III. TELECOM TARIFFS 1. Objectives of telecom pricing methodologies 4. Prices are an important means to achieve policy objectives.

The telecom sector’s objectives cover a wide canvas which includes enhancing efficiency and flexibility of operation, financial viability of the sector, promoting investment and innovation, stimulating demand and competition, addressing unfair competition, and meeting social objectives such as universal provision of telecom services at fair and reasonable rates. . For achieving these objectives, there is an increasing focus on efficient cost-based pricing, with a forward-looking perspective. At the same time, flexibility of prices and competitive pressure on prices are also emphasized.

Price floors and ceiling, together with unbundling of the various services, have been considered for addressing the issue of unfair competition. Higher peak-time prices are used to better manage demand, and subsidized prices might be required to achieve social objectives such as providing universal access to telecom. 2. Methodologies for determining telecom tariffs 6.

Earlier, regulators focused on providing telecom operators with a specified rate of return which ensured financial viability while keeping the price low for consumers. Experience showed that this methodology requires considerable information and gives rise to perverse incentives, leading to inefficient operation and investment. 7. More recently, due mainly to increasing

competition in the sector, the focus has been on prices which encourage dynamic elements such as efficiency, innovation and flexibility. 8. Prices can be based on costs or demand, and could be specified in terms of a particular level or with some flexibility for the operator to decide the price level.

An increasing trend in certain countries has been to exclude services from price regulation if there is adequate competition in their markets. Enhanced competition has also led to tariff restructuring in several countries to alter the previously prevailing pattern of cross-subsidizing local calls and rentals through relatively high prices for long distance and international calls. This restructuring has basically meant that prices are getting more cost-oriented. Such cost-orientation of prices can arise either through the determination of a price level based on costs, or through a flexible process such as under a price cap methodology (see below).

a) Prices based on costs 9. Short run marginal (or variable) costs, long-run incremental costs (which include investment costs), and fully-allocated costs have been considered for specifying prices based on costs. All cost-based pricing requires considerable information and monitoring, and a number of conceptual and practical problems arise in properly measuring and assigning costs to the various telecom services. 0.

Prices based on short-run marginal costs and long-run incremental costs promote efficient production. However, the revenue derived on the basis of these two cost-concepts does not cover total costs because they do not account for all the costs that are incurred by a telecom operator. In contrast, fully-allocated costs cover all costs. Despite this, there is increasing

emphasis on using long-run incremental costs for cost-based pricing because they promote efficiency, while fully-allocated costs foster inefficiency. Long-run incremental costs cover a greater portion of total costs than marginal costs, and incorporate dynamic elements such as technical change and economies of scale. 11.

Different variants of long-run incremental costs can be calculated depending on the level of output, time period and technologies used. A wide coverage is provided by total service long-run incremental costs (TSLRIC), which basically shows the cost the firm would avoid in the long run if it stopped providing a particular service. b) Mark-up 12. A mark-up is required to cover the deficit that would arise if an efficient cost-based price were determined.

Different methods for ascertaining the mark-up include: mark-up varying inversely with elasticity of demand of different users or services (Ramsey rule); applying a rule-of-thumb, such as a risk-adjusted reasonable commercial return; and applying different price slabs to different units of usage, or obtaining the requisite revenue through rentals. The rule-of-thumb is the most straight-forward of the mark-up methodologies. Since demand is not easy to estimate, Ramsey rule provides at best a rough guide on the nature of the mark-up. c) Subsidized pricing 3. Subsidies to price are given normally for achieving social objectives such as promoting the provision of universal service in telecom or providing preferential telecom access to specific users such as hospitals or those living in remote areas. The subsidy could be given, for example, in terms of access charges, rentals or price of the calls made.

14. With greater competition and pressure for changing the prevailing pattern of cross-subsidization, there is a great need to improve the transparency of the extent and nature of the subsidies being provided. This requires greater transparency of costs and revenues, and an unbundling of the services being provided. With such information, the policy-maker would have a better basis to consider alternative policies to fund the subsidies. d) Demand-based pricing 15. Under this methodology, prices reflect willingness to pay for the use of a product, or the value given to a particular product.

These prices are shown by the demand curve. In assessing the social value from a demand-price, it would be necessary to specify the social value of consumption of the service by different customer groups. Demand-based prices are not easy to determine on account of the difficulty of determining the demand curve. e) Flexibility 16.

With increasing complexity of emerging telecom products, difficulty of monitoring and ascertaining costs of production, and the market providing price discipline as the level of competition increases, telecom regulators are increasingly relying on flexible pricing methodologies. This is done either by providing a range within which prices can be fixed by the operators, or by not extending price regulation to certain products (normally products with competitive markets or those that are not considered essential). 7. A flexible price range is usually provided under a price cap methodology, which imposes an upper limit on the average price increase for a basket of telecom services.

This increase is specified under a formula which usually incorporates a need to decrease prices due to a rise in productivity. For certain specific services, sub-baskets are devised with conditions different from the overall basket. The price cap methodology provides considerable flexibility to take account of various policy objectives, including equity and efficiency of operation. 8. Price floors and ceilings have also been used for providing flexibility, and to limit an operator from abusing its dominant market position.

19. Price flexibility is also achieved through different price options provided for alternative combinations (or volume) of services that are purchased by customers. These include, for example, options providing combinations of a high rental and low usage charge or a low rental and a high usage charge, or volume discounts. f) Conclusions from the discussion on pricing methodologies 20.

To begin with, a regulator needs to determine which services should be subject to price control and which should be left outside the purview of such control. The next step is to consider what type of regulation should apply to the various telecom services subject to price regulation. For instance, should different types of control be used, with certain services (such as essential services) being subject to closer price scrutiny and control (including a specific price level being determined for them), and prices of other services being controlled only broadly through price floors and ceilings. Alternatively, should only a price cap mechanism be used for regulating prices, or should such a mechanism supplement the other forms of price control in order to infuse some simulated competitive pressure on prices.

21. Even for those services which are not subject to any price regulation, mechanisms are available to deal with situations of unfair competition. An effective functioning of these mechanisms requires unbundling of the various services. Furthermore, unbundling, together with better account-keeping, enhances the transparency of revenue and costs linked to different services. Detailed account-keeping is also an important requirement if prices based on costs were to be used. 22.

Another benefit of more detailed account-keeping is to improve the transparency of subsidies given for social reasons, thus providing a better basis for policy-formulation in this regard. 23. There are a number of methods to fund the deficit that arises due to expenditures for meeting social objectives. These include increasing the telecom tariffs or rentals, creating a fund financed by the license fee obtained from the telecom sector, or by revenue obtained through a levy or a tax. If a levy were impose on the telecom operators for financing this fund, then the price of certain telecom services might need to be increased to accommodate this “ additional cost”. 24.

The discussion suggests a number of questions and options to be considered with regard to tariff policy. A list containing these options and questions is provided in the Annex to the Executive Summary. IV. TELECOM TARIFFS IN INDIA 25.

Some salient features of the telecom tariffs in India are considered next, in particular the escalation in tariffs as the number of calls increase, tariffs for STD calls (including international calls), operator-assisted trunk call rates,

different rentals charged on the basis of the capacity of a subscriber’s telephone exchange, preferences given to rural subscribers, and off-peak rates to ease the pressure on the network during peak-hours. The paper raises questions on whether or not these tariffs and rentals should be re-balanced, and provides certain options in this regard (see Annex to the Executive Summary). 6. In making any assessment of the prevailing tariff system in India, it is useful to bear in mind certain features which have a bearing on the Indian telecom scene. These include: excess demand for telecom on account of congestion in the network and unsatisfied demand for linkage to the network; likely substantial growth in demand for telephones; inadequate information on telecom demand in India (including on demand elasticity); inadequate information on costs; and private investors being limited to specific segments of the telecom market.

V. INTERCONNECTION CHARGES 27. Interconnection involves a linking up of one telecom operator to the infrastructure facilities of another. Interconnection charges include charges for collecting and delivering calls, for installing, maintaining and operating the points of interconnect, payment for supplementary services, and for ancillary and other facilities (such as space in the equipment room). In many instances, a charge is levied for funding the expenditure due to universal service obligations.

28. Basically interconnection charges are paid either through sharing of revenues among the interconnected operators, or on the basis of the cost of the interconnection service provided (plus a reasonable profit). The latter approach is more widely used. a) Procedures Used for Setting Interconnection Charges 29. The procedures used to establish

interconnection charges include, •the regulator determines the charges, together with other essential elements of interconnection, in advance; •the regulator sets the standard or guidelines hich should be used for establishing the rates through (bilateral or multilateral) negotiations among the operators themselves; •the operators set the rates through commercial agreement, without the involvement of the regulators; •In the negotiations between the operators, the regulators stand-by as mediators/arbiters, settling the interconnection charges in case the parties involved fail to agree or if a dispute is brought to the regulator. 30.

In most countries, regulators encourage the operators to settle interconnection rates through negotiations. To assist this process, the regulators normally establish guidelines or a framework which they consider desirable for determining interconnection charges. b) Objectives of Interconnection Pricing 31. The objectives of interconnection pricing policy are similar to those mentioned in the context of telecom tariffs. This is particularly so because of the link between interconnection and the provision of telecom services to end-users.

However, the objective of efficiency in interconnection not only requires a cost-based price, but also flexibility of interconnection. The latter aspect involves two features. One is to facilitate interconnection among different operators at any specific point (unless technically infeasible). Second is that the interconnection should be made available for the specific elements of the network for which interconnection is required rather than a whole bundle of interconnection services being purchased.

This suggests a need for unbundling of the interconnection services provided. 32. A very important objective under interconnection is prevention of unfair competition. This requires identifying those interconnection services which are essential for facilitating competition, or are required for essential services. Such services are subject to particular scrutiny and control, including monitoring and specification of interconnection charges and other access conditions. Furthermore, in certain cases, cost-concepts (such as incremental costs or “ stand-alone costs”) are used to define the limits on prices through floors and ceilings.

This helps to guide the negotiations on interconnection among operators. 33. Emphasis on promoting competition also implies that interconnection charges do not discriminate between different operators, particularly with reference to the operator which belongs to the same business group as the interconnection provider. 4.

An important feature about interconnection charges has been that in a number of cases, preferential treatment has been provided to a new entrant. One reason for this is the view that the newcomer starts with a competitive disadvantage, in particular due to the various types of interconnection problems that can arise, and the difficulty of initially generating an adequate market to cover the relatively high start-up costs. Preferential treatment helps the new entrant to stabilize in the market, with market stability judged in terms of certain criteria such as market share.) Different methodologies for fixing interconnecting charges 35. It is easier to determine the cost of physically linking-up an operator with another operator’s network than to determine the cost of providing interconnection services.

Therefore, most of the focus under interconnection charges has been on determination of these charges for the latter aspect. 36. Interconnection charges have generally been based on the time period (duration as well as peak or off-peak period) and the distance covered by the call. The different methodologies for fixing interconnection charges and mark-up for provision of interconnection services include several which were mentioned with regard to telecom tariffs, e. g. cost-based pricing, two part tariff, price caps, floors and ceilings, Ramsey mark-up, and uniform or cost-axiomatic mark-up.

Similar issues, as discussed earlier, arise for these methodologies. 37. Other methodologies include, (i) Charges based on the structure or the level of actual tariffs in place for telecom services. Not being linked to costs, this method leads to inefficient operation and investment. ii) Charges based on the time used by the calls made and the distance covered by the calls; (iii) Charges based on the capacity to which access is provided.

This method has been found difficult to implement, mainly because interconnecting carriers have underestimated their peak demand, which in turn reduces the competitive pressure in the market. (iv) Charges based on the network elements that are used through interconnection. This gives a better estimate of the costs involved, but requires more detailed information for implementation. v) The “ efficient component pricing rule” (ECPR) methodology, which provides for a floor and a ceiling for interconnection charges, and that interconnection charges comprise both the costs of giving interconnection as well as the earnings lost by the interconnect provider because of the telecom traffic that is diverted from that operator to the new entrant who obtains interconnection. This methodology is supposed to evoke

less political and strategic opposition from the incumbent regarding entry into the market.

The new entrants have to be much more efficient than the incumbent in order to enter the market. However, this approach has been criticized on a number of grounds. It would sanctify the market revenue earned by the incumbent in a protected market, and would make it more difficult to infuse competition, efficiency and even the introduction of related (but novel) products through new entry. Moreover, the incumbent operator may not have much incentive to improve the services for users because it makes a return whether or not the whole call is made on its network. These issues are compounded by a difficulties in ascertaining the extent of diverted traffic. Furthermore, if there is excess demand, then the diversion of market away from the incumbent is unlikely, or is likely to be small.

Without market diversion, the ECPR is like a cost- based rule with floor and ceiling prices. Due to the various problems with the ECPR methodology, this approach has been rejected in general. Most countries in the world use cost-based interconnection charges, or have decided to use costs as a basis for interconnection charges. (vi) The issues regarding cost-based charges are similar to those arising in the context of telecom tariffs. Once again, a combination of efficiency and revenue considerations have resulted in the focus being on long-run incremental costs.

Parallel to the total service long-run incremental costs (TSLRIC) which was mentioned with regard to telecom tariffs, a concept of total element long-run incremental costs (TELRIC) has been suggested for interconnection charges.

While TSLRIC focuses on the cost of providing services to end-users, TELRIC addresses the use of specific elements of the network by the interconnecting operator.) Suggested Guidelines 38. Operators should be encouraged to settle interconnection charges through negotiations.

Intervention by the regulators should be in the event of a difficulty or a dispute in the negotiations. 39. Interconnection charges for establishing a connection with another’s infrastructure facilities should be separated from charges for using the network facilities. The set-up costs associated with establishing and maintaining interconnection facilities should be shared between the interconnecting operators. 40. It would not be possible (nor desirable) to specify interconnection prices for each one of the interconnection services.

The interconnection services should be divided into essential services (essential for competition or for consumption), and others. While the regulator would address the issue of interconnection charges for both these services when there is a dispute or lack of agreement among operators, greater control and scrutiny has to be exercised for interconnection charges for essential services. This includes changes in these charges for essential services being subject to specific approval. 41.

Further, in order to increase the predictability of the process and to assist negotiations among the operators, cost-concepts should be identified on the basis of which a range (floor and ceiling) normally expected for these charges could be specified. 42. Efficiency would require cost-based

interconnection prices. The relevant concept of cost is incremental (i. e. forward-looking) costs, calculated for an efficient (i.

e. the most productive) operator. The costs should be those which reflect cause and effect relationship to the maximum extent possible, i. e. should incorporate all directly attributable costs. Further, the interconnection charge should include a normal commercial return.

43. Being based on costs, a change in the interconnection charge should itself be linked to a change in costs (or in efficiency). The relevant components for such a consideration will depend on the specific prevailing situation. 44.

A price cap mechanism could be combined with prices for essential services and for the prices given in terms of floor and ceiling. Such a pricing mechanism will address the issues of efficiency and unfair competition, provide flexibility of operation, and exert pressure to improve efficiency over time. 5. To promote competition and to guard against unfair competition, interconnection charges should be non-discriminatory. If a relatively higher charge has to be imposed on any operator, it should be based on a demonstrated difference in the cost of providing the particular interconnection service to that operator.

Similarly, the interconnection price charged to competitors must not be greater than the interconnection provider’s best price to its own vertically integrated operations (unless there is a cost justification). To limit the possibility of unfair competition, interconnection charges for any service roviding the same functionality should not have a different price. 46. As

much as possible, the charging structure should be unbundled so that a telecom operator pays for what it uses and is not forced to pay for what it does not use. In view of the principle of non-discrimination mentioned above, the interconnection charges for unbundled elements of a service must be priced the same across all bundled services. Furthermore, for consistency of pricing of unbundled services, any part of a service should be priced at less than the price of the whole service (unless cost justification is provided).

Similarly, an interconnection charge for a service should not be greater than the sum of the interconnection charges for the various parts of this service (unless cost justification is provided). 47. Since the operator seeking interconnection has to operate with a reasonable profit in the market, the interconnection charge should be below the end-user price of the service. There might be a need to provide a preferential treatment to a new entrant. For that purpose, the interconnection charge could be based on a cost-concept which provides an interconnection charge lower than a concept which has a wide coverage of costs.

This preference could be granted for a transition period, based on certain criteria such as market share. The preference could be removed once the entrant’s market position is stabilized. e) Policy in the near future 48. Full implementation of the above-mentioned principles would require developing appropriate cost-accounting methodology, and collection of detailed data. This would require time, and the question is whether the decisions on methodology and determination of interconnection charges should be suspended while detailed data is being collected.

The answer to this question has to be in the negative. There is a need to determine both the methodology and to take other decisions soon, and this will be done on the basis of the available information, albeit imperfect. Thus, while detailed cost information is being collected, a decision on methodologies for interconnection charges would be taken, and these charges could be based on a quick (but rough) estimate of the relevant costs, or on revenue sharing arrangement, or on international benchmarks.