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Liberalising Telecommunication Markets: A Framework for Assessment

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An important policy objective of the telecommunication reform process in recent years has been to liberalise markets. A major task of national regulatory authorities has been to facilitate the development of competition, and promote an evolution toward sustainable, well-functioning telecommunication markets wherever possible. As a reference point for assessing the progress and possibilities for establishing sustainable competition in different telecommunication markets, it is useful to identify the essential characteristics of well-functioning markets and the barriers to competition that exist in the telecommunication industry.

1. Characteristics of Well-functioning Markets

The economic analysis of markets concludes that, in most sectors of the economy, active competition is the most effective means to achieve, 1) efficiency and innovation in the supply of goods and services; and 2) consumer protection, by providing choice among competitive offerings. Well-functioning competitive markets are characterized by several important attributes,

1.1 *Ease of Market Entry and Exit*

Free entry and exit makes markets function efficiently. Barriers to entry (e.g., restrictive licenses, very large investment requirements, etc.) reduce possibilities for participation in the market, thereby limiting the extent of competition (and thereby market efficiency) that is possible.

1.2 *Absence of Significant Monopoly Power*

In a well-functioning competitive market, no firm has power to dominant the market. The existence of significant monopoly power in a market restricts the participation opportunities of smaller competitors and potential new market entrants. The market pressure for competitive efficiency and innovation is reduced; consumer choice and price protection are weakened.

1.3 *Widespread Availability of Information*

All parties in the market, including firms and consumers, must be well-informed in order to make effective decisions. Timely and relevant information must be easily accessible. Barriers to information weaken the ability of markets to function efficiently.

1.4 Absence of Market Externalities

If all the *costs* of producing a good or service are not borne by the firms supplying it, the additional social costs (e.g., pollution) are external to the market. If the *benefits* to society are not all captured in the prices that consumers pay and the revenues the firms collect, the social benefits (e.g., public health and safety) are external to the market. In a well-functioning market, the social costs and benefits are fully recognised within the market. There are no spill-over effects of consequence.

1.5 Achievement of Public Interest Objectives

When the market achieves its goals of efficiency, innovation and consumer protection, it will at the same time achieve any special public interest objectives as well. There are no special public interest objectives to satisfy (e.g., universal coverage) that go beyond the capabilities of a well-functioning market.

2. Improving the Performance of Imperfect Markets

Most markets in the economy do not inherently satisfy all the conditions necessary for a well-functioning market. They are characterised by varying degrees of market imperfection. In some sectors of the economy, the imperfections are minor. In others, governments examine the type and significance of the market imperfections, and the need for various kinds of market intervention by government directed to improving the performance of these markets.

It is common for governments to take steps to minimise barriers to entry and to ensure consumers have access to essential information. Competition authorities attempt to maintain active competition in markets by prohibiting and punishing abuses of monopoly power. The social costs of market externalities are charged to the firms producing them (e.g., pollution) and consumers using the products (e.g., recycling) where possible.

In sectors of the economy where market externality costs and benefits cannot be effectively incorporated into the market, or where the market cannot be expected to achieve public interest objectives, government either supplies the service itself (e.g., defence, public health), or applies direct industry specific regulation (e.g., telecommunication, energy, transport).

3. Markets in the Telecommunication Sector: The Traditional View

Historically, telecommunication has been viewed as a sector where competitive markets could not function effectively. Services were provided by

monopolies throughout most of the 20th century, either government owned and operated or private monopolies subject to direct government regulation. It was considered to be a “natural monopoly” because of certain inherent industry characteristics and special public interest objectives:

3.1 *Single Network* – all the components of telecommunication networks are interdependent. A single common co-ordinated network is necessary to permit communication among all subscribers;

3.2 *Public Resources* - telecommunication service providers must be able to use public resources that cannot be purchased in well-functioning competitive markets, i.e., rights of way to lay cable, limited specific frequencies in the radio spectrum, co-ordinated allocations of telephone numbers;

3.3 *Inefficiency and Unsustainability of Competition* - investment requirements to construct telecommunication facility networks are extremely high. The networks are characterised by high fixed costs and significant economies of scale and scope. In such a market, competition was seen as unsustainable because monopoly supply would be much more efficient;

3.4 *Network Externalities* – telecommunication services provide benefits not only to those who originate and pay for telephone calls, but also those who receive them and normally do not pay, as well as others who are not party to the conversations, but benefit from the messages. Telecommunication networks and services provided through a well-functioning market will not be extended sufficiently to capture these significant network externality benefits.

3.6 *Public Interest Objectives* – many governments have specified public interest objectives that require telecommunication services to be provided beyond those that a well-functioning market could be expected to provide, e.g., emergency, public access, disabled access, universal service obligations.

4. Markets in the Telecommunication Sector: Liberalization Reforms

Since the 1980s, a programme of telecommunication reform has been underway around the world focused on liberalising telecommunication markets. It has been stimulated by rapid technological advances, including the digitalisation of telecom networks and the convergence of telecommunication and computing technologies, as well as the growing importance of telecommunication-based communication and information services for the productivity of entire economies. Under these changed circumstances, it has become apparent that there must be much greater participation in the sector, and competition can play an important role in stimulating efficiency and innovation.

This telecommunication reform process has been characterised by the privatisation of incumbent monopolies and the introduction of competition into markets wherever possible. The establishment of independent national regulatory authorities has been essential to facilitate implementation of the reforms, promote competition, provide consumer protection where necessary, and ensure public interest policy objectives continue to be met. The introduction and expansion of competition in telecom markets has been a major objective of most national regulatory authorities.

Experience with liberalised telecommunication markets has demonstrated a wide diversity in the extent of competition that has developed in the different markets. The unbundling of terminal equipment from network services has resulted in well-functioning terminal equipment markets. The unbundling of telecommunication network services from facilities has resulted in well-functioning markets for international services and some value-added network services. The recent unbundling of the local loop offers the potential to expand this services-based competition across additional services. Increasing numbers of mobile operators have increased competition in that sector.

However the testing of competitive market possibilities in telecommunication has highlighted a number of continuing barriers to the establishment of well-functioning competitive markets for several important categories of service. These barriers are common to telecommunication markets everywhere. However the relevance and significance of each barrier will depend upon the circumstances that prevail in particular countries at different stages of the telecommunication reform process. These common barriers include,

4.1 *Facility Network Restrictions*

Although the introduction of mobile communication networks has provided for a degree of facilities-based competition, barriers to entry for the construction of facility networks remain extremely high. Limitations on available spectrum require special licensing and limit the market structure to a few firms. Mast and antennae location issues require public interest coordination. Fixed networks still require very large-scale investments, as well as public interest coordination of essential public resources - access to rights of way for the construction of network facilities, spectrum allocation, and assignment of telephone numbers.

The barriers to establishing facilities-based competition in well-functioning markets remain extremely high. Regulation must ensure that these market imperfections do not distort downstream services markets that are dependent on the facility networks of dominant operators for access to customers. Policymakers and regulators in many countries are investigating the potential special ex-ante application of competition law principles by telecommunication regulators as a necessary step to ensure that competition opportunities are not foreclosed by the monopoly power of dominant facility network operators.

4.2 *Interconnection of Networks*

Reasonable interconnection arrangements cannot be expected in the market when one firm has significant monopoly power over access to customers. It is not in its economic interest to engage in such arrangements. As long as there is a dominant firm in the market, regulatory oversight on interconnection will be necessary to ensure that competition has an opportunity to develop.

4.3 *Access to Networks*

If a firm has significant monopoly power over the facilities network connections to customers, it will have no market incentive to establish reasonable network access arrangements with competitive services suppliers when it also provides these services. Regulatory oversight on access arrangements for competitive operators will be necessary to ensure that competition has an opportunity to develop.

4.4 *General Market Conditions in the Industry*

The introduction of general market conditions that enhance consumer choice and the intensity of competition are often not in the interest of any service supplier to promote. In telecommunication, such conditions include the ease of customer choice relating to carrier selection, number portability and call selection. Also, markets that are insufficiently developed do not provide consumers and/or smaller competitors with the necessary timely and relevant information to enable informed decision-making. As the market liberalisation process proceeds, regulation will need to facilitate the development of better-functioning markets by promoting more competitive general market conditions in the industry and more informed decision-making by the market participants.

4.5 *Consumer Protection*

Although competition has developed for some services, many residential users are entirely dependent upon the incumbent fixed network operator for access to the network and for basic telecommunication services. For these services being purchased under monopoly arrangements, regulation must ensure the reasonableness of consumer prices and quality of service. In addition, with a wide range of new electronic services now in development, including e-commerce, new industry specific issues of consumer awareness, information and protection can be expected to arise.

4.6 *Termination Service Monopoly*

With the increased participation of competitive firms in the industry, an increasing proportion of calls originate on one operator's network and terminate on another's. In the mobile sector, in particular, this has led to the practice of charging termination prices to the operator originating

the call, who in turn passes these charges back to the originating customer. This has created conditions for a completely dysfunctional termination market. The operator terminating the call has a monopoly on its customer's telephone number. The consumer ultimately being charged is a customer of another operator, often in another country, who does not know what price is being charged until the invoice arrives sometime later. Regulation must ensure the reasonableness of prices for monopoly termination services.

4.7 Universal Service Obligations

Universal access to basic telephone services is a well-established public interest objective. Regulation ensures that universal service obligations are implemented effectively. As the network is being enhanced to broadband capacity to enable e-economy and advanced Internet services, universal service obligations are being expanded. Regulation will need to ensure these obligations are implemented effectively.

5. Conclusion

The telecommunication industry has a number of distinctive characteristics that prevent competition from being fully effective in promoting efficiency, consumer choice, and public interest policy objectives. These include, requirements for very large-scale investments in fixed network facilities; use of essential, limited public resources – rights of way, spectrum, numbers; the presence of significant monopoly power by incumbent operators; the necessity of interconnection among competing networks on reasonable terms; monopoly over the telephone numbers on which calls are terminated; limited consumer choice for some essential services; and requirements for universal services.

Nevertheless, in the evolution of liberalised markets, competition has had a major impact upon efficiency and innovation in some markets. The significant barriers preventing the development of well-functioning markets for a number of services can be reduced further by proactive regulatory activity promoting opportunities for greater competition. The challenge for regulation in the next phase of telecommunication reform is to minimize barriers to competition, and to ensure they do not distort competitive market opportunities or the achievement of public interest objectives.