Graduate School of International Corporate Strategy, Hitotsubashi University

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#### Economic Analysis of Regulation and Public Enterprise

# REGULATION IN

# TELECOMMUNICATIONS INDUSTRIES:

***Why, What and How to Regulate?***

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Recent empirical studies have showed that national indicators correspond closely to the degree of competition in telecommunications markets. Greater competition has generated greater innovation, investment and spin-offs for the economy as a whole. However, many governments have found that competition in telecommunications can bear good results only if appropriate regulatory institutions are functioning effectively. Consideration of advantages and disadvantages of specific regulatory policies raises questions on why regulate, what to regulate and how to regulate.

##### Why Regulate Telecommunications?

There are different approaches trying to answer this question, but basically they are split into two views: whether government should regulate actively or intervene only in case of “market failure”.

*Public policy goals:* Even though the ultimate goals are the same, the relative priority given to different goals may vary. For example, in developing countries with a limited access to telecommunications services, the policy goal to make them universally accessible is especially important. While, in developed countries, the priority goals may be to raise the efficiency of telecommunications and maintain a basic telephone service.

*Market failure:* General goals such as “universal accessibility” cannot be enough to justify regulatory intervention when the prevailing view relies on market forces to promote efficiency and innovations. In this case, the strongest justification takes the form of “market failures” and the regulator may intervene in order to facilitate competitive entry, combat abuse of market power and redistribute benefit.

Actually, the nature of the problems addressed depends on the structure of the telecom services industry, the general economic, political and social situation and the prevailing set of fundamental telecommunications policies, particularly those concerning the roles of monopoly and competition. Accordingly, we may consider three groups of countries: (i) full monopoly, (ii) partial monopoly and (ii) full market system.

As some countries have moved from one of these groups into another, the major problems to be solved by regulators have changed. For example, as Mexico introduced competition in cellular services and privatised its former state telephone monopoly, Telmex, it has faced controversial issues concerning the interconnection of different carriers' networks. In the United States, the evolution of the telecommunication industry since the 1950s illustrates a gradual transition from the first group via second to the last one: if in the beginning, the regulatory policy concern was to assure the universal availability of telecommunications services with reasonable rates, over the years, as competition has developed, regulators become more confident about the provision of different telecommunications services. Thus, a gradual relaxation and withdrawal of some forms of regulation (notably controls on the pricing of services to end-users) has been introduced. At the same time, new forms of regulation have arisen from the need to solve new kinds of problems, concerning for example, the terms of interconnection between different carriers' networks, or control of the numbering plan in a multi-carrier environment.

In spite of variations of the regulator’s mandate across each group of countries, some of his basic missions can be defined as following:

1. *Promotion of “universal service”* targeting low-income households, users in remote geographical areas, or disabled persons. For example, in Argentina, this was done through setting goals for the expansion of PTO networks; in the United Kingdom and U.S., through imposing “lifeline” tariffs for low-income users.
2. *Protection of user interests*.
3. *Change in the industry structure.* The desired change is usually towards a more competitive industry structure, but this mission can be far from "deregulation". For example, in Japan, the Ministry of Posts and Telecommunications caused NTT to maintain high charges between Tokyo, Osaka and some other major locations for the initial period of competitive entry, to help new entrants gain a foothold.
4. *Movement towards a “no discrimination policy” or “level playing field”.* However, in this case, the concern on the need to discriminate in favor of new entrants has to be addressed (mission 3).
5. *Supervision of the dominant PTO* in case of limited or absent competition. This can be done, for example, through applying price-cap regulation like in Mexico.
6. *Stimulation of innovations*. In many countries, the regulator is seen to anticipate opportunities for innovations and creating a favourable environment for their timely exploitation. For example, in the United Kingdom the pioneering action of OFTEL in granting licenses for the Personal Communications Network (PCN) and Telepoint (CT2); in France, current activity by DRG on PCN licensing; in the U.S., policy of granting "pioneer's preference" in the licensing of radio frequencies to companies pioneering new service concepts and technologies.
7. *Management of common resources effectively.*
8. *Stimulation of investments in the public network.*
9. *Network interconnection.* Open entry requires interconnection. It is important to create favourable environment for interconnection of new network operators and other providers of telecom services. However, the more innovative the services of the new entrant, the tougher the problem may become for the dominant carrier. This subject requires considerable study and analysis, since it lies at the heart of the challenge of finding economically efficient means of facilitating entry and promoting competition.

In practice, the regulator’s mandate represents a mixture of these different concepts. Not only does the "mix" vary from country to country, it also evolves over time. For example, in Canada, telecom regulation has traditionally followed the mission of *supervising the dominant PTO*. More recently, the mission of *changing the industry structure* has emerged as a major thrust of Canadian telecom regulation policies. A cellular duopoly was established and a second long-distance carrier, now known as Unitel, was granted operating and interconnection rights to the local telephone companies' networks. This consent was initially given only for leased-line and packet-switched service, and not for switched telephony, but Unitel is now licensed to provide a full range of long-distance services, including voice services.

##### What to regulate?

The provision and use of telecommunications services may be regulated in the following ways:

1. licensing carriers;
2. establishing and supervising technical and operational standards and practices for network operations by carriers;
3. overseeing the quality of service provided by carriers;
4. regulating the pricing of telecom services, either by controlling telecom operators' rates (tariffs) in detail or by applying some more general form of control such as a price-cap;
5. setting the terms (administrative, financial and technical) for the interconnection of different carriers' networks, including the "access" pricing charged by one carrier to another, where there are multiple carriers and one carrier needs to interconnect with another's network;
6. controlling type approval of customer premises equipment (CPE) and its attachment to the public network;
7. controlling the numbering plan and related matters.

The decision on "what to regulate" has substantially varied in various countries since it depends on what outcomes are to be achieved. For example, in “full monopoly group” countries (e.g. Spain, Italy and the majority of developing countries), the regulator's goals will imply that:

* supervision of the monopoly PTO's technical standards and practices may be unnecessary;
* price regulation will be necessary and important;
* licensing new carriers and regulation of network interconnection is not relevant.

At the other extreme, in a highly competitive group countries (e.g. U.S. long-distance telephone service), the regulator’s goals will imply:

* regulatory control of some technical and operational matters is essential since effective competition requires extensive interconnection of different carriers' networks;
* price regulation may become unnecessary, at least in some segments of the industry;
* licensing function may be unnecessary or minimal;
* rules concerning the interconnection of different carriers' networks are of critical importance.

But what if a government chooses not to regulate at all? Experience suggests that this decision is too illusory: in the unregulated or self-regulated monopoly, someone must determine whether or not the monopoly is acting in the public interest, and intervene if it is not.

These considerations, among others, have led the countries of the European Community to collectively enact EC legislation requiring the establishment in each country of an explicit regulatory process for telecommunications and a regulatory body to implement that process which is separate from operational PTO organisations, even in those countries where national legislators have chosen to maintain a monopoly of basic fixed voice services.

##### How to regulate?

Regulator with a defined mission can fulfil it using widely differing regulatory approaches. Actually, there are basically two kinds of choices that must be made to define regulatory approaches:

1. How far the regulator will exercise control, and how far the regulator will act "by exception." To what extent will certain matters (e.g. "access charges" for interconnecting) be controlled by the regulator, or will the regulator only intervene "by exception" when a particular regulatory case requires this? In the case of access charges, for example, U.S. practice involves continuous and mandatory control of access charges for fixed-service carriers. In the United Kingdom, by contrast, the regulator does not automatically exercise control over these charges, but may exercise the power to determine the charges if the various carriers fail to reach agreement.
2. How far the regulator controls outcomes directly, or indirectly. For example, if one goal of regulation is low prices for service, will the regulator control prices directly, or seek to influence prices indirectly by promoting an industry structure that is considered to be favourable to achieving low prices? Or, to take another example, will the regulator directly impose particular targets for network expansion and modernisation, or rely on the effect of a general framework of incentives designed to encourage carriers to pursue these goals?

In this context, let’s consider one of the most fundamental issues about whether or not the regulator should intervene to promote innovation. There are three different views on this matter:

* 1. *“Regulator as Patron”*: the regulator identifies the promising innovation, and takes steps to ensure that the organisation most likely to implement it is not only authorised, but have priority access to the resources necessary to implement the innovation.
	2. *"Pro-active Removing of Obstacles":* the regulator does not "pick winners" in this way, but nevertheless actively seeks to ensure that regulation itself does not impede promising innovations and to act pro-actively to provide an environment that is favourable for innovation.
	3. *“Arm's Length Approach”:* the regulator’s role is minimised in decision-making about innovation, and the regulator will respond to innovation initiatives from the PTO or other interested parties (e.g. telecommunications users, resellers or providers of value-added services). This may occur if the innovation needs the regulator to take specific actions before it can proceed.

Although these approaches are different, they are not clear-cut alternatives. There are many intermediate approaches between them. In table 1, the main advantages and disadvantages of these tree alternatives are presented.

Concluding all above, we can say that establishing proper regulatory institutions is an important precondition for successfully restructuring the telecommunications sector and increasing the involvement of private initiatives and market forces. Three basic questions are to be addressed at the outset - why, what and how to regulate – in order to settle the main two principal issues: how to ensure a proper interface between the regulated and competitive parts of the telecommunications, and how to encourage the innovative forces in the sector.

###### Table 1 Advantages and Disadvantages of the Broad Regulatory Alternatives Concerning Innovation

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|  | Advantages | **Disadvantages** |
| *Regulator as Patron* | May stimulate important innovations not previously foreseen.May significantly increase the rate of innovation. | Regulatory complexity and cost.Blurs the line between regulatory and commercial decision-making. |
| *Pro-Active Removal of Obstacles* | Maintains dividing line between regulatory and commercial decision-making. May still significantly increase the rate of innovation. | A country with this approach may in some cases become follower of a country with the “regulator as patron” model. |
| *Arm's Length Approach* | Simplicity and low cost for the regulator.Maximises the clarity of the dividing line between regulatory and commercial decision-making.  | May result in slower rate of innovation.May entail significant delays since the regulator needs to undertake new policy development efforts, after initiatives are received, before he can respond. |