

PUBLIC POLICY FOR THE

Private sector

The World Bank Group

July 1997

Note No. 121

Peter Smith

What the Transformation of Telecom Markets Means for Regulation

Powerful forces are recasting the business world in a fleetier, more competitive form. These forces, largely grouped around information infrastructure and new communications technologies, have come to be known collectively as the information revolution. This Note is the fourth in a series of five that looks at the information revolution and the future of telecommunications—and what they mean for the regulatory role of government.

In most countries, telecommunications regulators no longer regulate a static, monopolistic industry that provides essentially a single product, telephone service, but a dynamic, multiproduct, multioperator industry. In this respect, the telecommunications regulator is way ahead of its peers in other utility sectors in moving from a monopolistic to a competitive market. This environment is a fast-changing and an increasingly complex one where regulators face reduced scope for discretionary decisions. This Note explores the implications for the regulatory agenda.

Transformation of markets

The transformation of telecommunications markets is occurring in several dimensions—in the changing structure of demand, in the convergence of services, and in the changing structure of the industry. The transformation is driven mainly by technological developments. But competitive pressures resulting from the globalization of the world economy and the ideology and results of reform policies in the sector are also important forces.

- **Changing demand structure.** Only ten years ago, conventional “fixed” voice telephony dominated the revenues of all telephone companies. Today, unprecedented growth in demand for new services—facsimile, mobile telephony, and Internet—is fundamentally changing the overall structure of demand in the sector. For example, in Thailand recently, 24 percent of all telephones were mobile (figure 1). The exponential growth in the number of Internet servers and users, and consequently in the demand for bandwidth to carry graphics-rich data files, is intensifying the demand for national and international transmission links.
- **Convergence of services.** Convergence is occurring not only between telecommunica-

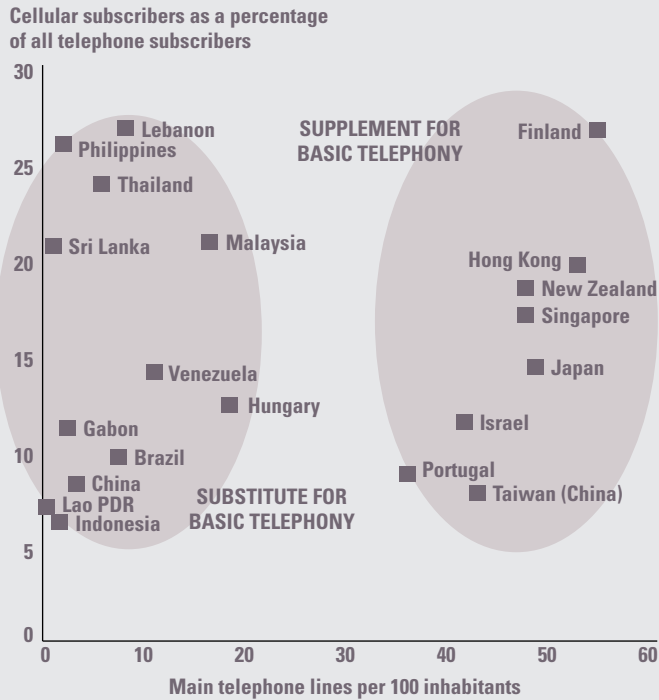
tions, broadcasting, cable television, and the Internet, but also within segments of the telecommunications market. For example, cellular mobile telephony is now a substitute for conventional local telephone service for many customers (see figure 1); the distinction between local and long-distance calling or, with the pending introduction of global personal mobile satellite service, between domestic and international service is becoming less and less relevant; and paging and cellular telephony are now sometimes bundled as a single service delivered through the same handset.

- **Changing industry structure.** There has been a fundamental shift in the industry structure in many countries toward a multioperator environment. Several factors are driving this shift. New operators are entering the market from other utility sectors (in the United Kingdom, for example, electric utilities and cable TV companies both provide telephony services). Service suppliers are going international as the era of national monopolies passes. And the resale of network services is becoming an increasingly important business as separating network ownership from service delivery becomes operationally and commercially viable.





FIGURE 1 DIFFERING ROLES FOR CELLULAR
Density of cellular telephones, 1995



- Determining whether entry in different market segments should be limited or open and setting the terms of entry—and thus creating market forces.
- Adopting processes for the award of licenses to service providers. (These may include bidding processes in which the evaluation criteria are clear and easily measured, as in price bids, or “beauty contests,” in which the bid evaluation criteria are subjective and the selection process is less transparent.)
- Resolving network interconnection issues and managing numbering plans to promote the emergence of a multioperator environment.
- Authorizing rate rebalancing (whereby prices are moved closer to costs by reducing prices for international and long-distance services and increasing them for local and network access service) in order to reduce economic rents and cross-subsidies.
- Applying new approaches to cross-subsidies, such as improved targeting of beneficiaries, bidding for minimum subsidies, and the administration of subsidies in a way that does not favor one operator over another.

The future of telecommunications regulation

These trends in telecommunications markets mean that regulators will operate in a rapidly changing environment characterized by increased complexity, reduced scope for discretionary decisions, increasing privatization of some aspects of regulation, and the convergence of regulation of different sectors and of regulation within the sector.

Management of change

In contrast to such utilities as power and water, telecommunications is now clearly a multiproduct sector with several alternative service delivery mechanisms that permit competition in service provision. Thus, the regulatory agenda has shifted from minimizing the price of subscribing to local telephone service or maintaining cross-subsidy to managing multiple issues related to competition, entry, pricing, and cross-subsidies:

Furthermore, the wireless revolution (reflected in the rapid growth of cellular telephony, the increasing significance of wireless local loop systems, and the planned deployment of several new-generation global personal mobile satellite systems) demands that regulators respond to the increased need to manage radio spectrum. Typically, this task involves allocating portions of the radio spectrum to different uses, assigning frequencies and authorizing transmission power levels to transmitters at specified locations, maintaining standards to ensure that transmitters make optimum use of the radio spectrum, and implementing measures to control unauthorized use.

But competition has not eliminated the fundamental reasons for regulation of the sector—the need to allocate the scarce radio spectrum and to protect customers from potential monopoly abuses. Voice telephony is still widely regarded as an essential public service, and the sector is still a potential monopoly in which

operators could adopt strategic behavior with respect to network interconnection, numbering plans, allocation of radio spectrum, and the use of cross-subsidies. Moreover, regulators are still gatekeepers of the transformation of the telecommunications market. They influence the speed, conditions, and areas of change, and they arbitrate conflicts that arise between winners and losers in that change. Consequently, regulators often must keep an eye on politically acceptable limits to change (for example, to the structure of cross-subsidies in the sector) while steering a course toward regulatory reform.

Increased complexity and reduced discretion

The transformation of telecommunications markets has made the job of regulating the sector much more complex. At the same time, it has reduced the scope for discretionary decisions. Market transformation is reducing the scope for regulators to maintain cross-subsidy, for example, as a result of the convergence of services within the sector. Traditionally, the clear segmentation of the market enabled regulators to treat different categories of customers and service providers differently, influencing the profitability of services and the flow of cross-subsidies. Thus, mobile telephone service prices were typically unregulated, while fixed telephone service prices were regulated. And monopoly international telephone service prices could be set very high in order to generate a pool of funds for cross-subsidy. But the convergence of services—reflected in the increasing substitutability of mobile and fixed services, the increasing ease with which high-priced international telephone service can be bypassed through private networks, the introduction of call-back services, and the pending introduction of global personal mobile satellite services—creates pressures to reduce differential regulatory treatment and to push prices closer to costs.

In addition, the involvement of the World Trade Organization (WTO) in setting rules for regulating basic telecommunications services further

reduces regulators' scope for discretionary decisions relating to, for example, preventing anticompetitive practices, providing interconnection with a major operator on nondiscriminatory terms, and allocating scarce resources such as radio frequencies and telephone numbers (Viewpoint 120).

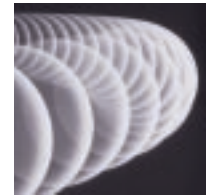
Privatizing regulation

With the increased complexity, the option of privatizing some aspects of telecommunications regulation is increasingly attractive. Two main approaches are possible. One is to create private property rights over the radio spectrum, which has been implemented to some extent in the United States and other countries through radio spectrum auctions. Once such property rights are established the new owners of the spectrum may wish to take an increased role in sublicensing to other users and in policing the use of the spectrum. By establishing property rights the commercial value of the spectrum takes on increased importance, and thus provides incentives for more efficient use.

An important extension of this approach, proposed by advisers to the government of El Salvador in 1996, calls for creating rights over designated commercial radio spectrum bands not just for specific uses, but for any use. This gives owners of designated commercial bands an incentive to assign frequency to the most profitable (or highest-value) use.

Creating property rights thus substitutes a market process for the government role in assigning radio spectrum for specific uses such as broadcasting, cellular telephony, or private telecommunications networks. The government role could be limited to managing the initial sale of spectrum, ensuring compliance with international agreements on spectrum use, and ensuring that ownership of the radio spectrum is not monopolized.

The second approach for privatizing regulation is outsourcing. While regulatory authority would remain with a government agency, many





functions could be contracted out, such as auditing the performance of operators, preparing public consultation documents, or implementing alternative dispute resolution mechanisms. The multioperator environment emerging in most countries promises a heavy workload for regulators in adjudicating billing, numbering plan, and interconnection issues. Alternative dispute resolution mechanisms and other forms of outsourcing are important options for reducing that workload as well as the budgetary burden on telecommunications regulators.

Convergence of regulation

Multisector public utility boards have been around for many years in the United States. These utility boards often have a mandate over telecommunications, natural gas, and electric power supply. And in some jurisdictions, communications regulators have a mandate over transport or broadcasting as well as telecommunications.

Now, new pressures for convergence in regulation are arising from four main sources. First, the overlap between regulation of carriage (telecommunications) and regulation of content (broadcasting) will increase as both telephone companies and cable TV operators begin to provide services previously provided only by the other and as the Internet's capability to deliver video improves.

Second, the substitutability of services across subsectors or market segments, particularly between telecommunications and cable TV, broadcasting, satellite broadcasting, or Internet, also creates pressures for harmonizing regulation across communications subsectors.

Third, the critical issues that are emerging in telecommunications relate to promoting competition: interconnection arrangements, revenue settlement, numbering plans, number portability, and the like. Although the implementation of procompetition policies in telecommunications is sector-specific (or in some cases, specific to network industries) in important ways,

the policy itself is essentially competition policy. This pressure for regulatory convergence is an outcome not only of the changing technology and market structures, but also of the increasing role of international agreements on telecommunications regulation. And as a result, telecommunications regulatory agencies will increasingly become specialized competition policy agencies.

Fourth, the high level of insularity or compartmentalization that has been possible at the national and international level as well as the sectoral level is being eroded. Until recently, for example, France could have a completely different regulatory approach than the United Kingdom. But the recent completion of the WTO agreements setting out commitments for regulating basic telecommunications services is a step toward international harmonization of regulation in the sector. And in the European Union, the application of European competition policy has played a key role in liberalizing basic telecommunications. These recent EU and WTO initiatives, though not comprehensive, are important steps in harmonizing national approaches to telecommunications regulation.

Conclusion

Regulation is profoundly changing the telecommunications sector. But change in the sector is also driving the agenda for regulation. It is hard to know where all this will end. But it is not inconceivable that telecommunications regulatory agencies will eventually disappear, absorbed into multisector antitrust agencies.

Peter Smith (psmith2@worldbank.org), Principal Telecommunications Policy Specialist, Telecommunications and Informatics Division

Viewpoint is an open forum intended to encourage dissemination of and debate on ideas, innovations, and best practices for expanding the private sector. The views published are those of the authors and should not be attributed to the World Bank or any of its affiliated organizations. Nor do any of the conclusions represent official policy of the World Bank or of its Executive Directors or the countries they represent.

To order additional copies please call 202-458-1111 or contact Suzanne Smith, editor, Room F6P-188, The World Bank, 1818 H Street, NW, Washington, D.C. 20433, or Internet address ssmith7@worldbank.org. The series is also available on-line (www.worldbank.org/html/fpd/notes/notelist.html).

♻️ Printed on recycled paper.