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Competition in Telecoms—Implications for Universal Service and Employment

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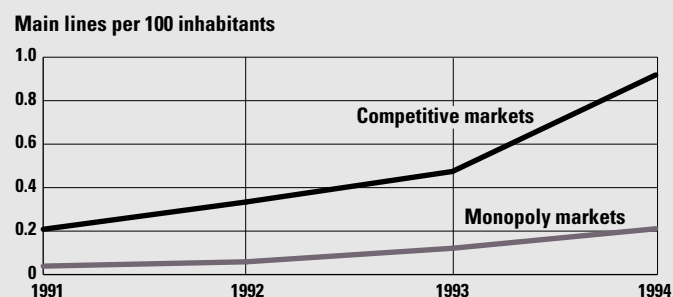
vided by a monopoly carrier, and this basic telephony is still out of reach for most of the population. The reluctance to open monopoly markets to competition arises from fears about what it means for universal service, employment, and the viability of the incumbent national carrier. This Note argues that these concerns are misplaced. The arrival of new technologies and new services means that the real issue for government is not whether to liberalize but when and how.

Universal service

In practice, there is little evidence that competition puts universal service at risk. Most of the available data point to an increase in network penetration and service availability with competition.

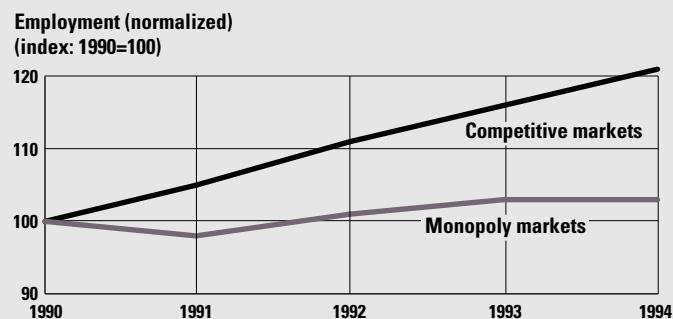
Competition in cellular services, which has been introduced more widely and for longer than competition in wireline services in developing countries, clearly has led to much greater network penetration than monopolies. In Asia and Latin America, for example, teledensity—the number of main lines per 100 inhabitants—has risen more rapidly in competitive markets (figure 1). In the OECD countries competitive cellular markets have achieved a teledensity three times higher than monopoly markets and cellular teledensity in markets with competition in both cellular service and the public switched telephone network (PSTN) is twice that in those with competition only in cellular services (OECD 1996b). The indirect competition from cellular service has had a positive side effect on wireline teledensity, promoting greater wireline network penetration than in countries with no cellular competition (Petrazzini and Clark 1996).

FIGURE 1 CELLULAR TELEDENSITY IN DEVELOPING COUNTRIES OF ASIA AND LATIN AMERICA



Source: Petrazzini and Clark 1996.

FIGURE 2 TELECOM EMPLOYMENT IN DEVELOPING COUNTRIES OF ASIA AND LATIN AMERICA



Source: ITU 1995.





Even the *threat* of competition in developing countries has an impact on monopoly carriers. Several countries have set a precise date for the end of the licensed public operators' market exclusivity. Where that date is less than three years in the future, there is a strong statistical correlation between the threat of competition and the increasing rates of teledensity growth (Petrazzini and Clark 1996).

Among developing countries, there are numerous examples showing the positive effect of competition on universal service. In China, the entry of a second carrier into the market has dramatically improved the rate of network and service deployment. In 1990, the network growth rate was 25.7 percent. In 1993, after the announcement of competition, the network growth rate skyrocketed to 58.9 percent. In the same year, ten national fiber-optic backbones were completed and a new high-speed communications system (ChinaDDN) was launched. In mobile telephony services, prices dropped by 30 percent and customer subscription grew by 261 percent. And the waiting period for new wireline connections dropped for both business and residential customers, by as much as 50 percent. In the Philippines, the announcement of competition in 1993 led to a 1,530 percent increase in the annual installation of main lines. A similar pattern occurs in new technologies such as the Internet. In OECD countries, for example, growth in the number of Internet hosts is five times faster in competitive markets than in monopoly markets (ITU 1995 and OECD 1996a). There is nothing to indicate that the same pattern would not occur in developing countries.

Privatization has also enhanced the prospects for universal service. Developing countries that have privatized their telecommunications systems have experienced much faster growth in their networks than those that have retained a state monopoly. This is particularly true in Asia and Latin America, where teledensity growth in countries with privatized telecommunications has been twice the rate in nonprivatized markets during each of the five years following

privatization. In Africa and the Pacific Basin too, the evidence shows that privatized systems have achieved much faster teledensity growth than their state-owned counterparts.

Employment

There is a widespread belief that competition triggers significant labor cuts, but the evidence suggests that this is not the case in developing countries. A comparative analysis of twenty-six countries in Asia and Latin America shows that during 1990–94 employment in markets with varying degrees of competition increased by 20.73 percent, while in monopoly markets employment grew by only 3.13 percent (figure 2). A more detailed analysis of the sample shows that while employment grew in all competitive markets, monopoly markets had an uneven performance: in traditional public operators, employment grew by 5.6 percent, while in privatized monopolies it dropped by 9 percent. But among the public operators, employment rose in only 40 percent of the companies, and declined in 60 percent (Petrazzini and Clark 1996).

It turns out that network modernization accounted for only 29 percent of all telecommunications investments in developing countries in the mid-1990s, while the installation of new lines—a task that boosts employment opportunities—accounted for almost 71 percent. In developing countries, where teledensity was as low as 5.2 in 1994, network expansion creates a demand for labor that outweighs the trends toward workforce reduction that network modernization has generated in industrial countries, where teledensity was 52.3.

Incumbent public operators

After decades of unchallenged exclusive rights that have allowed employees to build up important welfare benefits, many public telecommunications operators strongly resist the opening up of domestic markets. But recent experiences in competitive markets suggest that former monopoly operators are not as vulnerable to the

entry of competing service providers as initially expected. In most cases, new entrants have had difficulties in taking any significant share of the market, let alone growing large enough to gain market power and become a serious threat to the former public operator.

In Malaysia, for example, which introduced competition in long-distance and international services in 1993, none of the new entrants had chipped away any significant share of the market from Telekom Malaysia Berhad, the former monopoly operator, by early 1996. In China, the licensing of China United Telecommunications (China Unicom, or Lian Tong) in late 1993 as a second operator raised concerns for the incumbent carrier, the Ministry of Posts and Telecommunications. But three years later, China Unicom still faces an uphill battle to establish a significant market presence. In the United Kingdom, after more than ten years of long-distance competition, British Telecom continues to hold more than 90 percent of the market.

There are some cases, however, as in Chile, where the interconnection requirements along with competition can have significantly detrimental effects on the incumbent's market share. Chile's multicarrier system in the long-distance and international telecommunications market, allows users to access any carrier at any time by simply dialing a code before the desired number. The ease of this system enabled one of the new service providers to claim 16 percent of the Chilean international service market after only seven months of operation. In such cases, the absence of costs associated with switching operators makes the price of service the major and probably the only factor guiding customers' choice of operator. Market share under these conditions can decrease or expand rapidly.

New technology

Much of the debate about the effects of competition has focused on the entry of new operators in the domestic market. But technological inno-

vation means that, increasingly, competition will come from international sources.

Until quite recently, governments and public operators were fairly effective at blocking international competition out of their domestic telecommunications markets. But by the mid-1990s, new and difficult-to-control sources of competition had emerged, and they are spreading rapidly. Although these new technologies and services operate on different platforms and through different media, they have one thing in common: they can all bypass incumbent operators or regulators, providing services that are difficult to shut down. Callback services, Internet phone, low-earth-orbit satellites, and global operators are among the most significant challenges to domestic public telecommunications operators in developing countries.

Callback operators, which have thrived because of the differences in tariffs between industrial and developing countries, have quickly grabbed a big chunk of the market in many developing countries. In Argentina, there were until recently twenty-three callback providers offering tariffs as low as a quarter of the public operator's prices. Teleintar, the international service operator, estimates that it has lost more than 30 percent of its market share to callback operators. Public operators in developing countries have attempted to limit competition from callback providers through court decisions (the Philippines), government orders (China), and tariff reductions (Argentina), but there is no clear-cut way for them to block callback services without hurting their own business.

Internet phone has just joined callback services as a significant potential threat to established public operators. Until recently, Internet services had been limited to data transmission. But in 1994, software was developed that allows voice communication among computers connected to the Internet. It is expected that new developments in Internet phone software will allow computers connected to the Internet to call telephones in the public switched telephone network by early 1997, and that later





in the year these services will be extended to phone-to-phone communication based on new Internet gateways. This will allow telephone users to communicate over the PSTN at Internet prices—a prospect that will no doubt put considerable pressure on the tariff structure for long-distance and international services.

Mobile satellite services provided over low-earth-orbit satellites present both opportunities and challenges to public operators in developing countries. Mobile satellite services can offer services that complement the national PSTN, but they can also bypass the public network by providing direct global services to large customers at very low cost. With large customers generally accounting for only 3 to 5 percent of a public operator's customer base, but more than 50 percent of its revenues, the migration of even a small number of these customers to mobile satellite services could significantly erode the public operator's profits.

This rapid expansion of global services creates serious pressures for small public operators in developing countries. Sooner or later, on their own initiative or forced by events, they will have to compete with large public operators based in large foreign markets. Of course, developing countries could attempt to contain these pressures through regulatory mechanisms. But there are no technological or economic constraints on the expansion of these global forces into local markets in the developing world. Unprepared public operators will find it hard to compete against the commercial and technological sophistication and dynamism of international operators.

Challenges and opportunities

There is little doubt that new information technologies and services will progressively and irreversibly erode the market position of telecommunications monopolies and their high profit margins. As a result, the financial value of these companies will deteriorate, making them less attractive to future investors.

To make the best of the situation, governments could consider two proactive reform strategies. If a government believes that its national carrier can withstand the challenges of competition, it should consider corporatizing the state-owned operator and gradually lowering entry barriers in both value added and basic services. Several developing countries (including China, India, Malaysia, the Philippines, and Vietnam) have chosen this approach in an effort to strengthen the entrepreneurial capabilities of their public operators. But since the organizational and cultural transition from a public utility operation to a commercial venture takes time, governments should begin early to expose their telecommunications operators to competition.

If a government believes that its national carrier will not be able to stand up to competition or if fiscal considerations are a priority, privatization may be a good alternative. Just as in introducing competition, timing is important, not so much because the company has to be prepared for privatization but because the declining value of monopoly markets over time can erode the price that would be paid for the company.

This Note is based on previous work by the author. See Petrazzini 1996.

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