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End of the Line for the Local Loop Monopoly?

Technology, competition, and investment in telecom networks

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Local telephone service is the last bastion of a still frequently asserted public policy preference for monopoly provision of telecommunications. This Note challenges the rationale for that preference, addressing four issues: First, is local network competition feasible from a technical and cost point of view? Second, is telecommunications competition accepted by major investors? Third, how important is competition from a public policy point of view? And fourth, briefly, how can it be made to work?

A traditional and now outdated view in the telecommunications sector is that competition is suitable for terminal equipment, for value-added services, and possibly for long-distance telephone service after universal service is achieved—but not for local telephone service. This position is usually accompanied by the view that cellular mobile telephony is *not* local telephone service (which it clearly is) but a separate "mobile" market segment.

A modified traditional view is that local service competition is appropriate only for large markets (such as the United Kingdom) and in rich countries that have already achieved universal service (for example, Finland, New Zealand, and the United Kingdom). This is wrong. Even in a relatively small market such as Sri Lanka, local network competition is beneficial. Sri Lanka has four cellular operators and some of the lowest cellular telephone service prices in the world. In 1994, the number of telephone lines in the country increased by about 47,000. Of these, about 30,000 were conventional lines provided by state-owned Sri Lanka Telecom—a record increase. The remaining 17,000 lines came from the provision of cellular service. Thus, the cellular operators installed about 35 percent of all new lines last year, a surprisingly high percentage. These cellular operators contributed significantly to the expansion of telephone service in Sri Lanka—and demonstrated the transition of cellular service from a small, specialized, premium part of the market to a substitute for conventional service.

Feasibility and viability

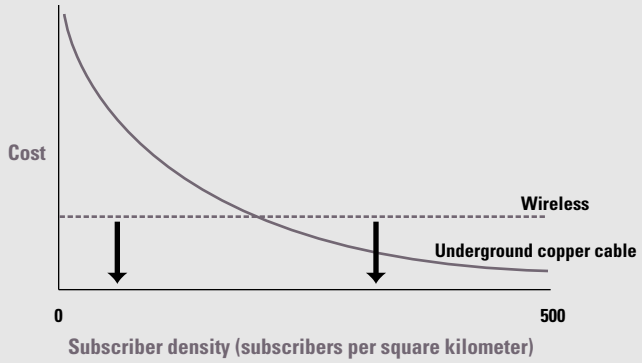
To assess the feasibility and viability of local network competition, we need to review two groups of factors: first, technology and the cost characteristics of different technologies; and second, the views of investors, since it is no good being right about the technology if investors don't believe in it.

The choice of technologies for the provision of local telephone service is now broader than ever. There are several wireless options: analog and digital cellular radio, digital cordless telephony (for example, Digital European Cordless Telecommunications, or DECT), proprietary (noncellular) wireless local loop systems such as lonica (being installed in Finland),

and mobile satellite. There are also fiber-optic cable TV options, and hybrid solutions combining, for example, cable TV and DECT.

Figure 1 compares lifetime costs for two generic technologies: traditional underground copper cable and wireless. The figure is, of course, simplified and generalized, showing just one cost line for each technology. (The wireless cost curve is for Global System Mobile, or GSM, cellular.) Actual cost structures vary according to the technology, market, topography, network configuration, and grade of service. Nevertheless, the figure shows that in areas of low subscriber density (fewer than 250 to 300 subscribers per square kilometer), wireless systems have lower costs. Furthermore, because wireless costs are falling relative to the costs of cable systems, the crossover point is moving to the right. Thus, wireless systems are becoming more competitive, in larger parts of the market, every year.

FIGURE 1 WIRELESS VERSUS WIRELINE: COMPARISON OF LIFETIME COSTS PER SUBSCRIBER



Source: Evans and others 1995.

What do investors think?

The issue of exclusivity often arises in the context of telecommunications privatizations. In many of these transactions, a policy decision has been made to continue monopoly rights, sometimes on the basis of an investment bank's recommendations. In Mexico, Argentina, and Venezuela, for example, exclusivity periods of six, seven, and nine years were granted. In these and other cases, privatization advisers have made recommendations that do not necessarily lead to the best public policy for the development of the telecommunications sector as a whole.

But do investors think that network competition poses unacceptable risks? Apparently not. In New Zealand, Telecom NZ was successfully privatized in a policy environment of open entry in all market segments. In the Philippines, foreign investors such as NYNEX, Cable & Wireless, and Telstra have entered—or are preparing to enter—the market as competitors or partners of competitors. In Mexico, a large domestic cellular operator with support from Bell Atlantic has proposed installing a fixed wireless network to serve 1.5 million customers. In southern India, US West has proposed a telecom build-own-operate scheme and has not asked for an exclusive franchise. Other examples show that investors have accepted competition in Australia, Malaysia, Sweden, the United Kingdom, and the United States and in the cellular market of almost every country.

Why competition is so important

Many of the benefits of telecommunications competition are well known—lower costs, lower prices, greater innovation. Less recognized and more important benefits, however, particularly for developing countries with significant underinvestment in the sector, are increased investment and better service.

By way of comparison, the alleged benefits of exclusive franchises are short-term stability in a difficult privatization environment (as in Argentina in 1990), higher profits, and more investment ("no one will invest unless you grant them a monopoly"). In some cases, it is true that a very short period of exclusivity (say, one

year) can contribute to stability in a difficult environment. But the second alleged benefit, higher profits, is not, of course, a customer benefit. Thus, the question of whether competition or monopoly is the better public policy in an environment of underinvestment hinges on which leads to more investment. This is really an empirical question. But it seems likely that competition will stimulate more investment, because it opens more channels for investment, and it creates incentives to invest to meet demand—companies that do not invest will risk losing market share. This stimulus is exactly what is needed in countries with chronic underinvestment in telecommunications—such as Bangladesh, India, the Philippines, and Sri Lanka. Two examples from Ghana and the Philippines confirm the expectation that competition will stimulate investment in the sector.

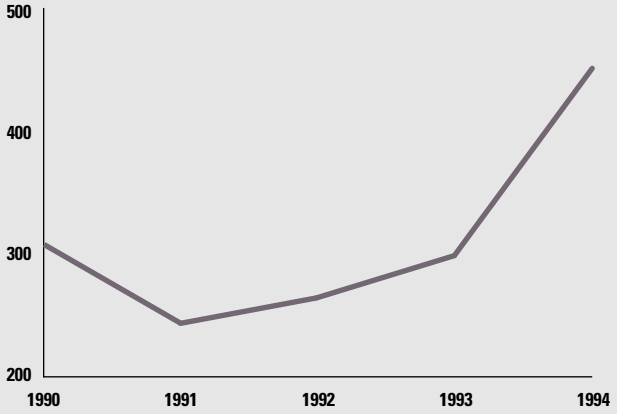
Ghana, a small West African country with less than 20 million people and low per capita income, is regarded as a relatively high-risk location by some foreign investors. In 1992, a small, mainly foreign-owned cellular operator, Mobitel, began operations in the capital, Accra. Mobitel's business plan called for it to extend service to Kumasi, the second main city, only when the required investment could be financed out of retained earnings. This decision changed in 1994. Mobitel rushed to provide service in Kumasi after a new operator, Celltel, announced plans to provide service in both Accra and Kumasi within a few months. Furthermore, Mobitel has halved its connection charges since Celltel began operations earlier this year.

In the Philippines, the threat of competition similarly prompted a quick response from the main telephone service provider, PLDT. Only in 1993—after PLDT came to believe that the government was serious about authorizing new entrants to provide local telephone service on a large scale—did it announce its "zero backlog program." PLDT's investment program turned sharply upward after 1993 (figure 2).

These are not isolated examples. The issue of local network competition is becoming important in many countries. Finland has authorized duopolistic competition in the provision of both local and long-distance service, and Indonesia's government has authorized Ratelindo to provide fixed wireless local loop service in the Jakarta and Bandung areas of West Java. Local network competition is also pending in India, Mexico, and Sri Lanka and could become very important in China.

FIGURE 2 ANNUAL INVESTMENT BY PLDT, 1990–94

Millions of constant US dollars



Source: Author's calculations based on PLDT annual reports.

How to make it work

For competition to work, new entrants need reasonable interconnection, reasonable prices, telephone numbers, and, often, radio licenses—in a sense, all technical issues with technical solutions. But even more important is that the government must have the will to enforce reasonable rules of competition in the sector. This is particularly clear in the case of interconnection, where, in the absence of effective regulation, "strategic" conduct by the incumbent telephone company can hinder or prevent new entry. For a new entrant to interconnect its network with that of the incumbent, it needs information on the type of equipment that exists

at different interconnection points. The incumbent can impede interconnection by providing no information, wrong information, or changed information. It can make only a limited number of interconnection points available, forcing the new entrant to send traffic along unnecessarily long routes. The incumbent may lease lines to new entrants that are incorrectly dimensioned and unreliable. And it may provide revenue settlement arrangements that are unsatisfactory, and make payments late. In short, without effective regulation, an incumbent can keep new entrants out of the business—and put them out of business.

Conclusion

This Note has made the case that local network competition is increasingly feasible from a technical and cost point of view, that it is increasingly accepted by investors, and that it offers important benefits from a public policy point of view—particularly its potential to stimulate investment. But in order to work, it must be supported by effective regulation. Much work remains to be done in many countries to move toward a competitive telecommunications sector. Policymakers should be encouraged to address the critical issues of this transition—and discouraged from losing time on counterproductive efforts to maintain monopolies in this dynamic sector.

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