8
Bolivia

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Bolivia has long been one of the least developed and poorest of Latin America's countries. The economy has been dependent on minerals, particularly tin, and, more recently, natural gas (which accounts for about 25 percent of the country's exports). Located in the heart of South America, it covers about 1.1 million square kilometers. The population of 7.7 million (July 1994 estimate) has increased almost 50 percent since 1979 and is growing at around 2.3 percent annually, a decrease from the 2.7 percent rate in the 1970s. In the late 1970s the population was only one-third urban, but by the mid-1980s over half were in cities or towns. The average life expectancy in Bolivia in 1994 was about fifty-four years, according to the World Bank.

Geographically, landlocked Bolivia is very diverse, with elevations ranging from 150 meters to well over 6,000 meters. There are three major areas: the Altiplano, the temperate valleys, and the plains.

The Altiplano is a plateau between the Cordillera Occidental and the Cordilleras Oriental and Real in the southwestern part of the country. It is about 140 kilometers wide and 840 kilometers long, with an average elevation of 3,600 meters. Most of the mining is in this region, so some of the largest and oldest cities are here, including the seat of government, La Paz, as well as Oruro and Potosí (where the Spanish began mining silver in 1545). About 50 percent of the population live in the Altiplano.

The temperate valleys *(Yungas)*, with elevations between 500 and 3,000 meters, are located in the eastern foothills of the Cordillera Real in the central part of the country. Cochabamba, the third largest city in the country; Sucre, the official capital and seat of the judiciary; and Tarija are the principal cities. Some 28 percent of the population are in this area.

The plains *(Llanos)*, located in the north and east, slope from about 450 meters to as low as 150 meters in the southeast. Most of the *llanos* are in the Amazon basin; the southern part is in the Gran Chaco, an area of fairly dry grasslands and scrub brush. The plains account for over half of the country's total area, but only about 22 percent of the population live there. Santa Cruz, center of the natural gas discoveries, is Bolivia's second largest city.

Bolivia is a republic with a centralized government comprised of three indepen-

dent branches. The president and members of the bicameral legislature are elected every four years by popular vote. Presidents cannot succeed themselves.

Since August 1985—under Paz Estenssoro (1985–89), Jaime Paz Zamora (1989–93), and Gonzalo Sanchez de Lozada (1993–), who was planning minister under Paz Estenssoro—the country has been following an open-market economic development model that has been successful in controlling hyperinflation, which had reached an annualized rate of 25,000 percent in July 1985. Annual inflation has generally been below 15 percent since 1986, and the economy has been growing since 1987, reversing a negative trend that started in 1980.

8.1 History

Telecommunications in Bolivia started when a telegraph line was built in 1874 between the mining center of Caracoles and the Pacific port of Antofagasta. This line was quickly followed by others, linking the principal cities.

Initially, telegraph lines were constructed and operated by the National Corps of Engineers, which reported directly to the Office of the Presidency. On September 8, 1892, the government created the General Directorate for State Telegraphs to construct new lines and operate all existing ones. Thus, since the very beginning, telegraph service has been a state monopoly.

8.1.1 Telephony

Telephone service has come late and slowly. Using operators and manual exchanges, people were able to make calls only within the same exchange. Municipalities had the authority to grant operating licenses, which went to local companies. The municipality was the largest shareholder in each case.

A customer seeking service was required to purchase a share in the telco for a price fixed by the company and approved by the municipality. The purchase entitled the customer to "own" a telephone number on the local exchange and to have a line connected, subject to space availability in the nearest telephone box. The assigned number stayed with the customer as long as the customer remained a shareholder of the company. This caused problems when a customer moved to an area of the city served by a different exchange.

Comparing the local telcos, one finds that service has developed at different rates, in many cases following separate paths. There were seventeen local telcos, and most towns in the Altiplano and *yungas* had service of some sort.

Truly automated service with direct-dial capability within a given exchange was first introduced in La Paz in April 1941. Other cities soon followed, and by the late 1950s the main cities—La Paz, Cochabamba, Santa Cruz, Oruro, Sucre, and Potosí—had this service. All the original automatic exchanges were electromechanical. Several were still in service as late as the early 1990s, in La Paz, Cochabamba, and Sucre; these had been installed in 1941, 1943, and 1950, respectively.

Despite the significant cash outlay required to purchase a share in the local

telco in order to have access to a telephone, the number of users grew steadily. This was not only due to a growth in demand in cities already having telephone service but also because new cities were installing exchanges. By 1960, the number of users had reached 16,410. The next two decades saw dramatic growth, averaging close to 10 percent annually. From 1975 to 1980 the number of users more than doubled, reaching 129,800.

Bolivia entered a deep recession in the 1980s, with the economy shrinking at a yearly rate of over 2 percent. Spiraling inflation had reached hyperinflation status by 1984. The government maintained a policy of fixing the exchange rate to the U.S. dollar at an unsustainable level, well below the rate in the parallel market. The difference at times reached a 20 to 1 ratio. Because tariffs for all services were fixed at the official exchange rate and paid in Bolivian currency, companies providing services were greatly affected.

Local telcos were unable to continue the rapid expansion of their networks. The number of telephones increased only some 30 percent during the 1980s (Table 8.1). The slower growth was not so much from a decrease in demand as it was from the inability of local telcos to add capacity. Of the seventeen local telcos, only Santa Cruz and Cochabamba installed exchanges after the late 1970s or early 1980s. By the early 1990s Santa Cruz and La Paz had very significant waiting lists of people who had paid a deposit to secure a line once one became available. Tarija and Sucre also had relatively large lists, but ten telcos and the places where local service is provided by ENTel had no waiting lists. In March 1991 there were 172,423 users nationwide, and 52,675 people on waiting lists (44 percent of them in Santa Cruz and 43 percent in La Paz).

The lack of investment during the 1980s also meant most lines were on electromechanical (20 percent) or crossbar exchanges (72 percent). Fewer than 4 percent were digital. (Data are for 1991 and are not available on 4 percent of the lines, but they were analog of some sort.) Virtually all of the electromechanical switches were supplied by Ericsson; Oki supplied 77 percent of the crossbar exchanges, with Ericsson a distant second.

Table 8.1. Telephone Subscribers, 1955–1991

Year	Number of Telephones	Growth per Year (%)
1955	11,400	
1960	16,410	7.6
1966	25,235	7.4
1970	37,551	10.4
1975	62,630	10.7
1981	135,100	13.7
1984	158,308	5.4
1988	164,545	1.0
1991	172,423	1.6

Sources: AT&T, *The World's Telephones.* New York: AT&T, various years. Data for 1960, 1975, 1991 from ENTel, "Estado Actual de la Telefonía en Bolivia," and ENTel internal document, 1991.

8.1.2 International Long Distance

International calling first became available in the 1960s. Two foreign companies, as concessionaires of the government, operate the service, which still requires the use of an operator. Cable & Wireless (C&W), operating as Cable West Coast, linked Bolivia with Europe, while International Telephone and Telegraph, as All America Cable (AAC), provided connections to North America. As a requirement for the right to operate, the companies opened offices in the main cities where the public can place calls and send telegrams and telexes.

In the mid-1990s, three long-distance carriers—Sprint, MCI, and AT&T—entered the market with their long-distance services. By 1995, several North American companies were offering callback services in Bolivia. Also, a consortium consisting of Comsat and MCI, with ENTel, was offering international business services.

8.1.3 Telex

Telex was introduced in the early 1960s by Cable & Wireless and All America Cable. Subscribers paid a monthly fee that included rental of a telex machine; they could not use their own machines. The tariff was a fixed rate plus a variable rate depending on traffic.

In the early 1970s, as C&W and AAC's licenses to operate long-distance services expired, telex was taken over by ENTel. The network grew steadily through the decade, but by early 1980, with the introduction of facsimile, demand stabilized near 1,400 subscribers. In March 1991 active subscribers had reached 1,570, with over half in La Paz and almost a quarter in Santa Cruz.

8.2 ENTel

In December 1965 the military government then in power created ENTel (Empresa Nacional de Telecomunicaciones) through Decree 07441, as a joint private-public company. The intention was to establish a national telecom enterprise with which the local telcos would join in a united effort to modernize and further develop the sector. ENTel was given a number of responsibilities.

1. Provide public telecom services in certain urban areas and domestic and international long distance. Services would include telephone, telex, connections for radio and television, rental of circuits to state and private services, and all in-transit international traffic.
2. Promote and direct the modernization and expansion of public telecom services to keep up with technological change.
3. Advise and cooperate with the state and state-related agencies in matters related to telecommunications. This would be conducted through the Ministry of Public Works and Communications.

The decree specifically indicated that ENTel would not interfere with the international long-distance services provided by C&W and All America Cable or with

national defense and national security services. Radio and television broadcasts and special systems defined as "mobile aeronautic" and "mobile maritime" were also excluded.

ENTel's board was to have ten members, five representing various ministries and five representing local telcos. The state would hold at least 51 percent of the company. Part of its funding included all payments made to date by the central and municipal governments and other state agencies in the telecom sector.

The local telcos did not agree with the creation of a single enterprise or with the participation of the state. To present a unified front against what was perceived as a threat from the government, they formed ABET (the Bolivian Association of Telephone Companies). This was the main reason for ENTel's inability to raise any funds from the private sector.

In February 1968, soon after taking office, a democratically elected government placed ENTel under the regulatory jurisdiction of the Ministry of Public Works and Communications. The ministry was, in particular, to oversee compliance with technical standards, tariffs, and any other requirements related to the operation of a concession.

In October 1968, Decree 08527 assigned priority to ENTel regarding the development and operation of telecom services in Bolivia. The decree also stated that no new concessions would be awarded if ENTel was capable of providing the necessary services. This did not include any existing concessions, and thus it did not affect the international long-distance and telex services provided by C&W and All America Cable.

The status of ENTel was changed in June 1970 by the military government to a state-owned enterprise (Decree 09250). At the same time the government decided not to renew the C&W and All America Cable concessions when they expired, and it placed all matters pertaining to the operation and development of domestic and international long distance in the hands of ENTel.

A year later, a new military government issued the General Law for Telecommunications confirming the decision not to renew the concessions. The companies were required to turn over their equipment without compensation. Some of the foreign managers, and most of the Bolivian staff, became employees of ENTel.

The June 1971 law also defined the functions of the General Directorate for Telecommunications (DGT) as a regulatory agency for the sector, with the authority to grant operating concessions, approve tariffs, and verify compliance with technical standards for all areas. This included local telcos, long-distance telephone, telex, radio and television broadcasting, cable television, and other related services. The DGT reported directly to the undersecretary for communications of the Ministry of Transportation, Communications and Civil Aviation. In other words, some of ENTel's original functions were transferred to the DGT.

In the early 1970s, after finally having in place all the legislation defining its role, as well as the resources from the state, ENTel set out to develop long-distance service. By 1976 it had constructed an analog microwave trunk network with 960 radio channels linking La Paz, Cochabamba, and Santa Cruz. By 1978 it had installed a satellite earth station in La Paz with a capacity of 292 circuits for international communications. A second 960-radio-channel microwave network had linked La Paz

with Oruro, Sucre, Potosí, and Tarija by 1980. With demand for long-distance service growing, the analog microwave network underwent an expansion in 1989, using multiplexing to increase capacity to 2,100 channels on each route.

8.3 The 1985 Reorganization and Tariff Revision

In an attempt to alleviate the problems of the local telcos and to make services accessible to more users, the new Paz Estenssoro government in August 1985 reorganized all local telephone companies and established new practices for fixing tariffs. By law, the companies were converted into cooperatives. In addition, tariffs were fixed in U.S. dollars to be charged in local currency adjusted monthly to reflect the current exchange rate, a policy that remains in effect. In 1992 the average monthly rate was equivalent to U.S.$3.45.

Today, ENTel provides approximately 80 percent of the national and international telecommunications services in Bolivia with two large basic systems: transmission and the automatic telephone exchange systems. It is responsible for the operation of all telex and telegraphic services, data transmission services, television signal transmission, radio broadcasting, rent or lease of microwave channels within the industry, telecommunications, and other services. The phone industry is constructed as follows: ENTel handles long-distance calls; local co-ops own the lines within their areas, which correspond to the urban centers in most cases, with some limited service to rural areas (no numbers are available on the percentage of rural lines). Individual phone customers buy their lines from the co-op directly, if they are lucky to get an available line, or they purchase them from a current owner.

Another reason for the 1985 change in legal status was to try to give some power to the average consumer (shareholder) and diminish the overwhelming influence local municipalities exerted as both the largest shareholder and the regulator. As shareholder entities, it was one share, one vote. Under Bolivian law for cooperatives, essentially each juridical person or member of the cooperative, regardless of shares held, has one vote. In practice, the change in status has had little, if any, effect. Companies are still managed by people in theory "elected" by popular vote of the users. In practice, however, they have strong ties to the municipalities or major political parties and are far removed from the real needs of users or from matters relating to the quality and cost of services.

It remains necessary to purchase a telephone line in order to have service. During 1965–95, the price of a line oscillated around U.S.$1,500—this in a country with a 1991 per capita yearly income of approximately U.S.$845.

A small industry has arisen in La Paz in which companies do nothing more than buy and sell phone lines. The current official price for a phone line, sold by the co-ops, is U.S.$1,500, but the market price is closer to U.S.$2,000.

It is almost impossible in practice to transfer existing service out of a given telephone exchange. Instead, the customer has to purchase a line in the new exchange area, rent a line in the secondary market from an existing holder, or trade the existing line with someone seeking to transfer to the customer's exchange.

8.4 The Telecom Network

Bolivia's telecom infrastructure is currently underdeveloped, with only 4 lines existing for every 100 Bolivians; some new lines should come into service in the future, but this will still leave the country with a low per capita level of phone service. In 1992, Bolivia had only 207,823 telephone lines for an urban population of 3.69 million and a rural population of 2.72 million.

Almost 80 percent of subscribers are in the three largest cities (La Paz, Santa Cruz, and Cochabamba), and the next three largest (Tarija, Sucre, and Potosí) add another 10 percent. The remaining 10 percent are in eleven cities, each with its own local telco, and in six other population centers where ENTel provides local service. (All data are for March 1991.) In La Paz, Santa Cruz, and Cochabamba, the number of lines per 100 people in 1994 was 6.89, 7.63, and 7.16, respectively, according to statistics compiled by ENTel. In rural areas, on average, the number of lines was less than 1 per hundred people. In short, there are seventeen local telcos, plus the local service ENTel provides.

Local telcos in several major cities had significant expansion plans under way in the early 1990s, all using digital technology. La Paz was adding 70,000 lines to meet a waiting list for 23,266 lines, replace 13,660 lines dating back to 1941, and have some 33,000 lines for new demand. Santa Cruz was installing 50,000 lines, about half of which were for those on waiting lists, and Tarija was getting 18,000 lines, about a third for those on waiting lists. These projects, completed in 1994, largely eliminated waiting lists and almost doubled capacity in the three cities. At the end of 1994 there were about 243,000 lines nationwide.

The transmission systems consist of the southern analog microwave network, the analog and digital microwave network, the microwave link system between Santa Cruz and Puerto Suarez, the international earth link with Argentina and Peru, the UHF radio link (FDM/FM), the digital multiaccess national rural system, and signal transmission channels for broadcasting stereophonic radio and television systems.

The automatic telephone exchange system is digital for international traffic; national telephone operators are 60 percent digital. ENTel owns and operates two large ground satellite stations in La Paz and Santa Cruz, and thirteen small ground satellite stations throughout the country, all using the most modern technology. The telex and telegraphic automatic communications systems have 3,346 operational lines and 644 trunk lines. The data transmission network provides nontelephone exchange point-to-point (IBS) services between La Paz, Cochabamba, Santa Cruz, Orno, Potosí, and Sucre. Data verification is done with the magic-on-line system and a data transmission service of 64 kbps. Also, ENTel has recently completed the installation of a fiber-optic link for the telephone cooperatives of La Paz, Cochabamba, and Santa Cruz. The fiber-optic link will give users better quality and service. ENTel installed twenty-two small ground satellite stations throughout the country, which became operational by the end of 1993. Another five large remote stations were scheduled to be installed in Trinidad, Monteagudo, Bermejo, San Ignacio de Moxos, and Riberaha, along with seven other smaller remote stations. The Spanish government has provided financing to Bolivia in the

amount of U.S.$27 million for new telecommunications equipment that will serve some 180 small villages throughout the country. The financing requires that Spanish suppliers be used, and Alcatel won the bid.

There is only one public data network. Operated by ENTel, it has been in service since 1988. Most of the customers are banks that use it to transmit files and transactions. In the early 1990s, there were only sixty-five subscribers, including twenty-eight in La Paz, twenty-one in Santa Cruz, and sixteen in Cochabamba. Subscribers must use modems supplied by ENTel. The network can operate at 50 to 300 bauds in asynchronous mode and 2,400 to 9,600 bauds in synchronous mode. Private data networks are provided to large users by Datacom. By 1995, these networks were also used for voice transmission.

Cellular phones are filling in some of the gap between supply and demand, and more growth is expected in that sector. In 1990, a concession was granted to Telecel to offer cellular telephone communications in the cities of La Paz, Santa Cruz, Cochabamba, Tarija, and Oruro. All long-distance communications between the cities necessarily will utilize ENTel's network.

Telecel, a joint venture between Millicon International and a U.S. company, and two local partners had invested U.S.$8 million by 1995. Telecel completed installation of the necessary equipment in the fourth quarter of 1991, and the system has been operational since then. By the end of February 1992 subscribers numbered approximately 5,000. At that time, tariffs were a fixed charge of about U.S.$5 per month plus a variable rate of about U.S.$0.35 for each minute on the air.

8.5 Television and Radio

Except for one government-owned television broadcasting station, all regional television broadcasting stations are in private hands and eight belong to the major state universities. About eighty-four stations existed in 1993. Only the government station is considered "national" because it alone reaches all areas of Bolivia. The other stations beam their signals only to major cities. All private regional and university television stations have to rent the interconnection system from ENTel to broadcast nationally.

Three private cable television systems exist in the cities of La Paz, Cochabamba, and Santa Cruz. One of them, Video Cable Universal, wholly owned by the U.S. company COMTECH Supply Inc., installed the latest fiber-optic technology in 1994. In 1996, a small-scale price war was going on in La Paz between Video Cable Universal and the UHF-based cable companies.

Cable television was introduced in the third quarter of 1991 with the granting of a license to Video Cable Universal (VCU) for operations in the city of La Paz. The packages offered to subscribers consist primarily of foreign programming received by VCU by satellite.

The industry is regulated by the Direccion de Telecomunicaciones (Telecommunications Directorate). The Directorate regulates hours for broadcasting but not price controls.

As in the case of the television stations, all but two of the 234 radio broadcast-

ing stations were in private hands in 1993 (one of the two belongs to the military, the other to the government). Radio stations are popular in Bolivia in part because radios are cheap and can bring entertainment and news to the vast majority of the population, which cannot afford television. In the mid-1990s there was a large increase in new FM radio stations throughout the country. By 1993, there were 118 AM stations, 56 FM, and 60 SW.

8.6 Regulation

8.6.1 The Preexistent Legal Framework

Regulation had originally been entrusted by the government to the Ministry of Transportation, Communications and Civil Aviation (now Secretariat of Transportation and Communications). More specifically, regulatory powers resided with the General Directorate for Telecommunications (DGT), except for rural telecommunications, which was handled by the Directorate for Rural Telecommunication (DITER). Both agencies were at the same level in the ministry hierarchy and reported to the undersecretary for communications, who had direct responsibility to control all actions of the DGT and the DITER.

The organizational structure of telecommunications was rather complicated because the ministry that regulates the sector was also responsible, in the final analysis, for operating the state-owned long-distance company, ENTel. Both the minister and the undersecretary for communications were members of ENTel's board, together with representatives from the Ministries of Finance, Planning, and National Defense.

The DITER both regulates and operates the rural telecom system. For local telcos, a similar conflict exists, as the municipalities still participate in their operations and effectively control their tariffs. The local telcos were members of FECOTEL, the Federation of Local Telephone Cooperatives.

8.6.1.1 General Directorate for Telecommunications (DGT)

The DGT regulates, coordinates, authorizes, and controls all activities in the telecom sector not specifically excepted, and it participates in the design and execution of telecom policy. It has a long list of specific functions:

1. Manage the frequency bands for the various forms of radio communication.
2. Oversee licensing and permits within the sector.
3. Oversee concessions for systems, services, and media.
4. Suggest charges and tariffs and oversee their application.
5. Harmonize, evaluate, and coordinate telecommunications plans.
6. Participate in the execution of national telecom policy.
7. Control and coordinate the activities of all the companies in the sector—state-owned, private, and joint—in order to maximize performance of the systems while optimizing their efficiency.
8. Propose legislation for the sector.

9. Establish standards for material and equipment, including their installation and operation.
10. Encourage research and technical assistance, including the development of a local equipment industry.
11. Carry out and coordinate censorship and the like in cases of internal commotion or war.
12. Sanction those violating the General Law for Telecommunications and the corresponding regulations.

In practice the DGT has concentrated most of its efforts on carrying out the first four duties. Regarding tariffs (item 4), the DGT and the Secretariat have approved only the tariffs for domestic and international long-distance services provided by ENTel. Approval for charges by the local telcos was given by the municipalities, which continue to have regulatory powers. The DGT has done very little in the remaining areas for various reasons, including lack of funds and staff.

8.6.1.2 Directorate for Rural Telecommunication (DITER)

The main functions of the DITER are limited to rural telecommunications. They are mostly operational and very little, if any, work is done to maintain and expand the network. Services are offered by the private company Radio Serrano.

8.6.2 Problems

Telecommunications in Bolivia faced a number of technical, economic, and administrative problems. The problems were often interrelated and can be summarized as follows.

1. Lack of coordination between local telcos and ENTel, which resulted in incompatible plans.
2. Inefficiencies and defective tariff practices that limited the companies' ability to maintain and expand services.
3. Excessive government intervention and other bureaucratic procedures, as well as outdated and inflexible internal organization and practices in the companies.

8.6.2.1 Technical Problems

The main technical problem was lack of coordination between ENTel and the local companies in development of the network. This has resulted in imbalances. For example, in the late 1970s and early 1980s while ENTel was aggressively increasing capacity on its long-distance network, the local companies did little to install equipment to interface with ENTel. In the early 1990s, the completion rate within ENTel's network was at 82 percent. Completion rates were only 37 percent for calls originating in or made to La Paz, 46 percent for Santa Cruz, and 52 percent for Cochabamba.

These types of imbalances increased after the new digital trunk network linking La Paz, Cochabamba, and Santa Cruz became operational in August 1991, as the electromechanical switches then still serving 20 percent of the

nation's subscribers had serious difficulties interfacing with the new microwave network.

In 1990 a major contract was awarded to Siemens (of Germany) and Oki (of Japan) to expand the telephone systems in La Paz and Santa Cruz, installing 102,310 new telephones lines. As late as 1994, lines were being installed. Pending governmental approval and availability of foreign financing, another 17,000 new telephone lines in other circles were planned for the near future.

Long-distance companies AT&T, Sprint, and MCI are now providing phone-card international long-distance service. All billing comes from the United States. Global Communications, also a U.S. company, is offering callback services in Bolivia, apparently with some success. Its lower rates may cut into ENTel's revenues. This service is available only to holders of major credit cards, so its numbers are relatively small.

Until the third quarter of 1991, only 10 percent of subscribers could dial international calls directly. However, by using a double tone, all but the 20 percent of users on the old electromechanical exchanges could have direct dialing.

While ENTel's digital network is capable of handling expanded value-added services, the local companies are doing little, if anything, to offer similar services, thus placing all responsibility for their development with ENTel or private-sector companies. Because the local telcos have a de facto monopoly within their operating areas, it is difficult for private companies to compete.

Seventeen cooperatives own 90 percent of the urban telephone system and a small part of the rural system. By 1994, 44 percent of the co-op system was digitalized. Cotel from La Paz, Cotas from Santa Luz, and Comteco from Cochabamba are, in that order, the largest telephone cooperatives. All the cooperatives must utilize ENTel's service for their national interconnection. Most of the rural system and the entire domestic long-distance system are wholly owned by ENTel, whose system was about 64 percent digitalized in 1994.

8.6.2.2 Tariff Problems

Regarding tariffs, although much has been done since August 1985 to eliminate direct subsidies from the government to telcos and to keep rates constant in U.S. dollar terms, problems remain.

In theory all tariffs must be approved by the government through the ex-Ministry of Transportation, Communications and Civil Aviation. The ministry has very little to say regarding charges by the local companies; rather, these are approved by the municipalities. ENTel and the DGT originate long-distance tariff proposals and submit them to the ministry for approval.

Since August 1985 tariffs for all public services were required to cover all expenses—operational and financial—and provide funds for the companies to invest in modernization and expansion. In practice, in the telecom sector, this is the case only with ENTel's tariffs for long distance.

ENTel's tariffs included the local telcos' participation, which was negotiated separately with each company and does not necessarily relate to the actual costs incurred by the local company. Also included was an amount negotiated between the ex-Ministry of Finance and ENTel, which was transferred each month to help

balance the central government's budget. It is important to consider this practice, as these transfers are not considered taxes and are not a fixed percentage of the company's income. Rather, they are specified amounts of money, known to change depending on the requirements of the Treasury. Transfers were the equivalent of about 26 percent of ENTel's revenues for 1988, 24 percent in 1989, and 28 percent for 1990.

Accounting practices and the structure of ENTel had not permitted determination of costs for specific long-distance routes and services. There were no cost accounting systems until the mid-1990s: all company costs simply were added together and assigned to individual services in the same proportion as their participation in the overall traffic of the company.

An additional problem with tariff policy was that it presupposed that the level of efficiency at the company, both for operations and investments, was acceptable. If there were inefficiencies, they were transferred directly to the customer via the tariff. Mainly bureaucratic in nature and designed to control processes, with no emphasis on results, ENTel's structure, and the company's and government's mechanisms for control, did not contribute to improvements in the efficiency of the company.

Local companies' tariffs appeared to be artificially low. For various reasons, some technical companies, with the exception of Cotas in Santa Cruz, charged a flat monthly rate with no additional charges for the number or duration of local calls. In 1991 the average monthly charge for local service was U.S.$3.45, except in Santa Cruz. There, charges varied depending on the number of calls made. To this day the emphasis for local telcos seems to be on the onetime, up-front charge for purchasing a telephone line.

The local companies had problems with their accounting practices similar to those at ENTel. Most had not had cost accounting systems. One consequence of this was that the participations received from ENTel for long-distance calls undoubtedly did not reflect the real costs incurred by the local companies. Probably the payments exceeded the costs, in effect a subsidy from long distance to local services.

8.6.2.3 Administrative Problems

Although the government has little influence on rates, it does otherwise involve itself in the affairs of ENTel and the local telcos, many would say excessively. Particularly burdensome are the bureaucratic procedures that must be followed. They are aimed at such things as making sure the proper forms are being filled out and doing very little, if anything, to ensure that the actions of the companies yield the expected results. Government intrusion also has contributed to a state of confusion in the sector and added to the lack of direction in development, with the various players more often than not going their own separate ways. Even in the case of ENTel, the message from the government has not been clear most of the time, but rather has been a collection of requests and instructions that often are confusing if not contradictory in nature. In short, while the control of processes has been intended to improve efficiency at enterprises owned by the state or with state participation, it has been largely ineffective because very little or no emphasis is placed on results. A case in point is purchasing parts and equipment.

Essentially, all equipment is imported. The main suppliers have been Ericsson, Oki, ITT, NEC, Northern Telecom, and Siemens. The use of different suppliers has created problems of compatibility, but that is not the issue here. Under regulations still generally in effect in 1994, any purchase in excess of a certain amount (U.S.$50,000 in 1991) had to be channeled through one of three independent procurement agencies contracted by the government for this purpose. This was true even for the procurement of spare parts when there is only one supplier.

The three agencies are Crown Agents from Great Britain, UNDP/OPS from the United Nations, and C3D from France. Any enterprise where the state has a stake has to select one of the three to source equipment and supplies on its behalf according to technical specifications defined by the enterprise. The procurement agency is in charge of evaluating proposals and recommending the "best" to the enterprise. This often means the lowest initial-cost proposal, which of course is not necessarily the most cost effective over the life of the equipment. The agencies charge 2 to 3 percent of the value of the purchase for their services.

The average time required to complete this process, from the moment the company contacts the procurement agency to the moment an order can be placed, is twelve months. As a result, companies break up orders to stay below the threshold or maintain high parts inventories in order to be able to respond to technical emergencies. Neither of these tactics does anything to improve company efficiency or to allow flexibility to respond to a rapidly changing technology and marketplace.

The bureaucratic obstacles associated with procurement are only part of the problem. Consider the digital microwave network linking La Paz, Cochabamba, and Santa Cruz. The project was approved by the DGT on July 29, 1986. It was then decided that it needed to be approved by the government's Economic Council of Ministers (CONEPLAN). This approval was not granted until June 12, 1987. The next step was for ENTel's board of directors to authorize contacting a procurement agency; this happened on October 27, 1987. After the lengthy procurement process was complete, the company was authorized to award the contract on November 11, 1988. The award had to be ratified by the government; this was done on April 5, 1989. A few more steps had to be followed before the Central Bank issued the necessary Letter of Credit for the supplier to start manufacturing and installing the equipment. The Letter was issued in February 1990.

Installation was completed in August 1991, and the system has been operational since then. Bureaucratic procedures took over three and a half years from when the DGT granted approval. Manufacturing and installing the equipment required only one and a half years. An analysis of several other projects reveals a similar pattern.

8.6.3 The Actual Legal Framework

In order to resolve these administrative, technical, and tariff problems, three laws were enacted and now form the basis of the sectorial regulation: The Capitalization Law in March 1994, the SIRESE Law approved in October 1994, and the Telecommunications Law enacted in July 1995.

Bolivia enacted the Capitalization Law in a search for capital. It permits the

state to transform ENTel (and other public enterprises) into corporations that are held by shareholders. Each corporation would consist of a major international investor, with the rest of the shares being given outright—not sold—to the pension funds of each Bolivian resident that was of legal age on December 31, 1995. The investor, with a controlling interest of about 50 percent, would manage the corporation. Instead of paying up-front for ENTel shares—as is the case with privatization—the investor would, instead, set aside a predetermined amount of capital to be expended on investments in the network.

The government shies away from use of the word "privatization" in good measure to placate parties such as the labor unions, which are antiprivatization, and to avoid the attendant connotations of downsizing and foreign ownership of precious resources. Bolivia, with its history of local cooperatives sharing power with a national operator, was perhaps destined to come up with a plan that would serve the interests of private capital and of social polity. In June of 1995 three power companies were capitalized for a total of U.S.$145 million. The telecommunications sector was the second to be capitalized, to be followed through 1996 by the state airline, railway, smelter complex, and the oil and gas company.

In October 1994, Bolivia passed another law, the Law of Sectorial Regulation (SIRESE). This law created a General Superintendency and several Sectorial Superintendencies to regulate many activities, including telecommunications. The Superintendencies are under the tutelage of the Ministry of Finance and Economic Development. The system acts primarily as a watchdog and is barred from dictating regulations, allocations of the spectrum, and granting concessions.

The Law of Telecommunications was enacted in July 1995, broadening the scope of the Superintendency of Telecommunications to include allocations of the spectrum and to establish technical standards for telecom services. The Superintendency is now allowed to grant concessions, approve tariffs, and approve contracts between telecom providers and users. It can also exact penalties, such as the modification or revocation of a license. However, the power to establish regulations resides only in the executive branch of government.

After capitalization, ENTel is granted six years of monopoly rights to national and international long-distance service. Additionally, ENTel is granted nonexclusive rights for a concession of forty years to provide other services, such as mobile cellular, satellite, data transmission, telex, telegraph, rural telephony, public telephones, and local service. The cooperatives also have temporary exclusive rights—for the same six years—to provide local service in their concessions. However, the local operators, like ENTel, must meet expansion and quality targets that are set forth in new contracts with the Superintendency. Local operators with more than 50,000 installed lines will lose 20 percent of their monopoly rights in each year that they fail to meet targets. Operators with less than 50,000 lines will lose 25 percent of their market in each year that they fail to meet targets. A cooperative's loss of exclusive rights will be taken up by ENTel or granted to another firm, via a new concession.

The 1995 Telecommunications Law permits ENTel and the cooperatives to merge or to buy or transfer shares among themselves. It is quite likely that ENTel

will benefit by buying into cooperatives (and gaining market share) and will thereby create an entity that can more effectively block market entry by new competitors after its monopoly ends, in the year 2001. Competitive services will not be regulated, but operators must avoid anticompetitive practices, such as price fixing. Monopoly services will be priced according to the costs of providing them, adjusted for inflation. The executive body will oversee these prices, as well as prices for interconnection.

Three months after this last piece of legislation was passed, Stet International (Italy) won the bid for ENTel in October 1995, beating out both MCI and Telefónica de España. ENTel's revenues in 1994 were U.S.$16 million—Stet's bid valued it at U.S.$1.22 billion. Stet made a capital contribution to ENTel amounting to U.S.$610 million in November 1995. These funds must be invested by ENTel over a six-year period to satisfy demand in its concession area and improve quality of service according to preestablished goals. ENTel must also provide telephones for every community of more than 350 inhabitants and install 5,000 pay phones by May 1997.

8.7 Conclusion

The Capitalization Law in Bolivia has come under attack by critics who charge that Bolivia needs to address today's dire problems, such as illiteracy, rather than to provide for the future, in the shape of a pension fund. However, others believe that the only two choices available in Bolivia's politically charged and decentralized telecom arena might have been either capitalization or no privatization at all. Therefore, Bolivia's solution serves as an example of a creative way for cash-strapped embattled governments in other countries to attract foreign investment capital.

The government of Bolivia's total investment in telecommunications between the years 1989 and 1993 came to about U.S.$100 million. The number of lines per 100 habitants reached only 4. The telecommunications system had different problems (tariff, administrative, and technical) that made harmonic development in this sector impossible. The telcos in Bolivia represent a singular and an original case due to the role played by seventeen independent cooperatives without profit objectives and with a high level of monopoly power.

ENTel, a public-private enterprise, has provided the long-distance services for the country under a monopoly structure. In the past, the prices and tariffs of local services have been low and did not cover the installation, operation, and the maintenance costs. Also, it seems that cross-subsidies from long-distance calls did not exist. It became clear that greater infusions of capital were needed to bring the local telecom network up to a better standard. To do so, a new institutional body was established with three legal norms: capitalization, regulation, and a telecommunication law.

It is too early to conclude if this process has or will have good results, but all the conditions are in place to improve development of the telecommunications sector in Bolivia.

Note

Edgar Saravia is the primary author of this chapter, having written about developments up to 1992. The author wishes to acknowledge the contributions of Michael Chong Pineda and Sheryl Russell, who contributed the research and analysis of policy developments after 1992.