9
Colombia

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Colombia has seen significant growth since the mid-1960s, although the 1975–80 coffee boom contributed to inflation and slower growth, and its ending meant more inflation, even slower growth, and government deficits in the early 1980s. The collapse of the International Coffee Agreement in July 1989 cut the price of coffee in half. (Colombia is the world's second largest coffee producer after Brazil.) Reform measures beginning in 1990 have helped the economy recover. Discoveries of oil in the early 1990s doubled the country's proven reserves and further discoveries could double them again, which could help put the country on a faster growth path.

The population of 35.7 million (1993 census) is almost 75 percent urban and has been growing rapidly. (There were an estimated 25.8 million people, 60 percent urban, in 1979.) There are sharp regional disparities in the standard of living, and its overall level has been retarded by the high rate of population growth, particularly relative to productivity growth.

Colombia is on the northwest corner of South America, with both Caribbean and Pacific coasts, and covers about 1.1 million square kilometers. The western and northwestern parts are flat coastal lowlands. These give way to three cordillera of the Andes, the easternmost of which runs into Venezuela. These mountains make internal transportation difficult. The valleys on either side of the central cordillera contain many of the major cities, including Bogotá, the capital, which is at an elevation of over 2,500 meters. In the east are plains (*llanos*) that are part of the Amazon and Orinoco basins. The plains, which become tropical rain forest in the southeast, are about 60 percent of the area and have 4 percent of the population.

Colombia is a republic, with the executive branch dominant. The country is divided into thirty-two departments plus the capital district. Presidents serve four-year terms, as do legislators in both houses, although the elections are held a few months apart. The country has a history of civil wars and political violence dating from at least 1830 when Gran Colombia—which included modern Colombia, Panama, Venezuela, and Ecuador—disintegrated. Since the 1980s this instability has been exacerbated by drug traffickers. Ernesto Samper assumed the presidency

in August 1994, having campaigned to continue the economic liberalization launched in 1990 but also to increase government spending on social programs.

9.1 History

From the first, telecommunications in Colombia has been marked by involvement by the state and decisive participation by the private sector, especially foreign companies, which have directed construction of much of the infrastructure and provided the technology.

In the mid-nineteenth century Colombia was at an incipient development level, with the extractive industries and agriculture as the foundation of the economy and political and social institutions inherited from the Spanish colonial period largely maintained. By then some industries had appeared utilizing the manual labor that became available after the abolition of slavery. Education levels were low, commercial activity limited, and communication difficult; the country was a patchwork of geographically isolated areas.

In this context the Revolution of 1850 took place. Set off by the governing Liberal Party, it generated a reformed economic structure. It was recognized that roads and communications media were needed in order to develop the nation's wealth. With the objective of promoting development and unifying the country, during the Liberal government of Manuel Murillo Toro, the first telegraph line was installed in 1865.

Built by the Compañia Anómina Colombiano de Telégrafo, a firm owned half by the government and half by private investors, the line linked Bogotá and Nare, a municipality 23 kilometers away along the Magdalena River. The private investors—Henry I. Davidson, William Lee Stiles, and William W. Woolsey, all from the United States—constructed the line at their own expense and were involved in the management. The initial concession was for thirty years. Soon after, it was decided to extend service to Medellín and construct additional lines, then to scale back plans and extend service only as far as Honda. Stiles was contracted by several state governors to build lines connecting to the main one.

In 1869 the state took complete control of the company on the grounds it had not fulfilled its contract to install a national network. Authority over telegraph service was given to the postmaster. Although subsequent installation was directed by the state, most of the actual construction was done through franchises or permits to individuals. Thus, in February 1870 the government contracted Stiles to extend the line from Honda through Manizales to Cartago.

Service was poor, with many long outages because of poor construction, including the use of wood poles in areas where they were unsuitable. As a result of this, in 1876 the government set standards for the construction, inspection, and maintenance of lines, as well as for government administration of the service, tariffs, and training. Private companies were reimbursed by the state for their work. By 1879 the network covered 2,690 kilometers, but service remained inefficient.

In 1879 the government contracted Fralick, Murphy & Company of New York to lay a submarine cable on the Pacific side beginning in Panama harbor, touching

at Buenaventura, and ending at Callao, Peru. The firm was given an exclusive twenty-five-year concession. Service began in 1882. Later this concession was transferred to E. D. Adams and then to the Central and South American Telegraph Company. In 1881 Central and South American received a concession for a cable to connect Panama City to overseas countries and with commercial centers in Colombia. The concession, which was not exclusive, was initially for a term of twenty-five years. In 1903 it was extended to August 1924.

Also in 1881 the government contracted for telegraph lines to be installed connecting Colombia to Venezuela. The first lines were built in the department of Panama, using iron instead of wood poles, in 1888. By 1894 there were 675 kilometers of line in Panama.

In the wake of a post–civil war constitutional reform in 1886, under the principle "political centralization and administrative decentralization," forty new lines were built. In 1889 there were 100 posts linked to the telegraph service, and contracts were in place for further extensions and maintenance of the existing network. The system grew from 8,094 kilometers connecting 229 telegraph offices in 1890, to 9,614 kilometers in 1892, to 10,572 kilometers in 1894, and to 14,040 kilometers in 1898.

9.1.1 Early Telephone Service

Telephone service began in 1888 on a trial basis using equipment the government purchased from Mourlin & Company of Brussels. By 1892 Bogotá, Baranquilla, Cúcuta, and Medellín had service. That year, a law was passed (Number 98) authorizing the government to purchase the existing telephone companies and requiring government approval for construction of interurban lines. In 1894, by Decree 1294, the government spelled out procedures for private construction of interurban lines, which included receiving the approval of the municipal council of the districts. Contractors would receive concessions for specified time periods. By July 1898 there were 1,500 kilometers of interurban lines, including 200 in Panama. Still, there were few telephone customers before the 1910s.

9.1.2 1899–1919

The longest war in national history, known as the War of the Thousand Days (1899–1903), destroyed most of the interurban telegraph and telephone network, but this was only a temporary interruption in the sector's growth.

In 1910, under Decree 1130, the president became the regulator of telecommunications. An organization called the Intendencia de Telegrafos was created to manage maintenance of the telegraph plant and otherwise direct the industry. Construction of networks continued to be carried out primarily by private entrepreneurs under government contract. Domestic telephone service also was placed under the Intendencia.

Between 1910 and 1922 wireless telegraph stations were constructed in several of the more important cities. As part of this process, in 1911 Congress authorized the government to equip municipalities on the Caribbean and Pacific. United Fruit

Company (UFC) was contracted to install a wireless station at Santa Marta on the Caribbean and to transmit all government messages. UFC was given a twenty-year concession. Gasellschaft fur Drahtlose Telegraphie of Berlin received a contract in May 1912 to install a station at Cartagena with a thirty-year concession, after which the plant would become the property of the government. In January 1913 the company won a contract to install a station on San Andres island. The Cartagena station was closed after the outbreak of World War I but reopened in 1920.

In September 1913 Marconi Wireless Telegraph Company was contracted to install stations in Bogotá, Buenaventura, and Medellín with thirty-year concessions. Also in 1913, Colombia entered an agreement with Venezuela, Peru, Bolivia, and Ecuador to increase communication among these countries. Many telegraph lines—including those between Bogotá and Tunja, Tocaima, Girardot, Honda, and La Dorado—were able to transmit both telegraph and telephone messages by 1918.

In 1919 Marconi Wireless Telegraph was contracted to construct an international station in Bogotá and to repair and operate the system on San Andres. In April 1923, after repeated postponements initially because of World War I, wireless international service was inaugurated.

The 1910s also saw significant expansion of telephone service. By 1920 there were twelve private telephone companies. The largest was the Bogotá Telephone Company with 2,379 customers, equal to 38 percent of the country's total of about 6,300 lines. The next largest was in Medellín with 1,200 customers, triple the number in 1912. Founded in 1892 by the local government, the Department of Antioquia, Medellín's telco in 1915 became a private corporation, Empresa Telefonica de Medellín. J. P. Dieter of Chicago began telephone service in Baranquilla in 1890. The concession, which expired in 1916, was not renewed.

Each telco charged a rate deemed appropriate. For instance, the Bogotá company in 1920 charged U.S.$8 for installation and U.S.$36 a year for service. In Medellín in 1915 the monthly tariff was U.S.$2.50 for a business and U.S.$2.00 for a residence. Compañia de Telefonos de Baranquilla in 1918 charged U.S.$4.50 a month for a business and U.S.$4.00 for a residence line.

9.1.3 1920–1936

Communications development during the 1920s was closely linked to advice from foreign missions, particularly one from Belgium. That mission was in charge of extending the network and training domestic technicians to maintain it. The decade also witnessed rivalry among foreign companies seeking to provide services, both within the country and internationally. This participation and technological advice from foreign experts and companies left a highly satisfactory result: an increase in the telegraph network, creation of a technical training school, and improvement in long-distance communications.

The government provided various tax exemptions to the private companies in exchange for their maintaining low tariffs during 1914–28. After heated debates in the Congress, the exemptions were reduced and rates increased. The funds generated were used to finance the government deficit rather than left with the companies to invest in the system.

In 1929 the Compañía Telefónica Central (CTC) began operations. Owned by North Americans, it provided domestic long-distance telephone service. Marconi initiated the first international radiotelephone service in 1932.

During the 1930s the economic structure of Colombia changed as factory production increased and agriculture became relatively less important. The government continued to develop the communications system as part of unifying the country.

9.1.4 Nationalization

The government began a series of reforms in 1936 to institutionalize state intervention. These established that telecom services would be provided only by the central government directly or under franchises granted by it (Law 198, 1936), which was essentially the existing situation. Subsequently, there was a profusion of laws, almost always increasing intervention.

In 1943 the government of President Alfonso Lopez promulgated Law 6a authorizing nationalization of all communications services and formation of a single company to operate them. As part of this, in August 1943 the government purchased all the facilities of Marconi Wireless Telegraph, which had been operating in the country for twenty years. These were merged with other government-held telecom operations to create Empresa Nacional de Radiocomunicaciones. Two years later Law 83/45 became the basis for regulating the new company.

In 1947, ITT conducted a technical study at the request of the government of President Ospina Perez that made suggestions about network extensions and organizational changes in the Ministry of Postal Service. Soon after, ITT sold its Colombian network to the government and, under decree 1684 of 1947, Empresa Nacional de Radiocomunicaciones was reorganized under the name Telecom Colombia. At that point, just one foreign company, All America Cable, which provided international service, remained with a concession.

9.1.5 Telecom Colombia

Telecom Colombia was organized in 1947 as a public corporation with administrative autonomy, although it was required to follow the policies and plans formulated by the Postal Ministry. Its purpose was to monopolize provision of telephone, radiotelephone, and radiotelegraphic services. This meant taking over all interurban exchanges for long-distance service, being responsible for constructing lines, and providing telecom services to municipalities that lacked the financial or technical capacity to offer services. Notwithstanding Telecom's supposed monopoly, the Postal Ministry continued to provide some telecom services.

By the end of the 1940s it was realized that it made no sense to have two state entities providing service, so, in 1950, under Decree 1233, the operations were finally truly unified in a new company, although with an old name, Empresa Nacional de Telecomunicaciones. The new entity, called simply Telecom, was a public corporation with administrative autonomy and a monopoly on all services, although the Postal Ministry retained the power to inspect and control communications services.

During 1953–56 several regulations were issued reinforcing the coordination and control functions of what had in 1953 become the Ministry of Communications. These provided extensive definitions of the different services that could be offered, either directly or by franchisees of the state. The greater part of these regulations were still in force in the 1980s.

Telecom Colombia was partially decentralized in 1959, with the creation of regional management offices. These were intended to serve communities that were financially or technically unable to provide local telephone service.

9.2 1960–1990

All America Cable's concession expired in 1958 and the government purchased its Colombian assets in 1960. With that purchase, for the first time, all telecom services, domestic and international, were completely in Colombian hands—specifically, local and national government hands.

The Ministry of Communications was reorganized by Decree 3267 in 1963. Communications were centrally coordinated but functionally divided into specialized institutions attached to the ministry. The National Postal Administration (ADPOSTAL) was created for the postal service, while the Radio and Television National Institute (INRAVISION) was organized for radio and television. The National Telegraph service, which had been managed by the ministry, was merged with Telecom. Telecom also monopolized interurban and international communication, as well as telex (international telex service was introduced in 1965) and local service in some minor locations. In the wake of the decree, local service was significantly expanded by the creation of new municipal telcos. By 1975 there were fifty-four municipal companies and one regional company, Empresas Departamentales de Antioquia (EDA). EDA provides local and long-distance service within the department of Antioquia, except for the city Medellín.

In 1976 the Ministry of Communications was reorganized by Decree 129/76 to create a Division of Entities and Companies to oversee institutions that had their own infrastructure and the necessary human, technical, and financial resources to otherwise operate independently of the ministry. The reform distinguished policy making, regulation, strategic planning, engineering and research, and general aspects of commercial and financing management from operations. Operations, including network administration and maintenance, were handled by the telephone companies. These include Telecom and the municipal and departmental companies providing local service.

The other functions were performed by various central-level entities, primarily the Ministry of Communications. The National Planning Department took an economy-wide view of investment and financing plans and imposed priorities to assure efficiency in the use of external resources. The Ministry of Finance and Public Control examined projects in order to assure that the conditions of loans were satisfactory. In 1968 a Domestic Tariff Board was put in charge of setting prices.

Because of insufficient human and technical resources and the lack of strong political support, the ministry did not really have the operative and administrative

capacity to fulfill the functions assigned to it. Staff were not always selected using technical criteria, partly because low salaries made the jobs uninteresting to those with the appropriate specialized skills. Strategic planning was not developed by the ministry, or by the National Planning Department, which was more concerned with macroeconomic planning and with credit and financial policies than with sectoral development planning.

One consequence of the absence of strategic planning and the failure of the central authority to establish clear technical standards during the 1970s and 1980s is a diverse mixture of switches throughout the country. Colombia depends on imported equipment for its telecom network. This actually can be advantageous, as the market for every major product line is highly competitive among a number of companies based in different countries. The significant enhancements to switches and the general move to digitalization in the 1980s meant that the country's failure to expand and upgrade service more during the 1970s and early 1980s was an opportunity to leapfrog a generation of equipment. Unfortunately, however, in the latter part of the 1980s, because of the lack of nationwide technical standards and the nature of the purchasing procedures required of state companies—which could take three or four years—the companies were buying what often, when finally delivered, was equipment made obsolete by continued rapid technological change. In addition, local telcos frequently bought particular solutions offered by a manufacturer that subsequently have prevented optimizing the total network as regards cost, operation, and maintenance.

Frequent changes in the minister of communications (and its predecessor, the Postal Ministry) have been a problem in regulating and promoting telecommunication. Ministers have served an average of just one year. In the 1930s this was ten months; in the 1950s, eleven months. Even within the same presidential administration, changes in ministers have meant there has been little continuity in policy.

9.3 Rate Structure

In 1936, under the administration of President López Pumarejo, the government began to regulate the prices charged for public services to ensure "fair profit margins and commercial morality." Any changes had to be announced in advance. The criteria used recognized financial factors such as costs but also included the ability of users to pay. In 1938 the Department of Public Service Companies was created to enforce the regulations. In 1955 a new Anti-Monopoly Law expanded explicit state involvement in setting prices, but only in 1960 was a government agency, the Economical Regulation Superintendency, created to exercise it.

The Ministry of Communications, under Decree 2848 of 1966, assumed the power to approve the rules and rates of local telcos. It also undertook to guarantee customer deposits, installation rights, and similar matters related to telephone service. However, the ministry had limited administrative capacity to perform these functions. Moreover, it was represented on the boards of directors of the companies, which created something of a conflict of interest. For these reasons, Decree 1765 was issued in 1972. It led to decree 3069 of 1978, which gave the National

Board of Public Services the power to fix, supervise, and control telephone rates. At the same time, the National Board of Tariffs, which is under the National Planning Department, was given an active role in tariff setting.

The Public Services board has been rather cautious, seeking to balance the sector's cash flow so that it is not being subsidized by the state but not running a surplus, which would indicate rates might be too high and thus repressing demand. Rates for telephone service since the 1970s have involved a fixed charge and a charge based on usage (time, duration, and distance of a call). In an effort to counteract the financial instability that occurred due to rapid inflation, steps were taken to index tariffs. The overall result was that for fifteen years, from 1977 to 1992, both local and domestic long-distance rates were fairly stable in real terms. In 1983, Law 14 provided for consideration of socioeconomic conditions in setting rates.

Notwithstanding the explicit formal legal role of the national government, historically, each telco has determined its specific rates, so rates for the same service can be different in different parts of the country. Seeking to reduce disparities, the government in 1988 issued Decree 189 setting guidelines for local charges, particularly usage charges. By the early 1990s usage rates were similar throughout the country, although Bogotá and Medellín have higher charges than most other cities. Since Decree 1900 was promulgated in 1990, tariffs, with the exclusion of connection fees, have decreased. The National Planning Department has established estimates of reasonable rates, and these have come to provide an upper limit to what regulators will approve.

Further movement toward a unified rate schedule was made in 1991 by the Cesar Gaviria Trujillo administration with Decrees 969 and 970, which provided municipalities with methodological guidelines and unified criteria for setting fixed charges. This included guidelines on socioeconomic factors used in determining rates. In urban areas the population (calling area) and external qualities of the individual customer's house are to be used. In rural areas, the internal qualities of the house are the criterion. In both areas, the better the quality of the house, the higher the cost of phone service. These guidelines were not immediately put into effect but rather were being tested in Bucaramanga in early 1995.

Local telcos receive little from Telecom Colombia for handling domestic and international long-distance calls, and they have requested greater compensation. Telecom has refused, maintaining that it needs the money to provide mandated deficit services such as telex, telegraph, and rural telephony. However, moves are being made to decrease the deficits of these services or to subsidize them in other ways. Thus, to fund the development of rural telephony, a tax has been imposed on cellular and mobile operators. However, the Ernesto Samper administration (1994–) has used the revenue to fund general government operations rather than to expand rural telephone service. In consequence, cellular operators have argued for removing the tax.

The disparity in the price of a call from Colombia compared to a call to Colombia is substantial, and the resulting recourse to callback services reduces Telecom Colombia's revenue.

In general, the telecom sector has operated under a system of cross-subsidies between type of service and socioeconomic status of customers. As the sector is

reorganized, including requiring separate accounting for each service, the transparency of subsidies will increase.

9.4 The 1990–1991 Reforms

Telecom and the local companies have had almost unlimited power in their setting of administrative, financing, technological, and general policies. They have also generally been able to make their own development plans, following essentially only their own immediate interests. The result has been real but not always harmonic development, with technological choices and investment handled without long-term vision. In short, the network had developed as islands that could communicate with each other, but the concept of a unified domestic network had been lost.

To address this lack of unity, the first comprehensive evaluation of the sector was made in 1988 and the results published as the *National Telecommunications Study.* The objective of the study was to examine the principal aspects of the telecom sector—such as its organization, relevant legislation, and the demand for service—and to prepare a plan for extending the network and addressing its financial situation. The study thus excluded private networks, television, and other subsectors.

In the end, the study did not formulate clear objectives concerning the reorganization of telecommunications, nor was there a plan for the technological development of the sector. No consideration was given to administrative planning, sectoral management, or operations. The report expressed some feeling that a domestic microelectronic industry could be developed. It realistically looked at establishing assembly plants in the short and medium term and did not emphasize transfer of technology to local producers.

The 1988 study was fundamental in the government's decision to give the sector a new perspective, focusing on creating an environment conducive to the involvement of private companies in providing new telecom services. The government realized that, by itself, it did not have the administrative, financial, or technological abilities to face the accelerated development challenge that telecommunications present at a world level. Thus, in 1989 Congress passed Law 72 authorizing the government to issue standards to reorganize the sector under the principles that its planning, regulation, and control would stay with government bodies, but actual provision of services would continue to be through concession to particular companies.

The 1989 law was followed by Decrees 1900 and 1901 of 1990, which were implemented in 1992 after Congressional approval. These decrees somewhat restructured telecommunications. Although most of the institutional structure existing since 1976 was maintained, new rules made competition a principle, in particular by permitting private operators to provide value-added services. The Ministry of Communications was responsible for regulation, general policies regarding technological and institutional development, research and development, and promotion, as well as directly providing services or authorizing concessions under previously established standards. These macro functions were coordinated with the National Planning Department. The decrees spelled out three goals.

The first goal was to triple telephone density to a level of at least 25 per 100 people by the year 2000. This would bring Colombia to the low end of what international organizations consider developed. It was estimated that about U.S.$5 billion would be needed to achieve this goal, an amount substantially greater than had been invested in the previous eight years and beyond the capacity of the government to carry out without diverting funds from other endeavors. For this reason, privatizing telephone service was recommended.

The second goal was to increase the size of service areas—that is, merge municipal companies into larger units (regionalization)—as a way of obtaining economies of scale. A committee was formed to undertake this. Telecom's role would be somewhat reduced as intraregional long-distance calls that it handled under the old structure would be handled by the new regional companies.

The third goal was to increase the number of services offered and expand existing services into new geographic areas. All regions of the country were to have acceptable service levels.

Under Decree-Law 1900, the military and the government generally are allowed to have telecommunications networks for their exclusive use as part of defending and governing the country. Private parties can have networks for security or intracompany needs provided they are installed on private property.

9.5 No Privatization

After Congress approved Decree-Law 1900 in 1992, the Gaviria administration attempted to privatize Telecom Colombia over a period of ten months beginning in 1993. The employees, in response, went on strike, suspending all local, national, and international telecommunications service for a week. In the face of such intense opposition to privatization, which continues, the government has looked for alternatives.

A shared-risk joint-venture approach was developed as a way to install a large number of new telephone lines and replace old lines. This involves an exclusive concession to install equipment in a designated geographical area. The supplier must complete all necessary construction at its own expense. Telecom Colombia would operate and maintain the system, paying investors a percentage of installation fees and local, domestic, and international usage charges for a term of approximately ten years.

Since this type of agreement was not included in Decree-Law 1900, the government issued Decree 0533 on April 1, 1992, authorizing Telecom to enter such ventures with local or international organizations. The legality of Decree 0533 was challenged and the Supreme Administrative Court decided it was in conflict with Law 72 and thus illegal. In response, the government sought legislation explicitly allowing the arrangement. It did this by adding the necessary language to a bill concerning cellular mobile telecommunications then pending before Congress. Thus, Law 37, enacted on January 6, 1993, not only regulates mobile and cellular service, it also, under Article 9, authorizes Telecom to enter shared-risk joint-venture contracts, as well as other types of contracts.

9.6 Moving toward Competition

Overall, there has been a broad consensus among the political parties to opening telecommunications to competition. There also are ample legal grounds to introduce competition into domestic or international long distance: Decree Law 1900, Decree 2122 of 1992, Law 37 of 1993, and Law 142 of 1994. Still, for some time the government did not move. Then, in January 1995 the government outlined its intention to open long distance to competition on January 1, 1997. As it did in the cellular mobile telephone sector, the government is expected to divide the country into zones with two companies competing in each zone. Telecom is very dependent on domestic and international long-distance calls—they provided 93 percent of revenue in 1993 and 1994.

9.6.1 *Cellular Service*

In 1994 cellular mobile service was introduced in Colombia. The country was divided into three regions—east, west, and coast. In each region, two operators were awarded a concession, one a venture of a state company and a private company and the other a private company. The concessions are for five years, after which, in 1999, service will be evaluated to determine if the concession will be extended.

Celumovil and Comcel offer service in the east (61,865 customers in 1994), Cocelco and Occel in the west (70,661), and Celumovil de la Costa and Celcaribe on the coast (12,400). A study conducted by Economic and Management Consultants International estimated that there would be 24,210 customers in the first year of operations, 55,813 by the second year, and 94,638 by the end of the third year. Instead, the number at the end of the first year was 144,926, almost six times as many as predicted. In just one year Colombia had cellular penetration of 0.4 percent. Brazil, Chile, Argentina, and Venezuela took four years, and Peru took more than five, to reach that level.

The price of a concession ranged from U.S.$593 million to U.S.$624 million and, over the course of the first year, the companies spent between U.S.$100 million and U.S.$250 million each building their networks. Subscribers pay an initiation cost of approximately U.S.$650 and a monthly charge of some U.S.$150 plus between U.S.$1.00 and U.S.$1.50 per minute of usage.

The minister of communications regulates cellular service. Such service must be provided in urban zones, including low-income areas and areas in which access to wired service is difficult, thus helping to implement extension of the communications network.

9.6.2 *Restructuring Telecom Colombia*

In anticipation of competition in its key long-distance markets, Telecom has restructured the company in accordance with Decree 2123. Thus, in December 1992, Telecom changed from being a public institution to being a state-owned company, permitting it greater management flexibility and accountability. State-

owned companies are regulated by the laws that govern private entities rather than those that govern public institutions. Day-to-day control is exercised by a board of directors appointed by the president of Colombia. However, the minister of communications has the authority to regulate, control, and plan the sector, making fundamental decisions about what Telecom Colombia may or may not do. Thus the ministry would be involved in such decisions as building a fiber-optic network, launching a satellite, or abandoning the rural telephone program.

With its new legal status, the company's focus has been twofold. First, it is reducing operating costs. The telex and telegraph division, for instance, had 20 percent of employees but generated just 1 percent of net income in 1994. Union resistance prevented Telecom from reducing employment through layoffs. Instead, retirement packages were offered all employees except those with specialized skills the company wished to retain. This reduced the total workforce by approximately 15 percent.

Second, in Decree 2123 the minister of communications defined specific areas in which Telecom would have a competitive advantage. The company is charged with providing state-of-the-art telecom services within Colombia and to foreign countries. Therefore, the minister authorized Telecom to participate in association agreements with, or invest in, domestic telcos, as well as to enter association agreements with foreign companies. As a result, Telecom has shared-risk agreements with Nortel, Alcatel Standard Electrica de España, and Alcatel Bell Telephone (Belgium). Nortel Colombia also has provided Telecom with assistance in operating and maintaining the equipment.

Telecom has three goals: to achieve a higher level of service and technical support; to make local telephone service profitable; and to offer high-quality service. As part of this, it will administer local telephone service in a decentralized, regional manner. To achieve these three goals, Telecom intends to develop association contracts with third parties; expand the areas that associated companies cover; promote agreements for the development of local telephone service in areas not included in the company's own expansion plan; and develop and promote new services that complement local service.

Telecom Colombia was the local-service provider in nearly 500 of the country's cities in 1994. In over 2,800 small communities there are local companies tied into Telecom's national network, but there was no service at all in some 60 percent of rural communities. Of the twenty-five municipal and regional telcos in 1992, Telecom had a financial interest in eight. Of thirty-three in 1994, Telecom Colombia had a financial interest in thirteen.

9.7 The Mid-1990s

The network now consists of independent local telephone companies connected to a long-distance network operated by Telecom Colombia. The connections are not all automatic: indeed, an operator may need to go through another operator to reach the main network. For instance, TeleCartagena connects to TeleBaranquilla, which in turn connects to Telecom Colombia.

The three largest municipal telcos are La Empresa de Telecomunicaciones de Santa Fe de Bogotá (ETB), Empresas Públicas de Medellín (EPM), Empresas Municipales de Cali (EMCALI). ETB provides service to the city of Bogotá, whose population was 6.3 million (almost 18 percent of the national total) according to the 1993 census. ETB had 1.2 million lines in 1991 and almost 1.7 million in 1994. EPM provides service principally to the municipality of Medellín; it had 580,400 lines in 1991 and 718,420 in 1994. EMCALI principally serves the municipality of Cali, with 305,800 lines in 1991 and 302,474 in 1994.

Telecom Colombia serves areas of low population density and income not served by municipal companies. Such service is expensive relative to the revenue it generates. Often public telephones are installed to serve low-income segments of the population. A rural telephone plan has been announced to provide automated telephone service to 5,000 villages and 8,600 locations with populations of at least 250.

In April 1995 Telecom sought bids for a contract to build a 3,200-kilometer fiber-optic network extending from Baranquilla on the Caribbean to Buenaventura on the Pacific. Directly connecting twenty-six cities, it will link with international submarine cables, and some eighty other cities will be connected through secondary networks. Contracts will be awarded in September 1996 and the network is expected to begin operation in the third quarter of 1997.

9.7.1 Demand for Service

Other than in the 1988 *National Telecommunications Study,* there has been no analysis of demand. The study concluded that for each 1 percent increase in GDP the demand for local telephone service increased 0.65 percent and for domestic long distance, 1.32 percent. Although the study analyzed the ability of telcos to supply service, it did not address the ability of potential customers to pay for it. One indicator of unsatisfied demand is the willingness of customers to pay for service. Despite its very high costs, cellular service had rapid penetration: in 1995, after one year of operation, 0.4 percent of the population owned a cellular telephone.

Another method to characterize demand is teledensity measured in lines per 100 people. In 1994 this ranged from 0.067 in the department of Vicahada (tropical forest in the Orinoco River basin) to 27 in the district of Bogotá. Another method is the time required for a line to be installed. Official statistics published by the National Telecommunications Department indicate this ranges from one to forty-eight months. When Nortel began providing service, it was presented with lists showing people who had been waiting ten years. Nortel at first did not believe this. On ascertaining it was true, the firm began to advertise that anyone could have a telephone within a month. Customers began to submit applications for telephones, and soon the number of applications exceeded the number of lines Nortel had installed. Alcatel was presented with lists with names fourteen years old. Such waiting lists do not fully represent demand, since some potential customers have given up hope of ever receiving a telephone and consequently have not submitted an application.

9.7.2 Equipment Suppliers

The telcos depend on imported equipment and the producers are very competitive. Although there are two firms in Colombia that manufacture copper cable and one that manufactures telephone sets, operators prefer to import these items. The quality is better and, in spite of import duties, the cost is approximately the same. Duties on telecom equipment are approximately 6 percent, and there is a 14 percent value-added tax. Equipment that will be connected to the telephone network must receive import license approval from the Ministry of Communications, but there are otherwise no restrictions. The Institute of Technical Standards of Colombia (INCONTEC) establishes standards for products and equipment manufactured in or imported into the country.

The major equipment supplier in 1992 was Ericsson with a 42 percent market share, followed by Fujitsu with 12 percent. In 1993 Ericsson's percentage fell due to increased competition from Siemens and Alcatel. Ericsson, Fujitsu, and Siemens have long histories of supplying Colombia.

9.7.3 Regulation

Three bodies have important roles in regulating telecommunications. First is the National Council for Social and Economic Policy (COPNES), an advisory board to the government as a whole, which establishes broad economic and social policies that affect the industry. The Ministry of Communications has the ultimate authority. It provides guidelines for planning the network through its National Planning Department, assisted by the Ministry of Finance. The Telecommunication Regulatory Commission was created in 1991 to establish the tariff structure, oversee concessions for domestic and international long-distance service, promote competition, seek to improve efficiency and service quality, and otherwise regulate operations within the sector. To provide local telephone service in urban areas or to use spectrum, an operator must seek a concession or governmental authorization.

9.8 Conclusion

Having been foiled in privatizing Telecom Colombia in 1993, the Gaviria administration sought alternative solutions to meeting the country's needs for more and better telecommunications. The government decided to open the sector to competition gradually, preparing the labor force and Telecom for competition. Telecom identified and focused on certain core strengths and reduced its labor force through early retirement plans and attrition.

By comparison to many other Latin American countries, particularly Chile, Colombia has moved little and slowly in opening telecommunications to competition and reducing government ownership and involvement. When competition comes to long distance in 1997, Telecom will still be state owned and have had seven years to prepare. It will face only two new entrants. Other services that

Telecom offers such as basic telephony will continue to be provided without competition. Cellular, a completely new service when introduced in 1994, also has been limited in the number of participants in each region, and the state has maintained an ownership role in three of the six companies. Value-added services are more open to competition and have attracted participation by the private sector.

The technological, administrative, and financial development of telecommunications in Colombia has been uneven since the beginning. Administrative and financial bottlenecks have kept the system less extensive and less capable than it might have been. Tariff structures motivated more by political considerations than by recognition of the need to generate sufficient profit to finance the expansion and maintenance of the system have been part of the reason for this situation. In the 1990s Colombia has not used privatization or liberalization as a means of obtaining capital and expertise—particularly foreign capital—to expand and upgrade its telecommunications. At the same time, the innovative shared-risk ventures to include private, mostly foreign, partners in expanding service within a state-controlled context may prove to be a less traumatic alternative.

Note

This chapter draws on material provided by William Cartier and benefited from rigorous commentary by an outside reader.

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