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Venezuela

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Venezuela, the sixth largest country in South America, has an area of about 912,000 square kilometers and a highly urbanized population of almost 21 million (July 1994 estimate)—the twelve largest cities have about 75 percent of the population. Eighty-three percent reside in cities of at least 5,000 people. The population increased over 40 percent in the fifteen years from 1979 to 1994.

An extension of the Andes runs into Venezuela and mountains rise along much of the Caribbean coast. Several fertile valleys lie in these ranges. Caracas, the capital and largest city, with 20 percent of the population, sits at an altitude of about 1,000 meters. The northwest corner of the country, around Lake Maracaibo, is the traditional center of the petroleum industry. South of the mountains is a sparsely populated plain (*Llano*) of savannas and scrub. The southeast is part of the Guiana highlands and the largely tropical rain forest. The Orinoco River runs between, and drains, these last two.

10.1 History

Development of telephone service in Venezuela began in 1883 when a representative of Intercontinental Telephone Company of New Jersey, James A. Derrom, obtained authorization from the government of General Antonio Guzmán Blanco to install three telephones in Caracas, on a demonstration basis. In 1890, the English company Telephone and Electrical Appliances (TEA) became the assignee of the contract, by which time there were 400 subscribers. At the time, the economy was based on agriculture, a situation that continued until the beginning of petroleum exploitation in 1914.

In December 1894 American Electric & Manufacturing Company was contracted to install service for the government. The Venezuelan Telephone & Electrical Appliances Company Ltd. (formerly TEA) signed an agreement with the government on July 21, 1898, that regulated relations between the parties.

The Ministry of Transport and Communications (MTC) was created on February 25, 1936, and was originally responsible for administration of mail, communications, and air transport services of a civil and commercial nature. Subsequently

it was split, with communications becoming a separate ministry. In 1977 the parts were recombined.

Since 1914 Venezuela's constitutions (1914, 1936, 1961) have embodied the principle that all matters related to telecommunications lie in the domain of the state. Thus, the constitution enacted July 20, 1936, conserved, without alteration, the provisions of the 1914 constitution that reserved to the executive branch "all activities related to the mails, telegraphs, telephones, and wireless communications." This has not, however, meant the state actually provided the service directly. Concessions were given private companies, generally foreign, to construct and operate domestic local and long-distance service, as well as international service.

On July 28, 1936, the Law of Telecommunications was enacted, superseding a 1918 law. However the 1927 Law of Overseas Cablegraphic Communications remained in force until 1940, when a new Law of Telecommunications was enacted.

10.1.1 Creation of CANTV

Compañía Anónima Nacional Teléfonos de Venezuela (CANTV) was organized and began operations in 1930.

In 1953, in the face of the private foreign sector's difficulty in undertaking the costly investments necessary to expand service at the national level, the government purchased all of the common stock of CANTV from Telephone Properties Ltd.

10.1.2 International Communications

On September 14, 1931, the Ministry of Development declared the international radiotelephone service it operated open to the public.

Venezuela became a part of Intelsat in December 1965 with a 1 percent participation. In August 1966 a submarine cable, co-owned by CANTV and AT&T, with a capacity of eighty channels, entered service. With this cable and with the irrevocable rights for use acquired in the Saint Thomas-Florida cable, the first modern international communications system of the country was completed.

10.2 Telecommunications Since CANTV's Nationalization

Venezuela's 1961 constitution, still in effect in 1996, establishes as a general rule that monopolies will not be permitted, but granting exclusive concessions is accepted for a limited time to establish and exploit services of public interest. The mails and telecommunications, among others, are thus within the domain of the central government. The constitution and several specific laws provide that ownership of telecom services resides with the state, but Congress is permitted by a two-thirds vote in each chamber to attribute to the states or municipalities specific areas of this national domain. As a consequence, in order to promote administrative decentralization, Congress can convert monopolistic national public services into state or municipal services.

Decree 782 of June 26, 1962, ordered reorganization of telecom services. This

left the Ministry of Communications responsible for the administration and operation of national and international telegraph and radiotelegraph services, as well as control and supervision of television and radio broadcasting programs, control of the spectrum, and setting rates. It also granted CANTV the right to provide all telephone service, including international, as well as national and international telex, radiotelephone, facsimile, telephoto, data transmission, and facilities for the transmission of radio broadcasting and television programs. This decree was subsequently replaced by a 1965 law that confirmed the monopoly of the state, exercised through CANTV.

A subsidiary of CANTV, the Postal and Telegraph Institute (IPOSTEL), provided mail and telegraph service. Both services were slow. There were about 800 telegraph stations in 1988.

10.2.1 Network Growth before Privatization

Planning telecom services was initiated in 1958 with CANTV's first development plan, which covered 1958–64. The second was for 1965–70, and the third, 1971–75. The years 1965–75 gave rise to the most intense quantitative growth of the company, as during this period the change from step-by-step to common-control exchanges took place.

In 1976 the involvement of political parties and unions slowed CANTV's growth. Then, in 1979 and 1981, internal crises took place that led to the flight of many of the company's professional staff. These departures ended growth, and service seriously deteriorated as, among other things, congestion of the network increased substantially.

Demand continued to grow, producing a substantial bottleneck by 1980. In 1984 digital exchanges were approved. Political problems and the lack of resources—financial and human—compounded by internal problems at CANTV, meant their introduction was quite slow, however. Thus, at the height of the crisis of unmet demand in 1990, only 6,000 lines were installed. Demand was 300,000 to 400,000 lines per year. In 1991, CANTV regrouped somewhat and installed 180,000 lines.

It is possible to make CANTV's activities during the 1970s and 1980s look (superficially) favorable. During the debate over privatization, a former minister of Cordiplán noted that "population increased during the period 1970–89 from 10,762,000 to 19,369,000, that is, by 8,607,000, and during this period the large investments in telephone infrastructure by the State meant an increase in the number of subscribers from 276,834 to 1,462,885; that is, while the population increased by 80%, the number of telephone subscribers increased by 427%" (as reported in the newspaper *Diario El Universal* of November 20, 1991). Of course, this plays on the distortions possible when the base of one percentage change (telephone subscribers) is a small fraction of the base of the other (population). An increase of about 1.2 million subscribers against an increase of 8.6 million people yields an incremental tele-density of less than 14—a not particularly impressive level.

The history of CANTV is typical of the history of state telecommunications companies in Latin America: a period of enthusiasm, with growth stimulated by

governments, then a period of decline, stagnation, and corruption that leads to calls for privatization. In Venezuela, privatization was carried out in 1991.

10.3 Change in the Political Environment

The government of Carlos Andrés Pérez, which took office in 1989, began to make profound changes in Venezuela's economic programs, reflecting a rethinking of the interventionism and protectionism of a bureaucratic (and inefficient) state that had characterized the country for decades. The principal political parties—Accion Democratica (AD), in power 1989–94, and Social Christian (COPEI)—have progressively broken with their original ideologies, which, to a greater or lesser degree, were “populist,” to adapt to a “technological pragmatism” more in accord with the requirements of a country that claims “solutions” and not “flags.”

There has been a movement toward competition, a market economy, and transfer to the private sector (with foreign participation) of activities and services that, in government hands, had generated large losses and otherwise been a major fiscal burden to the state. The need to refinance foreign debt, together with the policies of the International Monetary Fund, accelerated this process, from which telecommunications could not escape.

This shift has made it possible to achieve a consensus around the restructuring of the public services and other state-owned companies. All this led the government to establish guidelines for itself under which, among other things, it would minimize its role in providing telecom services. At the same time, the state would seek to broaden the coverage of services and increase the quality. It would also guarantee coverage of the support services fundamental to the social development and culture of the population, as well as the integrated and harmonic development of the network, particularly basic services. When these government enterprises are privatized, workers and other groups directly affected would be given an opportunity to acquire an equity interest in the new companies and, as appropriate, would also seek international partners with appropriate technical and administrative skills.

Other interest groups, such as the Federation of Chambers of Industry and Commerce (FEDECAMARAS), the national group of local chambers of commerce, and the Confederation of Workers of Venezuela (CTV), the federation of principal unions, have reached agreement on the proposed reforms in the telecom sector. CTV accepted the need to reduce employment at CANTV as part of the process of privatization.

Only some minor parties identified with socialism and intervention, such as the Movimiento al Socialismo (MAS), are opposed to this process. They argue that privatization of telecommunications leads to its denationalization, delivering it to transnational companies; that the technical conditions of the telecom network are inherently monopolistic; and that private providers will finance the system by charging users high rates. From this they conclude telecommunications should remain in the hands of the state.

10.4 Restructuring

A major consideration in the decision to privatize CANTV was the huge unmet demand; something simply had to be done to solve the problem. CANTV's own estimate was that obtaining service took an average of eight years from the time it was applied for. The goal at the time of privatization (1991) was to reduce this period at first to three years, and then narrow the interval to months, not years.

Related to this situation was the level of CANTV's foreign debt—some U.S.\$600 million. Devaluations of the Bolivar (Venezuela's currency) exacerbated the state's problems servicing its debt, let alone making the investments necessary to meet demand.

Lack of investment meant entire segments of the market were going unserved, not just those wanting cellular phones, private networks, and other services taken for granted by subscribers in countries with well-developed networks, but also many trying to get basic service. There was a feeling it was necessary to introduce new actors into the sector to address these shortcomings, even though—actually, because—that meant ending CANTV's monopoly of service.

The government of Venezuela wants foreign investment to flow to the sector, along with the introduction of advanced technologies, the formation of more specialized human resources, and the availability of the greatest variety of services. I agree with those who say restructuring telecommunications is a prerequisite to attracting investors in all areas of the economy, because investors will not tolerate a backward and deficient telecommunications system.

10.4.1 *The Legal Framework*

After months of work, a draft law reforming telecommunications was put forward. It moved slowly through the Congress, acquiring amendments and spawning other laws relating to regulation of the industry. As an advisor to the Congress, I actively participated in drawing up the Law of Telecommunications that was finally passed and, in 1991, substituted for the one in force since 1940.

The new laws were a response to the need to update the legal framework that regulates this area and to define precisely the functions and responsibilities of the public and private sectors. A principal objective is to establish a system of equal access in the provision of different services, stimulating both national and foreign private investment in the context of free competition.

The October 1991 law, with a fundamentally technical nature, regulates the services that currently exist and provides for the incorporation of new ones. Services are classified as being for general use, for restricted use, and for broadcasting. Broadcasting (radio and television) is excluded from the coverage of this law; separate statutes deal with it.

The law establishes the rights and duties of users and provides for their participation in the design of policies. Among the rights, besides equal access to and use of services, there is to be timely attention to requests. Users will participate in the Consulting Council of the National Telecommunications Commission (CONATEL).

10.4.2 CONATEL

Regulation of broadcasting, television, telephone, telegraph, and mail services rested with the Ministry of Transport and Communications (MTC), through various renamings and restructurings, from the time it was created in 1936 until 1991.

Initially, MTC's General Dirección Sectorial de Telecomunicaciones was responsible for regulation and control of the sound and audiovisual media. This responsibility had two aspects: technical (regulation of utilization of the spectrum) and content. The division's jurisdiction was radically changed on September 5, 1991, when the Office of the President issued Decree 1826 creating CONATEL (the National Telecommunications Commission). The General Directorate of Communications retained responsibility for the content and programming of radio and television, and CONATEL became the regulatory body for technical aspects of telecommunications such as the use of spectrum and assigning frequencies.

More specifically, CONATEL had the authority to plan, direct, supervise, and regulate telecom services; recommend the granting of concessions, permits, and administrative authorizations; administer the rights of granting of concessions and permits; promote investment and technological innovation in the sector; apply administrative sanctions; watch over respect for users' rights; establish standards and other regulations for services; prepare criteria for setting rates; and collect fees and other income derived from the services.

CONATEL, autonomous in administration, finance, and budget, is assigned to the Ministry of Transport and Communications. At the time it was created, people assumed CONATEL would be temporary, necessary only until Congress approved a new law creating a regulatory agency of greater hierarchy and autonomy, with the presence of representatives of the legislative and executive branches.

One of CONATEL's charges is promoting competition in the telecom sector. This is also a responsibility of the Superintendency for the Promotion and Protection of Free Competition, a regulatory agency created as part of the Ministry of Development to cover all areas of the economy. My expectation is that CONATEL will have jurisdiction only on technical matters, with the exception of overseeing the concession contract between the state and the new CANTV. Other matters related to competition will be handled by the Superintendency.

10.5 Privatization

In April 1991, Fernando Martínez Mottola, president of CANTV, presented the "CANTV Proposed Privatization Plan." This document deserves quoting at length.

Telecommunications require changes of enormous magnitude to promote national development. A wide national consensus supports this. The technological and organizational delay and the financial crisis the company is undergoing can only be corrected with very profound changes in its organization in order to undertake the anticipated growth and financing of its investments.

Installed telephone lines increased from 1,150,020 in 1980 to 1,922,800 in 1990.

while the principal lines for each 100 persons rose from 5.13 to 7.38. In 1990, 45.46% of demand was met. The process of digitalization of the network [begun] with the purchase of 1 million digital lines in 1986 has certainly been restricted by the inability of the company to install equipment and put it into operation. The introduction of new services was limited to cellular mobile telephony in Caracas, with many deficiencies, starting in 1986.

A reasonable objective for the sector consists of reaching an acceptable level in regard to variety, quantity of supply, and quality of the services in a period of five years, and a good level in relation to international standards, in ten years.

To reach the objective implies attaining at least the following partial objectives or subobjectives: installing and putting into service 300,000 additional telephone lines per year, on average, during the next decade; refurbishing and improving the quality of operation of CANTV's installed plant, which included 1.9 million lines at the end of 1990, in a period of three to four years; creating an organization able to provide high-quality service in its different aspects, for a subscriber base that will double in five to seven years; introducing value-added services, providing them with a high level of quality, and expanding them according to the rhythm of demand. This expansion will require several hundred million dollars annually during the 1990s. (Martínez Mottola 1991, translation by Zaidman)

The plan was for an international operating company to become a minority partner, with a 30 percent interest. This company would have to commit to formulating a predetermined investment plan for expanding service; meeting specified quality levels similar to those of industrial countries; and doing this at tariffs established by the regulating body. CANTV workers would be transferred to the new operating company, with guarantees of their contractual rights and an option to purchase shares. This phase was to be completed within two years, after which sale of the government's remaining shares would be carried out in an international offering.

10.5.1 Selection Process

The initial plan was modified after discussions between the leading political parties (AD and COPEI) so that 40 percent of shares would be sold to the selected operator, 11 percent to company employees (who numbered about 22,000), and 49 percent would remain with the state until the company was able to command a better price, at which point shares would be offered to the public through the Caracas Stock Exchange. Each of these would be a different class of shares. The proceeds of these sales would become part of CANTV's equity.

Only bids from larger international operators were sought. This was done by establishing high minimum technical and financial requirements, such as at least 6 million installed access lines, 25 percent of local exchanges digital, and annual revenue of at least U.S.\$5 billion.

On March 6, 1991, qualification documents were accepted from twelve bidders. Evaluation and analysis was carried out by a committee of the Ministry of Transport and Communications, the Venezuelan Investment Fund (a government agency that would hold the state's shares after privatization), and CANTV. In April, eight potential bidders were announced; five were U.S. companies (Ameritech,

Bell Atlantic, GTE, Southwestern Bell [since named SBC Communications], and U.S. West), plus Bell Canada, France Telecom, and Nippon Telephone & Telegraph. However, only two consortiums, one led by GTE and another led by Bell Atlantic and Bell Canada (BC), were interested in acquiring 40 percent of CANTV.

On November 15, 1991, the consortium led by GTE (51 percent), Venworld Telecom CA, was declared the winner, agreeing to pay U.S.\$1,885,000,000 for 40 percent of CANTV. Other members are AT&T International (5 percent), Telefónica Internacional de España SA (16 percent), CA La Electricidad De Caracas (16 percent), and Consorcio Inversionista Mercantil (Cima) CA, represented by Venworld Telecom CA (12 percent). Citibank NA is the trustee of the employee shares (11 percent). The remaining shares were held by Fondo de Inversiones de Venezuela, the Ministry of Transportation and Communications, and the Banco Industrial de Venezuela. Venworld is obligated to maintain ownership of all its shares until at least January 1, 1997, 70 percent until January 1, 1999, and 20 percent until January 1, 2001. In no case before 2001 may its shares be transferred to manufacturers of telecom equipment.

In January 1995 Venezuela's privatization agency announced plans to offer the public 32 percent of CANTV during the year's third quarter. This would reduce the state's holding to 17 percent.

10.5.2 The Concession Contract

CANTV's legal status prior to the beginning of the privatization process was that of a direct instrument of the state. It was thus necessary to formalize a concession contract between the state and CANTV, which was done on October 14, 1991. The concession runs thirty-five years and requires payment to the state of 5.5 percent of billings for all services. Importing of plant and equipment for use in the network requires prior authorization of the ministry. There will be limited competition in respect to basic services—local, national, and international—during a nonrenewable nine-year period (that is, through October 2000). Other services, including cellular and value-added, are open to immediate competition, and CANTV may participate in these markets.

Users basically had to accept CANTV service as it was when it was a state-owned and operated enterprise. There was essentially no recourse in cases of poor or no service. As part of becoming a responsible service provider, CANTV is obligated to provide equal treatment, prompt attention to claims, and compensation to subscribers when basic service is not restored within seventy-two hours of being reported. The privacy and inviolability of communications is also formally recognized.

10.6 Telephony in the 1990s

Nationwide, Venezuela had a density of 7 telephones per 100 persons in 1990, but the level in Caracas, with 1 million lines, was 25.

In the CANTV concession contract that took effect in October 1991, quality standards have been included using a detailed protocol of such measures as how long it takes to get a dial tone, an operator, and a repair, as well as the quality of billing. The private consortium controlling CANTV is subject to penalties such as newspaper announcements, fines, and the suspension of its concession if it fails to meet the obligations imposed by the concession.

It is assumed that in the year 2000, from 70 to 80 percent of demand will be met, compared to between 15 and 20 percent in 1992.

After CANTV's first year in private hands, a majority of Venezuelans still felt service quality was very poor, although CANTV had made some improvements. CANTV's problem in this regard was that things had been so bad, simply stopping further deterioration was a major task, and one the public would not directly perceive.

Demand for telecom services has been so great, it is almost inelastic: price increases have not significantly reduced demand.

By the year 2000, CANTV must be satisfying 90 percent of requests for a line within an average of five days. CANTV also is obligated to undertake an expansion program that will increase the number of lines from 1.8 million to 4.5 million in nine years, which will mean a teledensity of 14 to 15.

Rural service is open to competition in geographic areas with populations less than 5,000. Rates for these services will be higher than CANTV's in order to create incentives to make investments.

In July 1992 a program began to install 18,400 pay phones of state-of-the-art technology. They accept coins or intelligent cards. Services also improved. In 1991, 57 percent of public telephones were out of service. By 1993, only 10 percent of public telephones were out of service. In 1993, concessions for public telephone service were granted to three companies: Teleservicios VOZ/DATA (Venezuela), Telepub (Italy), and Smart Phone (Malaysia). Teleservicios was given the central coastal area and parts of Caracas. Telepub will cover Central Venezuela, and Smart Phone will cover the states of Amazonas, Nueva Esparta, and Miranda.

10.6.1 The CANTV Network

In 1992, in addition to the telephone network for voice, data, and fax, there was a telex network operating at 50 baud and a data transmission network (VENEX-PAQ). The telex network had 17,500 lines and 13,000 subscribers in 1988, over half of them in metro Caracas. Also, there were a large number of private networks for corporate purposes, such as those of the petroleum, steel, and banking companies. Tests of videoconferencing had been made in some petroleum networks.

At the time of privatization, the telephone system was overwhelmingly analog. Most telephone exchanges used electromechanical technology, but (in 1992) about 16 percent were digital, using the AXE 10 from Ericsson, NEAX 61E from NEC, and EWSD from Siemens. These companies had been the successful bidders in 1986 for what was until then the largest tender offer in CANTV history. The technological change in Venezuelan telecommunications contemplates the installation

of 1 million digital lines, to accommodate 792,000 new subscribers, together with an important number of support centers including training and repair.

The purpose of this project is to establish an ISDN structure. In 1992 a 140 Mb/s backbone Radio Digital Interactive (RDI) project was completed, providing digital links among all major cities. A project called VENFOIN (Venezuela Interurban Optical Fiber) was begun at 1992 and due to complete in 1996. It was to link major cities and rural areas to the national network. In 1993, the RD-2.2 (Radio Digital) project was completed. Its main purpose was to increase transmission capacity. It links the main cities of Venezuela. The benefits of this network will be increased capacity, videoconferencing, and high-speed E-mail.

The principal bottlenecks in the basic network have been interconnections between local exchanges for domestic and international long distance. In practical terms, it has historically been much easier to call Venezuela from abroad than to call abroad from Venezuela. This is probably due to an old CANTV policy to facilitate entry of calls, which generates more income than outgoing calls.

10.6.2 Satellite Communications

Venezuela participates as a party, with CANTV as the signatory, to the Intelsat agreement. The privatized CANTV has remained the country's satellite communication provider. Growth of telephone traffic via satellite has been very great, primarily from international traffic. Intelsat introduced what has been called international business services (IBS) in 1987. These are totally digital integrated services handled by satellite at speeds of 64 Kb/s to 8,448 Mb/s. In Venezuela, state entities, such as the petroleum companies and national government, as well as multinational companies, have become IBS users.

CANTV is required to give access to private operators who want to use Intelsat directly. CANTV charges 40 percent above Intelsat rates for this service. The possibility of bypassing CANTV and dealing directly with Intelsat was being studied in 1992. This was already happening in the United Kingdom. Called cosignees, new users would not need to coordinate anything with CANTV. Intelsat wants greater traffic and thus is happy to cooperate in such arrangements. Profits are distributed among all the stockholders, which include CANTV.

In the late 1980s, orbiting of the PAS-1 satellite by Panamsat, a U.S. company, offered an alternative supplier of satellite communications services. Before deciding to utilize it, Venezuela studied the new system's impact on Intelsat. It is technically compatible with Intelsat until 1998, and utilizing the new system is not expected to adversely affect Intelsat economically, provided services are point to point and not interconnected to switched networks at both ends. It was thus decided to allow use of Panamsat, but only for transmission and reception of domestic and international television programs. This limitation will continue until the Ministry of Transport and Communications defines the available frequencies for other satellite telecommunications services (IBS, data, teletext, voice, fax, and the like). In addition, because Venezuela has obligations with the Simon Bolivar Andean Satellite System, in the sense that all domestic and subregional traffic must be through this satellite when it is in orbit, use of Panamsat will be by per-

calls issued for one-year terms. Several television stations have been using Paramsat. In 1993, CANTV added two new digital earth stations for a total of four at Camatagua. One is used for domestic satellite traffic, and the other is used for international digital traffic. Another earth station was scheduled for installation in Maracaibo, the second largest city in Venezuela, in 1994.

10.6.3 Rate Structure

Before privatization, rates nominally were approved by the president of the country, although the actual exercise of this power was by the Ministry of Transport and Communications in coordination with the Ministry of Development, pursuant to an assortment of laws and regulations and the interests of the Treasury. As part of attracting private investors, rates are to be set more broadly and with greater flexibility. Three things are considered in setting rates: recovery of capital invested in equipment, operating expenses, and the need to generate a profit for the benefit of the National Treasury.

Before 1967, charges were based on the number of calls. Since then, time of day, duration, and distance are a factor in long-distance charges where equipment permits direct dialing. For local calls, duration charges are for 90-second increments (one pulse or unit).

As has been the case in most countries, long distance has been used to subsidize basic residential service. In comparison to the United States, which has gone the furthest in relating rates to costs, international and domestic long-distance rates are quite high, and local rates, both residential and commercial, are quite low. In 1990 the basic commercial rate was about U.S.\$12 a month. Since privatization, rates are being rebalanced, which means residential rates will increase to reflect costs more accurately.

Venezuela has been using rate caps since privatization. This method is considered the most efficient from an economic point of view, as the service provider directly benefits from being more productive. The government desires universal service, understood to mean that all citizens have service at a "reasonable" cost.

10.6.4 Mobile Cellular Telephony

In 1988 Venezuela became the first South American nation to have cellular service. On May 31, 1991, a contract for a competing service was awarded to Telcel Celular CA, a consortium of Venezuelan investors and BellSouth, a regional operating company in the United States. It is able to offer service nationwide. CANTV was by then already serving about 9,200 subscribers in Caracas and along the central coast.

Telcel's initial system would serve 20,000 subscribers. It paid the government U.S.\$100 million for the right to offer service. Telcel is the A-band operator and is using Motorola technology. In 1992, CANTV spun its cellular service, the B-band operator, into an affiliated company called Movilnet. By 1992, Movilnet served 21,000 subscribers. And by 1993, subscribers increased by 268.5 percent, to a total of 77,184. Movilnet provides cellular service with the technological support of GTE. By 1994, Movilnet served the following cities: Caracas, Los Teques, La

Guaira, Maracay, Barcelona, Punta de Mata, Maturin, Alto Guri, Ciudad Bolivar, Puerto Ordaz, Valencia, Barquisimeto, Cabudare, Araure, Ciudad Ojeda, Cabimas, Maracaibo, San Antonio, and San Cristobal. CANTV's cellular concession, purchased in 1992, is good for twenty years and can be expanded for another twenty years.

Given the congestion of the basic network, cellular phones are quite popular among those who can obtain and afford them. A wide assortment of mobile phones are available, including Radio Shack, with Motorola and NEC having the largest market share.

Quality of the cellular service has not been optimal in either band. Partly this is from topographical factors—Caracas is located in a valley surrounded by mountains—but it is also due to a scarcity of base stations. The presumed paralysis of the original plans for investments and expansion must be noted.

10.6.5 Data Transmission

Data transmission does not have a dedicated network. Despite this, the service has achieved noteworthy penetration. Data are carried on the telex network (limited to 50 baud), switched telephone network (RTC), and private circuits. While the RTC can technically support transmissions up to 4800 baud, CANTV did not promote use of the RTC for data because it did not have adequate means to manage it. Private interurban and international circuits provide only for the leasing of channels for speeds of 50 baud.

The fact CANTV did not offer greater facilities caused an anarchical expansion of private data networks. The private data networks were often used illegally for voice traffic. Aware of this, CANTV undertook several studies, concluding there was significant profit potential from establishing a switched public data network. In addition, once in operation, the network would contribute to establishing new informatics services and strengthening those already available.

The first study on a data transmission network for Venezuela was prepared by CANTV's Division of Technical Planning and Norms in 1979. It recommended initiation of tests of packet switching equipment, which were done, and a multiplexor network (named Venmux), which was not pursued. A 1981 study concluded packet switching would permit better utilization of the existing transmission media and facilitate the interconnection of equipment with distinct communications protocols.

As a consequence, at the end of 1982, a bidding process was opened for the acquisition of equipment and cable related to data, which would permit meeting demand for this service during 1983–86. The data network proposed for 1986 was based on a star-grid network with seven concentration nodes, twenty-one remote centers, connected to the nodes through statistical multiplexors, and a network control center (CCR). This would permit 10,957 users, including 25 percent not on dedicated lines (that is, accessing the system through the regular telephone and telex networks), located in forty-five cities.

By 1992 there were several data transmission networks.

VENEXPAQ. Begun in the early 1990s, this is a packet switching network in the eight most important centers of the country utilizing Siemens nodes and managing SDLC, BSC, X.25, X.28, and X.32 protocols. Put into operation by CANTV, its privatization is expected.

CONICIT (SAYCYT). At the end of 1982 the National Council of Scientific and Technological Investigations (CONICIT) contracted with GTE Telenet, a U.S. company, to implement a data network to facilitate access to national and international information centers, stimulate the development of new national databases, and reduce the cost of communications for scientists and other researchers in the country.

SWIFT (Society for Worldwide Interbank Financial Telecommunications). At the end of 1984 CANTV approved a request from the National Bank Association for operation of the SWIFT network for interbank financial communications. Venezuela became a party to SWIFT on March 17, 1988. The network has approximately twenty user banks, which connect their terminals by means of dedicated links to the local concentrator in Caracas. The concentrator is connected by two links with SWIFT's international operations centers, directly or through concentrators in other countries.

In April 1990, IBM de Venezuela SA offered CANTV the computer services of IBM Information Network (International Network of Applications) at the world level, and the proposal was still under study two years later. IBM de Venezuela has been supporting the idea of connecting all the libraries of the country and, subsequently, allowing connection to international academic networks. Moreover, IBM is supporting FEPAFEM (Pan American Federation of Faculties and Schools of Medicine) in providing Venezuela with a medical network that permits disseminating all kinds of medical and health information.

A study by the National Teleinformatics Council (CNT) paid special attention to the type of company that should administer the public data transmission network. It considered four possible options.

1. CANTV be the exclusive provider.
2. A privately owned organization be in charge of the global administration of the service.
3. CANTV associate with a private company, but have a controlling interest.
4. CANTV, through a new subsidiary, initially be in charge of the service to give time for it to be established, but later the new company would become independent.

10.6.6 Equipment Industry

Before the 1990s there was no electronic components industry in Venezuela, except for the manufacture of printed circuit boards. In consumer electronics, local industry basically has been dedicated to assembly. Motorola, which is providing a good deal of equipment to the expansion and modernization of telecommunications worldwide, announced plans to build a semiconductor plant in

Venezuela to supply South America, particularly other signatories to the Andean Pact and the Caribbean. The firm has some expectation of being treated as a national company. Motorola already carries out assembly of some telecom equipment, as do Ericsson, Alcatel, and national companies such as Maplatex. However, there is no "real" local manufacturing of such equipment.

10.7 Conclusion

There is no doubt in the minds of most Venezuelans that without adequate development of telecommunications, a takeoff into a real market economy through the promotion of financial, industrial, and commercial activity cannot be carried out successfully. This means the modernization of the basic telecom network, as well as providing value-added services—and hence, privatization with a foreign operating partner.

In the process of change, several questions arise. Is there any purpose to privatizing a state company if it continues to be a monopoly? The answer is yes, if it is a step toward ending the monopoly. For Venezuela and most other Latin American countries, the capital and technology needed for the task are not going to be available unless the provider has reasonable assurance of a return on the tremendous investment necessary.

Although most political leaders and economists recognize the world is simply not going to give Venezuela a good telecom network—let alone a healthy and prosperous economy in general—and domestic resources are inadequate, there has been a backlash against foreign participation and implementation of reforms. The most notable of these were the protest and looting of February 27, 1989—after newly installed President Carlos Andrés Pérez announced a major economic restructuring program that included the doubling of the price of gasoline—and an attempted military coup on February 4, 1992. In November of 1994, the National Guard was called out to patrol Venezuela's big cities in order to control a nationwide crime wave that overwhelmed the resources of the local police.

Experience elsewhere—as in Mexico—has shown that when governments set a period, for example, two years, for a privatization program, it often takes longer, perhaps close to four or five years, to achieve the declared objectives. CANTV's history since privatization is a cautionary tale for investors there and elsewhere. Privatization of CANTV in 1991 benefited users, thanks to increased investments in infrastructure, but investors in the company did not fare as well. If timing, as the axiom goes, is of the essence, then investors couldn't have picked a worse time. In 1991, the following signs boded well for investment in the local economy: an increase of GDP growth from 6.5 percent to 10.9 percent, a decrease in inflation from 36.6 percent to 31.0 percent, and a decrease in unemployment from 9.9 percent to 8.7 percent. And then the economy took a nosedive.

In addition to political uncertainties, investors faced an increasingly hostile economic environment. GDP growth plunged from 10.9 percent in 1991 to -1 percent in 1993, while inflation grew from 31.9 percent to 40.9 percent within the same time period. In 1994 and 1995, inflation grew even more, hovering at 60 to 70

percent annually. In 1994, the local economy reeled due to bank failures. The government was forced to take over ten of Venezuela's forty-seven banks.

Meanwhile, CONATEL, the regulatory agency, presented yet another source of problems for investors. Often touted by the government as an autonomous agency, CONATEL began to look more and more as though it were in danger of compromising this autonomy and becoming politicized. CONATEL was legally entitled to decide upon purchases without the approval of Congress, but it still chose to consult with Congress regarding acquisitions. As late as 1994, the new administration of CONATEL considered imposing more restrictions on its own decision-making authority. Although CONATEL could legally grant concessions without restriction, its president chose to be open to the idea that all pending and new concessions should be approved by Venezuela's attorney general.

CANTV's profit potential, hobbled by the aforementioned economic and political crises, an increasingly antagonistic regulatory agency, and contractual commitments to invest heavily in infrastructure, faced yet another hurdle: an accounts receivable crisis. In 1995, government entities were, on the average, at least a year overdue in paying telephone bills. CANTV was also restricted—by CONATEL—from other potentially profitable activities, such as the delivery of video services. CANTV hoped to return to profitability in 1996, but dividends were not expected for yet another two years.

The lack of telecom infrastructure in Venezuela in the early 1990s was good news for the cellular services industry, which experienced burgeoning growth. By 1994, Telcel and Movilnet—the first two concessionaires in this industry—jointly served about 230,000 subscribers. Increasingly, cellular service emerged, for many users, as the only form of telephone service. And as CANTV invested in installation—expansion and modernization—at the expense of repair service, users began to view cellular service as the more reliable option. In response to demand, Movilnet plans for 1994 included doubling its 1993 investment in cellular infrastructure. Cellular became an attractive option even for public telephones in densely populated areas such as Caracas.

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