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The Philippines

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The Philippines is one of the world's few major archipelagic nations. As such, the ability of a government to wield influence throughout the islands has depended to a large extent on its communications network.

There were thriving commercial centers long before Ferdinand Magellan arrived in 1521, but precolonial political units were small. There are still some eighty-five indigenous languages and dialects. The Spanish brought macropolitical unification of the islands and Roman Catholicism—and stopped the spread of Islam, pushing it back to the southern islands. In 1898 the Philippines declared independence, but the United States assumed control from 1900, following the Spanish–American War, until 1942. A second republic was founded in 1946.

A legacy of Spanish rule is the view that public utilities are probably better off under government direction and ownership, still a prevailing view in most of continental Europe. Hence, it is not surprising to find government in the business of providing telecom services—or at least willing to provide them. In contrast, U.S. rule introduced the idea of private entities providing services. The interplay of these philosophies continues to influence the development and structure of the Philippines' telecom sector in important ways.

10.1 Economic and Political Background

About 95 percent of its 66 million people (mid-1991) and land area of 300,000 km² are on eleven islands; Luzon and Mindanao together have almost two-thirds the land area. However, all told, there are over 7,100 islands stretching some 1,800 km along the coast of Southeast Asia. The country is divided into thirteen regions, and has seventy-three provinces and sixty cities. Filipinos are of Malay–Polynesian descent, although they have mixed with Chinese, Spanish, and American peoples. Pilipino (a form of Tagalog spoken natively in the Manila region) was made the national language in 1939, while English is the language of commerce and industry; little Spanish remains.

An economic recovery began as an offshoot of the urban, popularly supported, and bloodless uprising that brought Corazon C. Aquino and a new set of national leaders to power in elections held in February 1986. The uprising brought a complete change in the political order. Constitutional authoritarianism was replaced with democracy, a government similar to that provided for by the 1935 Constitution (which had been drafted as part of preparation for independence during the period of U.S. rule.)

Even while a new economic plan was being prepared, several policy initiatives designed to restore dynamic market forces were undertaken. Monopolies in the sugar and coconut industries were abolished, import liberalization was pursued, and privatization of publicly owned corporations was adopted.

Numerous challenges confront the Philippines, many of which affect the nature and extent of telecom services. Because of the capital-intensity of modern telecom equipment, one of these challenges is the nation's huge external debt, U.S. \$28.4 billion in 1990. It continues to be a heavy burden and a drag on growth. Principal and interest payments claimed almost one third of export earnings in 1988. Restructuring of production sectors to make them more export oriented has been routinely delayed by intractable problems related to inefficiency, ineptitude and corruption in government.

Income distribution also continues to be a serious problem. About 55 percent of households, some 32 million people, live below the poverty line of approximately U.S. \$140 in monthly income. In 1985, 10 percent of the population had income more than fifteen times that of the poorest 10 percent. On average rural incomes are less than half that of urban ones. Insurgency is a serious concern in certain areas of the country. Unemployment, a major cause of the discontent that spawns insurgency, is being gradually alleviated by improvement in domestic military capability and positive developments on the economic front.

GNP of U.S.S.\$45.2 billion (1990), about \$700 per capita, grew at 5–6 percent in real terms in the late 1980s, but it had slowed to 2.5 percent in 1990. Consumer spending remains strong, sparked by wage adjustments and renewed government spending since 1986. Inspired by investor confidence, the economy continues to register favorable developments so direly needed to sustain growth and change, although growth was not as rapid, and inflation was higher, at the end of the decade than it was earlier (see, e.g., Cruz 1989).

Economic recovery has placed the telecom sector under close examination. As a facilitator in the exchange of data and information needed in the movement of goods, people, and ideas, the sector and its potential have become a subject of interest among users and policymakers aware of its role in fostering economic development.

10.2 Telecommunications History

There were well-established lines of foreign as well as domestic communications under the Spanish. In the latter part of the nineteenth century, regular

mail service between Manila and Barcelona was provided by *Compania Trans-Atlantique*, a steamship line subsidized by the Spanish government. There were ships each way at least once every four weeks. Other lines provided links with North America, other parts of Europe, and points in between, as well as Australia. Interisland mail to the main government centers was carried by *La Compania Maritima*. Four mail lines were established by the Spanish government to cover North Luzon, South Luzon, and the southeastern and southern islands.

In 1872 the first telegraph line was installed by the colonial government to link Manila and Cavite, a province southwest of Manila. Eventually, three main lines emanated from Manila to the ends of Luzon. The northwest line followed the highway toward Laoag in Ilocos Norte; the second line ran northeast along the highway to Aparri in Cagayan; and the southern line ended at Sorsogon. There were forty-nine telegraph stations on Luzon, nine on Panay, four on Negros, and three on Cebu, connected by 2,818 km of line.

In 1880, a submarine telegraph cable was installed from Hong Kong to Bolinao, Pangasinan. A land line connected it to Manila, some 250 km away. (For more on this see Santos 1986, pp. 25–27.) This link was operated by Eastern Extension Australia and China Telegraph Company Ltd. The same company was granted the concession to lay three submarine cables connecting Manila to the Visayan trading centers of Panay (Capiz and Iloilo), Negros, (Bacolod) and Cebu.

10.2.1 The U.S. Era

Six months after the Visayas cables went into operation, war broke out between the United States and Spain. The Hong Kong cable was cut during the siege of Manila Bay and remained inoperable until the end of the hostilities. When the United States assumed control of the archipelago, Eastern Extension restored operation to both its interisland and overseas cables.

The government telecom service centered its operations on the telegraph network established by the American occupation forces. In 1906, a government reorganization transferred administration of telegraph services from the Philippine Commission (the highest governing body in the colony, composed entirely of Americans) to the Bureau of Posts. Meanwhile, mail service was expanded throughout the archipelago.

Due to the increased American interest in the archipelago and Asia, facilities for communication expanded considerably. The San Francisco–Philippines submarine telegraph cable project began in 1901 and was placed in service in 1903. The Manila-based Philippine Islands Telephone and Telegraph Company was started in 1905, serving 500 subscribers; Cebu Tel & Tel followed in 1914, among others (see Arce 1986).

With development of the country's internal communications system, the interisland submarine cables of Eastern Extension were closed in 1917. On November 28, 1928, the Philippine Legislature granted a fifty-year franchise to a new corporation called the Philippine Long-Distance Telephone Company (PLDT), which was run largely by American management and whose majority

stockholder was British Columbia [Canada] Telephone. By 1930, PLDT had acquired the assets and franchises of the various local telephone systems. It initiated long-distance service to various parts of the country, starting with service between Manila and Iloilo in 1931. Two years later, overseas radio-telephone service was established between the Philippines and the United States and other parts of the world. There were approximately 28,579 telephones in place after the PLDT's first decade of operations.

10.2.2 Postwar Era

Immediately after the war, U.S. military authorities took over a system in which only 10 percent of the original facilities were still operational. In 1947, operations and maintenance of the telephone exchanges were turned over to the newly created Government Telephone System of the Bureau of Telecommunications (Butel). An Executive Order implemented as part of the 1947 government reorganization abolished the Bureau of Post's Electrical Commission Service, which was among other things the implementing agency for telecommunications, and the telephone system was returned to PLDT. By 1949, the company had restored service to 12,000 telephones and reopened its exchanges in the south. During the 1950s, independent telephone companies sprang up outside Manila and were interconnected to the toll network of PLDT.

It was not until 1953 that PLDT recovered its prewar level of 33,712 stations. After 1953, PLDT started converting provincial manual exchanges to automatic or dialing systems. In 1956 PLDT's majority owner, British Columbia Telephone, sold itself to General Telephone and Electronics (GTE). GTE began divesting shares to Filipino investors in 1967 because of the slated 1974 expiration of the Laurel-Langley Agreement, which had granted the US trade concessions for an eighteen-year period beginning in 1956 (see Taylor 1964, pp. 208-19).

In 1964, the Philippine-Guam Submarine Cable System (TPC-1), spanning 1,468 nautical miles, was landed at Baler in Quezon province. The initial capacity of the coaxial cable was 128 message channels, including telephone, telex, telegraph, and data traffic. Installed and operated by PLDT, it was the first system to bring high quality voice circuits to the Philippines.

Satellite capabilities were added to the country's telecommunications system in 1967 when Philippine Communications Satellite Corporation (Philcomsat), a joint venture between the government and private investors represented by the Philippine Overseas Telecommunications Corporation (POTC), installed and operated a portable satellite station. This was later replaced by a Standard A Station connecting to a Pacific Ocean satellite. In 1970 it was complemented by another A Station that connected it to an Indian Ocean satellite. Philcomsat vested POTC to manage and operate its earth station communications facilities (646 circuits). The charter of Philcomsat as a carriers' carrier, not regulated by any government agency, covers its operation and maintenance of earth stations and leasing of satellite circuits only to international common carriers.

In 1968, PLDT initiated a service improvement and development program budgeted at 700 million pesos (U.S. \$180 million at the time) over a period of four years. All remaining manual provincial exchanges were subsequently converted to dial operation. Also, PLDT's microwave toll network was extended to the southern island of Mindanao. At that time, 184,782 lines were in service.

In 1969, the first domestic tropospheric scatter system was installed and operated by Oceanic Wireless Network (OWNI) under the supervision of Eastern Telecommunications Philippines (ETPI), the successor of Eastern Extension. Its capacity of ninety-six circuits operating to Taiwan was replaced a decade later by a submarine cable.

10.2.3 The 1970s and 1980s

To broaden the ownership base and secure additional capital funding sources, PLDT implemented a subscriber investment plan (SIP) in 1973. It requires applicants seeking to acquire new telephone lines, transfer existing lines, or upgrade lines to invest 10 percent cumulative convertible preferred stock in PLDT. Because PLDT stock is freely traded, a subscriber can immediately sell the shares. Table 10.1 shows the required amounts.

PLDT awarded Siemens a contract in 1977 to provide and install 60,000 electronically switched lines. At the same time, it launched a ten-year 110-million peso rural telecommunications development program (RTD) to assist government rural development initiatives. By the end of 1978, PLDT's installed telephones in service had reached 496,266.

Additional submarine cable systems were installed. The Okinawa-Luzon-

Table 10.1. PLDT's Required Investment Under Subscriber Investment Plan (SIP)

Metro Manila	Elsewhere	
<i>New Installation</i>		
147	95	Business, private line
95	71	Business, party line
86	62	Residential, private line
43	88	Residential, party line
<i>Transfer Service</i>		
38	29	Business, private line
29	24	Business, party line
29	24	Residential, private line
24	14	Residential, party line

Source: Philippine Long-Distance Telephone Co.

These levels have been in effect since 1988. At yearend 1991 US\$1 = 26.3 pesos. Amounts given are in U.S.\$.

Hong Kong (OLUHO) cable became operational in 1977 with 1,600 circuits to Okinawa and 1,840 circuits to Hong Kong. This U.S. \$55 million venture was undertaken by ETPI, Cable & Wireless of Hong Kong, and KDD of Japan. In 1978 the ASEAN Philippines–Singapore (ASEAN P-S) cable, installed by ETPI at a cost of U.S. \$60 million, became operational with 1,380 circuits. Additionally, in 1980 the 480-circuit Taiwan–Luzon (TAILU) cable became operational; it is jointly owned by ETPI and International Telecommunications Development Corporation (ITDC) of Taiwan and operated by ETPI.

Domestic Satellite Philippines (Domsat) started operations with a capacity of 176 circuits nationwide in 1978. Domsat is a privately owned company that has contracted eleven earth stations and has an agreement with PT Telkom of Indonesia, the operator of the Palapa satellite system, for its space segment needs.

Up until the late 1970s, efforts to upgrade and enlarge specific capacities led to a fragmented network for telecom services. Duplication, the inadequacy of backbone routes, and concentrations of equipment and facilities, indicated the need for a long-range plan to integrate and develop the network. As the sector's implementing agency, Butel is responsible for maintaining backbone telecommunications networks to assist the private telecom sector. However, it is also a public utility that operates telegraph and telephone systems in government offices and in municipalities and cities throughout the country, although it is not the exclusive provider of telecom services to the government even in Metro Manila. Butel (renamed Telof in 1989) has its own network, with a central exchange in its Metro Manila headquarters.

Government planners also realized that appropriate infrastructure has to be developed if telecommunications is to help stimulate social and economic development at both national and regional levels. As envisioned, the emerging system will consist of a single homogeneous national network that will pave the way for orderly and progressive development within the limits of existing resources. Alongside this is a goal to improve the nationwide regulatory system, which oversees compliance by both public and private operators with government standards for efficient service and monitors related national security interests (see NEDA 1977, pp. 285–305).

To ensure that both strategic direction and regulatory needs are addressed, the Ministry of Transportation and Communication (MOTC) was created within the executive branch in 1979 by Executive Order. A five-year (1978–1982) national development plan containing a new focus on telecommunications and a ten-year (1978–1987) telecommunications sectoral plan underwent major revisions starting in 1980 in light of the second oil shock. Higher inflation rates and pressure on international reserves altered the government's public investment portfolio, which included telecommunications, other infrastructure, and various industries. Nonetheless, in 1983 MOTC was able to obtain official approval for a long-term (1984–2000) telephone development program. However, the protracted domestic political crisis that ensued delayed completion of World Bank studies, a precondition for funding, until 1985. (see *Bulletin Today*, Nov 17; 1985).

10.2.4 Legal Foundations

Historically, there has been minimal government concern for interventionist telecommunications policies, as evidenced by the absence of major legislation to guide its evolution and development. Legislation was generally limited to the granting of franchises. During the 1970s, administrative policies and guidelines were, if not simply reactive, then superficial, and favored companies with strong ties to the Marcos administration. It is generally assumed PLDT was protected from competition, as were other companies, owned or controlled by cronies of the president (see, e.g., Friedland 1988).

Only when the Aquino administration took power did a need for direction in telecommunications development appear to have been given consideration. An executive memorandum order created the National Telecommunications Development Committee (NTDC) to coordinate with the legislative branch and the private sector regarding resolution of issues regarding telecommunications development. DOTC issued a department circular in 1987 as an official guiding policy for the development of telecommunications.

10.2.5 Postal Service

The postal sector has remained a government monopoly. Postal services covered approximately 95 percent of all major settlements through 1,654 post offices by 1977. Nonetheless, service remained insufficient due to a host of problems. Over 90 percent of post offices—and there was just 1 per 26,000 persons—were either in rented private homes or rooms of municipal halls that were inadequate for mail processing as of 1990. Postal manpower was at a level of 1 employee per 3,100 persons in 1987, the volume of mail handled was 800 million pieces. Management of postal logistics was poor, and mail dispatching and delivery were unsynchronized. Improvements in mail service depend to a large degree on an honest, well-managed, disciplined work force, as well as government financial outlays.

10.3 Industry Structure

The telecom sector comprises private and public entities; Table 10.2 summarizes the major companies. PLDT, the dominant company, has mixed Filipino and foreign ownership—its shares are listed on the American Stock Exchange in the United States. It is controlled by a group of Filipino businessmen (see Friedland 1988, p. 70). In early 1990 two companies were licensed to compete with PLDT in carrying toll traffic.

Two separate entities provide satellite communications. Philcomsat operates direct voice–record–data circuits to eleven Pacific Basin countries and twenty countries in the Indian Ocean area through Intelsat. Domsat carries mainly “live” or “real time” broadcasts from and to any part of the country. Due to the marginal use of its facilities, it has suffered financial losses (see Table 10.3).

Table 10.2. Major Telecommunication Firms

Abbreviation	Full Name, Founding or Franchise Date, 1990 Revenues (in Million Pesos), Services, Territory
<i>Voice Carriers</i>	
PLDT	Philippine Telephone & Long Distance Co (1928); P12,839; Principal domestic local and long distance carrier; international calls from United States and Europe.
PT&T	Philippine Telephone & Telegraph (1962); P346; Domestic voice and record carrier.
RCPI	Radio Communications Philippines (1950) Biggest telegraph operator; also telex.
Telof	Telecommunications Office (was Butel until 1989) Government-owned tel & tel provider.
<i>Satellite</i>	
Domsat	[Domestic Satellite]; relays broadcasting signals.
Philcomsat	Philippine Communications Satellite Corp; P551; IRC; Uses Intelsat.
<i>International Record Carriers (IRCs)</i>	
CAPWIRE	Capitol Wireless, Inc (1962); P76; International record carrier.
ETPI	Eastern Telecommunications Philippines, Inc (1967); P1,000; International calls from Hong Kong, Taiwan; connects to PLDT, opened own gateway in 1991; successor to Eastern Extension; also common carrier.
GMCR	Globe-Mackay Cable & Radio Corp (1928); P631; International record carrier.
Philcom	Philippine Global Communications (1977); P936; International calls from Japan, Korea; connects to PLDT, given permission for own gateway in 1990.
<i>Others</i>	
OWNI	Oceanic Wireless Network, Inc (1959); P76; Common carrier.

Source for revenue: Mahal Kong Pilipinas Foundation, *Philippine Company Profiles*, 1991 edition.

10.3.1 Telephone

The telephone sector consists of more than sixty mostly private telephone companies. Many of these operate within a single town. PLDT has well over 90 percent of total access lines. It operated forty automatic telephone exchanges in Metro Manila and seventy-one local exchanges throughout the rest of the country. In thirteen important urban centers there is more than one telephone company. (These are all 1988 data.) The national telephone toll network had 271 central exchanges at the end of 1989.

Availability is low. There are thirteen provinces, including three subprovinces and eight cities, that still have no telephone service. Of the nation's approximately 1.1 million main stations (1990, excluding military service), close

Table 10.3. Major Telecommunication Firms: Financial Data, 1983–1990*

1983	1985	1987	1989	1990	Listed by Gross Revenue
					PLDT
12,569	17,048	21,264	26,583	36,224	assets
3.7	3.8	2.4	1.2	1.2	debt-equity ratio
2,504	4,718	6,591	9,459	12,839	gross revenue
398	779	1,362	2,080	3,187	net income
					PHILCOM
379	667	896	896	1,115	assets
1.0	1.1	1.1	1.6	3.0	debt-equity ratio
282	493	688	847	936	gross revenue
108	231	270	374	458	net income
					ETPI
672	923	1,334	1,451	1,770	assets
0.9	0.6	1.5	0.4	0.3	debt-equity ratio
280	437	528	668	1,000	gross revenue
105	180	159	229	531	net income
					GMCR
272	388	512	611	800	assets
0.2	0.1	0.9	0.7	0.6	debt-equity ratio
186	276	342	372	361	gross revenue
85	132	108	79	52	net income
					PT&T
457	578	752	951	1,139	assets
1.3	1.7	1.4	0.9	0.6	debt-equity ratio
97	187	235	312	346	gross revenue
10	7	5	29	29	net income
					OWNI
—	50	87	132	173	assets
—	0.3	0.2	—	—	debt-equity ratio
—	35	48	57	76	gross revenue
—	17	14	18	21	net income
					CAPWIRE
36	48	67	96	121	assets
1.8	0.7	0.6	—	—	debt-equity ratio
14	34	47	66	76	gross revenue
−4	−8	10	11	9	net income
					PHILCOMSAT
—	984	942	1,948	2,006	assets
—	0.4	0.2	—	—	debt-equity ratio
—	578	546	910	551	gross revenue
—	298	234	258	148	net income
					RCPI
122	117	—	—	—	assets
1.5	2.5	—	—	—	debt-equity ratio
95	115	—	—	—	gross revenue
2	−12	—	—	—	net income
11.1	18.6	20.6	21.7	24.3	Pesos per U.S.\$

Source: Mahal Kong Pilipinas Foundation, *Philippine Company Profiles*, 1988 and 1991 editions.

*Data in million pesos, except debt–equity ratios.

—=not available.

to 80 percent are in the National Capital Region (Metro Manila) comprising four cities and thirteen municipalities. Baguio, Cebu, Bacolod, Iloilo, Davao, and Cagayan de Oro account for another 8.5 percent. Metro Manila and these other urban areas are only 13 percent and 4 percent respectively, of the total population. Penetration is about 1.6 percent nationwide, but over 10 percent in Metro Manila (1990). In 1988 there were 147 exchanges on Luzon (which included Manila), thirty-two in the Visayas islands, and thirty-seven on the southern island of Mindanao. Table 10.4 shows the country's telephone density.

Legislation proposed in the late 1980s reflects increased awareness of an acute need for telecom services. One bill proposed public telephone and telegraph systems in every town or municipality. Another was to provide 200 million pesos for installation, operation, and maintenance of public telephones in every municipality. The Municipal Telephone Act was passed in February 1990. It required each of the 1,050 towns then without service to have at least one public station by mid-1993. The stations are to be capable of both voice and data transmission. All told, some 143,000 lines were planned for 1990–1993 (*Telephony*, 1990 Oct 20, p. 40).

Extelcom has received government permission to provide mobile telephone service in Metro Manila using the PLDT network. PLDT has gone to court to

Table 10.4. Telephone Main Lines and Density, by Area, 1987

Main Lines	Density	
733	1.31	National
527	7.37	Metro Manila
62	2.96	Other urban areas
144	0.31	Rest of country
		Region (major city)
178.9	0.45	Ilocos (Bagio)
3.5	0.13	Cagayan
34.5	0.61	Central Luzon
30.7	0.42	Southern Tagalog
9.6	0.24	Bicol (Legaspi)
27.9	0.54	Western Visayas
32.2	0.75	Central Visayas (Cebu)
6.6	0.21	Eastern Visayas
7.9	0.27	Western Mindanao (Zamboanga)
6.1	0.19	Northern Mindanao
24.8	0.63	Southern Mindanao (Davao)
3.8	0.14	Central Mindanao

Source: NEDA, "Medium-Term Investment Program, 1988–1992," June 1988.

More recent detailed data are not available. At the end of 1990 there were nearly 1.1 million lines nationwide according to PLDT, which made density just over 1.6. The 1989 figure is about 988,000 lines. Data are in thousands and lines per 100 people.

prevent this, arguing it is not fair for another company to use facilities PLDT has paid for.

10.3.2 Telex, Telegraph, and International Record Carriers

Of the four private international records carriers (IRCs, i.e., companies that lease circuits or channels, or telegram exchange and facsimile services), two have telephone correspondent status. ETPI operates four submarine cable systems out of Currimao, Ilocos Norte. ETPI and Philcom have enjoyed telephone or voice correspondent status since the 1930s and 1977, respectively, by virtue of their indefeasible rights of user (IRU) access to the cables.

Competition among IRCs is keen and aggressive. All of them operate their own telex switching exchanges and are linked to international telex switching centers around the world. They also provide a range of services based on modern circuit, message, and packet-switching technologies including store-and-forward and other enhanced features. In addition to telex, the IRCs offer telegram and mailgram, leased telegraph and data circuits, facsimile and Bureaufax, data access and other packet-switched data communications services, press bulletin service, Datel, satellite television broadcast, and electronic mail.

PLDT has a digital telephone switching exchange (Siemens EWSD) for both national and international traffic with a capacity of a 1,230 international circuits and ninety-six digital switchboards. An ARM Crossbar and an ESK Relay Metric with 600 and 345 circuits, respectively, are complementary exchanges. All three on the CCITT standard 5, signalling with the digital exchange having system 7 capability.

In 1986, Philcom held 42 percent of the telegraph market while GMCR was the leader in telex with a 34 percent share. The tariffs charged by these companies are uniform and regulated by the NTC.

Among the nine domestic record carriers, Philippine Telegram and Telephone (PT&T) and Radio Communications of the Philippines (RCPI) both operate domestic telex switching exchanges. In 1986, they dominated the market of 2,254 subscribers. PT&T is a private company set up in 1962; during the height of intense competition in the early 1970s, its losses prompted a restructuring of operations. It discontinued telegraph services and shifted its focus to telex and leased channels systems. It makes use of an NEC-NEDIX 103B telex exchange that has a capacity of 3,000 lines expandable to 30,000 lines. In 1983, it introduced the computergram service featuring delivery in three hours through a Computer Oriented Message Switching Exchange (COMET) utilizing a VAX 11/750 computer with C&W Incotel software. PT&T's integrated digital network (IDN), completed in 1984, makes available high-speed digital data communication within the Metro Manila area and other major cities. The company's Digital Data Service (DDS) introduced in 1986, offers low-speed (300 baud), medium-speed (up to 9,600), and high-speed (beyond 2 Mbps) data communications service between Manila and major provincial cities. In 1989 PT&T launched its national Datanet service utilizing a Siemens EDX-P packet-

switching exchange, the country's first public-switched data network (PSDN). PT&T's Datanet service connects nine major cities.

Established in 1950 through a congressional franchise under a legislative act, RCPI is the country's biggest telegraphic carrier, controlling roughly 65 percent of the market. It operates a stored-program controlled telex exchange (an EL-TEX II) and provides line capacity for 1,500 telex subscribers with such capabilities as abbreviated dialing, store and forward systems, multiaddress calls, and automatic advice of call duration. The other domestic carriers are Universal Telecommunications Service, Clavecilla Radio Systems, BFC Communications, and Federal Wireless. These companies operated 1,913 telegraph stations and 142 domestic telex stations as of yearend 1989.

Despite the presence of these private companies, the government through Telof operates telegraph facilities at 1,522 stations located primarily in rural areas. Most privately owned stations are in commercially viable areas or urban centers while Telof generally operates in low volume areas. Nevertheless, there are still 198 isolated towns and municipalities without telegraph service.

10.3.3 Industry Finances

Providing telecom services is generally a capital-intensive business. Technological advances made much of the installed base obsolete in the 1980s. This means local telecommunications tend to involve foreign firms and institutions—for both capital and equipment. Foreign equity contributions often take the form of equipment and technology transfer.

Because the Philippine economy is still recuperating from economic crisis, it is considered almost impossible to set up an entirely locally financed and equipped telecommunications venture. The majority of companies, especially the international carriers, accordingly have foreign partners. ETPI is associated with Cable & Wireless, GMRC is partly owned by ITT Communications Services, and part of Philcom is owned by RCA Global Communications. Companies associated with multinationals show stronger debt–equity positions than such 100 percent Filipino firms as PT&T and RCPI.

PLDT deserves special mention. Although it has some foreign ownership, it is controlled by a group of Filipinos. Its debt–equity ratio is the highest of all major firms due to its ambitious expansion projects, which have been financed largely by loans. The government has declared a moratorium on debt repayments. Some of PLDT's foreign debt is government-guaranteed. Because of the moratorium, the company is not entitled to soft-loan financing offered through regional governments by industrialized countries. PLDT, however, has worked out refinancing agreements and new loans from various international banks and lending institutions. This demonstrates its comparative advantage in terms of access to funds relative to other purely Filipino-controlled telecommunications companies.

A government-mandated 12 percent ceiling annual return on investment applies to all telecommunications firms. The government, through the NTC, also sets rates. Rates in Manila are given in Table 10.5.

Table 10.5. Telephone Service Rates, Metro Manila

Rate	Service	Rate	Service
	Residential		Key System
148-185	Private	446-584	Main Equipment
103-138	Two-Party	126	Per trunk termination
29-59	Extension	146-168	Key telephone (each)
	Business		PABX-ESK
404	Private	3,838-6,398	Equipment package
295	Two-Party	336-554	Trunk line (each)
55-73	Extension		

Source: Philippine Long-Distance Telephone Co.

Rates vary with type of equipment (e.g., desk handset, wall handset, extension with or without bell, rotary or pushbutton, etc). These rates, given here in pesos, have been in effect since 1988.

10.4 Regulation

Telecommunications is considered a public utility. The Department of Transportation and Communication (DOTC) is the entity of the executive branch directly responsible for the promotion, development, and regulation of the entire telecom sector. Its areas of concern are basically: (1) formulation of telecommunications policies, guidelines, and systems at all levels of government; (2) regulation of communications activities, and determination and collection of fees; (3) assessment, review, and direction-setting in communications research by government and other institutions; and (4) establishment and administration of comprehensive and integrated programs for communications.

In mid-1987 DOTC Circular 87-188 laid down a set of policies that called for:

1. Establishment of nationwide communications services subject to competitive and regulated market entry.
2. Provision of at least one integrated and reliable nationwide transmission facility for voice, record, and data services interconnecting all major cities and towns.
3. Promotion of state-of-the-art and cost-effective technology (e.g., digital transmission).
4. Conformance of all installed equipment with accepted CCIR or CCITT recommendations.
5. Rationalized management of radio frequency spectrum.
6. Interconnection of at least one reliable nationwide marine coastal communications system (i.e., ship-to-shore) with public networks.
7. Operation of mobile radio communications by franchised carriers interconnected to the public network.
8. Rationalization of all government transmission networks.

9. Promotion of entry of private enterprise to areas presently served by DOTC's telecom services.
10. Connection of customer provided equipment to public networks subject to guidelines.
11. Encouragement of domestic manufacturing of telecom equipment.
12. Comparatively efficient interconnection for all public carriers.
13. Any and all value added services for public use subject to grant of certificates of public convenience and necessity from NTC.
14. A policy change concerning the "international gateway" to better address the public interest and national security.

The National Telecommunications Commission (NTC) is the regulatory agency within DOTC and has quasi-judicial powers. It implements all the policies and plans of the department regarding communications. With the exception of military telecommunications installations, the commission exercises jurisdiction over, supervises, regulates, and controls all telecom services in the country. Some of its powers include: (1) issuance, revision, suspension, or cancellation of permits to operate facilities; (2) determination of rates; (3) allocation of frequencies (4) regulation of equipment importation; and (5) adjudication of legal issues.

It may be logical to expect an independent regulatory mechanism to be in place due to the sector's public service features. Up to the early 1980s, however, government's role was limited to the imposition of rules and regulations relative to rates, frequencies, certificates of public convenience and necessity (CPCNs), and franchises. (CPCNs and franchises are prerequisites for a private company to install and operate a telecom system; they are granted by the NTC.)

The NTC's role in standardization of equipment is a development of the late (post-Marcos) 1980s, and no major concrete steps have been taken. Regulation primarily revolved around infringement and violation of a set of bureaucratic rules and regulations that in practice had little to do with how well service was provided. Supervision was primarily reactive and did not attempt to influence the industry to develop in line with any coordinated national telecommunications program. It should be noted, however, that in the early 1990s the NTC has been trying to assert a stronger presence in the sector both as regulator and initiator of telecommunications development.

In addition, there were no mechanisms in place to reconcile national interests with the interests of private business. Even Philcomsat was not governed by any regulatory agency until 1987. It is partly government-owned, but it has not always been the case that government regulatory agencies upheld the public interest. (Thus, for example, there have been instances where regulatory bodies have appeared to show undue preference for the interests of regulated government-owned entities to the detriment of regulated private entities.)

Likewise, no regulatory mechanism could ensure competitive discipline and prevent abuse of monopoly power associated with the economies of scale common to telecommunications activities. It should be noted that PLDT's telephone service has been subject to frequent public criticism, mainly because of its

“take it or leave it” attitude, which reflects PLDT’s indifference to the quality of its service.

For quite a long time, standards necessary for interconnection among carriers were seldom spelled out and often did not exist. This reflected a weak understanding and poor recognition at higher government levels of the dynamic changes in technology. In such an environment, and where private corporate behavior has been chiefly influenced by large reactive regulatory supervision, any initiative to deliver efficient products and services, including promotion of standards, will be limited.

Heavy government intervention during the latter part of the Marcos regime rendered many of the usual advantages of private enterprise largely ineffective. Regulation is meaningful and effective only as long as government has a clear vision of what it wants and crafts rules to guide business toward that state of affairs. Policy visions only emerged in the 1980s. These were strengthened by public recognition of the important role of telecommunications in their lives.

By the early 1980s strengthening the NTC was recognized as necessary, and thus expected. Rationalization and standardization of rates was clearly identified as a task to be undertaken jointly with the finance Ministry and Congress, although leaving NTC the authority to grant franchises and establish the specific tariffs was considered desirable.

10.4.1 Ownership

Ever since U.S. rule, private enterprise has been the guiding philosophy of development. However, in areas where private telecommunications companies do not operate, government through Telof is present. At least 60 percent of invested capital must be owned by Filipinos in order to obtain fifty-year operating authority. Under the 1987 Constitution, participation of foreign investors in the management of any public utility is limited to their proportionate share of its capital. Moreover, all executive and managing officers must be Philippine citizens.

Although the NTC grants the necessary franchise for any telecommunications entity to operate, Congress has the right to amend, alter, or repeal such franchises when the common good—universal access to telecommunications facilities and information—dictates.

Because telecommunications is very capital intensive, recovery of investments often takes a time. Financial resources are very limited, and operators frequently have difficulty in raising capital to expand or upgrade facilities. The Philippine capital market is virtually nonexistent, and the government itself does not have the means to assist private operators directly—the government’s deficit was about 2.3 percent of GNP in 1989. The few telecom operators possessing strategic advantages (e.g., links with big business groups—including banking, insurance, real estate, and commercial center development—or association with a multinational telecommunications firm such as Cable & Wireless, RCA, ITT, etc.) find themselves in a powerful position vis-à-vis regulatory bodies.

10.5 Interests the System Seeks to Protect

The historic events of 1986 dramatically altered the country's political course and produced new perspectives on how the telecom sector relates to national interests. A widely held view prior to 1986 was that the state-owned domestic and international communications systems were under control of Marcos and his close associates (see Sussman 1981).

Authentic adherence to private enterprise is now stressed more than was the case during the twenty years prior to 1986, and the public expects more firms to enter the telecom sector. Areas where conditions call for monopoly power through exclusive permits will have to be better justified to an interested public.

A strong sense of nationalism permeates the Congress and will influence legislation affecting foreign direct investment. Thus, while important as sources of needed technologies, multinationals in their roles as minority owners of telecommunications entities—particularly satellites and as record and voice carriers—face greater scrutiny than before.

In terms of telephone usage, metered local service will probably not be introduced. As far back as 1983 NTC was ordered by MOTC to meter local telephone service immediately where possible—for example, when subscribers were served by electronic switching equipment. However, the current unmetered practice appears strongly rooted within the system. Any move to push metering would require well-defined benefits and improved levels of service.

10.5.1 *Political Parties and Major Interest Groups*

Political parties have proliferated since the restoration of democratic processes in the country following the EDSA revolution. Foremost among the groups that brought the present leadership to power are the Pilipino Democratic Party and Lakas ng Bayan (PDP-Laban), the United Nationalist Democratic Organization (UNIDO), and two factions of the Liberal Party. Political groups formed by leaders from the previous regime are the Nationalist Party of the Philippines, New Society Movement (KBL), and the Nacionalista Party. Key leaders of PDP-Laban and Lakas ng Bansa formed the Laban ng Demokratikong Pilipino (LDP) party, the administration's party, in 1988.

Given the fluid delineations between political groups, it is not easy to identify their main positions or leanings. A few things are clear, however. There is at least a rhetorical commitment to providing better telecom services, a goal agreed on by all concerned social sectors through the process of democratic consultation. For example, the LDP included a specific agenda in its economic platform calling for improved rural communications systems (LDP 1988, p. 4).

Certain areas in telecommunications are of particular concern to interest groups. A key issue for consumer groups is SIP, the telephone subscriber investment plan. The Philippine Consumers Foundation (PCFI) petitioned NTC to suspend it. The NTC dismissed the group's plea in 1988 after hearing arguments from PLDT and the Subscriber Investors Association. The plan had been modified previously to allow installment payments for SIP. Prospective telephone sub-

scribers make a downpayment of 30 percent, with the balance in six equal monthly installments. SIP opponents have made no serious suggestions as to how system expansion could be financed absent the program.

Interests of telecommunication carriers, suppliers, dealers, manufacturers, and professionals are represented under the umbrella organization of the Philippine Electronics and Telecommunications Federation (PETEF). This private industry group has worked closely with the government on policy directions—including study groups that drafted eight implementing guidelines that are a part of DOTC Circular 87-188. So far, however, only the circular's guidelines on customer-provided equipment have been approved (see *Business World*, Jul 21, 1988).

Attaining increasing levels of overall efficiency is another concern. At NTC's suggestion, the Telecommunications Users Groups of the Philippines (TUGP) was formed in 1987 to provide government with a clearer picture of the requirements of large users, such as major banks (see *Philippine Daily Globe*, May 2, 1988, and *Business Star*, May 13, 1988). TUGP has publicly stated its opposition to monopoly providers beyond those necessary for an orderly national telecommunications system. TUGP views competition among international record carriers positively (*Business Star*, May 31, 1988). The group specifically noted it was more concerned about PLDT's monopolistic—"take it or leave it"—attitude than its monopoly per se. It wanted PLDT to be measured against a set of stringent standards and penalized if it fails to deliver acceptable levels of performance.

There is also a Manila-based network of institutions known as People in Communication (PIC) that seeks to use media for the service of human development and social transformation. While acknowledging telecommunications as an instrument for national development, it believes universal service and telecommunications development should be compatible with culture and tradition. It advocates industry-balancing commercial objectives against the telecom needs of a developing country. PIC's components are the Asian Social Institute Communication Center, Communication Foundation for Asia, National Office of Mass Media, New Day Publisher, Philippine Educational Theater Association, Radio Veritas, and Sonolux Asia.

10.6 Reforms and Disagreements Within the Government

Under the 1987 constitution the state recognizes the vital role of communications and information in nation building as a matter of national policy. How this role is discharged depends to a large extent on what methods the government considers best to maximize the potentials of telecommunications. Congress plays a role because it has the power, when it deems the common good requires it, to intervene and amend, alter, or repeal franchises granted by NTC. Any disagreement between Congress and the NTC may require resolution by the Supreme Court.

In spelling out its policies in Department Circular 87-188, DOTC has defined the parameters that will govern the growth and development of the telecom

sector in the 1990s. However, Congress might try to micromanage. A number of bills have been introduced calling for various studies of issues that have already been addressed. Worse are numerous bills to accelerate provision of services at local levels—which could totally disrupt attempts to systematically develop needed networks within very severe funding constraints. Unless DOTC is quick to point out its program of action, disagreements over the proper time frame for delivery of public services could arise.

The NTDC was established to facilitate resolution of immediate development, regulatory, and other issues affecting telecommunications. It serves as an organized forum for interaction among the principal telecom authorities and other major interest groups to assist DOTC. The chairman of the Senate Committee on Public Services as well as the chairman of the Committee on Transportation and Communications of the House serve as consultants. NTDC's principal tasks are to:

1. Facilitate consultation and interaction between the relevant authorities and private sector parties affected by issues such as the degree of competition, the role of the various carriers, and timebound objectives for increasing telephone density.
2. Act as a central forum where operators, users, and government can meet to discuss vital problems and arrive at solutions despite disparate interests.
3. Facilitate formulation of mechanisms for accelerating development of the sector.
4. Provide the venue for consultation on development of a comprehensive regulatory framework and implementation of necessary regulatory reforms.
5. Expedite formulation of short-term measures to improve service availability and quality quickly.

10.6.1 Impact of Reforms Abroad

Deregulation and greater competition in some industrialized nations, notably the United States, appear to have strengthened public views that monopolies should be disciplined by exposure to market forces. The current assumption of some within government is that producing better telecom service must occur at the expense of PLDT (see, e.g., *Philippine Star*, Jun 8, 1988, and *Manila Bulletin*, Aug 15, 1988). At the same time, it is argued—primarily by those opposed to PLDT's virtual monopoly—that PLDT's nationwide franchise should be a strong enough incentive for it to engage in continuous development even of unprofitable areas. The general view is that its inability to meet this expectation seems to be reason enough to revoke its exclusive license to operate nationally. Of course, not much is said about PLDT's performance under previous governments, which were partly to blame for not having exerted enough pressure on PLDT to operate in new areas. To a large extent corporate behavior is the result of a given business environment. Policy directions to resolve this

issue might be to confine PLDT to its current operations and open other areas to competitors or confine PLDT to trunk business.

10.6.2 Exceptions to the Telecommunications Monopoly

Under Circular 87-188, it would seem to be only a matter of time before most areas of the industry will be open to competition. This may contradict plans for network development, but this possibility is addressed using several policy guidelines. One guideline specifically states that there should be "at least" one nationwide backbone facility. In effect, the avenue for additional integrated facilities has been defined. PLDT operates four international gateways; EPTI started its own at a cost of about U.S. \$5 million in early 1991. PLDT fought granting EPTI the right to do this. Like EPTI, Philcom received approval for a voice gateway in early 1990, but had not started service by the end of 1991. Other companies have circuit leasing arrangements. In February 1990 PLDT cut overseas rates 20 percent to discourage new entrants (international traffic has provided 60–65 percent of PLDT revenues).

Groundwork has been laid for competition in CPE and the area of value added products through a set of March 1988 guidelines. Previously, only PABXs, key systems, and wireless telephone sets were allowed interconnection to the public network. More items will be allowed once implementing rules are issued. Cellular telephone subscribers generally own their telephones, which need not be bought from the telephone company.

In its application to the NTC to install and operate an international gateway, ETPI, through Cable & Wireless and seven local investors holding a 40–60 percent ownership interest, formed Digital Telecommunications Philippines (Digitel) to construct a new nationwide telephone network. Initially about 2.7 billion pesos (around U.S. \$130 million) will be invested over a five-year period to install 57,000 single-line digital telephones in Bulacan and Pampanga, two provinces just north of Metro Manila. To begin operations, the company must secure congressional approval for its franchise as well as NTC approval. From its application in September 1987 through 1990 Digitel appeared at twenty-six NTC hearings with only provisional authority to operate in one city and province (*Asian Business*, Jan 1991, p. 42). Digitel intends to offer rates 15–20 percent lower than PLDT's. Philcom has also proposed an international gateway (*Philippine Star*, Jun 9, 1988).

10.7 Emergence of the Electronics Industry

Unlike some of its Asian neighbors' flourishing electronics industries, Philippine electronics is still embryonic. Demand for electronics goods, now mostly satisfied by imports, is on the rise. The semiconductor firms that exist cater exclusively to the export market. Meantime, trade and industry officials are grappling with the strategic problem of how to induce substantial growth in the industry.

The crisis years of 1983 to 1985 led to a substantial drop in foreign investment inflows. Studies toward the end of the Marcos regime highlighted several reasons for the failure of initiatives to make the Philippines an attractive place for multinationals engaged in technology intensive activities. These included: (1) lack of access to the domestic market for consumer electronics, (2) poor availability of materials and components that offset lower labor costs, and (3) red tape and bureaucratic delays that create significant obstacles.

Almost all computer hardware is imported. Demand for computers surged in 1986 after removal of a 1983 restriction on their importation. Fierce competition, especially in the banking and government sectors, was observed between IBM and NCR, the established leaders, and rivals Philips, Nixdorf, and Unisys, aggressive latecomers. As of 1986 (the most recent user survey) 226 mainframes, 472 minicomputers, and 14,050 microcomputers were in operation in the country.

The software industry bucked the economic doldrums of 1980–1985. The number of firms grew from twenty-three in 1981 to fifty-one by 1985. Software development—including design and coding—for local and export markets boomed in the late 1980s. In 1990 exports by companies registered with the Board of Investments, the country's investment promotion office, reached U.S. \$7.8 million.

No substantial link exists between major semiconductor firms and electronic firms with the potential for local manufacturing or assembly of electronic products including telecom equipment. In fact, all integrated circuits manufactured by multinational subsidiaries must be exported under legislation formulated during the late 1970s. They have to be reimported for domestic use.

As markets and production capacities for electronic products increase, a closer link could be initiated because rising labor costs in the newly industrialized Asian countries make the Philippines attractive. Thus, in 1988 several locally owned companies set up to assemble circuit boards for communication equipment for a Manila-based Japanese telecommunications firm (see *Business Star*, June 2, 1988).

In an attempt to promote the electronics industry, a comprehensive long-term plan for the development of information technology was drafted in early 1986 by a task force composed of computer experts from the private and government sectors. Called the Strategic Program for Information Technology (SPRINT), it was presented in 1987. The plan focused on expanding computer system use prior to manufacturing promotion. Thus, SPRINT's main features included a call for massive expansion of the installed base of computer systems through fiscal incentives to users and suppliers (i.e., lower tariffs).

Although the local electronics industry at its early 1990s level of development can offer only minimal help to the development of telecommunications, the Electronics Sector Plan (ESP 2000) envisions that the telecommunications industry will employ substantially more support from the electronics industry by the year 2000 (see *Electronics Towards the Year 2000*, a joint sectoral study undertaken in 1988 by BOI and industry).

Only Electronic Telephone Systems (ETSI) is taking visible steps to aid tele-

communications development by manufacturing telephone sets and exchanges for the domestic market. Other local companies have focused on exports. Their usual arrangement is for equipment to be assembled locally using imported components. However, the local market potential for industrial electronics, including telecommunications components, is apparent. DOTC included a provision in its guidelines concerning the telecommunications industry (Circular 87-188) encouraging "development of a domestic telecommunications manufacturing sector . . . particularly in the manufacture of electronic and communications equipment and components to complement and support the expansion, development, operation, and maintenance of an efficient nationwide network."

10.7.1 Equipment

Support industries for local manufacture of telecom equipment are either absent or underdeveloped. As a result, most equipment is imported. A major constraint on continuous upgrading is high tariffs. For example, wireless equipment faces a 50 percent duty plus 25 percent advance tax. In addition, the Central Bank requires payment of 50 percent of duties before import letters of credit are approved. These levels were implemented to protect the few domestic vendors, generate revenue, and limit demands on foreign currency reserves.

Local equipment manufacturing started in 1977 when PLDT began a major expansion of its system under a U.S.\$56 million contract to Siemens, and another U.S. \$544 million contract with Siemens for electronic switching equipment to supply 220,000 lines by 1982. ETSI, a joint venture with Siemens, was established in 1982 to manufacture telephone instruments with 45 percent local content. At that time, annual demand was estimated at 25,000 units. In 1987, demand was estimated at 80,000 units and annual growth was projected at 25 percent. ETSI officials claim 100 percent local content for telephone instruments would be economically viable if demand reached 300,000–500,000 units a year. Siemens switching equipment had reached 20 percent local content in 1987 (*Business World*, May 13, 1988). With deregulation of CPE in 1988, demand growth does not necessarily translate into ETSI sales as there has been an influx of telephone instruments from foreign sources.

Three things are likely to be major influences on development of local manufacturing. One is a policy to encourage domestic manufacturing. In the 1988 Investment Priorities Plan of the Board of Investments, telecommunications and information handling equipment have been accorded pioneer or nonpioneer status. (Pioneer status gives a firm several incentives under the investment code. Status is achieved by using a type of technology or offering a service that is new and untried in the Philippines, or manufacturing goods not being locally produced on a commercial scale.)

Investment proposals to manufacture telecom equipment locally may qualify for incentives after proper registration with the One-Stop Action Center for Investments of the Department of Trade and Industry (see BOI 1988). Start-up

investments required by firms offering telecom services are normally estimated to be four to six times expected annual income (Maglalang 1988, p. 63).

A second has been the PLDT X-5 expansion project (1989–1991), estimated to have cost U.S. \$350 million through 1991, including U.S. \$173 million for local components. It has involved the installation of additional facilities for toll traffic and business subscriber local service and was intended to partially cover residential subscriber requirements up to 1991. Roughly 130,000 SPC digital lines were involved. Siemen's was the prime contractor. Part two of the X-5 program (1991–1993) involves over \$510 million for 355,000 additional digital lines.

Third is the NTP for 1990–1994 involving tranches for groups of regions. In NTP Tranche 1-1 (1990–1992) a digital transmission route using radio-cable spurlinks will be constructed in central and southern Luzon (Regions III–V) affecting forty-two municipalities and involving 61,209 lines. Tranche 1-2 (1992–1994) involves a digital transmission network covering eighteen municipalities and involving 30,500 lines in the Visayas (the islands between Luzon and Mindanao, Regions VI–VIII). Mindanao (Regions IX–XII) will receive a transmission network connected to Luzon, covering twenty-five municipalities and involving 45,800 lines under Tranche 1-3 (1992–1994). These investments are estimated at U.S.\$369 million. Average cost per line before taxes and other conventional capitalized expenses (such as interest during construction) was estimated at U.S.\$2,215 (E&T 1988, pp. 33–42).

While both PLDT and Telof have major expansion plans that will affect equipment and supplies procurement, the source of financing might not fully translate into support for local manufacturers: the Luzon project will receive Japanese funding; the Visayas project, French development assistance; and Mindanao, Italian. NTP originally assumed funding by a single financial institution. However, due to constraints imposed by government budgetary ceilings and loan ceilings at financial institutions over the prescribed implementation period, the government had to resort to multisourcing. If requirements for compatibility and integration into one telecommunications backbone are not effectively enforced, local manufacturing may not expand from present levels.

10.7.2 Communications and the Service Sector

Starting in 1975, the hosting of international conventions and increased tourism created a tremendous demand for telecommunications. Access to government credits enabled convention centers, hotels, and resorts to be built all over the country. Pressure to install the latest telecommunication facilities mounted. At the same time, the country was being promoted as a site for regional headquarters (*Business World*, Sep 23, 1988). The immediate implication was the need for reliable infrastructure—particularly telecommunications. However, the worldwide situation following the second oil shock and crises in the Philippines discouraged both tourism and headquarters siting.

10.8 Long-Term Prospects

The Philippine telecommunications industry is undergoing many fundamental changes. Conditions that prevailed over a long period of time are gradually being challenged by new thinking, policies, and views. Filipinos have an acute awareness that the nation's telecom services have become quite backward in a fast-changing, communications-intensive world. Popular enthusiasm to embark on projects to develop an industry considered by many to be inefficient has spread, and the government, for its part, wants to accelerate the delivery of basic services. Expansions of the system will undoubtedly be digital. It is hoped that the cost will not be so great that it will delay the installation of required interconnective equipment and services. It is unclear what sort of physical interconnection will be needed at exchanges where regional, provincial, or municipal systems meet the backbone system. As PLDT and Telof expansion plans get underway, this delineation should emerge.

The franchise issue is also of critical importance. The often-used yet powerful reason for entertaining entry is inadequate service in areas where entrants will operate. Will this encourage local telcos to become regional ones or encouraging new entities to absorb smaller ones?

Pricing is a major issue, although it is not mentioned in the policy guidelines. Rate modifications to reduce cross subsidies from long-distance and international service to backbone and local operations have occurred and such efforts to adjust rates should continue in order to reduce biases for or against various types of services. As development of the domestic side (toll switching and local distribution) is as important as the international side, alternatives may have to be explored. Having different operators for the different segments, allowing for more focused use of capital and attention of management, may be one such alternative.

Finally, policies to develop competition to replace existing monopoly elements may provoke misinterpretations of the government's dealings with a private sector monopoly. This issue has to be addressed. The government has given explicit signals to PLDT to make local distribution in Metro Manila and international gateway operations as its core businesses. Such concentration may enable the company to manage expansion better. PLDT's problem is funding: To develop its franchise areas requires tremendous amounts of relatively cheap capital (soft loans) that only government can obtain and provide from concessionary lenders. Because the government, of necessity, has become less inclined to partake of such arrangements, PLDT might be required to focus more on core business.

The thrust of DOTC since the late 1980s encourages participation of private enterprise in a regulated, fair, and competitive environment in order to accelerate the development and expansion of an efficient and adequate telecommunications infrastructure. There is reason for guarded optimism that service will expand and improve.

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