Paper No. 9

THE PHILIPPINE INFORMATION INFRASTRUCTURE: CONNECTING THE ARCHIPELAGO

I

INTRODUCTION AND EXPLANATION OF OBJECTIVES

Knowledge is power.

As the world forges ahead into the 21st Century, it is awakening to the realization that the best way to ensure a steady flow of knowledge is by getting on what is commonly referred to as the "information super-highway".

This holds especially true for the Philippines, an archipelagic nation composed of more than 7,000 islands and populated by a diverse people belonging to various ethnic groupings and speaking different languages. With the dawning of the information age, the people of the Philippines are hopeful that the country will finally overcome the physical barriers which have, to a significant extent, held back the growth and development of telecommunications and information technology in the country.

This paper seeks to provide the reader with (i) a socio-economic profile of the Philippines, discuss the (ii) telecommunications industry, information technology and the legal and regulatory structures prevailing in the Philippines, (iii) present issues and problems relating to telecommunications and the Internet in the Philippines, (iv) the government's response and (v) our own conclusions.

It is the hope of the writers that with this study, they would have done their own small part in fostering cooperation among the countries of the Asia-Pacific Region in advancing telecommunications and information technology and in pushing the region forward on the information super-highway.

II

PHILIPPINES: THE SOCIO-ECONOMIC PROFILE OF THE "EMERGING TIGER" OF ASIA

Stretching 1,839 kms. north-to-south off the southeast coast of Asia, the Republic of the Philippines has a total land area of 300,000 sq. kms. Its 7,107 islands comprise one of the largest island groups in the world.

Filipinos comprise 111 cultural and linguistic groups of Malayo-Polynesian origin, with varying degrees of Chinese, Spanish and American influences. Majority are Roman Catholics, though a significant number are Protestants and Moslems.

A. Demographic and Economic Data

The latest available official statistics indicate that as of 1 September 1995, the total population stood at 68,616,536.[8] It is worthwhile noting that 9,454,040 or 13.78 % of the national population resides in the National Capital Region (NCR), which is widely recognized as the political, financial, business and cultural center of the country. Table 1 presents a breakdown of the population in each of the 12 regions of the country plus (i) the National Capital Region, (ii) the 3 autonomous regions (CAR, ARMM, CARAGA), and (iii) Filipinos living in Philippine embassies and consulates abroad. Table 1 likewise shows the population figures taken from years 1970, 1975, 1980 and 1990 both on a national and regional basis. Table 2 on the other hand presents data from the National Statistics Office (NSO) on the population and the average annual rate of increase in population in the Philippines from the year 1799 up to 1995.[9]

While the Philippines has always been one of the leaders in the Asia-Pacific Region in terms of population size, it has lagged behind its neighbors in terms of economic performance. Though once perceived as the "sick man of Asia", the Philippine economy has picked-up by significant leaps and bounds to take its rightful place among the rapidly industrializing countries of the region. From a negative growth rate of 0.6% in 1991 and close to nil growth of 0.3 in 1992, the Philippine economy has steadily expanded, attaining a respectable figure of 5.5% in 1996.[10] Admittedly, the figure is still below the standards set by the leading Asian economies, but the attainment of such steady growth following many years of economic stagnation is interpreted by many as a positive sign that the Philippines is on track towards recovery. Table 3 gives us the gross domestic product (GDP) growth rates of selected Asian countries from 1991 to 1998 (projected) at constant prices,[11] while Table 4 provides us with figures on the gross domestic investment as a percentage of GDP in selected Asian countries from 1991 to 1998 (projected).[12]

For 1996, Gross National Product (GNP) stood at PHP 2,282,958,000,000 and Gross Domestic Product (GDP) at

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[8] 1997 Philippine Statistical Yearbook, p. 1-4. The primary sources of population data contained herein are censuses and registration of vital events. Population censuses in the Philippines are undertaken by the National Statistics Office (NSO). The latest Population Census (POPCEN) was conducted by the NSO September 1995.

[9] Ibid, p. 1-27.

[10] Ibid, p. 19-6.

[11] Ibid.

[12] Ibid.

2,196,595,000,000 for the year 1996.[13] The Service Sector accounted for the biggest contribution to GDP at PHP 1,029,232,000,000, followed by the Industry Sector at PHP697,022,000,000 and the Agriculture, Fishery and Forestry Sector at PHP 470,341,000,000.[14]

Figure 1 is a bar graph which shows the steady rate at which GNP and GDP have increased from 1987 to 1996, while Figure 2 is a pie chart which depicts GDP by industrial origin in the year 1996.[15] Table 5 depicts GNP and GDP by industrial origin at current prices from 1983 to 1996 while Table 6 shows us the same data at constant 1985 prices.[16]

It is once again worthwhile noting that in terms of 1996 Gross Regional Domestic Product (GRDP), the NCR registered by far the biggest contribution at PHP 720,058,000,000[17] or 32.78 % of GDP. Certainly, the GRDP of all the other regions paled in comparison, the second highest being that of Region 4 (Southern Tagalog) at PHP 314,305,000,000 and the third highest being that of Region 3 (Central Luzon) at PHP 184,874,000,000.[18] Table 7 gives us data on GDP by region (GRDP) at current prices from 1983 to 1996 while Table 8 provides us data of the same at constant 1985 prices.[19]

On a per capita basis, GDP of the Philippines for 1996 was PHP 30,551.[20] Table 9 provides us with a breakdown of GDP at current prices by region from 1983 to 1996 while Table 10 provides us with the same data at constant 1985 prices.

The Philippines has always been well regarded as having a relatively high level of literacy. The latest available official figures from the NSO and the Department of Education, Culture and Sports (DECS)[21] indicate that the

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13 Ibid, p. 3-9. All figures at current prices. At constant 1985 prices, GNP for 1996 is PHP 882,399,000,000 while GDP is PHP 848,451,000,000.

14 Ibid, pp. 3-8 to 3-9.

15 Ibid, p. 3-5.

16 Ibid, pp. 3-8 to 3-9.

17 Ibid, p. 3-37. At current prices.

18 Ibid, p. 3-37.

19 Ibid, pp. 3-36 to 3-37.

20 Ibid, p. 3-51. At current prices. At constant 1985 prices, GDP for 1996 is PHP 11,801.

21 These are 1994 figures. The Functional Literacy and Mass Media Survey conducted by the NSO in coordination with DECS every five years starting in 1989 provides data on the literacy and functional literacy status of the population.

simple literacy rate is 93.9% and that the functional literacy rate is 83.8%.[22] Table 11 gives us a breakdown of the simple literacy rate (i) by region and (ii) by gender for the years 1989 and 1994 while Figure 3 is a bar graph illustrating the same for the year 1994. On the other hand, Table 12 shows us the breakdown of functional literacy of the population aged 10 to 64 years (i) by region and (ii) by gender for the years 1989 and 1994, while Figure 4 is a bar graph illustrating the same for the year 1994.[23]

During the years 1987 up to 1996, the Philippines registered a fairly stable unemployment rate, ranging from a high of 9.1 in 1987 to a low of 7.4 in 1996.[24] This was widely perceived to be attributable to the gradual but steady improvement of the Philippine economy over the said time period. Following the financial crisis which hit the Asia-Pacific region in mid-1997, however, the Philippine economy, like most other economies in the region, took a downturn amidst the instability and lack of confidence in the economic prospects for the region. This in turn has given rise to unemployment rates of 8.7% in 1997 and 13.3% as of April 1998.[25]

Table 13 reflects the labor force participation rate and employment status (urban and rural) from 1987 to 1996[26]. Figure 5 is a bar chart reflecting the increase and decline in the employment rate from 1987 to 1996, while Figure 6 is likewise a bar chart which illustrates the comparative 1996 unemployment figures by region.[27]

B. Communication Infrastructure

A little over a decade ago, telephone density in the Philippines stood at 1.38 for every 100 persons.[28] By mid-1989, the figure rose to 1.54, still among the lowest in Asia. Sadly, these figures did not even reflect the miserable state of affairs in the countryside. At that time, 67% of the country's municipalities did not have a single telephone and the average telephone density in the rural areas was 0.5 for every 100 persons , or

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22 Ibid, p. 10-4. Covers members of the population 10 years old and over.

23 Ibid, pp. 10-4 and 10-10.

24 Ibid, p. 11-9.

25 Data gathered from the Department of Labor and Employment.

26 1997 Philippine Statistical Yearbook, p. 11-9.

27 Ibid, pp. 11-3 and 11-8.

28 Private Development Corporation of the Philippines, Future Directions of the Telecommunications Industry, September-October Industry Digest 1 (1988). Data is as of December 1987.

around one line for every 2,000 persons.[29]

Over the next ten years, the Philippines saw a marked increase in communication infrastructure which may perhaps be described as nothing short of phenomenal.

The telecommunications industry, for one, has since taken a massive transformation, making it one, if not the most dynamic industries in the country today. State-of-the-art products and technologies have been introduced into the market. Geographical coverage and penetration have grown exponentially. In 1996, only 427 towns out of a total of 1601 had telephone access translating to a nationwide coverage of 27%. By 1998, this figure is expected to balloon to 83%, or a coverage of 1,335 municipalities. Also, in 1996, close to two million fixed lines were installed -- a feat without precedent -- virtually wiping out the estimated 800,000 - line backlog based on pending line applications with the Philippine Long Distance Telephone Co. (PLDT) in 1993.[30] These and more have pushed the industry on the brink of unprecedented growth.

1. Telephone Service

According to the latest available official data from the NTC, as of 31 December 1997, there was a total of 5,768,296 installed telephone lines servicing a total population of 71,538,597. Telephone density was at 8.06 for every 100 persons.

Historically, the National Capital Region has always had the most number of telephones. For 1997, it registered a figure of 28.62 for every 100 persons, well above the national average and that of the other regions. In comparison, the lowest figure registered was 0.89 for every 100 persons (Region II). In terms of growth prospects, local exchange lines are expected to grow at an average of 25%, due mostly to the continued aggressive expansion of PLDT and the roll-out obligations of other local exchange carriers.[31] By the year 2000, telephone density is forecasted to hit a high of 11.06.[32] Table 14 provides us with data on telephone distribution by region as of December 31, 1997.[33]

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[29] Phan, I.L., What bugs rural telecommunications in the Philippines, 19-26 Fil. Entrep. 19-26 (May 1990)

[30] Chua, J.M., Telecommunications and the Law: A Call for Reason, 1997(3) Econ. Policy Rev. (1997).

[31] This will be discussed more thoroughly in the succeeding chapters of this paper.

[32] Ibid., at p.3.

[33] Dumlao, F.Q., 1997 NTC Accomplishment Report, March 12, 1998.

Growth in cellular mobile telephone service subscription has likewise been impressive. From 56,044 subscribers in 1992, the figure has risen to 1,343,620 in 1997, an increase of 2,297.44 %. Throughout this 6-year period, the number of subscribers would, on the average, double every year. By the year 2000, the number of cellular subscribers is expected to hit 2.8 million, due largely to increased in price and quality competition as well as the introduction of new cellular technologies.[34] Table 15 gives us data on the number of cellular telephone subscribers for the years 1992 to 1997.[35]

Radio paging service subscription has likewise experienced phenomenal growth. From 14,652 subscribers in 1990, the number has risen to 704,138 in 1997, an increase of 4,705.75 %. Contrary to expectations from some quarters, the paging segment is expected to grow a healthy 31% until the year 2000, due largely to expansions outside of Metro Manila.[36] Table 16 reflects the number of subscribers over the 7-year period from 1990 to 1997.[37]

Public trunk repeater service subscription follows a similar pattern of steady growth. While the number of subscribers in 1991 totalled only 1,938, this number reached 45,859 in 1997, an increase of 2,226.30 %. Table 17 provides us with data on the number of subscribers on a yearly basis from 1991 to 1997.

2. Television and Radio Broadcast and Cable TV Stations

The growth in the radio and television broadcast industry and in cable television networks has followed a similar pattern. From 1992 to 1997, the number of radio stations nationwide on the AM Band has grown from 294 to 330; those on the FM Band from 201 to 399; television stations from 88 to 159; and cable television stations from 147 to 894.[38] Table 18 gives us the foregoing figures on a yearly basis from 1992 up to 1997.

According to data gathered from the Television Research Council, and based on an estimated total population of 72 Million, an estimated total number of households of 12 Million or an estimated number of six (6)

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34 Chua, J.M., Telecommunications and the Law: A Call for Reason, 1997(3) Econ. Policy Rev. 3 (1997).

35 Ibid.

36 Id.

37 Id.

38 Id.

individuals per household, there would be an estimated:

8.52 Million	households with television
10.2 Million	households with radio
3.6 Million	households with video cassette recorder (VCR)
960,000	households with compact disk player (CD)
240,000	households with laser disk player (LD)
240,000	households with video disk (VD)
960,000	households with none of the foregoing equipment

3. Internet Service

It has been about four years since the Philippines joined what is known as the Internet Revolution.

It was in March 1994 when the country's first full access to the Internet's backbone was established. [39] It was only during the latter part of 1994 that one private company, which was linked to the country's first Internet-connected network, started offering commercial Internet access to local computer users.[40] Subsequently, in 1995, newly organized, as well as existing, telecommunications and computer companies engaged in the business of becoming an Internet Service Provider (ISP) offering Internet access on a regular and commercial basis. By mid-1996, the number of ISP's had grown to 22.[41] Since then, Internet service in the country has grown at a phenomenal pace.

As of December 1997, there were a total of 123 ISP's in the Philippines. Expectedly, Metro Manila has by far the most number with 66, followed by the other major Philippine cities like Cebu (7), Bacolod (6), Cagayan de Oro (4) and Zamboanga (4). Table 19 lists down the number of ISP's nationwide per city as of December 1997.

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39 Moncerate, B. III, The Internet Revolution is Here , The Manila Times, December 6, 1995, p. 9.

40 Ibid.

41 Dumlao, F.Q., 1997 NTC Accomplishment Report, March 12, 1998.

C. Telecommunications Industry Structure

It was during the time of former President Corazon Aquino (1986-1992) that the government initiated moves to liberalize the telecommunications industry. Following Aquino's lead, the government under former President Fidel Ramos (1992-1998) exerted a determined effort to further open up the industry, thus pushing forward the growth and development of this vital sector. As a result, the industry has benefitted from the entry of new firms offering cellular, paging and trunk radio services, among many others, thus contributing to its unprecedented growth. These have expanded communications coverage in the country and provided alternative telecommunication services to supplement the deficiencies in telephone service which the country continues to experience, albeit to a lesser extent, to this day.

The various types of telecommunication services being offered in the country today may be classifed in the following manner:

1. Local exchange carrier service
2. Cellular mobile telephone service
3. Paging service
4. Trunked repeater service
5. International gateway facility
6. Satellite service
7. International record carrier
8. Domestic record carrier
9. Very small aperture terminal
10. Public coastal station
11. Radio telephone

In recent years, the number of firms providing each of these services has dramatically increased. The last 5 years have likewise seen the emergence of 11 dominant firms in the telecommunications industry, most of which operate in partnership with foreign entities, namely:

1. Digital Telecommunications Phils., Inc. (DIGITEL)
2. Eastern Telecommunications Phils., Inc. (ETPI)
3. Express Telecommunications Company, Inc. (EXTELCOM)
4. Globe Telecom (GMCR)
5. International Communications Corporation (ICC)
6. Isla Communications Company, Inc. (ISLACOM)
7. Pilipino Telephone Corporation (PILTEL)
8. Philippine Global Communications, Inc. (PHILCOM)
9. Philippine Long Distance Telephone Company (PLDT)
10. Philippine Telegraph and Telephone (PT&T)
11. Smart Communications, Inc. (SMARTCOM)

Following is a list of these firms, their foreign partners, and the equity share held by their partners:[42]

COMPANY	FOREIGN PARTNER	% SHARE
DIGITEL	Telia-AB Sweden Jasmine International of Thailand	11.80% 3.00%
ETPI	Cable & Wireless (Hongkong)	40.00%
EXTELCOM	Millicom (USA)	37.00%
GLOBE TELECOM	Singapore Telecoms	37.00%
ICC/BAYANTEL	Nynex International Telecom Holdings Chase Manhattan AIF	15.00% 10.00% 0.93% 6.00%
ISLACOM	Shinawatra of Thailand Deutsche Telecom of Germany	30.00% 10.00%
PILTEL	None	
PHILCOM	None	
PLDT	None	
PT & T	Korea Telecoms	20.00%
SMARTCOM	First Pacific Co. of Hongkong NTT of Japan	28.00% 12.00%

From a monopoly, telecommunications has indeed become one of the most competitive industries in the country today. It is also looked upon as being one of the most dynamic. Competition is waged on all fronts -- in terms of the product, price, quality and services offered. The number of players in the lucrative international calls market has increased from one in 1989 to nine in 1996. The cellular market has also grown from two before 1993 to five in 1996. Paging companies have also multiplied from 5 before 1993 to 11 in 1996. In the local exchange segment, where PLDT had a virtual monopoly prior to 1994, 10 new companies have entered.

The data on the names and the number of firms offering telecommunication services in the country on a yearly basis from 1992 to 1996 are summarized below:[43]

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42 National Telecommunications Commission, 1996 NTC Annual Report 10-14 (1996).

43 Ibid.

TELECOM SERVICE	1992	1993	1994	1995	1996
Local Exchange Carrier Service	PLDT PILTEL DIGITEL Government (4) Others (38)	PLDT PILTEL DIGITEL Government (4) Others (42)	PLDT PILTEL DIGITEL GMCR SMART Government (4) Others (51)	PLDT PILTEL DIGITEL GMCR SMART ICC ISLA MAJOR PT&T Government (4) Others (54)	PLDT PILTEL DIGITEL GMCR SMART ICC ISLA MAJOR PT&T ETPI Government (4) Others (60)
Cellular Mobile Telephone Service	PLDT EXTELCOM PILTEL (Mobiline)	EXTELCOM PILTEL (Mobiline) SMART (Celfone) ISLA GMCR (Handyphone)	EXTELCOM PILTEL (Mobiline) SMART (Celfone) ISLA GMCR (Handyphone)	EXTELCOM PILTEL (Mobiline) SMART (Celfone) ISLA GMCR (Handyphone)	EXTELCOM PILTEL (Mobiline SMART (Celfone ISLA GMCR (Handyph
Paging Service	ECPI (Easy Call) PVVI (Pocketbell) PILTEL (Beeper 150) TMNI (Digipage) RMNI (Powerpage) Satellite Paging	ECPI (Easy Call) PVVI (Pocketbell) PILTEL (Beeper 150) TMNI (Digipage) RMNI (Powerpage) Satellite Paging	ECPI (Easy Call) PVVI (Pocketbell) PILTEL (Beeper 150) TMNI (Digipage) RMNI (Powerpage) Satellite Paging Ermita (Starpage) GMCR SMART ISLA (Icon)	ECPI (Easy Call) PVVI (Pocketbell) PILTEL (Beeper 150) TMNI (Digipage) RMNI (Powerpage) Infocom (Infopage) Ermita (Starpage) GMCR SMART ISLA (Icon) Multi-Media Telephony	ECPI (Easy Call) PVVI (Pocketbell PILTEL (Beeper 1 TMNI (Digipage RMNI (Powerpag Infocom (Infopag Ermita (Starpage SMART (Smartpa ISLA (Icon) MMTI (Index) ICTI (JASPage) Worldwide Comm AZ Comm. Corona Int'l.
Trunked Repeater Service	AZ Comm. Contel ICC LBNI Omninet T.N. Romasanta Radio Marine	AZ Comm. Contel ICC LBNI Omninet T.N. Romasanta Radio Marine Corona Int'l.	AZ Comm. Contel ICC LBNI Omninet T.N. Romasanta Radio Marine Corona Int'l.	Contel ICC LBNI Omninet T.N. Romasanta Radio Marine Corona Int'l. Infocom Comm. Net UTS Worldwide Comm.	Contel ICC LBNI Omninet T.N. Romasanta Radio Marine Corona Int'l. Infocom Comm. UTS Worldwide Comm
International Gateway Facility	PLDT PHILCOM ETPI	PLDT PHILCOM ETPI GMCR ICC	PLDT PHILCOM ETPI GMCR ICC CAPWIRE SMART ISLA DIGITEL	PLDT PHILCOM ETPI GMCR ICC CAPWIRE SMART ISLA DIGITEL	PLDT PHILCOM ETPI GMCR ICC CAPWIRE SMART ISLA DIGITEL
Satellite Service	DOMSAT OWNI	DOMSAT OWNI PHILCOMSAT	DOMSAT CAPWIRE PHILCOMSAT	DOMSAT CAPWIRE PHILCOMSAT	DOMSAT CAPWIRE PHILCOMSAT
International Record Carrier	CAPWIRE ETPI GMCR PHILCOM	CAPWIRE ETPI GMCR PHILCOM	CAPWIRE ETPI GMCR PHILCOM PLDT	CAPWIRE ETPI GMCR PHILCOM PLDT	CAPWIRE ETPI GMCR PHILCOM PLDT

TELECOM SERVICE	1992	1993	1994	1995	1996
Domestic Record Carrier	BFC Federal Wireless GMCR PT&T RCPI UTS	BFC GMCR PT&T RCPI UTS TELOF	OWNI GMCR PT&T RCPI UTS TELOF	OWNI GMCR PT&T RCPI UTS TELOF	OWNI GMCR PT&T RCPI UTS TELOF
Very Small Aperture Terminal	ICC GMCR LBNI PLDT	ICC GMCR LBNI PLDT	ICC GMCR LBNI	ICC GMCR LBNI	ICC GMCR LBNI
Public Coastal Station	Telemarine T.N. Romasanta Radio Marine RCPI AZ Comm Asso. Rdo. Elec. David Radio Elman Radio Global Comm. Hypersonic Marzcom Microwave Comm. PHILCOM	Telemarine T.N. Romasanta Radio Marine RCPI AZ Comm Asso. Rdo. Elec. David Radio Elman Radio Global Comm. Hypersonic Marzcom Microwave Comm. UTS	Ermita Electronics T.N. Romasanta Radio Marine RCPI AZ Comm Asso. Rdo. Elec. David Radio Elman Radio Global Comm. Hypersonic Marzcom Microwave Comm. UTS	Ermita Electronics T.N. Romasanta Radio Marine RCPI Asso. Rdo. Elec. David Radio Elman Radio Global Comm. Hypersonic Marzcom Microwave Comm. UTS	Ermita Electronics T.N. Romasanta Radio Marine RCPI Asso. Rdo. Elec. David Radio Elman Radio Global Comm. Hypersonic Marzcom Microwave Comm UTS
Radiotelephone	AZ Comm. Concha Rdo. Net. Kayumanggui Rex Electronics	AZ Comm Concha Rdo. Net. Kayumanggui Rex Electronics RCPI PT&T	AZ Comm. Concha Rdo. Net. Kayumanggui Rex Electronics RCPI PT&T	Concha Rdo. Net. Kayumanggui Rex Electronics RCPI PT&T	Concha Rdo. Net. Kayumanggui Rex Electronics RCPI PT&T

To date, PLDT continues to dominate the local exchange market, accounting for 1,518,739 or 45% of the total land lines in 1996. Likewise, it managed to raise its operating revenues by 13%, bringing the figure to P28.6 billion. Local network revenues, which accounted for 27.8% of operating revenues, grew by 25.8%, primarily due to the 26.9% additional lines put in service. National long distance and international long distance revenues accounted for 15.6% and 55.4 % of operating revenues, respectively.[44]

Mobiline of PILTEL continued its dominance of the cellular market as of end of 1996, with 402,610 subscribers or 42% of the market. Data for the first half of 1997 however indicate that SMARTCOM has taken over the lead. Based on industry forecasts, SMARTCOM is likewise expected to stay on top at the end of 1997. In the paging segment, Easycall retains the lead in market share with 39%.[45]

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44 Chua, J.M., Telecommunications and the Law: A Call for Reason, 1997(3) Econ. Policy Rev. 3 (1997).

45 Ibid.

III

TELECOMMUNICATIONS AND THE INTERNET: STATE POLICY AND REGULATION IN THE PHILIPPINES

Telecommunications in the Philippine

The telecommunications industry and its corresponding market are not meaningless entities operating in isolation. Instead, the industry and its market (hereafter collectively referred to as the "telecommunications system") exist within the framework established by a country's laws, rules and regulations and are thus, employed in such a manner so as to promote a particular policy of the state.

In the Philippines, the Constitution recognizes the "vital role of communication and information in nation-building".[46] Consequently, the fundamental law of the land mandates that:

> "Sec. 10. The State shall provide the policy environment for the full development of Filipino capability and the emergence of communication structures suitable to the needs and aspirations of the nation and the balanced flow of information into, out of, and across the country, in accordance with a policy that respects the freedom of speech and of the press."[47]

Pursuant to this mandate, various policies governing distinct aspects of the telecommunications system were laid down by the Department of Transportation and Communication ("DOTC") through memorandum circulars in an attempt to create a suitable environment for the growth of the telecommunication industry in the Philippines and for the development of the Filipino people as an informed nation.

Towards the end of 1992, the DOTC promulgated the necessary policy directives to "ensure the orderly development of the CMTS [Cellular Mobile Telephone System] providing for a nationwide coverage, to optimize the utilization of radio frequency spectrum allocation allowing for flexibility to service providers and users and to provide healthy competition among authorized service providers."[48]

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46 CONST., Art. II, sec. 24.

47 CONST., Art. XVI, sec. 10.

48 DOTC Memo. Circ. No. 92-269.

Thereafter, in 1993, the Domestic Satellite Communications Policy was issued to provide for the "promotion and development of a robust domestic satellite services industry through a dynamic, healthy and competitive environment."[49]

The following year, in 1994, the International Satellite Communications Policy defined the country's position in the use of new satellite technologies pursuant to the Philippines' aim of achieving broader access to international fixed and mobile satellite systems.[50]

Finally, tired of a fragmented system, a holistic and integrated approach towards the policy framework of the telecommunications industry was achieved in Republic Act No. 7925, a law duly enacted by Congress and approved by the President of the Philippines on 1 March 1995.

Under Republic Act No. 7925, commonly known as The Public Telecommunications Policy Act of the Philippines ("Telecommunications Act of 1995), telecommunications is recognized as "essential to the economic development, integrity and security of the Philippines"[51] and defined, for the first time, as:

> "any process which enables a telecommunications entity to relay and receive voice, data, electronic messages, written or printed matter, fixed or moving pictures, words, music or visible or audible signals or any control signals of any design and for any purpose by wire, radio or other electromagnetic, spectral, optical or technological means."[52]

In view of its vital and Constitutionally-recognized role in the nation's progress, the growth and development of the telecommunications industry are governed by the following statutory policies:

> "a) A fundamental objective of government is to develop and maintain a viable, efficient, reliable and universal telecommunication infrastructure using the best available and affordable technologies, as a vital tool to national building and development;
>
> "b) The expansion of the telecommunications network

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49 DOTC Memo. Circ. No. 93-273.

50 DOTC Memo. Circ. No. 94-277.

51 Rep. Act No. 7925, sec. 4.

52 Ibid., at sec. 3(a).

shall give priority to improving and extending basic services to areas not yet served. For this purpose, government shall promote a fair, efficient and responsive market to stimulate growth and development of the telecommunications facilities and services, with emphasis on the accessibility by persons to basic services is unserved and undeserved areas at affordable rates;

"c) The radio frequency spectrum is a scarce public resource that shall be administered in the public interest and in accordance with international agreements and conventions to which the Philippines is a party and granted to the best qualified. The government shall allocate the spectrum to service providers who will use it efficiently and effectively to meet public demand for telecommunications service and may avail of new and cost effective technologies in the use of methods for its utilization.

"d) Rates and tariff charges shall be fair, just and reasonable and for this purpose, the regulatory body shall develop tariff structures based on socioeconomic factors and on financial, technical and commercial criteria as measures to enhance a fair rate of return and as a tool to ensure economic and social development;

"e) Public telecommunications services shall be provided by private enterprises. The private sector shall be the engine of rapid and efficient growth in the telecommunications industry;

"f) A healthy competitive environment shall be fostered, one in which telecommunications carriers are free to make business decisions and to interact with one another in providing telecommunications services, with the end in view of encouraging their financial viability while maintaining affordable rates;

"g) A fair and reasonable interconnection of facilities of authorized public network operators and other providers of telecommunications services is necessary in order to achieve a viable, efficient, reliable and universal telecommunications services;

"h) The government shall give all the assistance and encouragement to Philippine international carriers in order to establish interconnection with other countries so as to provide access to international communications highways on a competitive basis;

"i) For efficiency, practicability, and convenience, but with due regard to the observance of due process at all times, regulation of telecommunications entities shall rely principally on an administrative process that is stable, transparent and

fair, giving due emphasis to technical, legal, economic and financial considerations;

"j) No single franchise shall authorize an entity to engage in both telecommunications and broadcasting, either through the airwaves or by cable;

"k) Ownership of public telecommunications entities to as wide a number of people as possible, preferably to its customers, in order to encourage efficiency and public accountability and to tap personal savings shall be encouraged;

"l) The development of a domestic telecommunications manufacturing industry to meet the needs of the Philippines and to take advantage of export opportunities shall be promoted without preventing, deterring or hampering the goal of full universal service; and

"m) Human resources skills and capabilities must be harnessed and improved to sustain the growth and the development of telecommunications under a fast changing telecommunications environment."[53]

The foregoing policies governing the telecommunications industry in the Philippines reveal the basic, if not essential, characteristics of the Philippine telecommunications industry which, stripped of non-essentials, may be synthesized in the following statement: The Philippine telecommunications industry is, or is aimed to be, an accessible network of Filipino private entities operating within a highly competitive yet regulated environment. Hence, the five (5) major elements and/or characteristics of the Philippine telecommunications industry are: (1) Filipino; (2) Private or Non-governmental; (3) Accessible; (4) Competitive; and (5) Regulated.

To better appreciate their essence and significance, the major elements are discussed in relation to the legal environment within which they exist.

A. Telecommunications: A Nationalized Industry

No less than the Philippine Constitution requires that the operation of the telecommunications industry be limited to "citizens of the Philippines or to corporations or associations organized under the laws of the Philippines at least sixty *per centum* of whose capital is owned by such citizens".[54]

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53 Rep. Act No. 7925, sec, 4 (a) to (m).

54 CONST., Art. XII, sec. 11.

Thus, Philippine fundamental law mandates that the telecommunications industry be nationalized in order to "conserve and develop the patrimony of the nation".[55]

Such a nationalistic policy is not new to the Philippine telecommunications industry. As far back as 1936, when the Public Service Act[56] became law, restrictions against foreign equity ownership of not more than forty percent (40%) of the outstanding capital stock of entities engaged in telecommunications services were likewise effective.[57] Consequently, the following acts of an entity engaged in telecommunications services, or of the owner, lessee or operator thereof, were declared, and continue to be, unlawful, if committed or performed without the prior approval of the Public Service Commission (now the National Telecommunications Commission):

> "(h) To sell or register in its book the transfer or sale of shares of stocks, if the result of that sale in itself or in connection with another previous sale, shall be to vest in the transfer more than forty per centum of the subscribed capital of said public service. Any transfer made in violation of this provision shall be void and of no effect and shall not be registered in the books of the public service corporation. Nothing herein contained shall be construed to prevent the holding of shares lawfully acquired."[58]
>
> "(i) To sell, alienate or in any manner transfer shares of its capital stock to any alien if the result of that sale, alienation, or transfer in itself or in connection with another previous sale shall be the reduction to less than sixty per centum of the capital stock belonging to Philippine citizens. Such sale, alienation or transfer shall be void and of no effect and shall be sufficient cause for ordering the cancellation of the certificate."[59]

The nationalized character of the telecommunications industry has

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55 Lucila, R.R.V., The Legal Framework of the Telecommunications Industry in the Philippines 5, XVth LAWASIA Conference, August 28, 1997, Manila, Philippines citing Arcellana, E.Y., The Social and Political Thought of Claro M. Recto, p. 34 (1981).

56 C.A. No. 146, as amended.

57 Ibid., at sec. 16(a).

58 Id., at sec. 20(h).

59 Ibid., at sec. 20(i).

not only been effective but has been enforced[60], at least theoretically, through the imposition of criminal sanctions upon the erring persons, officers or stockholders, and even the corporation itself, for violations of the pertinent Constitutional restriction and of related statutes.

Commonwealth Act No. 108, as amended, otherwise known as the Anti-Dummy Law, penalizes various direct violations and circumventions of the Constitutional and statutory nationality requirements in the telecommunications industry with differing penalties including: (a) imprisonment of not less than two (2) nor more than ten (10) years, and by a fine of not less than two thousand (₱2,000.00) nor more than ten thousand (₱10,000.00) pesos[61]; (b) imprisonment ranging from five (5) to fifteen (15) years and a fine of not less than the value of the franchise enjoyed or acquired in violation of the Constitutional and statutory provisions on nationalized or partially nationalized businesses or activities but not less than five thousand (₱5,000.00) pesos[62]; (c) forfeiture of the franchise or the authority[63]; and (d) the dissolution of the erring corporation.[64]

Despite its apparent exactitude, enforcement of the nationality requirements in the telecommunication industry as well as other nationalized activities is not as simple as it seems especially where juridical entities are involved. Under present law and jurisprudence, domestic corporations may be considered foreigners or, more accurately, not Philippine nationals, within the contemplation of the Constitution, notwithstanding that they are organized under the laws of the Philippines and that sixty percent of their outstanding capital stock is owned in the books by Philippine citizens.

To facilitate the determination of corporate nationality within the ambit of the Constitutional limitation for public service[65], Congress, the Philippine legislative department, adopted the so-called "control test" through the enactment of the Foreign Investments Act of 1991.[66] Thus, "where a corporation and its non-Filipino stockholders own stocks in a Securities and Exchange Commission (SEC) registered enterprise, at least

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60 Lucila, R.R.V., The Legal Framework of the Telecommunications Industry in the Philippines 14, XVth LAWASIA Conference, August 28, 1997, Manila, Philippines.

61 C.A. No. 108, as amended, secs. 1 & 2.

62 Ibid., at sec. 2-A.

63 Id.

64 Id., at sec. 3.

65 CONST., Art. XII, sec. 11.

66 Rep. Act No. 7042, as amended.

sixty percent (60%) of the capital stock outstanding and entitled to vote of both corporations must be owned and held by citizens of the Philippines and at least sixty percent (60%) of the members of the Board of Directors of both corporations must be citizens of the Philippines, in order that the corporation shall be considered a Philippine national."[67]

Moreover, under the same law, ownership of stocks by Philippine citizens must consist not only of legal title but also full beneficial ownership coupled with the appropriate voting rights.[68] Otherwise, "stock, the voting rights of which have been assigned or transferred to aliens, cannot be considered held by Philippine citizens or Philippine nationals."[69] Thus, contrary to commonly known corporate doctrines, what is essential is not the stockholder as stated in the books but the individual actually exercising the rights of such stockholder.

Furthermore, although foreigners can be elected to the Board of Directors of a corporation engaged in telecommunications services to the extent of their equity therein[70], these foreigners, albeit corporate directors, cannot, under pain of criminal sanctions, participate or intervene in the management, operation, administration or control of the telecommunications entity, whether as an officer, employee, or laborer therein, with or without remuneration.[71] The sole exception thereto is technical personnel whose employment may specifically be authorized by the Secretary of Justice.[72]

Albeit intended for the country's benefit, the nationality requirement more often than not hinders the potential growth of the telecommunications industry in the Philippines. As will be discussed below, the advancement of the telecommunications industry needs infusion of substantial amounts of capital which, in view of our economic situation, necessarily come from foreign sources.

B. Public Telecommunications Entities As Purely Private Concerns

The telecommunications industry in the Philippines has, for the most

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67 Emphasis supplied; Ibid., at sec. 3(a).

68 Implementing Rules and Regulations of Rep. Act No. 7042, as amended by Rep. Act No. 8179, sec. 1(b).

69 Ibid.

70 CONST., Art. XII, sec. 11.

71 Ibid.; C.A. No. 108, sec. 2-A.

72 C.A. No. 108, Ibid.

part of its history, been existing under a predominantly "privatized" environment[73] with the private and/or commercial sector dominating the government in the operation of telecommunications entities and facilities and in the supply of telecommunications services. The largest of these private carriers is the Philippine Long Distance Telephone Company ("PLDT") which provides about 42-45% of the country's telecommunications services.[74]

Although satisfying a relatively minimal proportion of the nation's needs for telecommunications services, the government's participation in the industry has been integral for the growth and development of the telecommunications system as a whole. Direct governmental intervention, through the Office of Telecommunications Services ("TELOF"), has been undertaken to provide services in the so-called "unprofitable" areas, i.e., places where, for reasons of marginal viability, private carriers do not choose to operate.[75]

Sometime in 1990, however, the complete privatization of the Philippine telecommunication industry was enunciated as a primary policy objective of the Philippine government. In the DOTC's National Telecommunications Development Plan (1991-2010), the government's position on privatization was explicitly declared, viz:

> "3.2 Privatization of Government Operations
>
> "The Government's policy will be to entrust the operation of public telecommunications throughout the country to private carriers. While there has been in the past, some direct government intervention into pioneering areas, the Government is convinced hat this model is inappropriate for the orderly growth and development of the Philippines' telecommunications sector, and thus, it has concluded that it must privatize systems now operated by TELOF, the RTDP now operated by Filphone, and the NTP as, or before it is implemented.
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> "Since each of these systems is unique, each will require a

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73 Arce, R.T., New Directions in Philippine Telecommunications, J. Asia Pacific Telecom. (2) (1988).

74 Chua, J.M., Telecommunications and the Law: A Call for Reason, 1997(3) Econ. Policy Rev. 3 (1997); Center for Research and Communication, White Paper on Telecommunications Policy (The Main Report) 4-7 (1997).

75 Department of Transportation and Communications, Executive Summary of the National Telecommunications Development Plan (1991-2010) 22 (October 1990); Arce, R.T., New Directions in Philippine Telecommunications, J. Asia Pacific Telecom. (3) (1988).

different specific process to privatize. However, in all cases, the Government will employ an open, transparent process aimed at choosing carriers who are qualified to conduct operations, finance their growth, and provide quality services on a long-term basis."[76]

Consequently, pursuant to the aforesaid executive directive, the drive to privatize governmental telecommunications systems including, no matter how modest, the TELOF, became a force to reckon with, at least at the theoretical or policy level.

Five years later, the Philippine Telecommunications Act of 1995[77] pronounced the following as an express national policy:

"e) Public telecommunications services shall be provided by private enterprises. The private sector shall be the engine of rapid and efficient growth in the telecommunications industry;"[78]

Moreover, the said Telecommunications Act of 1995 specifically directed the DOTC to achieve absolute privatization within three (3) years from the effectivity thereof on 22 March 1995. Thus, Rep. Act No. 7925 provides:

"SEC. 22. *Privatization of Existing Facilities.* - The Department shall, within three (3) years from effectivity of this Act, privatize all telecommunications facilities currently owned and/or operated by the government for public use, plus those facilities currently being planned under various bilateral funding arrangements. Unless otherwise authorized by law, privatization of telecommunications facilities as well as construction of telephone infrastructure shall be made through public bidding."

With the effectivity of Rep. Act No. 7925, therefore, the governmental policy on the privatization of the telecommunications industry was transformed from a mere executive and/or departmental directive to a binding and enforceable legislative fiat.

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[76] Department of Transportation and Communications, Executive Summary of the National Telecommunications Development Plan (1991-2010) 27 (October 1990).

[77] Rep. Act No. 7925.

[78] Rep. Act No. 7925, Art. II, sec. 4(e).

However, complete privatization of the telecommunications industry was not the ultimate result sought to be achieved by the Philippine Constitution but merely one of the several modes by which the democratization of the ownership of telecommunications entities may be achieved.

The Philippine Constitution dictates that the "State shall encourage equity participation" by the general public in all public utilities including those companies engaged in telecommunications services.[79] Taking its cue from such mandate, the newly enacted Telecommunications Act of 1995 enjoins the dispersal of ownership of public telecommunications entities[80] and demands that:

> "SEC. 21. *Public ownership.* - In compliance with the Constitutional mandate to democratize ownership of public utilities, all telecommunications entities with regulated type of services shall make a *bonafide* public offering through the stock exchanges of at least thirty percent (30%) of its aggregate common stocks within a period of five (5) years from effectivity of this Act or the entity's first start of commercial operations, whichever date is later. The public offering shall comply with the rules and regulations of the Securities and Exchange Commission."[81]

With the democratization of the telecommunications industry underway pursuant to the foregoing provision of the Telecommunications Act of 1995, the base of ownership of all public telecommunications entities would necessarily broaden so as to possibly, if not preferably, include the end consumers of the services supplied. In that event, the industry would be controlled not only by the individuals whose occupation is to manage such entities but also such individuals whose primary, if not sole, concern would be the continued supply of such telecommunications services.

C. Telecommunications for All: A Question of Accessibility

The unavailability of telecommunications services in rural and far-

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79 CONST., Art. XII, sec. 11.

80 Lucila, R.R.V., The Legal Framework of the Telecommunications Industry in the Philippines 28, XVth LAWASIA Conference, August 28, 1997, Manila, Philippines.

81 Rep. Act No. 7925, Art. VIII, sec. 21.

flung areas of the Philippine archipelago robs scientific and technological advances of their real significance. Surely, where a telephone, the basic instrument of communication, is denied it would not be surprising that those deprived would find no comfort in the fact that science and technology have given rise to facsimile machines, satellite communication, cable television, and the internet.

The dearth of telecommunications services in the rural areas is evidence of the "irrational development of the industry"[82] as a consequence of the concentration in the urban areas of investments in facilities including basic telephone stations.[83]

To address the "irrational development" and the inaccessibility of the telecommunications industry to a majority of the citizenry in backward municipalities and remote provinces of the Philippines, President Corazon Aquino signed into law[84] Republic Act No. 6849, otherwise known as the Municipal Telephone Act of 1989, which accorded high priority to the provision of basic access to telephone service down to the municipal level through the establishment of public calling offices or stations ("PCOs").[85] In the implementation thereof, the Municipal Telecommunications Projects Office[86] was formed to facilitate and coordinate the said rural service program. As of 30 August 1996, 906 of the programmed 1,210 PCOs were completed with the government completing 76.6% of its responsibility while the private sector completing 71.7% of its responsibility.[87]

Continuing in the direction of his predecessor, President Ramos laid down the groundwork for a freely competitive and fully accessible

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82 Private Development Corporation of the Philippines, Future Directions of the Telecommunications Industry, September-October Industry Digest 7 (1988).

83 Ibid.

84 February 8, 1990.

85 Rep. Act No. 6849, sec.2 which provides:

> "SECTION 2. Declaration of National Policy. - Recognizing that the benefits of modern communication technology are as important to rural development as they are to urban areas, the State shall pursue and foster, in an orderly, purposive and vigorous manner, the interconnection of all municipalities in the country through the establishment and early realization of a nationwide network of public calling stations."

86 Ibid., at sec. 3.

87 National Economic Development Authority (NEDA) pub., The Philippine National Development Plan: Directions for the 21st Century 7:29 (1998).

telecommunications network in 1993 through the issuance of two landmark presidential edicts: Executive Order No. 59 ("EO 59")[88] and Executive Order No. 109 ("EO 109")[89].

EO 59 prescribed the compulsory interconnection of authorized public telecommunications carriers in order to create "a universally accessible and fully integrated nationwide telecommunications network for the benefit of the Filipino people"[90]. Albeit mandated as compulsory by presidential directive, interconnection under EO 59 is to be effected through bilateral negotiations between the parties involved subject only to certain technical/operational and traffic settlement rules to be promulgated by the National Telecommunications Commission ("NTC")[91], the DOTC arm designated to implement this directive.

EO 109, on the other hand, prescribes policy guidelines for an improved provision of local exchange telecommunication service in "unserved and undeserved areas" thereby promoting universal access to basic telecommunications service.[92] To achieve the noble purpose behind the law, EO 109 mandates that traditionally lucrative facilities such as international gateway ("IGF") operators and cellular mobile telephone service ("CMTS") providers respectively establish a minimum of 300,000 local exchange lines in three years and a minimum of 400,000 within a period of five years.[93] Thus, telephone service to unserved and undeserved areas in the country will be supplied at a ratio of one rural exchange line for every ten (10) local exchange lines installed in urban areas.[94]

For the efficient implementation of the executive order, the NTC devised in 1994 the so-called Service Area Scheme ("SAS") whereby the entire Philippine nation was divided into eleven (11) service areas composed of pairs of profitable and unprofitable areas to be assigned to the telephone companies covered by the EO for the installation of their committed landlines.[95] The NTC's SAS, the first of its kind in Asia, if not in

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88 February 24, 1993.

89 July 12, 1993.

90 Ibid., at sec. 1.

91 E.O. No. 59, sec. 6.

92 E.O. No. 109, sec. 2.

93 E.O. No. 109, secs. 5-7; National Telecommunications Commission pub., 1997 NTC Annual Report 12 (1997); National Economic Development Authority (NEDA) pub., The Philippine National Development Plan: Directions for the 21st Century 7:28 (1998).

94 E.O. No. 109, sec. 5(b).

95 Chua, J.M., A Review of Telecommunications Policy: Keeping the Lines Open, 1997(1) Econ. Policy Rev. 2 (1997); Center for Research and

the world, is illustrated as follows:

TABLE NO. 1

SERVICE AREA SCHEME				
SUBDIVISION NO.	**COVERAGE**		**ASSIGNED CARRIER**	**FOREIGN PARTNER**
1	Region I	Abra, Ilocos Norte, Ilocos Sur, La Union, Pangasinan, Mt. Province, Benguet	SMART	First Pacif (HKG)/NT (Japan)
	NCR D	Pasay City, Las Pinas, Paranaque, Pateros, Taguig, Muntinlupa		
2	Region II	Batanes, Cagayan Valley, Isabela, Quirino, Nueva Viscaya, Ifugao, Kalinga-Apayao	ETPI	CW (HKG
	NCR A	Manila, Navotas, Caloocan City		
3	Region III	Tarlac, Pampanga, Zambales, Bataan, Bulacan, Nueva Ecija	SMART	First Pacif (HKG)/NT (Japan)
4	Region IVA	Aurora, Laguna, Quezon, Marinduque, Rizal, Romblon	CAPWIRE	Korea Telecom
5	Region IVB	Cavite, Batangas, Mindoro Occidental, Mindoro Oriental, Palawan	GMCR	Singapor Telecom
6	Region V	Albay, Camarines Norte, Camarines Sur, Catanduanes, Masbate, Sorsogon	ICC	Nynex (USA)
	NCR B	Quezon City, Valenzuela, Malabon		
7	Region VI	Aklan, Antique, Capiz, Iloilo, Negros Occidental, Guimaras	ISLACOM	Shinawat (Thailand Detsche Telekom (Germany
	Region VIIA	Negros Oriental, Siquijor		
8	Region VIIB	Bohol, Cebu	ISLACOM	

Communication, White Paper on Telecommunications Policy (The Main Report) 10 (1997); National Telecommunications Commission, 1997 NTC Annual Report 12 (1997).

SERVICE AREA SCHEME				
	Region VIII	Eastern Samar, Leyte, Northern Samar, Southern Leyte, Biliran		

SERVICE AREA SCHEME				
SUBDIVISION NO.	**COVERAGE**		**ASSIGNED CARRIER**	**FOREIGN PARTNER**
9	Region IXA	Zamboanga del Norte, Zamboanga del Sur	PILTEL PHILCOM	Malaysian Group/ Comsaf (USA)
	Region X	Agusan del Norte, Agusan del Sur, Bukidnon, Camiguin, Misamis Occidental, Misamis Oriental, Surigao del Norte		
	Region XIB	Surigao del Sur, Davao Oriental		
10	Region XIA	Davao del Norte, Davao del Sur, South Cotabato, Sarangani	PILTEL/ PHILCOM	
	Region IXB	Basilan, Sulu, Tawi-Tawi		
11	Region XII	Lanao del Norte, Lanao del Sur, Maguindanao, North Cotabato, Sultan Kudarat	GMCR	Singapore Telecoms
	NCR C	Makati, San Juan, Mandaluyong, Marikina, Pasig		

The obligation of the new IGF and CMTS operators under EO 109 to provide local exchange service in "unserved and undeserved areas" under the SAS eventually found statutory basis in the Public Telecommunications Act of 1995 which declared the creation of an accessible telecommunications network as a national policy, viz:

"SEC. 4. *Declaration of National Policy.* - x x x The growth and development of telecommunications services shall be pursued in accordance with the following policies:

x x x

"b) The expansion of the telecommunications network

shall give priority to improving and extending basic services to areas not yet served. For this purpose, government shall promote a fair, efficient and responsive market to stimulate the growth and development of the telecommunications facilities and services, with emphasis on the accessibility by persons to basic services in unserved and undeserved areas at affordable rates;"[96]

x x x

"g) A fair and reasonable interconnection of facilities of authorized public network operators and other providers of telecommunications services is necessary in order to achieve a viable, efficient, reliable and universal telecommunications services;"[97]

"SEC. 10. *International Carrier.*- x x x

x x x

"The international carrier shall also comply with its obligation to provide the local exchange service in unserved or undeserved areas within three (3) years from the grant of the authority as required by existing regulations: *Provided, however,* That said carrier shall be deemed to have complied with the said obligation in the event it allows an affiliate thereof to assume such obligation and who complies therewith.

"Failure to comply with the above obligations shall be a cause to cancel its authority or permit to operate as an international carrier."[98]

"SEC. 12. *Mobile Radio Service.* - x x x

"The operator of a mobile radio telephone system shall comply with its obligations to provide local exchange service in unserved and undeserved areas in accordance with existing regulations. Failure to comply with this obligation within three (3) years from the grant of authority shall be a cause to cancel its authority or permit to operate a mobile radio

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96 Rep. Act No. 7925, Art. II, sec. 4(b).

97 Ibid., at Art. II, sec. 4(g).

98 Id., at Art. IV, sec. 10.

telephone system."[99]

With the necessary statutory basis and administrative policies in place, the attainment of a fully and universally accessible and integrated telecommunications network is but the inevitable conclusion to the globalization of the Philippine's vision of telecommunications in the second millennium.

D. TELECOMMUNICATIONS: MONOPOLY IS OUT; COMPETITION IS IN

The Philippine Constitution mandates that "[T]he State shall regulate or prohibit monopolies when the public interest so requires."[100] With this Constitutional directive in place since 1987, it comes as no surprise that, a decade later, the telecommunications industry has, from a virtual monopoly, become one of the most competitive industries in the country today.[101]

From a practically one-company show in 1989, the industry now hosts nine (9) new players in the international calls market alone. Likewise, in the cell phone market, numbers have risen from two to five. Also, from a mere five paging companies before 1993, there are now twelve (12), or even possibly fourteen (14) at present.[102]

The fall of the so-called PLDT monopoly followed the landmark decision of the Philippine Supreme Court in *PLDT vs. National Telecommunication Commission and Express Telecommunication Co., Inc.*[103] which confirmed the authority of Express Telecommunication Co., Inc. ("Extelcom") to operate and maintain a cellular mobile telephone service and ordered PLDT to interconnect with the newly-installed network of Extelcom. Pontificating on the wisdom of free competition, the Supreme Court declared:

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99 Id., at Art. IV, sec. 12.

100 CONST., Art. XII, sec. 19.

101 Chua, J.M., Telecommunications and the Law: A Call for Reason, 1997(3) Econ. Policy Rev. 3 (1997).

102 Basilio, E.L., and J.M. Chua, Clearing the Line: Telecommunications SMEs and Regional Development (Part I), 1997(4) Econ. Policy Rev. 4 (1997); Center for Research and Communication, White Paper on Telecommunications Policy (The Main Report) 2 (1997).

103 G.R. No. 88404, October 18, 1990, 190 SCRA 717.

> "Free competition in the industry may also provide the answer to a much-desired improvement in the quality and delivery of this type of public utility, to improved technology, fast and handy mobile service, and reduced user dissatisfaction. After handy mobil service, and reduced user dissatisfaction. After all, neither PLDT nor any other public utility has a constitutional right to a monopoly position in view of the constitutional proscription that no franchise certificate or authorization shall be exclusive in character or shall last longer than fifty (50) years (ibid., Section 11; Article XIV, Section 5, 1973 Constitution; Article XIV, Section 8, 1935 Constitution). Additionally, the State is empowered to decide whether public interest demands that monopolies be regulated or prohibited (1987 Constitution, Article XII, Section 19)."[104]

Again, in a dispute between PLDT and Eastern Telecommunications Philippines, Inc. ("ETPI"), the Supreme Court, in 1995, overruled the dominant PLDT's arguments and allowed ETPI to provide local exchange services with the right to interconnect with PLDT's network.[105] The Philippine High Court explained:

> "We here reaffirm and underscore the continuing validity and vitality of the doctrine above set out: the requirement of interconnection between telecommunications carriers found in both legislation and administrative regulations constitutes a legitimate exercise of the plenary police power of the State for the securing of the general welfare.
>
> It is important to note that Eastern, contrary to PLDT's egregious pleading, does not seek, nor has it been allowed by NTC, a "free ride" on PLDT's (domestic) telephone network. The IGF will be paid for by Eastern itself. Revenues derived from international calls originating from, or destined to, a subscriber in PLDT's telephone network are required to be *shared by Eastern with PLDT* in proportions to be negotiated and *agreed upon between PLDT and Eastern with the approval of NTC*. There is, in particular, no "appropriation" of property of the PLDT without payment of just or reasonable compensation.
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> It is also appropriate to note that at least one other non-PLDT IGF which has been approved by the NTC, the

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104 Ibid., at 737.

105 PLDT vs. National Telecommunications Commission and ETPI, G.R. No. 94374, February 21, 1995, 241 SCRA 486, 503-505.

Philippine Global Communications Company, Inc. ("Philglobcom") gateway facility, has in fact been installed, interconnected with PLDT's domestic telephone network and is presently in operation. We must assume, therefore, that not only was interconnection found physically and technically feasible, but also that an economically acceptable sharing of revenues between PLDT on one hand and Philglobcom on the other, was in fact reached and is being implemented. There is no relevant distinction between the Philglobcom franchise authority and that of Eastern.

Through the interpretation it urges, PLDT in effect seeks to monopolize the external transmission and reception of telecommunications messages, i.e., *the sending and receiving of such messages across the boundaries of the Philippines.* The argument made by PLDT will result in local users of PLDT telephones having no choice but to got to PLDT *even for the external portion of international telecommunications*. Presumably, PLDT cannot object if its subscribers were to walk to offices or branches of Eastern and there make direct telephone calls to countries outside the philippines. Yet PLDT, would prevent its own subscribers from using any IGF and facilities for transmission and reception of international messages, except those owned by PLDT. PLDT's view, in refusing interconnection, would logically compel a telecommunication company, wishing to install an international gateway facility (IGF) to duplicate (however wastefully) the already existing domestic telecommunications lines of PLDT, and to restrict an IGF operator to transmitting messages originating in land or domestic lines established by that operator itself. While protective of the monopolistic position and profitability of PLDT, such a narrow and restrictive view completely disregards the broader interests of the general public consisting of the users of telecommunications services. Such view must accordingly, and once again, be rejected and the inherent authority of the State to secure the interests of the general public in the conserving and efficient utilization of finite or scarce resources, sustained.

PLDT has no right to treat its subscribers as its proprietary assets to be "exploited" by PLDT alone, rather than as customers to be served in the manner that a public utility is supposed to serve the public. Both local subscribers of PLDT or nay other domestic telephone system, as well as callers from across the oceans, should be accorded a choice. The fundamental point is that customers' choice and free competition among carriers are essential if reasonable prices and efficient and satisfactory service are to be achieved and maintained and the publics rapidly growing needs adequately served, in the area of telecommunications, an area so vital to national social and economic development."

The judiciary, however, was not the alone in its crusade against monopoly in the telecommunications industry in the Philippines. The Aquino Administration was, in fact, instrumental in the deregulation and liberalization of the industry which resulted in the licensing of new operators in previously monopolized services and in completely new telecommunications services as well.[106] Moreover, the policies pushed by then President Aquino including the Public Telecommunications Policy Bill of 1987, the NTC Reorganization Bill of 1988, and the Municipal Telephone Act of 1989, all helped inject new life and a spirit of competition in the industry.[107]

The liberalization efforts of the Aquino Administration were continued by President Ramos during his term. With the enactment of the Public Telecommunications Act of 1995, the environment of the telecommunications industry was made conducive to effective yet friendly competition with the pronouncement of the following national policies:

> "f) A healthy competitive environment shall be fostered, one in which telecommunication carriers are free to make business decisions and to interact with one another in providing telecommunications services, with the end in view of encouraging their financial viability while maintaining affordable rates;"[108]
>
> "h) The government shall give all the assistance and encouragement to Philippine international carriers in order to establish interconnection with other countries so as to provide access to international communications highways on a competitive basis;"[109]

More important than the express acceptance of free competition in the industry was the statutory liberalization of the rate and tariff setting environment.[110] The Public Telecommunications Act of 1995 unequivocally allows public telecommunications entities to establish "rates and tariffs which are fair and reasonable and which provide for the economic viability

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106 Center for Research and Communication, White Paper on Telecommunications Policy (The Main Report) 10 (1997).

107 Ibid.

108 Rep. Act No. 7925, Art. II, sec. 4(f).

109 Ibid., at sec. 4(h).

110 Lucila, R.R.V., The Legal Framework of the Telecommunications Industry in the Philippines 28, XVth LAWASIA Conference, August 28, 1997, Manila, Philippines.

of telecommunications entities and a fair return on their investments considering the prevailing cost of capital in the domestic and international markets"[111] and to "exempt any specific telecommunications service from its rate or tariff regulations if the service has sufficient competition to ensure fair and reasonable rates or tariffs".[112] Although not affirmed by jurisprudence as of yet, the NTC has construed the foregoing provision as an abandonment of the twelve percent (12%) ceiling on annual investments net profit previously enforced by the NTC pursuant to established jurisprudence.[113] Such a grant of free reign to public telecommunications entities with respect to the determination of the allowable rate of return will indisputably encourage the entrance of new players in the industry to finally break down monopolies and "level the playing field".[114]

E. PUBLIC TELECOMMUNICATIONS ENTITIES: PUBLIC UTILITIES SUBJECT TO A THREE-LEVEL REGULATION

In this jurisdiction, the term "public service" includes every person

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111 Rep. Act No. 7925, Art. VI, sec. 17 which states:

> "SEC. 17. *Rates and Tariffs.* - The Commission shall establish rates and tariffs which are fair and reasonable and which provide for the economic viability of telecommunications entities and a fair return on their investments considering the prevailing cost of capital in the domestic and international markets.
>
> "The Commission shall exempt any specific telecommunications service from its rate or tariff regulations if the service has sufficient competition to ensure fair and reasonable rates or tariffs. The Commission shall, however, retain its residual powers to regulate rates or tariffs when ruinous competition results or when a monopoly or a cartel or combination in restraint of free competition exists and the rates or tariffs are distorted or unable to function freely and the public is adversely affected. In such cases, the Commission shall either establish a floor or ceiling on the rates or tariffs."

112 Ibid.

113 Manila Electric Company vs. Public Service Commission, 18 SCRA 651 (1966).

114 Rosario-Braid, F., and R.R. Tuazon, Telecommunications in the Philippines: Some Policy Challenges, 1(1) Policy Review 97 (Jan-March 1994).

that "may own, operate, manage, or control in the Philippines, for hire or compensation, with general or limited clientele, and done for general business purposes, any common carrier, railroad, street railway, traction railway x x x, wire or wireless communications system, wire or wireless broadcasting stations and other similar public services x x x ."[115] Thus, pursuant to the foregoing definition, a public telecommunications entity is considered as a public utility, i.e., an entity engaged in public service.[116]

Consequently, despite the private character of public telecommunications entities and the highly competitive environment in which they operate, the telecommunications industry was, is and will continue to be within the domain of governmental regulation subject always to a three-pronged system of check and balance enforced by: (1) Congress; (2) NTC; and (3) Judiciary.

1. Congress: The Requirement for a Legislative Franchise

No less than the Philippine Constitution requires that the operation of a public utility be authorized by a non-exclusive franchise which shall be effective for a term of not more than fifty (50) years.[117] Despite the seeming clarity of the mandate, however, controversy arose as to which department of the government was authorized to grant such franchises. Some have taken the liberal view that administrative agencies may be empowered to grant license/authorization for the operation of certain utilities.[118] Others have taken the strict interpretation that only the legislative department can grant franchises for the operation of public utilities.[119]

Resolving the confusion relating to the above-stated fundamental mandate, the Public Telecommunications Act of 1995 declared without reservation that "[N]o person shall commence or conduct the business of being a public telecommunications entity without first obtaining a franchise"[120] which is "a privilege conferred upon a telecommunications entity by Congress, authorizing that entity to engage in a certain type of

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115 C.A. No. 146, as amended, sec. 13(b).

116 Lucila, R.R.V., The Legal Framework of the Telecommunications Industry in the Philippines 2, XVth LAWASIA Conference, August 28, 1997, Manila, Philippines.

117 CONST., Art. XII, sec. 11.

118 Albano vs. Reyes, 175 SCRA 264, 271-1 (1989).

119 Tatad vs. Garcia, Jr., 243 SCRA 436, 452 (1995).

120 Rep. Act No. 7925, Art. VI, sec. 16.

telecommunications service."[121] Hence, public telecommunications entities "with franchises granted by local government units which have been duly authorized by the Commission [NTC] on or before 22 March 1995[122] with either a CPCN[123] or a PA[124] shall continue to provide services until the expiration of their respective franchises or until their respective CPCNs or PAs are sooner revoked or cancelled."[125]

Notwithstanding the categorical statement contained in the Public Telecommunications Act of 1995, the exception to the legislative franchise requirement laid down by Republic Act No. 7227, a special law, was sustained. Under Rep. Act No. 7227, the Subic Bay Metropolitan Authority ("SBMA") and Clark Development Corporation ("Clark") are vested with limited "franchising" authority, that is, limited only to granting of franchises to service providers operating within the Subic Special Economic Zone and Clark Special Economic Zone, under the following justification:

> "x x x where the applicant telecommunications entity will not be engaged in the business of a public telecommunications entity as defined in Section 3(b) of R.A. No. 7925, but will only operate within the Zone and provide telecommunications services solely to residents therein, such entity, as discussed above, need only to secure a franchise from SBMA and no longer from Congress.
>
> "With reference to the case of Clark Development Corporation, the same ruling will apply to situations involving telecommunications entities exclusively operating and servicing within the Clark Special Economic Zone."[126]

In all cases, however, the regulatory power of Congress looms over all franchises, legislative or otherwise, as they are always "subject to amendment, alteration, or repeal by the Congress when the common good so requires."[127]

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121 Rep. Act No. 7925, Art. I, sec. 3(d).

122 The date of effectivity of Rep. Act No. 7925.

123 Certificate of Public Convenience and Necessity.

124 Provisional Authority.

125 NTC Memorandum Circular No. 8-9-95, Implementing Rules and Regulations of Rep. Act No. 7925, Transitory Provisions, par. (a).

126 Emphasis supplied; DOJ Opinion No. 94, s. 1996.

127 CONST., Art. XII, sec. 11.

The regulatory power of the legislative department on the Philippine telecommunications industry is not only applied directly but likewise indirectly through its appropriating power.[128]

It need not be said that the development of the telecommunications industry, albeit composed of private participants, relies heavily on the proportion of the nation's budget allocated to the Department of Telecommunications and Communications ("DOTC") in general and to the improvement of the telecommunications and information structure in particular.

Traditionally, investment in the telecommunication and information structure was one of the lowest in the annual national budget, or the General Appropriations Act ("GAA").[129] By maintaining the appropriations for the DOTC at a low level, the available resources for the various telecommunications and information technology ("IT") projects are easily depleted. With the boom of IT, however, it is expected that the legislative department will comprehend the necessity for funding for the various projects of the DOTC including Information Technology (IT21) of 1998, a newly launched project of the department which substituted the National Information Technology Plan (NITP 2000) of 1997, and, consequently, allot more of the national budget to the growth and development of the Philippine Information Infrastructure ("PII").

2. National Telecommunications Commission: CPCNs and PAs and their Regulation

a. The Requirement for a Certificate of Public Convenience and Necessity

In the Philippines, the grant of a legislative franchise is not an absolute assurance of being allowed to operate as a public telecommunications entity. Authority to actually render public telecommunications service comes only with the issuance of a Certificate of Public Convenience and Necessity ("CPCN") or, at least, a Provisional Authority ("PA") by the NTC, the second level of regulation.

A CPCN refers to "a grant consistent with the telecommunications policies and objectives to a qualified applicant, after due notice and hearing, of a final authority to own, operate and maintain a public telecommunications facility/service."[130] A Provisional Authority, on the

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128 CONST., Art. VI, sec. 25 (1) and (2).

129 Rosario-Braid, F., and R.R. Tuazon, Telecommunications in the Philippines: Some Policy Challenges, 1(1) Policy Review 87 (Jan-March 1994).

130 NTC Memorandum Circular No. 9-9-95, Definition of Terms, par. (11).

other hand, refers to an "authority for a limited period, granted to a qualified applicant to operate and maintain a public telecommunications facility/service . . . . pending the grant of the CPCN."[131]

In resolving applications for CPCNs and/or PAs, the NTC is mandated to ascertain, after due notice and hearing, whether the applicant entity is legally, financially and technically fit to operate the public telecommunications utility or service, and whether there is an economic need or basis which justifies the grant of the CPCN and/or PA.[132] The very terms of the CPCN are also subject to the NTC's regulatory powers. In fact, the Public Telecommunications Act of 1995 authorizes the NTC to impose other conditions with respect to duration, concession and other technicalities provided the same are not contrary to the terms of the franchise.[133]

More important, however, is the statutory power of the NTC "not to grant a subsequent CPCN for another segment of service or extend the area service coverage of an entity which has failed to satisfactorily comply with its commitments to the Commission to provide a particular service in the original area coverage under an earlier authorization."[134]

b. NTC's Administrative Regulation Post-CPCN and Post/-PA

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131 Ibid., par. (12).

132 Revised Rules of Practice and Procedure before the NTC (1993).

133 Rep. Act No. 7925, sec. 16 provides in part:

> "Sec. 16. *Franchise* - x x x
>
> x x x
>
> "The Commission, in granting a Certificate of Public Convenience and Necessity (CPCN), may impose such conditions as to duration and termination of the privilege, concession, or standard or technical aspects of the equipment, rates, or service, not contrary to the terms of the franchise. In no case, however, shall the CPCN be shorter than five (5) years, nor longer than the life of the franchise. A CPCN expiring at the same time as the franchise shall be deemed to have been renewed for the same term if the franchise itself is also renewed or extended.
>
> x x x"

134 Ibid.

Enforcement of compliance with the terms and conditions of the duly issued PA or CPCN is conferred upon the NTC, the "principal administrator" of the Public Telecommunications Act of 1995,[135] pursuant

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[135] Rep. Act No. 7925, Art. III, sec. 5:

> "SEC. 5. *Responsibilities of the National Telecommunications Commission.* - The National Telecommunications Commission (Commission) shall be the principal administrator of this Act and as such shall take the necessary measures to implement the policies and objectives set forth in this Act. Accordingly, in addition to its existing functions, the Commission shall be responsible for the following:
>
> a) Adopt an administrative process which would facilitate the entry of qualified service providers and adopt a pricing policy which would generate sufficient returns to encourage them to provide basic telecommunications services in unserved and undeserved areas;
>
> b) Ensure quality, safety, reliability, security, compatibility and inter-operability of telecommunications facilities and services in conformity with standards and specifications set by international radio and telecommunications organizations to which the Philippines is a signatory;
>
> c) Mandate a fair and reasonable interconnection of facilities of authorized public network operators and other providers of telecommunications services through appropriate modalities of interconnection and at a reasonable and fair level of charges, which make provision for the cross subsidy to unprofitable local exchange service areas so as to promote telephone density and provide the most extensive access to basic telecommunications services available at affordable rates to the public;
>
> d) Foster fair and efficient market conduct through but not limited to the protection of telecommunications entities from unfair trade practices of other carriers;
>
> e) Promote consumers welfare by facilitating access to telecommunications services whose infrastructure and network must be geared towards the needs of individual and business users;
>
> f) Protect consumers against misuse of a telecommunications entity's monopoly or quasi-monopolistic powers by, but not limited to the investigation of complaints

to its regulatory powers and functions provided under Executive Order No. 546[136] and under the Public Service Act ("PSA")[137].

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and exacting compliance with services standards from such entity; and

g) In the exercise of its regulatory powers continue to impose such fees and charges as may be necessary to cover reasonable costs and expenses for the regulation and supervision of the operations of telecommunications entities."

136 Exec. Order No. 546, July 23, 1979, sec. 15:

SEC. 15. *Functions of the Commission.* - The Commission shall exercise the following functions:

a. Issue Certificate of Public Convenience for the operation of communications utilities and services, radio communications systems, wire or wireless telephone or telegraph system, radio and television broadcasting system and other similar public utilities;

b. Establish, prescribe and regulate areas of operation of particular operators of public service communications; and determine and prescribe charges or rates pertinent to the operation of such public utility facilities and services except in cases where charges or rates are established by international bodies or associations of which the Philippines is a participating member or by bodies recognized by the Philippine Government as the proper arbiter of such charges or rates;

c. Grant permits for the use of radio frequencies for wireless telephone and telegraph systems and radio communication systems including amateur radio stations and radio and television broadcasting systems;

d. Sub-allocate series of frequencies of bands allocated by the International Telecommunications Union to the specific services;

e. Establish and prescribe rules, regulations, standards, specifications in all cases related to the issued Certificate of Public Convenience and administer and enforce the same;

f. Coordinate and cooperate with government agencies and other entities concerned with any aspect involving communications with a view to continuously improve the communications service in the country;

g. Promulgate such rules and regulations, as public safety and interest may require, to encourage a larger and

Conduct potentially violative of the PSA and other telecommunications laws is brought within the jurisdiction of the NTC and under its regulatory powers through the filing of a complaint by a consumer or a competitor[138] or through its on-going monitoring activities.[139]

Another manner of post-CPCN or Post-PA regulation is in the area of rate-fixing or rate-making.[140] In granting the NTC as well as other regulatory bodies the power to fix and make rates, the legislative "aims to compel public utilities to provide adequate service at such level of cost which is within the reach of the public while providing such public utility an allowable margin of profit that would not only insure its survival but would also maintain a high standard of service."[141] Thus, pursuant to such rationale, the Public Telecommunications Act of 1995 provided:

> "SEC. 17. *Rates and Tariffs* - The Commission shall establish rates and tariffs which are fair and reasonable and which provide for the economic viability of telecommunications entities and a fair return on their investments considering the prevailing cost of capital in the domestic and international markets.
>
> x x x"

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more effective use of communications, radio and television broadcasting facilities, and to maintain effective competition among private entities in these activities whenever the Commission finds it reasonably feasible;

h. Supervise and inspect the operation of radio stations and telecommunications facilities;

i. Undertake the examination and licensing of radio operators;

j. Undertake, whenever necessary, the registration of radio transmitters and transceiver; and

k. Perform such other functions as may be prescribed by law."

137 C.A. No. 146, as amended.

138 C.A. No. 146, sec. 16.

139 Ibid., sec. 17.

140 Rep. Act No. 7925, Art. VI; sec. 17; Exec. Order No. 546, sec. 15(b); C.A. No. 146, as amended, sec. 16.

141 SUBONG, "Rate-Making for Public Utilities", January 13, 1989, 169 SCRA 175, 182.

However, to balance administrative regulation with the spirit of free competition, the Public Telecommunications Act of 1995 likewise vests upon the NTC the power to grant exemptions from such rates when there is sufficient, and not ruinous, competition in operation, viz:

> "SEC. 17. *Rates and Tariffs.* - x x x
>
> "The Commission shall exempt any specific telecommunications service from its rate of tariff regulations if the service has sufficient competition to ensure fair and reasonable rates or tariffs. The Commission shall, however, retain its residual powers to regulate rates or tariffs when ruinous competition results or when a monopoly or a cartel or combination in restraint of free competition exists and the rates or tariffs are distorted or unable to function freely and the public is adversely affected. In such cases, the Commission shall either establish a floor or ceiling on the rates of tariffs."

3. Judiciary: The Last Resort

The NTC, in the exercise of its legislative and quasi-judicial functions, does not reign supreme in the telecommunications industry. Prescinding from constitutional dictate, the judiciary particularly the Supreme Court has not been restrained in its exercise of its residual power of judicial review[142] over all rules and regulations promulgated, and all decisions rendered, by the NTC.

Under the 1997 Rules of Civil Procedure, a decision or final orders or resolutions of the NTC may be appealed, by petition for review, to the Court of Appeals on questions of law, of fact or mixed questions of fact and law.[143] Ultimately, however, decisions and resolutions of the Court of Appeals may be brought to the Supreme Court on questions of law.[144]

Internet Industry in the Philippines

Since its entry in 1994, the Internet industry in the Philippines has grown exponentially such that, by December 1997, the number of internet service providers ("ISP") had soared to 123.[145] Unfortunately, the

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142 CONST., Art. VII, sec. 1.

143 Rule 43, secs. 1 and 3.

144 Rule 45, sec. 1.

145 Dumlao, F.Q., 1997 NTC Accomplishment Report, March 12, 1998.

dynamism of the Internet has not been complemented by a correlative growth in Philippine legislation. Thus, four years after its germination, the Internet remains largely unregulated by the state.

To date, no measure of supervision, regulation, or control is implemented by the Philippine government on the Internet industry. Technically, ISPs are required to register with the NTC before they can operate as such. However, because of the lack of a punitive or pecuniary sanction on unregistered ISPs, this registration requirement dismally fails to address the unfettered proliferation of ISPs and the unregulated nature of the information such ISPs provide to their subscribers.

The question that comes to mind is thus, how is the Internet and the information therein regulated or controlled in the Philippines?

Primarily, the control or regulation of the Internet is exercised by the owners and operators of the individual computer networks comprising it including operators of computer facilities owned by businesses, colleges or other organizations.[146] Each owner or operator of a network makes its own separate and independent decision on "how they connect to the Internet, and to how much of the Internet's features they choose to connect."[147] Secondarily, the Internet industry as well as each individual ISP will at all times be subject to present or future legislation whether it be administrative, civil or criminal.

In an attempt to address the adverse consequences arising from the lack of regulation of the Internet, numerous Congressional bills were sponsored by the Tenth Congress of the Republic of the Philippines.

On 2 February 1998, the Senate Committee on Constitutional Amendments, Revisions of Codes and Laws and Science and Technology[148] recommended the approval of Senate Bill No. 2485 entitled "AN ACT PENALIZING THE USE OF COMPUTERS TO COMMIT, FACILITATE OR CONCEAL THE COMMISSION OF A CRIME OR TO VIOLATE THE RIGHT TO PRIVACY OF PERSONS" or the "Computer Crimes Act". Under Senate Bill No. 2485, the following acts were proposed as unlawful:

> "(a) to use and operate a computer or computer network primarily to facilitate criminal activity or primarily to commit activities prohibited by the Penal Code and special laws;
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> "(b) to use a computer or computer network to transmit a communication intended to conceal or hide the origin of

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146 Domingo, R.V., Internet Regulation: The Philippine Experience 3, XVth LAWASIA Conference, August 28, 1997, Manila, Philippines.

147 Ibid.

148 Xth Congress of the Republic of the Philippines, Third Regular Session.

money or other assets, tangible or intangible, that were derived from the commission of a crime;

"(c) to use a computer or computer network to conceal, obliterate or hide the identity of persons guilty of committing a crime or an offense;

"(d) to use a computer or computer network to conceal or hide the commission of a crime or an offense and the evidence thereof;

"(e) for an interactive computer service[149] to disclose to a third party any personally identifiable information provided by a subscriber to such service without the subscriber's prior informed written consent.

x x x

"(f) for an interactive computer service or an employee of such service to knowingly disclose to a third party any personally identifiable information provided by a subscriber to such service that such service, or such employee, has knowingly falsified."

Moreover, recognizing the prevalence of obscene and indecent materials available on the Internet and appreciating the possibility of minors downloading such material, two independent bills were sponsored by Senators Defensor-Santiago and Honasan to address the same.

Senate Bill No. 1781[150] entitled "AN ACT TO PUNISH TRANSMISSION OF INDECENT MATERIAL BY COMPUTER TO MINORS" or the "Computer Pornography Act" declared the following as punishable acts:

"SEC. 4. Punishable Acts. --

"(A) Transmission by remote computer facility operator, electronic communications service provider, or electronic bulletin board service provider. -- A remote computer facility operator, electronic communications service provider, electronic bulletin board service provider who,m

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149 Under sec. 3, Senate Bill No. 2485, the "interactive computer service" refers to "any information service that provides computer access to multiple users via modem to the Internet." The "Internet", on the other hand, refers to "the international computer network of both national and non-national interoperable packet switched data networks."

150 Xth Congress of the Republic of the Philippines, Second Regular Session.

with knowledge of the character of the material, knowingly --

"(1) transmits or offers or attempts to transmit from the remote computer facility, electronic communications service, or electronic bulletin board service provider a communication that contains indecent material to a person under 18 years of age; or

"(2) causes or allows to be transmitted from the remote computer facility, electronic communications service, or electronic bulletin board a communication that contains indecent material to a person under 18 years of age or offers or attempts to do so;

"(B) Permitting access to transmit indecent material to a minor. -- Any remote computer facility operator, electronic communications service provider, or electronic bulletin board service provider who willfully permits a person to use a board service that is under the control of that remote computer facility operator, electronic communications service provider, or electronic bulletin board service provider, to knowingly or recklessly transmit indecent material from another remote computing service, electronic communications service, or electronic bulletin board service, to a person under 18 years of age.

"SEC. 5. *Penalty.* -- Any person who violates the provisions of this Act shall be Imprisoned not more than 6 years, or fine, or both at the discretion of the court."

Working with existing law, Senator Honasan sponsored Senate Bill No. 1676[151] entitled "AN ACT PROVIDING FOR THE PROTECTION OF FILIPINOS FROM OBSCENE AND INDECENT MATERIALS TRANSMITTED THROUGH COMPUTERS AMENDING FOR THE PURPOSE ART. 201 OF ACT NO. 3815 OTHERWISE KNOWN AS THE REVISED PENAL CODE AND FOR OTHER PURPOSES". Under said Senate Bill, Article 201 of the Revised Penal Code was to be amended to reflect the dynamic changes in information media, viz:

SEC. 4 Art. 201 of Act No. 3815 as amended is hereby further amended to read as follows:

"Art. 201. ***Immoral doctrines, obscene publications and exhibitions, and indecent shows.*** - The penalty of ***prision mayor*** or a fine ranging from Six thousand to Twelve thousand

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151 Ibid.

pesos, or both such imprisonment and fine, shall be imposed upon:

"1. Those who shall publicly expound or proclaim doctrine openly contrary to public moral EITHER ORAL OR WRITTEN, OR THROUGH REMOTE COMPUTER FACILITIES, ELECTRONIC COMMUNICATIONS SERVICE, OR ELECTRONIC BULLETIN BOARD SERVICE;

"2. (a) The authors of obscene literature, published with their knowledge in any form; the editors, publishing such literature; and the owners/operators of the establishment selling the same; **AND THE OPERATORS, OWNERS OR OFFICERS OF THE PROVIDERS OF REMOTE COMPUTER FACILITIES, ELECTRONIC COMMUNICATIONS SERVICE, OR ELECTRONIC BULLETIN BOARD SERVICE;**

"(b) Those who, in theaters, fairs, cinematographs, or any other place, exhibit indecent or immoral plays, scenes, acts or shows, it being understood that the obscene literature or indecent or immoral plays, scenes, acts or shows, whether live or in film, **THROUGH REMOTE COMPUTER FACILITIES, ELECTRONIC COMMUNICATIONS SERVICE, OR ELECTRONIC BULLETIN BOARD SERVICE OR OTHERWISE,** which are prescribed by virtue hereof, shall include those which: (1) glorify criminals or condone crimes; (2) serve no other purpose but to satisfy the market for violence, lust or pornography; (3) offend any race or religion; (4) tend to abet traffic in and use of prohibited drugs; and (5) are contrary to law, public order, morals, good customs, established policies, lawful orders, decrees, and edicts.

"3. Those who shall sell, give away or exhibit films, prints, engravings, sculpture or literature which are offensive to morals **EITHER THROUGH REMOTE COMPUTER FACILITIES, ELECTRONIC COMMUNICATIONS SERVICE, OR ELECTRONIC BULLETIN BOARD SERVICE OR OTHERWISE;**

"4. THOSE WHO ADVERTISE, SELL, OFFER FOR SUBSCRIPTION, PORNOGRAPHIC MATERIALS THROUGH REMOTE COMPUTER

> FACILITIES, ELECTRONIC COMMUNICATIONS SERVICE, OR ELECTRONIC BULLETIN BOARD SERVICE OR OTHERWISE;
>
> "5. THOSE WHO ACCESS, SUBSCRIBED, DOWNLOAD, UPLOAD, AND MAKE USE OF, AND THOSE WHO BY THE USE OF REMOTE COMPUTER FACILITIES, ELECTRONIC COMMUNICATIONS SERVICE, OR ELECTRONIC BULLETIN BOARD SERVICE, DISTRIBUTE, WHETHER FOR FREE OR WITH REMUNERATION THE ABOVE PROHIBITED OBSCENE LITERATURE OR INDECENT OR IMMORAL PLAYS, SCENES, ACTS, PHOTOGRAPHS, SHOWS, OR DOCTRINES, AND ADVERTISEMENTS."[152]

Although numerous bills have been sponsored by Philippine legislators, none of them has been enacted into law. Ironically, both the legislative and executive departments of the Philippine government have sustained the Internet's freedom from regulation and have, wittingly or unwittingly, promoted its abuse.

IV

ISSUES

A. Telephone: The Primary Tool for Communication

Following are some of the more significant issues and problems confronting the telecommunications industry:

1. Mandatory Interconnection

Given the unique state of the telecommunications industry in the Philippines, interconnection is viewed as a vital step in the effort to spur the growth of Philippine telecommunications networks within the shortest of time. Simply stated, interconnection is the physical linking of networks to make it possible for the subscribers of one network to access or call subscribers of another. Interconnection is defined under RA 7925 as

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152 Emphasis supplied.

> "The linkage by wire, radio, satellite or other means, of two or more existing telecommunications carriers or operators with one another for the purpose of allowing or enabling the subscribers of one carrier or operator to access or reach the subscribers of the other carriers or operators."

If properly implemented, interconnection may indeed give new entrants in the field of telecommunications a means of competing against more established telecom giants and thus avert immediate marginalization. Recognizing its potential, the government enacted laws to help ensure that interconnection is carried out.

As discussed earlier, under EO 59, the government required compulsory interconnection, specifying guidelines, conditions and penalties for those who fail to comply. With RA 7925, however, the regulator has been reduced to a minor and insignificant figure in the interconnection process. The said law provides that

> "the access charge/revenue sharing arrangements between all interconnecting carriers shall be negotiated between the parties and the agreement between the parties shall be submitted to the commission. In the event that the parties fail to agree thereon within a reasonable period of time, the dispute shall be submitted to the commission for resolution x x x the commission shall ensure equity, reciprocity and fairness among the parties concerned."

This means that the regulator can only step in when a stalemate occurs or when the agreement is violated. When that happens, the NTC can only persuade firms to meet, work out their differences, and abide by their agreements. RA 7925 is likewise perceived to have fallen short of the standard set by EO 59 in the area of penalties. While under EO 59 noncompliance meant the revocation of one's license to operate, this is not so under RA 7925. Worse, the general perception is that under the new law, the NTC would never have the audacity to enforce the sanctions.

This reliance on the negotiation process places the new and smaller players at a distinct disadvantage vis-a-vis the more dominant carriers. Since they have fewer lines installed, they cannot afford not to interconnect and are thus likely to accept even terms that favor the carrier with the bigger network, for instance, by way of paying higher access charges.[153] Moreover, in the absence of a regulator supervising the negotiating process, the dominant player, which has little incentive to interconnect, can take its time. While interconnection brings in additional revenues for the dominant carrier, it also means letting competitors get a foot in their turf. The nature of competition in the industry suggest that protecting market share may be a more important concern, and this

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153 Chua, J.M., A Review of Telecommunications Policy: Keeping the Lines Open, 1997(1) Econ. Policy Rev. 3 (1997).

motivates the dominant carrier to take its time complying with the agreement in order to strengthen its network and get to subscribers before the new firms do.[154]

Lastly, interconnection means added cost because new equipment will have to be purchased and installed. The more firms there are to connect, the longer it takes. Points of interconnection by firms using different technologies may also require different equipment.[155]

All these have really dimmed the once bright prospects of interconnection in the Philippines, at least for the moment.

2. Rollout or Landline obligations

One other issue arising out of the criticisms against RA 7925 seems to involve the rollout scheme as envisioned under EO 59 and as amended by RA 7925. As noted by the Center for Research and Communication, the problem may be viewed from two perspectives: one from firms who have satisfactorily complied with their obligations and another from those who are lagging behind.

For firms that have successfully complied with their obligations, the flaw lies in the inability of the present system to enforce the rules and the absence of clear policies on penalties for non-compliance. Originally, International Gateway Facility (IGF) operators were required to install 67% of their landline obligations within the first two years; Cellular and Mobile Telephone Service (CMTS) operators were required to install at least 50% within the same period. By year-end 1996, however, most of the companies covered by EO 109 had installed less than 50% of their total obligations.[156]

The underlying reason for this low level of compliance is the fact that the existing law does not provide for a system of reward and punishment for achievers and non-performers. No clear guidelines exist as to the imposition of penalties for non-compliance or the awarding of incentives for early compliance.[157]

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154 Chua, J.M., A Review of Telecommunications Policy: Keeping the Lines Open, 1997(1) Econ. Policy Rev. 3 (1997).

155 Chua, J.M., A Review of Telecommunications Policy: Keeping the Lines Open, 1997(1) Econ. Policy Rev. 3 (1997).

156 Center for Research and Communication, White Paper on Telecommunications Policy (The Main Report) 20 (1997).

157 Basilio, E.L., and J.M. Chua, Clearing the Line: Telecommunications SMEs and Regional Development (Part II), 1997(5) Econ. Policy Rev. 1 (1997).

It has been noted that the government has been hesitant to introduce the imposition of sanctions because penalties, which could include the suspension of applications pending before the NTC, forfeiture of the performance bond, revocation of Provisional Authority and termination of licenses, could negatively affect not only the firm in question but also consumers.[158]

The giving of incentives, on the other hand, is also risky. If new service areas are granted as an incentive to complying firms, for example, lagging firms would certainly protest because the law and its guidelines did not make any special provisions for such incentives.[159]

A different set of issues and problems confronts the firms that are lagging behind. Their foremost concern is that the reduction of the period within which to install land lines from five to three years, as contained in RA 7925, has made it virtually impossible for them to meet their obligations, especially those who are obliged to install 700,000 lines.[160]

Indeed, it may be more realistic and more constructive to impose penalties which would require the payment of fines by non-complying entities rather than imposing severe penalties such as suspension, revocation or termination of licenses to operate, in that these would certainly mean huge losses in investments and waste in capacity already installed. It has been suggested that non-complying companies be levied a fine corresponding to the number of lines they fail to install. On the other hand, players who meet their obligations may be awarded new service areas, or the areas serviced by non-complying firms who were not able to meet the benchmark for installed lines versus the required number.[161]

3. Failure to Address Convergence

There is a growing consensus that existing government policy has dismally failed to address the phenomenon known in information

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158 Center for Research and Communication, White Paper on Telecommunications Policy (The Main Report) 20 (1997).

159 Center for Research and Communication, White Paper on Telecommunications Policy (The Main Report) 20 (1997).

160 Center for Research and Communication, White Paper on Telecommunications Policy (The Main Report) 20 (1997).

161 Basilio, E.L., and J.M. Chua, Clearing the Line: Telecommunications SMEs and Regional Development (Part II), 1997(5) Econ. Policy Rev. 2 (1997).

technology (IT) circles as "convergence", which refers to the merging of information, telecommunications, cable TV (CATV), broadcast and computer technologies.

The marriage of these technologies creates a powerful system that makes multimedia applications possible, and is expected to result in the development of new products and services. This has made possible the introduction in other countries of cable telephone, satellite television, digital and high-definition television, satellite telephony, and the internet through cable. In these developed countries, businesses and consumers can likewise avail themselves of a wide-range of interactive services such as video-on-demand, interactive home shopping/banking, residential information services and telecommuting.[162] Indeed, these advances offer great potentials for improving the productivity of a country like the Philippines.

However, the current policy regulatory and constitutional environment "is applicable only for a segmented operational structure for IT, telecommunications, CATV and broadcast".[163] In other words, we do not have in place a legal and regulatory framework which would allow, and even encourage, the merging and integrated operation of the foregoing technologies in order to introduce multimedia services that are critical to national productivity. It has been noted that:

> "Since the structure resulting from their synergy is different from the sum of its parts, traditional policies that have been proven effective in stimulating the growth of each may no longer be suitable. This means that the government should take on a new approach in regulation aimed at producing an integrated policy for IT and telecoms. x x x Information and knowledge are now, more than ever, a source of power, and (IT and telecommunications) play an important role in harnessing this power".[164]

A case in point is the treatment given to CATV. Recently, Executive Order No. 436, prescribing "policy guidelines to govern the operations of cable TV in the Philippines", was issued. The order mandates that CATV be treated as separate and distinct from telecommunications or broadcast television. As things stand, CATV firms cannot provide telephone services

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162 Basilio, E.L., and J.M. Chua, Clearing the Line: Telecommunications SMEs and Regional Development (Part I), 1997(4) Econ. Policy Rev. 3 (1997).

163 National Economic Development Authority (NEDA) pub., The Philippine National Development Plan: Directions for the 21st Century 7:32 (1998).

164 Center for Research and Communication, White Paper on Telecommunications Policy (The Main Report) 22 (1997).

even though the technology will permit them to do so. This may have been possible if a single telecoms law was drafted that would incorporate or integrate CATV to the present telecoms law.

It would seem that policies that not only permit but encourage the efficient use of converging technologies must be studied and drafted, tailoring them to the needs and peculiarities of Philippine consumers. In the same way, regulation should be reexamined for the purpose of improving them to allow the Filipino people to meet the challenges and seize the opportunities of the information age.

B. Internet: The Global Information Highway

The value of the Internet as the universally accessible global information highway is immeasurable and undeniable. With the simple click of the "mouse", the Net user may access networks of computers called "hosts" and download a myriad of information on almost all topics imaginable. However, the Internet's most important feature is also its primary drawback.

The fact that information is easily accessible on the Internet has spawned various legal and moral issues in almost all jurisdictions in which such information technology is utilized. Unlike in advanced countries, the Philippines has failed to address, much less resolve, the issues occasioned by the increasing use of the Internet due to the lack a policy and regulatory framework to govern the same. As the issues are too numerous to discuss at length in this paper, the authors selected three of the more crucial ones.

1. Censoring "Cyberporn"

Of primary concern in most jurisdictions including the Philippines, is the plethora of obscene, indecent and offensive materials available on the Internet and easily accessed by a Net subscriber who may happen to be an impressionable minor.

As discussed earlier, no regulatory law or rule has been passed to directly address the proliferation of obscenity and indecency in Cyberspace, otherwise known as, "*Cyberporn*". Although censorship is technically allowed in the Philippines with respect to motion pictures, television programs, and related publicity materials[165], information downloaded from the Internet does not fall within the scope of the Movie and Television Review and Classification Board's ("MTRCB's") authority which is limited to

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165 Pres. Dec. No. 1986 entitled "Creating the Movie and Television Review and Classification Board"; MTRCB Implementing Rules and Regulations, sec. 1.

"all motion pictures, television programs, and related publicity materials intended for public exhibition in theaters and television, whether imported or produced in the Philippines, in any case for local viewing or for export.[166]" Lack of censorship or prior restraint does not mean, however, that Internet Service Providers and their host networks can circulate pornographic, indecent and offensive material with impunity in this jurisdiction.

Publications which are obscene, indecent and offensive are prohibited by no less than the Philippines' criminal law system through Article 201 of the Revised Penal Code ("RPC") which provides:

> "ART. 201. *Immoral doctrines, obscene publications and exhibitions, and indecent shows.* - The penalty of *prision mayor* or a fine ranging from six thousand to twelve thousand pesos, or both such imprisonment and fine, shall be imposed upon:
>
> "1. Those who shall publicly expound or proclaim doctrines openly contrary to public morals;
>
> "2. (a) The authors of obscene literature, published with their knowledge in any form; the editors publishing such literature; and the owners/operators of the establishment, selling the same;
>
> "(b) Those who, in the theaters, fairs, cinematographs or any other place, exhibit indecent or immoral plays, scenes, acts or shows, it being understood that the obscene literature or indecent or immoral plays, scenes, acts or shows, whether live or in film, which are prescribed by virtue hereof, shall include those which: (1) glorify criminal or condone crimes; (2) serve no other purpose but to satisfy the market for violence, lust or pornography; (3) offend any race or religion; (4) tend to abet traffic in and use of prohibited drugs; and (5) are contrary to law, public order, morals, good customs, established policies, lawful orders, decrees and edicts.
>
> "3. Those who shall sell, give away or exhibit films, prints, engravings, sculptures or literature which are offensive to morals."

The application of the aforesaid penal provision to *Cyberporn*, however, poses a multitude of problems which first have to be resolved before liability thereunder can attach, to wit:

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166 MTRCB Implementing Rules and Regulations, sec. 1.

(1) Whether the material or information downloaded or circulated in the Internet is obscene or indecent within the context of Article 201 of the RPC;

(2) Whether there has been sufficient "publication" to warrant a criminal case therefor; and

(3) Whether the Philippine can obtain territorial jurisdiction over the persons responsible therefor.

a. "Obscenity" in Philippine Jurisprudence

Unlike western jurisdictions, Philippine law and jurisprudence have not defined "obscenity" or "indecency" within the contemplation of the RPC in clear and certain terms. Instead, in the few cases brought before the Philippine Supreme Court, a number of tests were espoused. These tests were accurately summarized in the most recent case of *Pita vs. Court of Appeals*, viz:[167]

> "The court states at the outset that it is not the first time that it is being asked to pronounce what `obscene' means or what makes for an obscene or pornographic literature. Early on, in *People vs. Kottinger*, the Court laid down the test, in determining the existence of obscenity, as follows: `whether the tendency of the matter charged as obscene, is to deprave or corrupt those whose minds are open to such immoral influences and into whose hands a publication or other article charged as being obscene may fall.' `Another test,' so *Kottinger* further declares, `is that which shocks the ordinary and common sense of men as an indecency.' *Kottinger* hastened to say, however, that `[w]hether a picture is obscene or indecent must depend upon the circumstances of the case,' and that ultimately, the question is to be decided by the `judgment of the aggregate sense of the community reached by it.'
>
> x x x
>
> "It was *People vs. Padan y Alova*, however, that introduced to Philippine jurisprudence the `redeeming' element that should accompany the work, to save it from a valid prosecution. We quote:

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167 G.R. No. 80806, October 5, 1989, 178 SCRA 362, 368-371.

> x x x We have had occasion to consider offenses like the exhibition of still or moving pictures of women in the nude, which we have condemned for obscenity and as offensive to morals. In those cases, one might yet claim that there was involved the element of art; that connoisseurs of the same, and painters and sculptors might find inspiration in the showing of pictures in the nude, or the human body exhibited in sheer nakedness, as models in tableaux vivants. But an actual exhibition of the sexual act, preceded by acts of lasciviousness, can have no redeeming feature. In it, there is no room for art. One can see nothing in it but clear and unmitigated obscenity, indecency, and an offense to public morals, inspiring and causing as it does, nothing but lust and lewdness, and exerting a corrupting influence specially on the youth of the land. x x x
>
> x x x
>
> "In a much later decision, *Gonzalez v. Kalaw Katigbak*, the Court, following trends in the United States, adopted the test: `Whether to the average person, applying contemporary standards, the dominant theme of the material taken as a whole appeals to prurient interest.' *Kalaw-Katigbak* represented a marked departure from *Kottinger* in the sense that it measured obscenity in terms of the `dominant theme' of the work, rather than isolated passages, which were central to *Kottinger* (although both cases are agreed that `contemporary community standards' are the final arbiters of what is `obscene'.) *Kalaw-Katigbak* undertook moreover to make the determination of obscenity essentially a judicial question and as a consequence, to temper the wide discretion Kottinger had given unto law enforcers."[168]

Measured against the foregoing yardstick, it can easily be concluded that most of the "adult" information and graphics available on the Internet including pedophilic and paraphilic pornography, nude pictures of women in suggestive poses, and the like fall within the classification of "obscene" and "indecent" materials within the contemplation of the RPC.

b. Publication: An Essential Element

To be liable under Article 201 of the RPC, it is not sufficient that the material be obscene or indecent. The material must essentially be exhibited

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168 Emphasis supplied.

or exposed to public view. In the case of materials available in the Internet, however, the crucial question is not only when such publication takes place but more importantly if such publication has in fact occurred.

For instance, an Internet subscriber uploads undeniably obscene graphics into its "host" computers. Is such uploading in itself sufficient publication? Or what if a subscriber downloads graphically obscene material but does so in the privacy of his/her home. Is such downloading sufficient publication to render the "user" subscriber liable under Article 201 of the RPC or should the downloaded information be exhibited for public viewing? Or should the information transposed to a paper medium in order for the same to be considered published?

The unique feature of information and material uploaded in the Internet is that, unless printed on paper from one's computer, the same remains in an undefined and markedly unknown territory called Cyberspace. While at Cyberspace, the ordinary meaning of publication has in reality no significance.

c. Jurisdictional Territoriality vs. Internet's Borderless Status

A fundamental principle of Philippine criminal law and its enforcement is jurisdictional territoriality, that is, "criminal laws undertake to punish crimes committed within Philippine territory"[169] and is, as a general rule, enforced only within the Philippine Archipelago, its atmosphere, its interior waters and maritime zone.[170] It is this basic principle which diminishes Philippine criminal law system's power against violations committed through or via the Internet.

The Internet is a global network of computers accessible to any "connected" individual all over the world. Consequently, what is accessed in the Philippines through ISPs may not necessarily, and in fact most often does not, originate from within the Philippine Archipelago. Hence, as obscene and indecent materials are frequently uploaded in jurisdictions outside the Philippines, the authors and original publishers or purveyors of the same remain safely beyond the punitive powers of our state. Moreover, the ISPs which are the entities within the Philippine's territorial jurisdiction are not actually within the ambit of Article 201 of the RPC. The question that remains unresolved, therefore, is who should be made liable for obscene and indecent material in the Internet and in what state can they be proceeded against.

To date, the Philippine government has not yet delineated specific parameters for the application of the aforesaid penal provision to obscene materials generally available in the Internet. However, the rise in the number of sponsored bills attempting to regulate the Internet and penalize

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169 REYES, I THE REVISED PENAL CODE 12 (1993).

170 REVISED PENAL CODE, Art. 2.

criminal violations accomplished through or via the same reveals the escalating awareness of most legislators of the "legal" quandaries engendered by the increasing popularity of the Internet as the most accessible information highway.

2. *Infringement of IPR on the Internet*

A major dilemma of most individuals, businesses and multinational enterprises lies in the field of Intellectual Property Rights ("IPR") protection.

a. Copyright on the Internet

The Internet is generally considered an "open", "endless" and "unchecked" source of information. In fact, most Internet users uninhibitedly download information from Cyberspace into their individual computers without considering the fact, or worse, without being aware of the possibility, that materials therein are protected by copyrights and a reproduction of the same may result in liability for infringement.

Under the Intellectual Property Code of the Philippines ("IP Code"), also known as Republic Act No. 8293, a computer program which is defined as "a set of instructions expressed in words, codes, schemes or in any other form, which is capable when incorporated in a medium that the computer can read, of causing the computer to perform or achieve a particular task or result"[171] is protected by a copyright from the sole fact of its creation.[172]

If a creation is subject of copyright protection then its author shall have the exclusive right to carry out, authorize or prevent the following acts:

> "(1) Reproduction of the work or substantial portion of the work;
>
> "(2) Dramatization, translation, adaptation, abridgment, arrangement or other transformation of the work;
>
> "(3) The first public distribution of the original and each copy of the work by sale or other forms of transfer of ownership;
>
> "(4) Rental of the original or a copy of an audiovisual or cinematographic work, a work embodied in a sound

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171 Rep. Act No. 8293, sec. 171.4.

172 Ibid., at secs. 172.1 and 172.2.

recording, a computer program, a compilation of data and other materials or a musical work in graphic form, irrespective of the ownership of the original or the copy which is the subject of the rental;

"(5) Public display of the original or a copy of the work;

"(6) Public performance of the work; and

"(7) Other communication to the public of the work."[173]

Although Philippine jurisprudence on the application of the provisions of the IP Code on materials uploaded in the Internet is nil, it has been submitted that copyright protection under the IP Code encompasses the same in view of the overbroad definition therein provided. The predicament which ails the IP Code is not the scope of copyright protection but the determination when infringement of the same has occurred.

Infringement in its most common sense involves the unauthorized reproduction, or use of, of an original or copy of a material within the copyright protection. As the terms "copy" and "reproduction"[174] in the Internet have been given meanings different from those commonly understood, a breach of a copyright may arise in three different situations.

Firstly, "copying" may occur when an Internet subscriber merely views a copyrighted website on his/her screen. Although not commonly understood, viewing information on one's monitor actually involves the downloading of a copy of the original website on to the viewer's computer's RAM.

Secondly, "copying" may occur when a downloaded material is "reproduced" for later use by printing the same.

Thirdly, "copying" may be deemed to have transpired when a downloaded copyrighted material is saved on the user's hard disk or diskette for future reference.

In essence, all three situations involve viewing and use of "copies" of the original copyrighted work. As to which situation is actually within the ambit of infringement under the IP Code is anyone's guess.

b. Trademark in the Internet: Extraterritorial Protection

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173 Emphasis supplied; Id., at secs. 177.1 to 177.7.

174 Under section 171.9 of the IP Code, reproduction is defined as "the making of one (1) or more copies of a work or a sound recording in any manner."

Unlike copyright, a trademark is a right vested upon registration[175] which is, notwithstanding the principle of reciprocity under international conventions[176] and with the exception of internationally renowned marks, primarily territorial in nature.[177] It is the enforcement of a trademark in the territory in which it was registered that is widely affected by the multi-jurisdictional, if not global, reach of the Internet.

Under the IP Code, an owner of a registered trademark in the Philippines shall have the exclusive right "to prevent all third parties not having the owner's consent from using in the course of trade identical or similar signs or containers for goods or services which are identical or similar to those in respect of which the trademark is registered where such use would result in a likelihood of confusion."[178] This exclusive right, however, is enforceable only within this jurisdiction. Thus, a registered trademark owner in the Philippines, though vested with the rights and privileges herein, does not necessarily have the freedom to use the same trademark in other countries. The problem, therefore, arises when such a trademark is made part and parcel of a website which is accessible, and in fact accessed, in countries where the same mark or one confusingly similar is registered in the name of a different owner. The same problem may occur in reverse, that is, where a registered trademark is uploaded in its country of registration and thereafter accessed in the Philippines where a trademark similar if not the same as the foreign trademark is registered in the name of another. In the light of these cases, the most important questions would be whether infringement has occurred and who would be liable for the same. Surely, if the Internet is to exist as part of the global information highway, registered owners of trademarks and tradenames should be vested with "extraterritorial" protection for otherwise the value of the Internet as a commercial zone will be diminished.

3. The Viability and Security of E-commerce

Electronic commerce, or e-commerce for short, has been recognized by the Philippines as a revolutionary market for the trade of goods and services.[179] Although its popularity is fast escalating, the viability of e-commerce as an alternative to over-the-counter transactions is hampered by the customer's often and well-founded fear of a breach in security and privacy in Cyberspace.

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175 Rep. Act No. 8293, sec. 147.1.

176 Rep. Act No. 8293, sec. 3.

177 Rep. Act No. 8293, secs. 123 and 131.

178 Rep. Act No. 8293, sec. 147.1.

179 Exec. Order No. 468 s. 1998.

Although some payment systems have been devised in other jurisdictions to specifically address the security and privacy issues (such as electronic cash and electronic checks), the Philippines relies on the most commonly used method of purchasing over the Internet, the credit card. And there lies the flaw.

The difference between Internet based credit card transactions and "conventional" credit card transactions is the way in which the card's, and in reality the payor's account's, details are communicated to the merchant. Transmitting card details as well as personal circumstances (including home address, telephone number, etc.) through the Internet has exposed the purchaser to possible interception of private information in different parts of the networks by various individuals whose main objective is to criminally deprive the purchaser of money. Actual commission of such frauds has fostered public concern over the security of the Net and has, consequently, resulted in the development of encryption methods and other banking and integrated electronic systems.

Sadly, the Philippines' information infrastructure and Internet system has not yet advanced to such a stage of development. Encryption as a mode of security is largely practiced in multinational corporations and seldom, if at all, by private subscribers which constitute a majority of the e-commerce players.

Although the Internet has created inroads for the development of information technology and the creation of the Philippine Information Infrastructure ("PII"), it has simultaneously created legal quandaries most of which can no longer be resolved through the application of existing laws. The rise in the use of the Internet as a tool of communication and as a medium for commercial transactions has rendered most laws as well as procedural rules inappropriate, if not obsolete. Consequently, any and all problems which arise as a result of the utilization of the Internet and the Information Superhighway would require adoption of "modern" legislation as well as technically-sufficient administrative regulation.

VI

ITP 21 AND NTDP 2000: SATISFYING THE NEED FOR INFORMATION AND TELECOMMUNICATION IN THE PHILIPPINES

A. The National Information Technology Plan: "NITP 2000" & "IT21"

The new millennium looms large in opportunity for the Philippines. In this era of global economic rivalry, a country's ability to compete is becoming increasingly dependent on its capability to harness information

technology.

In its early stages, information technology (IT) in the Philippines suffered from a lack of identity, unity and coordination. It has been observed that unlike the United States, Japan, and most of Europe where IT is a major production industry and contributor to the economy, the Philippines may be regarded simply as a technology follower, if not an intermediate user of IT products.[180] But change may be in the offing.

On 19 July 1994, the President of the Philippines promulgated Executive Order No. 190 approving and adopting the National Information Technology Plan 2000 ("NITP 2000"). The NITP 2000, which has been renamed The National Information Technology Plan for the 21st Century or "IT21", currently serves as the country's blueprint for IT development. It likewise constituted the National Information Technology Council (NITC) to oversee the implementation of IT21. A critical strategy is to encourage the widest participation of both public and private sectors in the implementation of the IT21. With this important step, the Philippine Government recognized the vital role of information, communications and computer technologies in nation building. By following the guidelines set forth by IT21, the government hopes to develop a national information technology infrastructure and enable the Philippines to successfully compete in world markets in the years to come.

For effective implementation and management, the NITP 2000 or its successor IT21 is structured into six components, commonly referred to as "TIGERS":

(1) Telecommunications
(2) Industry
(3) Government
(4) Education
(5) Research
(6) Services

The DOTC was designated with the responsibility for the telecommunications component which aims to develop the Philippine Information Infrastructure, or the PII.

IT21 envisions that the PII will have as its backbone an "integrated, interactive, high-capacity, multimedia (voice, data, images/video and other advanced services) telecommunications network of networks."[181] It will have the capability to connect the Filipinos living in an archipelago of more than 7,100 islands, through the unifying force and empowering values of modern communications. The PII, as envisioned, will not deal solely with

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180 Chua, J.M., Finally Found IT, Industry Monitor 6 (February 1998).

181 "Project to set up legal, regulatory policy for infrastructure", Philippine Daily Inquirer, July 21, 1998, pp. B6-B7.

the physical components or the so-called "pipes" or what are popularly described as the "information highways". It will also include the "intelligent platforms" -- the software and the hardware, the customer premises equipment and the facilities, and other peripherals -- which will allow the seamless flow of data and information and other various forms of "content" on a managed basis over the PII. Finally, this network is aimed at linking the Philippines to the Asia Pacific Information Infrastructure (APII), other regional and national information infrastructures, and ultimately, the Global Information Infrastructure of the GII.

Industry observers count several factors as among the strengths of the Philippine IT industry. Among them are a well-educated and English-proficient labor force, a growing reputation for competence in IT, an expanding telecommunications sector, and highly entrepreneurial firms and managers. Still, observers note several stumbling blocks, namely the lack of middle-to high-end IT personnel; insufficient cooperation, coordination, and unity within the industry; weak intellectual property rights enforcement; limited domestic market, and lack of marketing capabilities.[182]

Prescinding from the premise that "knowledge is power", IT21 lays the groundwork for transforming the Philippines into the "knowledge center of Asia". The vision of IT21 is summarized in the following statements:

(1) By the year 2000, the Philippines will have laid the infrastructure for every business, every agency of government, every school, and every home in the Philippines to have access to information technology;

(2) By the year 2005, IT will be pervasive in daily life. Philippine companies will be producing competitive IT products for world markets; and

(3) Within the first decade of the 21st century, the Philippines will be a knowledge center in the Asia-Pacific Region: the leader in IT education, in IT-assisted training, and in the application of information and knowledge to business, professional services, and the arts.

IT21 consolidates all the gains made in the past in the area of IT and provides a new impetus for IT growth in the future. IT21 is being pursued amidst the tremendous growth of the IT sector, specifically: the growth in PC shipments in the Philippines, the phenomenal rise of internet subscribers world-wide, the outstanding pace of development in the telecommunications industry, growth in Philippine electronics exports, and the impressive income performance of IT firms.

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182 Chua, J.M., Finally Found IT, Industry Monitor 6 (February 1998).

Following is a summary listing of the specific policies and programs to be implemented under the three phases of IT21. A more detailed listing is provided for the first phase, while indicative thrusts are given for the succeeding phases:[183]

183 National Information Technology Council, IT21: I.T. Action Agenda for the 21st Century, 50 (October 1997).

ase I. Providing the Impetus

By the year 2000, the Philippines will have laid the rastructure for every business, every agency of vernment, every school, and every home in the ilippines to have access to information technology.

Provide the Policy Environment

1. Adopt and implement policies to promote reased investments in I.T. and related electronics lustries - e.g., through strategic partnerships, venture pital.

pecific Actions	Time Frame	Lead Agency/ Organization
romulgate administrative/legislative measures to promote wider rivate sector participation in venture capital financing to expand ne capital base for I.T.R&D and other I.T.-related development entures	1997-1998	DTI-BOI, DOF, PCCI
dopt measures to promote strategic partnerships and alliances y local companies/institutions with leading international R&D stitutions, technology providers, developers, and anufacturers	1997-1998	DTI-BOI, DFA, DOST, ITFP
romote private sector investments in product- and location-pecific I.T. projects	1997-1998	DTI-BOI, PEZA
romote technological innovation and experimentation by reating new products, services and applications	1997-1998	DOST, DTI, ITFP-PSA
ocus R&D on high-value added I.T. products and services as well as on product creation/design and improvement in high rowth sectors such as telecommunications, software evelopment (information systems, common application ackages, educational/courseware packages, multimedia pplications, computer animation, promotional packages, public nformation, new materials, multimedia), telemedicine, e-ommerce, etc.	1997-2005	DOST, DTI-BOI, PETEF, ITFP-PSA

"2. Adopt more investor-friendly policies, systems d procedures in government.

pecific Actions	Time Frame	Lead Agency/ Organization
ast-track legislation/adoption of administrative measures to urther liberalize foreign investment	1997 - 1998	DTI-BOI, DOF
stablish fast lane services for foreign investors/businessmen at orts of entry and when transacting business with government	1997 - 1998	DOTC, DTI,

to create investor-friendly environment		DOF
Organize task force on monitoring and public accountability aimed at making the administrative and policy environment more conducive to investing and doing business in the Philippines	1997 - 1998	DTI

"3. Implement Philippine commitments to international agreements that affect the I.T. sector favorably - e.g., the I.T. Agreement (ITA).

Specific Actions	Time Frame	Lead Agency/ Organization
Implement Philippine commitment to the I.T. Agreement (ITA) based on the tariff phase-out schedule submitted in Geneva on 25 April 1997	1997 - 2000	DTI, ITFP

"4. Adopt administrative measures to effectively enforce the laws on intellectual property rights (IPR), particularly as they affect I.T. products and services.

Specific Actions	Time Frame	Lead Agency/ Organization
Adopt administrative measures to implement the intellectual property rights(IPR) law, particularly on I.T. products and services	1997 - 1998	DTI, ITFP

"5. Rationalize and coordinate development of technoparks and cybercities throughout the country for greater complementarily in investments and infrastructure development.

Specific Actions	Time Frame	Lead Agency/ Organization
Develop a master plan for technopark and cyber city development	1997 - 1999	DOTC, DOST, DT
Network technoparks and cyber cities with educational and R&D institutions and organizations through high bandwidth telecommunications facilities	1997 - 2000	DOTC, DTI

"B. Enhance the Physical Infrastructure

1. Accelerate universal access (i.e. making telecommunications services accessible and affordable to all) by

completing telecommunications programs, especially in undeserved areas.

Specific Actions	Time Frame	Lead Agency/ Organization
Complete the roll-out programs of the telecommunications providers, especially in undeserved areas	1997 - 1998	DOTC, NTC
Complete the Municipal Telephone Program	1997 - 1998	DOTC
Complete the establishment of the telecommunications backbone through the interconnectivity of the various Philippine telecommunications providers	1997 - 1998	DOTC

"2. Fast-track the formulation and implementation of the Philippine Information Infrastructure (PII).

Specific Actions	Time Frame	Lead Agency/ Organization
Accelerate government interconnectivity, information sharing, and communication via the Internet, with the RPWEB as the Philippine Intranet	1997 - 1998	DOTC, DOST, PMS
Organize task forces to identify, develop, and publish in the Internet sectoral/department/agency homepages to facilitate wider public access to information on key governmental policies, programs, and services	1997 - 1998	NTC
Adopt measures to encourage wider use and development of value-added services and networks (e.g. e-commerce, EDI, electronic libraries, telemedicine, private and government networks, ATMs, public information kiosks, life-long learning, law enforcement and public safety, interactive access to government services, electronic government, and the like)	1997 - 2000	

3. Intensify investment promotion in the telecommunications industry.

4. Formulate appropriate cyber laws in the use of networks, particularly the Internet, to ensure the information security and network reliability.

5. Promote telecommuting/teleworking, particularly in software development and multimedia production.

Specific Actions	Time Frame	Lead Agency/ Organization
Intensify investment promotion in the telecommunications industry	1997 - 1998	DTI-BOI,
Formulate appropriate cyber laws in the use of networks, particularly the Internet, to ensure information security and network reliability	1997 - 2000	DOTC DOTC, DOST
Promote telecommuting/teleworking, particularly in software development and multimedia production	1998	DOTC, ITFP-PSA, NCCC

"Develop the I.T Manpower Base

1. Produce a critical mass of I.T. professionals and I.T.-literate manpower, including competent I.T. educators and teachers at all levels.

Specific Actions	Time Frame	Lead Agency/ Organization
Incorporate I.T. in the primary, secondary, and tertiary curricula	1997 - 2000	DECS, CHED, TESDA, DOST
Implement I.T. based/computer-aided learning in basic education, including the pre-schools	1997 - 2000	DECS
Upgrade competencies of educational/training institutions with I.T.-based tools and programs	1997 - 2000	DOST, DECS, CHED
Re-orient engineering and other I.T.-related courseware toward greater responsiveness to industry needs	1997 - 2000	CHED, DTI, DOST, ITFP, PCCI
Develop instructional/learning materials especially in the sciences and engineering, math and technology	1997 - 2000	CHED, DECS, DOST

2. Designate from among I.T. training institutions, universities or colleges I.T. Centers of Excellence as a form of recognition and reward.

3. Organize a nationwide network of Core Competency Institutions in I.T., in partnership with local and international development institution as and business organizations.

4. Conduct continuing I.T. education for teachers/trainors, I.T. practitioners and workers.

5. Adopt dual-tech approach in I.T. education and training.

6. Establish high-quality distance education and learning.

7. Develop and implement life-long learning through the Internet.

Specific Actions	Time Frame	Lead Agency/ Organization
Select/Designate from among I.T. training institutions, universities or colleges I.T. Centers of Excellence as a form of reward/recognition. Funding support for expanded training facilities and operations go with the award	1997 - 2000	DOST, CHED, DECS, TESDA
Organize a nationwide network of Core Competency Institutions in I.T., in partnership with local and international development institutions and business organizations, with the Philippine Software Development Institute (PSDI) as the National Core Competency Center.	1997 - 2005	DOST, CHED, DFA, DTI
Conduct continuing I.T. education for teachers/trainors, I.T. practitioners and workers	1997 - 2000	CHED, DECS
Adopt dual-tech approach in I.T. education and training	1997 - 2005	CHED, DTI
Establish high-quality distance education and learning.	1997 - 2005	CHED, DECS
Develop and implement life-long learning through the Internet	1997 - 2005	DOST, DOTC

D. Pump-Prime I.T. Industry Development

1. Implement a government-wide computerization program, with emphasis on the development and deployment of front-line, mission-critical and common application information systems

Specific Actions	Time Frame	Lead Agency/ Organization
Fast-tract the development and implementation of information systems for government frontline services such as civil, vehicle, land registration, licensing, health and other social services, etc.	1997 - 2000	PMS, DBM, NCC
Develop and implement government mission critical information systems such as planning, budget management, execution and accountability, investment programming tax administration, revenue collection, justice administration, public safety, environment preservation, labor and employment, etc.	1998 - 2001	DBM, NCC, PMS
Standardize and deploy common application information systems in government, including the local government units	1997 - 2002	DBM, DILG, PMS, NCC

2. Implement the RPWEB to interconnect all government offices and units through all government offices and units through any Internet Service Provider (ISP) through Internet exchanges.

3. Organize and monitor government and business response to the Year 2000 (Y2K) problem and opportunity.

4. Set up an I.T. Development Fund or other appropriate financing scheme for outsourcing information system development and deployment in government.

5. Promote technological innovation and experimentation by creating new products, services and applications, and developing value-added services and networks.

6. Provide appropriate financing support to allow active participation by the private section in R&D and in the development and the incubation of new products and solutions.

7. Fast-tract measures to streamline administrative processes and procedures in government procurement, budgeting, accounting, auditing, monitoring, reporting, etc.

Specific Actions	Time Frame	Lead Agency/ Organization
mplement the RPWEB to (a) interconnect all government offices ind units, including schools, colleges and universities, government corporations, as well as those at the local level, by uthorizing the use of savings for Internet access, through any nternet service provider (ISP) in their area, to facilitate faster ommunication and data interchange in government; (2) nterconnect all ISPs through Internet exchanges for greater onnectivity among users in the country; and (3) speed up mplementation of the telephone roll-out programs, particularly in nserved and undeserved areas in the country	1997 - 1998	DOTC, DBM, PMS, NCC
)rganize and monitor government and business response to the 'ear 2000 (Y2K) problem, including government sector articipation in the marketing programs/trade shows for hilippine developed software solutions	1997 - 1999	DTI, DOST, NCC
et up an I.T. Development Fund or other appropriate financing cheme for outsourcing IS development and deployment for nission-critical and common application systems for overnment, including the local government units (e.g. rocurement and accounting systems, financial management, udget allocations, execution, and reporting systems, personnel nd payroll systems, tax mapping, land registration, valuation, nd tax collection system, civil, vehicle, and land registry ystems, etc.)	1997 - 1998	DOST
romote technological innovation and experimentation by reating new products, services and applications, and evelopment of value-added services and networks (e.g. e-ommerce, EDI, electronic libraries, private and government etworks, ATMS, public information kiosks, and the like)	1997 - 2000	DOST, DTI, ITFP
rovide appropriate financing scheme and/or set up government und to allow active participation by the private sector in R&D nd in the development and incubation of new products and olutions to spur the widespread use of I.T. both in government nd in business	1997 - 2000	DBM
ast-track measures to streamline administrative processes and rocedures in government procurement, budgeting, accounting, uditing, monitoring, reporting, etc.	1997 - 2000	DBM

. ***Organize for Action: Institutional Reforms***

1. Reorganize the NITC to broaden and strengthen vate sector involvement in IT development activities.

2. Constitute NITC task forces to carry out specific 21 programs/actions.

3. Organize a 50-member private sector Advisory Council to facilitate meaningful private sector participation in the implementation of IT21.

4. Strengthen the NCC to enable it to better carry out its primary mandate of promoting widespread use of I.T. in government.

5. Create a comprehensive database management, monitoring and benchmarking system for key I.T. indicators.

Specific Actions	Time Frame	Lead Agency/ Organization
Organize the expanded/reorganized National Information Technology Council (or the National I.T. Board, NITB)	1997 - 1998	NITC
Constitute the NITC/NITB task forces to carry out specific IT21 programs/actions	1997 - 1998	NITC
Organize 50-member private sector Advisory Council to facilitate meaningful private sector participation in the implementation of the IT21.	1997 - 1998	NITC, PMS
Strengthen/Re-engineer the NCC as part of the newly created NITB to enable it to better carry out its primary mandate of promoting widespread use of I.T. in government through the formulation of appropriate I.T. policies and guidelines in the development of information systems and in acquiring I.T. resources; providing technical assistance; and providing I.T. training to government	1997 - 1998	NITC, DBM, PMS
Create comprehensive database on I.T. and set up monitoring and benchmarking system for key I.T. indicators	1997 - 1998	ITFP, DTI

"F. Marketing the National I.T. Plan for the 21st Century (IT21)

1. Organize task forces to undertake a nationwide communication and advocacy program, including focused I.T. trade missions and international roadshows.

2. Develop, produce, and disseminate promotional materials on IT21 and the Philippine I.T. Action Agenda

3. Create a Philippine web site promoting IT21 the I.T. Action Agenda

Specific Actions	Time Frame	Lead Agency/ Organization
Organize task forces to undertake a nationwide communication and advocacy program, as well as extensive and more I.T. trade missions and international road shows to promote the Philippines as I.T. investment destination and Knowledge Center in Asia in the 21st Century	1997 - 2000	NITC, DTI, DFA
Develop, produce, disseminate marketing/promotional materials on the IT21 and the I.T. Action Agenda	1997 - 1998	DTI, DFA
Create the Philippine IT21 website	1997 - 1998	NITC

The three-phase action format action agenda of the IT21 provides a general view of how IT development in the country is envisioned. The government will play the role of enabler, lead user, and partner of the private sector and will provide the policy, program, and institutional environment. The government will also act as a model user of IT as well as a partner in key IT projects.

As an initial effort towards achieving the goals of IT21, the President of the Philippines issued, on 7 November 1997 Administrative Order 332 which directs the electronic interconnection between and among government agencies. Recommended by the NITC and House Resolution 890 authored by Catanduanes Representative Leandro B. Verceles, Jr., the "RPWeb" is expected to link by computers all state universities and colleges, public schools, and eventually, over 12,000 government offices, government-owned-and-controlled corporations as well as local government units. Once realized, the RPWeb will give every Filipino student, including those from the most remote and far-flung localities, vast and almost unlimited access to a world of knowledge through the internet. It is likewise hoped that the RPWeb will provide a solution to the problem of bureaucratic red-tape.

Many have opined that IT21 is stated in terms that are too general, and that despite its adoption and implementation, the IT sector remains a disheveled throng of large multinational and small traditional firms. While the IT21 may be thin by international standards, it nonetheless points to a concrete effort by the government to move the IT industry forward. It provides a clear sign to industry players, investors, and consumers that the government recognizes IT's importance and will do its utmost to ensure that it grows.[184] As noted by a leading scholar on IT in the Philippines,

> "(I)t is premature to deem (IT21) inadequate just because it lacks specific provisions. Other countries have done well with less. The NITP 21 relies on the commitment and cooperation of the different government agencies assigned to take the lead in each of the action

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184 Chua, J.M., Finally Found IT, Industry Monitor 6 (February 1998).

agendas. As such, its ability to foster a coordinated effort among different government agencies is the true test of its merits."[185]

B. National Telecommunications Development Project 2000

For IT21 to be successfully implemented, an up-to-date accessible and affordable system of telecommunication must have been set in place. With full awareness of its importance, the Philippine government has exerted painstaking efforts at addressing the essential problems plaguing the telecommunications industry through the formulation of the National Telecommunications Development Plan 2000, or "NTDP 2000". In pursuit thereof, the government, through its expert arm, the DOTC, has lobbied for the passage of laws, laid down the necessary administrative and executive policies and enacted the appropriate rules and regulations.

With the end view of making the PII a feasible and workable system and the concomitant goal of converting the Philippines from the sleeping giant to Asia's knowledge center, the DOTC in conjunction with the NTC has outlined a Six-Year Plan to achieve national-level targets for the establishment of the minimum required infrastructure for the operation of the PII, to wit:

"Six-Year Plan: 1999-2004

"*a. Objectives*

To promote open investment for greater competition so that it can keep pace with the latest advancement in the area of communications, the sector will focus on the following:

1) Interconnect all telecommunications facilities and services to maximize the use of facilities;

2) Strengthen the regulatory and management capability of government to enable the private sector to meet the growing demand for telephone and other value-added services, and to achieve and maintain a high quality of telecommunications services;

3) Maintain transparency and consensus building in the policy-making and regulatory process;

4) Expand postal service to far-flung/unserved areas and improve delivery efficiency in those areas covered;

5) Develop the Philippines as a telecommunications hub in Asia;

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185 Ibid.

6) To keep-up with global competition, allow rate restructuring and rebalancing;

7) Put in place the Philippine Information Infrastructure; and

8) Introduce broad band services.

"b. ***Policies and Strategies***

1) Improve the guidelines to adopt clear, more specific and time-bound rules for interconnecting all public networks; encourage settlement schemes that will ensure financial viability of local exchanges; enforce full interconnection and sanction for cancellation of franchise.

2) Strengthen the policy and regulatory system towards resolving of issues arising from interconnection, toll settlement, radio-spectrum usage and monitoring, and complex technical options under a multi-operator business environment;

3) Promote and support value-added services and initiate their advanced uses on the business and professional opportunities arising from the convergence of computers and communications;

4) Develop a new set of regulatory guidelines in the use of Internet for other applications;

5) Adopt phased implementation of cost-based pricing;

6) Accelerate the development and implementation of Philippine Information Infrastructure in order to develop a more efficient and robust network to make it globally competitive;

7) Introduce broad bank services;

8) Issue policy and guidelines on the introduction of emerging technologies;

9) Privatize the Philippine Postal Corporation;

10) Upgrade the quality of postal communication services to internationally accepted standards;

11) Establish postal circuits in barangays not effectively covered by existing post offices/postal stations; and

12) Adopt a standardized national postal address system.

"c. ***Key Measurable Targets***

The following target are national-level physical targets that reflect minimum infrastructure development requirements. To meet the growing local and global socioeconomic needs, the sector is therefore encouraged to develop projects intended to go beyond these minimum targets.

1) Increase the telephone density from 4.66 working lines per 100 persons in 1996 to 12.73 in 2004 to meet the growing demand for telephone and other value-added services.

2) Develop the local telephone network in all municipalities. Extend local exchange telephone service to 100 percent of the 1,602 municipalities/cities by 2001 from only 30.9 percent in 1996.

3) Establish a nationwide maritime communications system in accordance with Global Maritime Distress Safety System by 1999. The system will provide the Philippines adequate communication facilities for maritime safety not only for Philippine registered ships engaged in international voyages but also for domestic ships.

4) Provide Public Calling Office service to barangays to quickly respond to the social and economic needs of those living in areas without telephone service. Although this goal still requires a detailed feasibility study, PCO service is targeted to be extended from 7,094 barangays or 17.6 percent in 1995 to approximately 28,840 or 71.55 percent of 40,303 barangays (excluding Metro Manila) by 2004.

5) Make available cellular mobile telephone service to 100 percent of provincial capitals and cities nationwide by 2000, covering major highways and corridors connecting these capitals and cities.

6) Introduce the Public Mobile Telephone Service (PMTS) and Global Mobile Personal Communication by Satellite (GMPCS) services.

7) Make available high-speed, broad-band transmission services (HSBBTS)."[186]

A summary of the targets of the NTDP 2000 is best appreciated in the following table:

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186 National Economic Development Authority (NEDA) pub., The Philippine National Development Plan: Directions for the 21st Century 7:34 - 7:36 (1998).

Table __
Physical Targets and Financial Requirements[187]

	CRITERION	TARGET STATUS	TARGET YEAR	INVESTMENT COST (US$)
1.	Telephone Density, working telephone lines per 100 persons	10.7 14.1 16.3 18.3	2000 2005 2010 2015	20,014
2.	Percentage of Municipalities with Local Exchange Service (%)	50.3 100	1999 2001	465
3.	Establishment of Nationwide Maritime Communications in accordance with GMDSS	100	1999	44
4.	Percentage of Barangays with PCO	45 100	1999 2009	495
5.	Cellular Mobile Telephone Service Availability Chartered Cities Provincial Capital	 80 100 80 100	1999-2000 1998 2000 1998 2000	
6.	PMTS GMPCS	Introduction Available	1998 1998	
7.	HSBBTS	With nationwide coverage		192
	TOTAL			$21,263

Source : Updated National Telecommunications Development Plan
Notes :
a. PCO service to the barangays could use a mobil technology overlay with fixed subscribers.
b. Future ISDN targets would be predicated on further study and the results of the trials.
c. Local Exchange Service target is part of the Telephone density target
* In Million US$ at 1995 prices"

In addition to the above Six Year Plan, the following long-term

187 Ibid., at 7:36.

strategies have likewise been devised to sustain the development and growth of the telecommunications industry and to create, and maintain the existence of, an environment conducive to the globalization of the Philippines through the interconnection between the PHI and the ALII:

"5. Long-Term Strategies

a) Increase telephone density and widen coverage consistent with the developmental stage of the various localities and the needs of business, by private entities in concert with government, investing their respective resources to anticipate and build capacities, accordingly;

b) Effect the rapid expansion and integration of the telecommunications network across urban and rural areas by local service providers in strategic alliances with international entities, through the use of satellite, fiber optics, wireless, digital and other technologies in synergy with existing power, railway, and other infrastructure facilities;

c) Introduce value-added services and initiate their advanced uses on business and professional opportunities arising from the convergence of computers and communications;

d) Phase out unnecessary taxes and fees that divert resources away from rapid growth of the sector, wean government away from the ownership, provision and direct operation of telecommunications services;

e) Firmly establish the niche for efficient postal communications services within a competitive, fully privatized communications industry environment;

f) Strengthen the policy and regulatory structures and accordingly develop competencies towards proactive arbitration of the key issues on interconnection, revenue-sharing, cost-related rates, radio spectrum usage and complex technical options under a multi-operator business environment that ensures adequate competition;

g) Modify the legal framework to permit and promote more electronic-based transactions, aside from phasing-in deregulation measures as the sector achieves maturity;

h) Exploit the opportunities created by the overlaps of broadcasting and telecommunications through the production of cultural and entertainment programs;

i) Enact laws and/or amend pertinent provisions of the Philippine Constitution to address telecommunications fraud, convergence issues and compliance with agreements to international fora; and

j) Accelerate the development of the Philippine Information Infrastructure and its material content."[188]

VII

CONCLUSION: PHILIPPINES -- "INTERFACING" WITH THE COMING MILLENNIUM

For a long time, the Philippines has been referred to as the "sleeping giant of Asia". The giant has awakened and is eager, albeit amidst economic crisis, to face the many challenges in this dynamic world. But eagerness is not sufficient to hurdle the changes brought forth by the Information Age. What is essential is a basic yet versatile policy and regulatory framework complemented by an affordable yet accessible and technologically-updated telecommunications infrastructure. Such is the objective of IT21 and NTDP 2000.

Admittedly, IT21 and NTDP 2000 have been criticized as being overly general to have any concrete functional value. However, haphazard specifics at this point may do more harm than good. At best, what regulators and policy makers can do is assist in lobbying in Congress for the enactment of a clear cut policy agenda in the field of telecommunications and information technology and coordinate with the government, as the model user of the Internet, for the efficient implementation of duly enacted legislative and executive policies. Within such a cooperative environment, persistent problems such as inadequate technical support, ineffective regulation, lack of funding and antiquated laws and regulations will be matters belonging only to the past and the soon to be left behind present.

The contended inadequacies of IT21 and NTDP 2000 notwithstanding, the Philippines as a nation zealously welcomes the coming of the new millennium. The Filipino people are confident that, with the endeavors of the government in formulating the necessary regulatory and policy framework and with the collaboration of the private sector in making such policies effective, the Philippines will finally develop the Philippine Information Infrastructure and constitute itself as a potent force in providing a viable springboard towards the establishment of the Asia Pacific Information Infrastructure and ultimately, the Global Information Infrastructure. Rest assured, however, that, hand-in-hand with its ASEAN neighbors, the Philippines will ever be conscious of its unified goal of creating the Asia Pacific Information Infrastructure and be supportive and cooperative in pursuing the noble objectives of the APII and GII which would necessarily prove beneficial not only to the ASEAN community but to the global community as a whole.

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[188] Ibid., at 7:34.

Table 1

POPULATION, LAND AREA AND DENSITY BY REGION AND PROVINCE
CENSUS YEARS 1970 to 1995

Region and province	Population				
	1995 (Sep 1)	1990 (May 1)	1980 (May 1)	1975 (May 1)	1970 (May 6)
Philippines	68,616,536	60,703,206	48,098,460	42,070,660	36,684,486
National Capital Region	9,454,040	7,948,392	5,925,884	4,970,006	3,966,695
Manila	1,654,761	1,601,234	1,630,485	1,479,116	1,330,788
City of Mandaluyong	286,870	248,143	205,368	182,267	149,407
Marikina	357,231	310,227	211,613	168,453	113,400
Pasig City	471,075	397,679	268,570	209,915	156,492
Quezon City	1,989,419	1,669,776	1,165,865	956,864	754,452
San Juan	124,187	126,854	130,088	122,492	104,559
Kalookan City	1,023,159	763,415	467,816	397,201	274,453
Malabon	347,484	280,027	191,001	174,878	141,514
Navotas	229,039	187,479	126,146	97,098	83,245
Valenzuela	437,165	340,227	212,363	130,605	98,456
Las Pinas	413,086	297,102	136,514	81,610	45,732
City of Makati	484,176	453,170	372,631	334,448	264,918
City of Muntinlupa	399,846	278,411	136,679	94,563	65,057
Paranaque	391,296	308,236	208,552	158,974	97,214
Pasay City	408,610	368,366	287,770	254,999	206,283
Pateros	55,286	51,409	40,288	32,821	25,468
Tagig	381,350	266,637	134,137	73,702	55,257
CAR	1,254,838	1,146,191	914,432	811,103	730,906
Abra	195,964	184,743	160,198	147,010	145,508
Benguet	540,716	485,857	354,751	302,065	263,550
Ifugao	149,598	147281	111368	104,707	92,487
Kalinga Apayao	237,805	211775	185063	163,225	136,249
Mt. Province	130,755	116535	103,052	94,096	93,112
1 Ilocos Region	3,803,890	3,550,642	2,922,892	2,726,220	2,488,391
Ilocos Norte	482,651	461,661	390,666	371,724	343,427
Ilocos Sur	545,385	519,966	443,591	419,776	385,139
La Union	597,442	548,742	452,578	414,635	373,682
Pangasinan	2,178,412	2,020,273	1,636,057	1,520,085	1,386,143
2 Cagayan Valley	2,536,035	2,340,545	1,919,091	1,665,245	1,462,723
Batanes	14,180	15,026	12,091	11,870	11,398
Cagayan	895,050	829,867	711,476	644,075	581,237
Isabela	1,160,721	1,080,341	870,604	730,386	648,123
Nueva Vizcaya	334,965	301,179	241,690	213,151	172,198
Quirino	131,119	114,132	83,230	65,763	49,767
3 Central Luzon	6,932,570	6,199,017	4,802,793	4,210,136	3,615,496
Bataan	491,459	425,803	323,254	263,269	216,210
Bulacan	1,784,441	1,505,219	1,096,046	899,529	737,975
Nueva Ecija	1,505,827	1,312,680	1,069,409	947,995	851,294
Pampanga	1,635,767	1,532,615	1,181,590	1,042,164	907,275
Tarlac	945,810	859,708	688,457	640,899	559,708
Zambales	569,266	562,992	444,037	416,280	343,034

Table 1
(cont.)

POPULATION, LAND AREA AND DENSITY BY REGION AND PROVINCE
CENSUS YEARS 1970 to 1995

Region and province	Population				
	1995 (Sep 1)	1990 (May 1)	1980 (May 1)	1975 (May 1)	1970 (May 6)
4 Southern Tagalog	9,943,096	9,263,099	6,118,620	5,213,843	4,457,008
Aurora	159,621	139,573	107,145	90,060	80,459
Batangas	1,658,567	1,476,783	1,174,201	1,032,009	926,308
Cavite	1,610,324	1,152,534	771,320	628,321	520,180
Laguna	1,631,082	1,370,232	973,104	803,750	699,736
Marinduque	199,910	185,524	173,715	162,804	144,109
Occidental Mindoro	339,605	282,593	222,431	185,787	144,032
Oriental Mindoro	608,616	550,049	446,938	388,744	328,364
Palawan	640,486	528,287	371,782	300,065	236,635
Quezon	1,537,742	1,372,455	1,129,277	1,025,902	902,865
Rizal	1,312,489	977,448	555,533	414,192	307,238
Romblon	244,654	227,621	193,174	182,209	167,082
5 Bicol Region	4,325,307	3,910,001	3,476,982	3,193,721	2,966,881
Albay	1,005,315	903,785	809,177	728,827	673,981
Camarines Norte	439,151	390,982	308,007	288,406	262,207
Camarines Sur	1,[illegible]593	1,305,919	1,099,346	1,023,819	948,436
Catanduanes	202,464	187,000	175,247	172,780	162,302
Masbate	653,852	599,355	584,520	533,387	492,908
Sorsogon	591,927	522,960	500,685	446,502	427,047
6 Western Visayas	5,776,938	5,393,333	4,525,615	4,146,390	3,618,326
Aklan	410,539	380,497	324,563	293,349	263,358
Antique	431,713	406,361	344,879	308,484	289,172
Capiz	624,469	584,091	492,231	445,716	394,041
Iloilo	1,876,031	1,765,476	1,433,641	1,313,049	1,167,973
Negros Occidental	2,434,186	2,256,908	1,930,301	1,785,792	1,503,782
7 Central Visayas	5,014,588	4,594,124	3,787,374	3,387,274	3,032,719
Bohol	994,440	948,403	806,013	759,370	683,297
Cebu	2,921,145	2,646,517	2,091,602	1,818,410	1,634,182
Negros Oriental	1,025,247	925,272	819,399	740,417	652,264
Siquijor	73,756	73,932	70,360	69,077	62,976
8 Eastern Visayas	3,366,917	3,054,490	2,799,534	2,599,728	2,381,409
Eastern Samar	362,324	329,335	320,637	287,149	271,000
Leyte	1,643,460	1,485,828	1,302,648	1,203,118	1,110,626
Northern Samar	454,195	383,654	378,516	354,665	306,114
Samar	589,373	533,733	501,439	478,378	442,244
Southern Leyte	317,565	321,940	296,294	276,418	251,425
9 Western Mindanao	2,794,659	2,459,690	1,973,267	1,664,394	1,443,397
Basilan	295,565	238,308	201,407	171,027	143,829
Zamboanga del Norte	770,697	676,862	588,015	490,515	409,379
Zamboanga del Sur	1,728,397	1,544,520	1,183,845	1,002,852	890,189
10 Northern Mindanao	2,483,272	2,197,554	1,765,120	1,502,174	1,261,286
Bukidnon	940,403	843,891	631,634	532,818	414,762
Camiguin	68,039	64,247	57,126	52,547	53,913
Misamis Occidental	458,965	424,365	386,328	356,319	319,855
Misamis Oriental	1,015,865	865,051	690,032	560,490	472,756

Table 1
(cont.)

POPULATION, LAND AREA AND DENSITY BY REGION AND PROVINCE
CENSUS YEARS 1970 to 1995

Region and province	Population				
	1995 (Sep 1)	1990 (May 1)	1980 (May 1)	1975 (May 1)	1970 (May 6)
11 Southern Mindanao	4,604,158	4,006,731	2,969,156	2,412,253	1,942,046
Davao	1,191,443	1,056,301	725,153	589,697	442,543
Davao del Sur	1,683,909	1,482,745	1,133,599	936,263	785,398
Davao Oriental	413,472	394,697	339,931	299,426	247,995
South Cotabato	1,315,334	1,072,988	770,473	586,867	466,110
12 Central Mindanao	2,359,808	2,032,958	1,467,115	1,222,777	1,126,503
Lanao del Norte	713,787	614,092	461,049	381,234	349,942
Cotabato	862,666	763,995	564,599	472,302	468,354
Cotabato City	146,779	127,065	83,871	67,097	61,184
Marawi City	114,389	91,901	53,812	63,332	55,708
Sultan Kudarat	522,187	435,905	303,784	238,812	191,315
ARMM [a]	2,020,903	1,836,930	1,359,073	1,231,060	1,240,571
Lanao del Sur	571,804	508,081	351,159	436,550	399,800
Maguindanao	662,180	630,674	452,675	411,022	415,154
Sulu	536,201	469,971	360,588	240,001	315,421
Tawi-Tawi	250,718	228,204	194,651	143,487	110,196
CARAGA [b]	1,942,687	1,764,297	1,371,512	1,114,336	950,129
Agusan del Norte	514,485	465,458	365,421	300,735	278,053
Agusan del Sur	514,736	420,763	265,030	213,216	174,682
Surigao del Norte	442,203	425,978	363,414	298,080	238,714
Surigao del Sur	471,263	452,098	377,647	302,305	258,680
Filipinos in Philippine Embassies/Consulates and Missions Abroad	2,830	5,212			

a/ Created into a region under RA No. 7864 dated November 26, 1989, taken from Region 9 and Region 12.
b/ Created into a region under RA No. 7901 dated February 23, 1995, taken from Region 10 and Region 11.

Source: National Statistics Office.

POPULATION OF THE PHILIPPINES
CENSUS YEARS 1799 to 1995

Table 2

Year	Population	Average annual rate of increase	Source of data
1799	1,502,574		Fr. Buzeta
1800	1,561,251	3.91	Fr. Zuniga
1812	1,933,331	1.80	Cedulas
1819	2,106,230	1.23	Cedulas
1829	2,593,287	2.10	Church
1840	3,096,031	1.62	Local officials
1850	3,857,424	2.22	Fr. Buzeta
1858	4,290,381	1.34	Bowring
1870	4,712,006	0.78	Guia de Manila
1877	5,567,685	2.41	Census
1887	5,984,727	0.72	Census
1896	6,261,339	0.50	Prof. Plehn's estimate based on census records.
1903	7,635,426	2.87	Census
1918	10,314,310	2.03	Census
1939	16,000,303	2.11	Census
1948	19,234,182	2.07	Census
1960	27,087,685	2.89	Census
1970	36,684,486	3.08	Census
1975	42,070,660	2.78	Census
1980	48,098,460	2.71	Census
1990	60,703,206 a/	2.35	Census
1995	68,616,536 a/	2.32	Census

a/ Includes the household population, homeless population, Filipinos in Philippine Embassies/Consulates and missions abroad and institutional population who are found living in institutional living quarters such as penal institutions, orhanages, hospitals, military camps, etc. at the time of the census taking.

Note: Population from 1799 to 1896 excludes non-Christians.

Source: National Statistics Office.

Table 3

GROSS DOMESTIC PRODUCT OF SELECTED ASIAN COUNTRIES
1991 to 1998
(Growth rate: at constant prices)

Countries	Base Year	1991	1992	1993	1994	1995	1996	1997 a/	1998 a/
People's Republic of China	1990	9.3	14.2	13.5	11.8	10.2	9.7	9.0	8.0
Hong Kong	1980	5.1	6.3	6.1	5.4	4.7	4.7	5.5	5.3
Republic of Korea	1990	9.1	5.1	5.8	8.6	9.0	7.0	6.3	6.9
Singapore	1990	7.3	6.3	10.4	10.5	8.8	7.0	7.5	8.0
Taipei, China	1991	7.5	6.8	6.3	6.5	6.0	5.7	6.2	6.3
Indonesia	1993	8.9	7.2	7.3	7.5	8.2	7.8	8.0	7.9
Malaysia	1978	8.7	8.0	9.0	9.1	10.1	8.8	8.5	8.5
Philippines	1985	(0.6)	0.3	2.1	4.4	4.8	5.5	6.0	6.5
Thailand	1988	8.5	8.1	8.3	8.9	8.7	6.7	6.1	6.6
Viet Nam	1989	6.0	8.6	8.1	8.8	9.5	9.5	9.5	9.3
Bangladesh	1985	3.4	4.2	4.5	4.2	4.4	3.7	5.4	6.0

a/ Projections
Source : Asian Development Outlook 1997 and 1998 (Statistical Appendix Tables), Asian Development Bank;

Table 4

GROSS DOMESTIC INVESTMENT 1/ OF SELECTED ASIAN COUNTRIES
1991 to 1998
(Percent of GDP)

Countries	1991	1992	1993	1994	1995	1996	1997 a/	1998 a/
People's Republic of China	34.7	36.2	43.4	40.0	41.2	39.6	39.8	39.7
Hong Kong	27.2	27.2	27.6	31.9	34.5	32.0	32.9	32.7
Republic of Korea	39.2	36.8	35.3	36.3	37.4	36.3	36.2	35.3
Singapore	34.2	35.3	38.0	32.3	33.0	34.8	33.8	33.3
Taipei, China	22.8	24.5	24.9	23.6	23.4	21.2	21.6	21.4
Indonesia	33.5	33.9	34.5	33.7	34.8	27.7	39.2	40.0
Malaysia	39.3	37.1	39.8	42.5	45.4	45.1	45.6	45.8
Philippines	19.9	20.8	23.6	23.5	21.6	23.9	25.5	26.5
Thailand	43.4	40.8	41.3	42.0	44.2	43.8	44.1	44.0
Viet Nam	15.6	18.3	26.0	26.0	27.5	30.1	31.0	31.5
Bangladesh	11.2	11.7	13.8	14.8	16.0	16.4	18.8	20.9

a/ Projections
1/ Sum of gross fixed capital formation and increase in stocks
Source : Asian Development Outlook 1997 and 1998 (Statistical Appendix Tables), Asian Development Bank;

Figure 1

GROSS NATIONAL PRODUCT AND GROSS DOMESTIC PRODUCT:
1987 to 1996 (at Constant Prices)

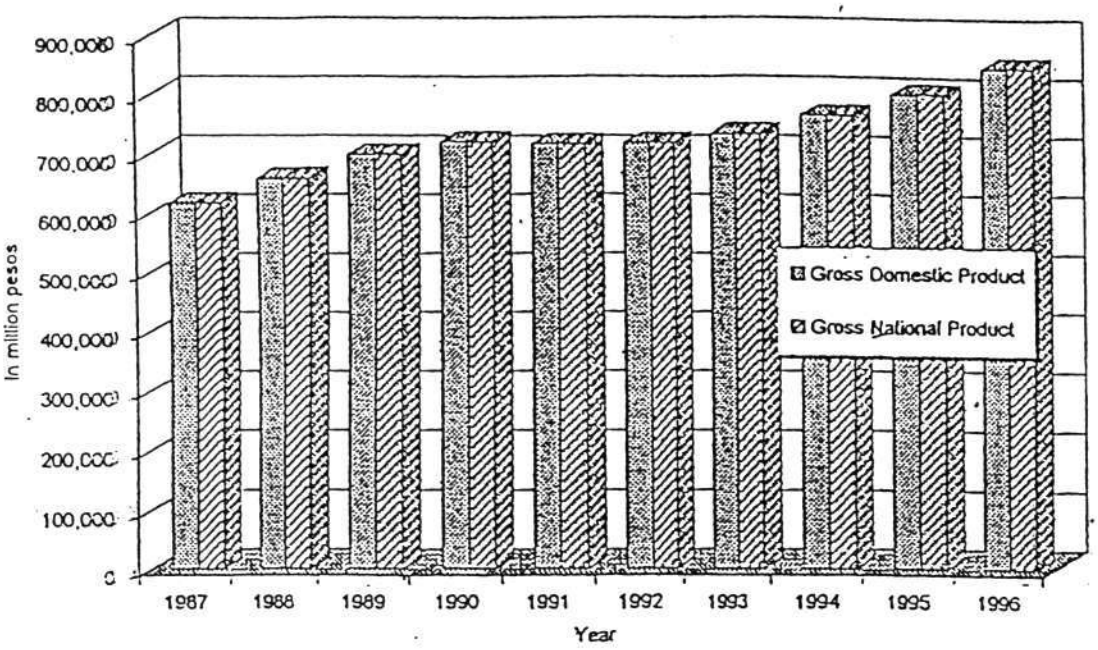
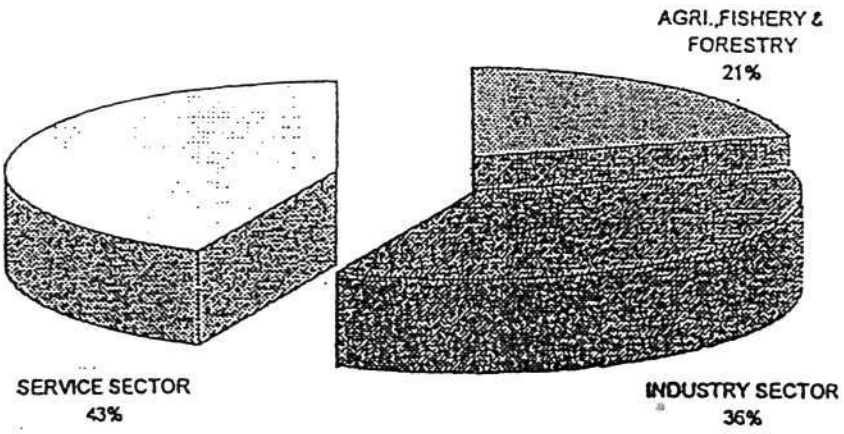


Figure 2

GROSS DOMESTIC PRODUCT BY INDUSTRIAL ORIGIN: 1996
(at constant prices)



GROSS NATIONAL PRODUCT AND GROSS DOMESTIC PRODUCT
BY INDUSTRIAL ORIGIN
1983 to 1996
(In million pesos : at current prices)

Table 5

	Industry	1983	1984	1985	1986	1987
1.	AGRI.,FISHERY & FORESTRY	82,545	129,824	140,554	145,807	161,927
	a. Agriculture and fishery	73,628	116,531	131,557	136,475	150,671
	b. Forestry	8,917	13,293	8,997	9,332	11,256
2.	INDUSTRY SECTOR	144,801	198,819	200,548	210,528	235,094
	a. Mining & Quarrying	6,182	8,142	11,893	14,144	14,354
	b. Manufacturing	89,472	129,171	143,851	149,958	169,627
	c. Construction	40,192	48,727	29,037	29,784	37,104
	d. Electricity, Gas and Water	8,955	12,779	15,767	16,642	14,009
3.	SERVICE SECTOR	141,731	195,838	230,781	252,552	283,743
	a. Transportation, Communication and Storage	17,848	25,117	31,666	34,307	36,827
	b. Trade	46,743	70,822	82,835	87,825	96,518
	c. Finance	13,484	16,335	17,123	18,658	22,446
	d. Ownership of Dwellings & Real Estate	20,362	25,677	32,132	35,449	39,226
	e. Private Services	25,296	32,022	39,121	43,593	49,927
	f. Government Services	17,998	22,865	27,904	32,720	38,799
	Gross Domestic Product	369,077	524,481	571,883	608,887	682,764
	Net factor income from abroad	(8,011)	(20,661)	(20,455)	(20,496)	(17,321)
	Gross National Product	361,066	503,820	551,428	588,391	665,443

See note on Table 3.1

Source: National Statistical Coordination Board.

1988	1989	1990	1991	1992	1993	1994	1995	1996
183,515	210,009	235,956	261,868	294,922	318,546	372,507	412,197	470,341
170,459	198,868	227,049	255,327	288,159	312,976	367,737	409,451	468,648
13,056	11,141	8,907	6,541	6,763	5,570	4,770	2,746	1,693
280,957	322,964	371,347	424,504	443,813	481,900	550,709	611,474	697,022
15,275	15,446	16,659	17,504	16,263	16,621	16,509	17,178	17,316
204,784	230,163	267,485	315,938	326,839	349,595	393,810	438,247	495,389
42,814	57,281	64,903	61,962	67,968	79,267	95,495	106,639	127,592
18,084	20,074	22,300	29,100	32,743	36,417	44,895	49,410	56,725
334,710	392,471	469,934	561,639	612,824	674,011	769,716	882,657	1,029,232
40,762	43,460	53,191	72,908	75,923	78,385	82,813	88,929	101,002
114,085	133,224	154,592	180,486	193,573	207,563	230,799	261,862	295,092
27,125	34,334	42,531	48,572	53,166	58,557	67,368	78,232	96,424
44,523	52,792	61,673	73,238	86,213	98,515	114,321	130,491	148,472
57,644	67,752	80,916	97,388	110,325	127,444	147,141	169,290	199,403
50,571	60,909	77,031	89,047	93,624	103,547	127,274	153,853	188,839
799,182	925,444	1,077,237	1,248,011	1,351,559	1,474,457	1,692,932	1,906,328	2,196,595
(17,113)	(19,985)	(5,804)	6,551	23,279	25,830	43,450	52,604	86,363
782,069	905,459	1,071,433	1,254,562	1,374,838	1,500,287	1,736,382	1,958,932	2,282,958

GROSS NATIONAL PRODUCT AND GROSS DOMESTIC PRODUCT BY INDUSTRIAL ORIGIN
1983 to 1996
(In million pesos : at constant 1985 prices)

	Industry	1983	1984	1985	1986	1987
1.	AGRI.,FISHERY & FORESTRY	144,586	143,247	140,554	145,725	150,414
	a. Agriculture and fishery	131,170	131,587	131,557	135,486	138,075
	b. Forestry	13,416	11,660	8,997	10,239	12,339
2.	INDUSTRY SECTOR	268,987	238,038	200,548	205,164	213,389
	a. Mining & Quarrying	9,244	8,959	11,893	12,313	11,232
	b. Manufacturing	173,756	156,195	143,851	146,453	154,604
	c. Construction	70,204	56,027	29,037	28,547	31,742
	d. Electricity, Gas and Water	15,783	16,857	15,767	17,851	15,811
3.	SERVICE SECTOR	252,144	235,677	230,781	240,534	253,120
	a. Transportation, Communication and Storage	32,622	32,060	31,666	33,075	35,056
	b. Trade	89,739	83,637	82,835	86,917	90,038
	c. Finance	24,957	20,110	17,123	18,517	21,465
	d. Ownership of Dwellings & Real Estate	34,693	32,585	32,132	33,205	34,759
	e. Private Services	42,289	39,506	39,121	40,120	42,060
	f. Government Services	27,844	27,779	27,904	28,700	29,712
	Gross Domestic Product	665,717	616,962	571,883	591,423	616,923
	Net factor income from abroad	(13,620)	(24,268)	(20,455)	(19,931)	(16,016)
	Gross National Product	652,097	592,694	551,428	571,492	600,907

See note on Table 3.1

Source: National Statistical Coordination Board.

1988	1989	1990	1991	1992	1993	1994	1995	1996
155,292	159,964	160,734	162,937	163,571	167,053	171,390	172,844	178,143
144,028	150,694	153,414	158,205	159,385	163,556	168,419	171,317	177,243
11,264	9,270	7,320	4,732	4,186	3,497	2,971	1,527	900
232,052	249,175	255,548	248,718	247,384	251,459	265,972	284,504	302,482
11,704	11,389	11,091	10,770	11,495	11,571	10,763	10,681	10,522
169,316	179,152	183,925	183,111	179,947	181,289	190,374	203,271	214,613
33,235	39,878	41,858	35,285	36,261	38,344	41,774	44,492	49,339
17,787	18,756	18,674	19,552	19,681	20,255	23,061	26,060	28,008
271,237	290,309	304,408	304,867	307,986	315,644	329,006	345,518	367,826
37,898	40,243	41,108	41,291	41,870	42,941	44,764	47,366	50,878
95,180	102,729	107,428	108,002	109,780	112,479	116,923	123,430	130,247
23,845	27,261	29,968	29,114	29,217	29,909	31,546	33,852	38,513
36,691	39,083	40,146	40,242	40,534	41,269	42,473	43,765	45,576
45,301	47,534	49,353	49,273	49,551	50,984	53,159	55,461	58,231
32,322	33,459	36,405	36,945	37,034	38,062	40,141	41,644	44,381
658,581	699,448	720,690	716,522	718,941	734,156	766,368	802,866	848,451
(14,352)	(15,217)	(3,761)	3,696	12,455	12,765	19,768	22,298	33,948
644,229	684,231	716,929	720,218	731,396	746,921	786,136	825,164	882,399

GROSS REGIONAL DOMESTIC PRODUCT
1983 to 1996
(In million pesos: at current prices)

Table 7

	Region	1983	1984	1985	1986	1987
	Philippines	369,078	524,452	571,884	603,888	682,765
NCR	Metro Manila	109,894	150,661	164,246	180,117	203,661
CAR	Cordillera Administrative					13,691
1	Ilocos Region	15,029	21,100	25,033	29,290	20,385
2	Cagayan Valley	10,521	14,432	15,309	15,574	14,280
3	Central Luzon	33,822	48,420	53,774	55,256	59,992
4	Southern Tagalog	53,268	76,997	82,615	86,983	95,946
5	Bicol Region	12,355	17,478	19,366	19,876	20,607
6	Western Visayas	27,740	38,029	42,418	44,338	48,890
7	Central Visayas	23,712	33,648	35,754	38,381	43,326
8	Eastern Visayas	9,511	15,250	16,218	16,309	18,139
9	Western Mindanao	12,010	17,640	18,561	19,542	20,900
10	Northern Mindanao	20,495	29,139	32,412	34,173	37,920
11	Southern Mindanao	27,161	41,151	43,727	45,502	54,132
12	Central Mindanao	13,559	20,538	22,452	23,549	25,597
ARMM	Autonomous Region of Muslim Mindanao					

Notes: 1. The GRDP estimates for the CAR and the ARMM started only in 1987 and 1993 respectively. Prior to these, the contributions to the economy of the provinces comprising the CAR is accounted for the Regions 1 and 2 while those of the ARMM provinces accrued to Regions 9 and 12.
2. Data for the years 1994 to 1996 are updates as of July, 1997
3. Details may not add up to totals due to rounding.

Source: National Statistical Coordination Board.

1988	1989	1990	1991	1992	1993	1994	1995	1996
799,183	925,444	1,077,237	1,248,011	1,351,559	1,474,457	1,692,932	1,906,325	2,196,595
251,164	298,589	347,609	409,778	437,730	475,312	548,782	620,110	720,058
15,562	17,928	20,267	23,659	23,974	27,597	33,497	38,733	43,892
23,041	26,931	32,501	36,336	37,102	41,961	49,731	58,155	66,898
16,709	19,674	23,724	25,262	26,671	29,847	35,002	41,102	47,633
68,010	75,253	91,922	106,726	118,202	129,870	143,552	159,290	184,874
114,401	130,349	155,817	188,502	205,172	218,201	250,808	274,079	314,305
23,849	27,549	31,927	36,201	39,616	44,296	50,575	55,785	63,767
57,265	66,455	75,649	85,407	95,299	105,867	118,577	133,965	154,690
51,872	61,737	70,766	82,821	88,831	94,892	108,493	122,058	141,394
21,586	24,640	28,269	32,057	34,681	38,354	43,644	49,817	57,708
23,607	26,469	31,182	35,157	39,012	41,496	47,816	52,896	59,522
42,282	49,146	55,120	62,726	68,855	74,686	87,479	97,902	111,218
59,589	66,287	74,670	82,459	90,297	98,322	113,563	129,370	146,597
29,948	34,436	37,813	40,919	46,118	40,909	45,559	54,337	63,157
					12,848	15,854	18,730	20,880

Table 8

GROSS REGIONAL DOMESTIC PRODUCT
1983 to 1996
(In million pesos: at constant 1985 prices)

	Region	1983	1984	1985	1986	1987
	Philippines	665,718	616,963	571,884	591,423	616,926
NCR	Metro Manila	201,703	180,909	164,246	169,358	180,609
CAR	Cordillera Administrative					11,342
1	Ilocos Region	25,987	24,949	25,033	26,947	18,294
2	Cagayan Valley	18,736	17,128	15,309	15,668	13,087
3	Central Luzon	61,196	57,044	53,774	54,853	57,459
4	Southern Tagalog	95,834	89,958	82,615	86,473	90,978
5	Bicol Region	21,340	20,496	19,366	19,530	18,913
6	Western Visayas	50,911	46,265	42,418	43,554	44,558
7	Central Visayas	42,183	39,838	35,754	37,680	39,662
8	Eastern Visayas	16,624	17,548	16,218	16,057	16,175
9	Western Mindanao	20,896	19,969	18,561	19,163	19,191
10	Northern Mindanao	37,252	33,419	32,412	33,239	34,381
11	Southern Mindanao	47,959	45,755	43,727	45,317	48,383
12	Central Mindanao	25,097	23,686	22,452	23,562	23,592
ARMM	Autonomous Region of Muslim Mindanao					

See notes on Table 3.29

Source: National Statistical Coordination Board.

1988	1989	1990	1991	1992	1993	1994	1995	1996
658,583	699,449	720,691	716,523	718,942	734,156	766,368	802,866	848,451
197,266	214,663	221,753	220,972	215,465	216,149	227,348	240,317	256,816
12,195	13,252	13,549	14,042	13,591	14,637	15,928	16,773	17,638
19,238	20,435	21,869	21,579	20,344	20,893	22,295	23,958	25,136
13,994	14,725	15,548	14,714	13,974	14,460	15,428	16,474	17,007
61,831	64,158	68,250	66,309	70,736	72,955	75,371	78,272	83,149
98,333	104,972	109,509	109,844	113,545	114,787	120,155	126,210	133,173
20,103	21,041	21,687	21,734	21,902	22,422	23,087	23,509	24,489
46,699	50,113	50,747	50,451	53,331	55,487	57,050	58,152	61,286
43,107	45,813	47,193	46,971	47,086	47,757	49,663	52,355	56,108
17,297	17,373	17,322	17,396	17,088	17,851	18,387	19,286	20,081
19,569	20,214	21,132	20,773	21,186	20,862	21,125	21,760	22,325
35,603	37,313	37,099	37,104	37,345	37,913	39,726	41,615	43,003
48,691	49,970	50,074	50,155	48,953	50,671	52,570	53,953	56,301
24,657	25,407	24,959	24,477	24,396	20,405	20,815	22,271	23,548
					6,908	7,420	7,962	8,392

Table 9

PER CAPITA GROSS REGIONAL DOMESTIC PRODUCT
1983 to 1996
(At current prices)

	Region	1983	1984	1985	1986	1987
	Philippines	7,090	9,531	10,461	10,872	11,994
NCR	Metro Manila	16,803	22,353	23,660	25,200	28,374
CAR	Cordillera Administrative					12,700
1	Ilocos Region	4,003	5,512	6,414	7,362	6,125
2	Cagayan Valley	4,386	5,869	6,073	6,027	6,214
3	Central Luzon	6,509	9,093	9,856	9,855	10,477
4	Southern Tagalog	7,947	11,167	11,654	11,936	12,813
5	Bicol Region	3,300	4,561	4,938	4,954	5,020
6	Western Visayas	5,701	7,638	8,330	8,515	9,185
7	Central Visayas	5,881	8,181	8,523	8,971	9,933
8	Eastern Visayas	3,210	5,053	5,278	5,213	5,695
9	Western Mindanao	4,393	6,305	6,483	6,673	6,961
10	Northern Mindanao	6,804	9,418	10,199	10,471	11,319
11	Southern Mindanao	7,452	11,003	11,399	11,567	13,426
12	Central Mindanao	5,496	8,111	8,642	8,837	9,476
ARMM	Autonomous Region of Muslim Mindanao					

Notes: 1. Per capita GRDP used Population Projection (Series 2) based on 1990 Census of Population and Housing
2. See additional notes on Table 3.29

Source: National Statistical Coordination Board.

1988	1989	1990	1991	1992	1993	1994	1995	1996
13,610	15,399	17,522	19,852	21,032	22,013	24,670	27,130	30,551
33,218	38,438	43,593	50,107	52,235	54,521	61,536	68,009	77,409
14,121	15,922	17,608	20,118	19,979	21,799	25,806	29,123	32,226
6,797	7,801	9,246	10,155	10,179	10,820	12,577	14,427	16,289
7,095	8,153	9,601	9,989	10,306	11,542	13,213	15,150	17,165
11,600	12,538	14,966	16,989	18,403	18,990	20,499	22,225	25,235
14,873	16,506	19,225	22,676	24,076	23,718	26,543	28,261	31,560
5,681	6,417	7,276	8,073	8,648	10,321	11,518	12,424	13,911
10,528	11,961	13,337	14,753	16,139	17,943	19,671	21,765	24,624
11,667	13,625	15,331	17,618	18,561	18,805	21,018	23,126	26,223
6,656	7,465	8,413	9,373	9,963	11,398	12,665	14,124	15,990
7,712	8,462	9,760	10,778	11,715	15,155	16,992	18,303	20,035
12,299	13,938	15,248	16,926	18,134	19,150	21,837	23,815	26,355
14,494	15,663	17,229	18,569	19,898	19,731	22,150	24,539	27,052
10,686	11,990	12,853	13,551	14,949	18,035	19,595	22,754	25,768
					6,395	7,720	8,923	9,744

PER CAPITA GROSS REGIONAL DOMESTIC PRODUCT
1983 to 1996
(At constant 1985 prices)

Table 10

	Region	1983	1984	1985	1986	1987
	Philippines	12,789	11,564	10,461	10,560	10,756
NCR	Metro Manila	30,841	26,841	23,660	23,695	24,559
CAR	Cordillera Administrative					10,522
1	Ilocos Region	6,923	6,518	6,414	6,773	5,497
2	Cagayan Valley	7,810	6,965	6,073	6,064	5,695
3	Central Luzon	11,777	10,712	9,856	9,813	10,035
4	Southern Tagalog	14,297	13,047	11,654	11,866	12,150
5	Bicol Region	5,700	5,349	4,938	4,868	4,607
6	Western Visayas	10,463	9,292	8,330	8,364	8,427
7	Central Visayas	10,462	9,686	8,523	8,808	9,093
8	Eastern Visayas	5,611	5,814	5,278	5,132	5,078
9	Western Mindanao	7,643	7,137	6,483	6,544	6,410
10	Northern Mindanao	12,368	10,801	10,199	10,185	10,263
11	Southern Mindanao	13,158	12,234	11,399	11,520	12,000
12	Central Mindanao	10,173	9,355	8,642	8,849	8,632
ARMM	Autonomous Region of Muslim Mindanao					

Notes: 1. Per capita GRDP used Population Projection (Series 2) based on 1990 Census of Population and Housing
2. See additional notes on Table 3.29

Source: National Statistical Coordination Board.

1988	1989	1990	1991	1992	1993	1994	1995	1996
11,215	11,639	11,722	11,397	11,188	10,961	11,168	11,426	11,801
26,090	27,634	27,810	27,020	25,712	24,793	25,493	26,356	27,609
11,066	11,769	11,772	11,941	11,326	11,561	12,271	12,611	12,950
5,675	5,920	6,222	6,031	5,581	5,388	5,638	5,943	6,120
5,942	6,103	6,292	5,813	5,399	5,591	5,824	6,072	6,129
10,546	10,689	11,112	10,555	11,013	10,668	10,763	10,921	11,350
12,784	13,293	13,511	13,213	13,324	12,477	12,716	13,014	13,372
4,789	4,901	4,942	4,847	4,781	5,224	5,258	5,236	5,342
8,586	9,020	8,947	8,715	9,052	9,405	9,464	9,448	9,756
9,696	10,111	10,224	9,992	9,838	9,464	9,621	9,919	10,406
5,334	5,263	5,155	5,087	4,909	5,305	5,336	5,468	5,564
6,393	6,462	6,614	6,368	6,362	7,620	7,507	7,530	7,522
10,356	10,582	10,262	10,012	9,835	9,721	9,917	10,123	10,190
11,784	11,808	11,554	11,306	10,787	10,169	10,254	10,234	10,390
8,800	8,847	8,484	8,124	7,908	9,021	8,953	9,326	9,607
					3,439	3,612	3,793	3,916

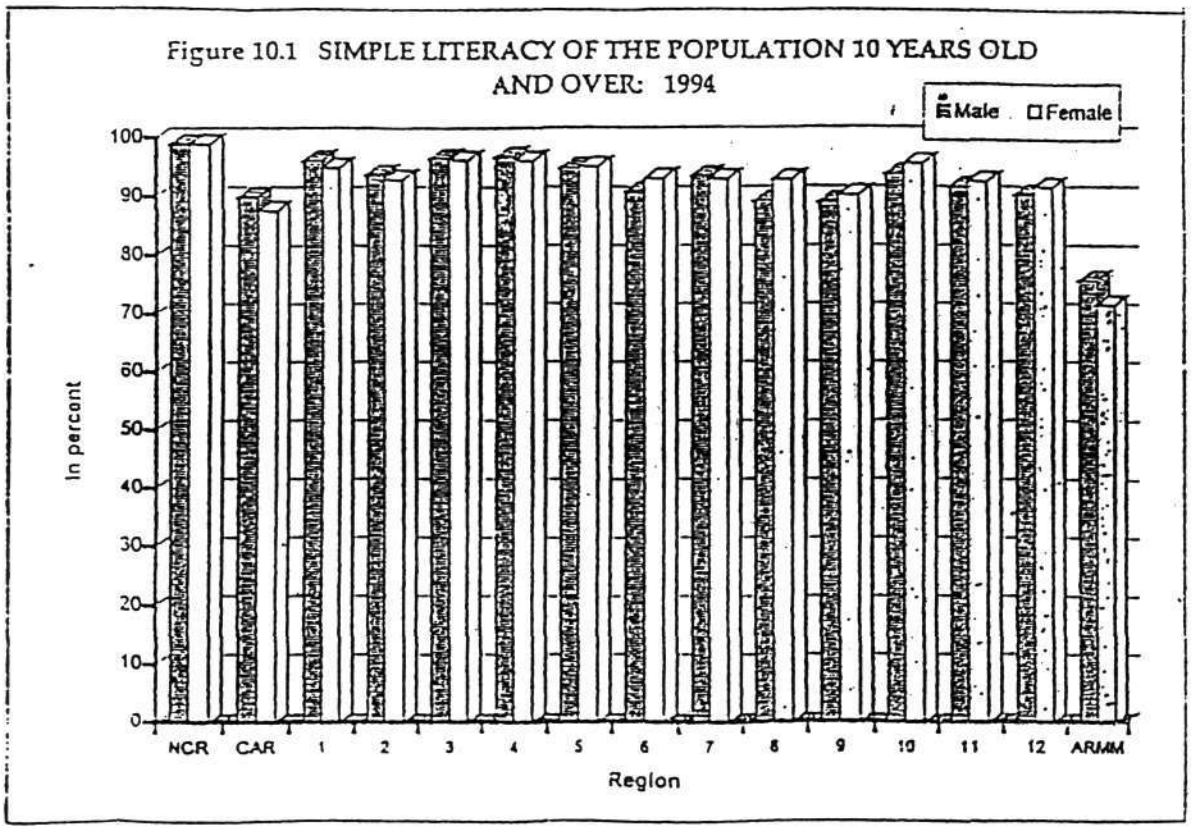
Table 11

SIMPLE LITERACY OF THE POPULATION 10 YEARS OLD AND OVER BY SELECTED CHARACTERISTICS
1989 and 1994
(In percent)

Characteristics		1989			1994		
		Total	Male	Female	Total	Male	Female
	Philippines	89.8	89.8	89.8	93.9	93.7	94.0
	Residence						
	Urban	95.4	*	*	96.5	96.6	96.5
	Rural	86.2	*	*	91.2	91.1	91.3
NCR	Metro Manila	98.1	*	*	98.8	98.9	98.8
CAR	Cordillera Administrative	86.4	*	*	88.8	89.9	87.5
1	Ilocos Region	90.6	*	*	95.5	96.1	94.8
2	Cagayan Valley	88.4	*	*	93.3	93.7	92.8
3	Central Luzon	93.7	*	*	96.3	96.5	96.1
4	Southern Tagalog	93.2	*	*	96.4	96.8	96.0
5	Bicol Region	87.3	*	*	96.9	94.8	95.0
6	Western Visayas	87.7	*	*	91.9	90.8	93.0
7	Central Visayas	88.0	*	*	93.1	93.4	92.8
8	Eastern Visayas	81.7	*	*	90.9	89.2	92.7
9	Western Mindanao	80.4	*	*	89.7	89.1	90.1
10	Northern Mindanao	90.5	*	*	94.6	93.8	95.5
11	Southern Mindanao	90.5	*	*	92.0	91.6	92.4
12	Central Mindanao	78.3	*	*	90.8	90.3	91.4
ARMM	Autonomous Region of Muslim Mindanao	-	*	*	73.5	75.6	71.4

* Data not yet readily available.
Source: National Statistics Office and the Department of Education, Culture and Sports

Figure 3



FUNCTIONAL LITERACY OF THE POPULATION 10 - 64 YEARS OLD
BY SELECTED CHARACTERISTICS
1989 and 1994
(In percent)

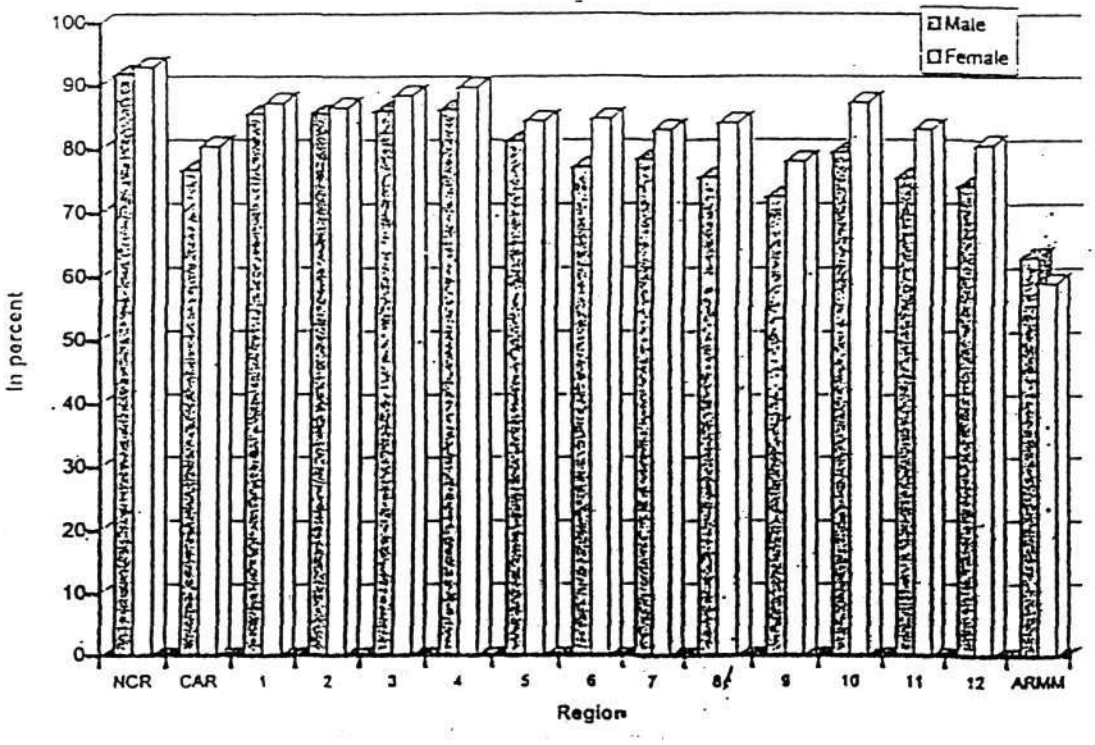
Table 12

Characteristics		1989			1994		
		Total	Male	Female	Total	Male	Female
Philippines		75.4	74.5	76.2	83.8	81.7	85.9
Residence -							
	Urban				88.4	86.9	89.8
	Rural				79.1	76.8	81.7
NCR	Metro Manila	90.6	91.5	89.9	92.4	91.8	93.0
CAR	Cordillera Administrative	73.7	73.0	74.3	78.6	76.6	80.5
1	Ilocos Region	75.1	74.8	75.3	86.4	85.6	87.3
2	Cagayan Valley	72	70.9	73.2	86.6	85.6	86.6
3	Central Luzon	84.1	84.4	83.8	87.3	86.1	88.5
4	Southern Tagalog	79.8	79.3	80.4	88.0	86.3	89.8
5	Bicol Region	68.8	66.2	71.3	82.6	81.3	84.5
6	Western Visayas	71.3	68.7	73.8	80.9	77.3	84.8
7	Central Visayas	70.6	69.4	71.9	80.9	78.5	83.2
8	Eastern Visayas	65.5	63.4	67.8	79.7	75.7	84.2
9	Western Mindanao	57.7	57.3	58.1	75.4	72.6	78.1
10	Northern Mindanao	76.5	74.1	78.8	83.4	79.5	87.4
11	Southern Mindanao	74.1	73.0	75.2	79.4	75.6	83.2
12	Central Mindanao	63.1	65.1	61.1	77.4	74.2	80.7
ARMM	Autonomous Region of Muslim Mindanao	-	-	-	61.2	63.2	59.1

Sources: National Statistics Office and the Department of Education, Culture and Sports

Figure 4

Figure 10.2 FUNCTIONAL LITERACY OF THE POPULATION 10 - 64 YEARS OLD: 1994



LABOR FORCE PARTICIPATION RATE AND EMPLOYMENT STATUS
URBAN AND RURAL
1987 to 1996
(Number in thousands)

Table 13

Year/Area	Labor Force Participation Rate (Percent)	Total Labor Force	Labor Force by Employment Status			
			Employed		Unemployed	
			Number	Percent	Number	Percent
Philippines						
1987	65.7	22,880	20,795	90.9	2,085	9.1
1988	65.4	23,451	21,497	91.7	1,954	8.3
1989	64.6	23,858	21,849	91.6	2,009	8.4
1990	64.5	24,525	22,532	91.9	1,993	8.1
1991	64.5	25,246	22,979	91.0	2,267	9.0
1992	65.0	26,180	23,917	91.4	2,263	8.6
1993	64.7	26,822	24,443	91.1	2,379	8.9
1994	64.4	27,483	25,166	91.6	2,317	8.4
1995	65.6	28,040	25,698	91.6	2,342	8.4
1996	65.8	29,637	27,442	92.6	2,195	7.4
Urban						
1987	62.2	8,633	7,463	86.4	1,170	13.6
1988	61.9	8,821	7,732	87.7	1,089	12.3
1989	61.3	9,060	7,998	88.3	1,062	11.7
1990	61.2	9,339	8,258	88.4	1,081	11.6
1991	62.3	12,334	10,864	88.1	1,470	11.9
1992	62.4	12,692	11,248	88.6	1,444	11.4
1993	61.7	12,973	11,443	88.2	1,530	11.8
1994	61.6	13,297	11,751	88.4	1,546	11.6
1995	62.6	13,542	12,045	88.9	1,497	11.1
1996	63.0	13,826	12,505	90.4	1,321	9.6
Rural						
1987	67.9	14,247	13,333	93.6	914	6.4
1988	67.7	14,631	13,766	94.1	865	5.9
1989	66.9	14,799	13,851	93.6	948	6.4
1990	66.8	15,185	14,273	94.0	912	6.0
1991	66.9	12,913	12,116	93.8	797	6.2
1992	67.7	13,487	12,669	93.9	818	6.1
1993	67.8	13,849	13,000	93.9	849	6.1
1994	67.3	14,185	13,414	94.6	771	5.4
1995	68.6	14,497	13,652	94.2	845	5.8
1996	68.5	15,811	14,937	94.5	874	5.5

Notes: 1. Data were taken from the final results of the October rounds of the Labor Force Survey (LFS) using past week as reference period.
2. Details may not add up to totals due to rounding.

Source: National Statistics Office.

EMPLOYMENT RATE, PHILIPPINES: 1987 to 1996 Figure 5

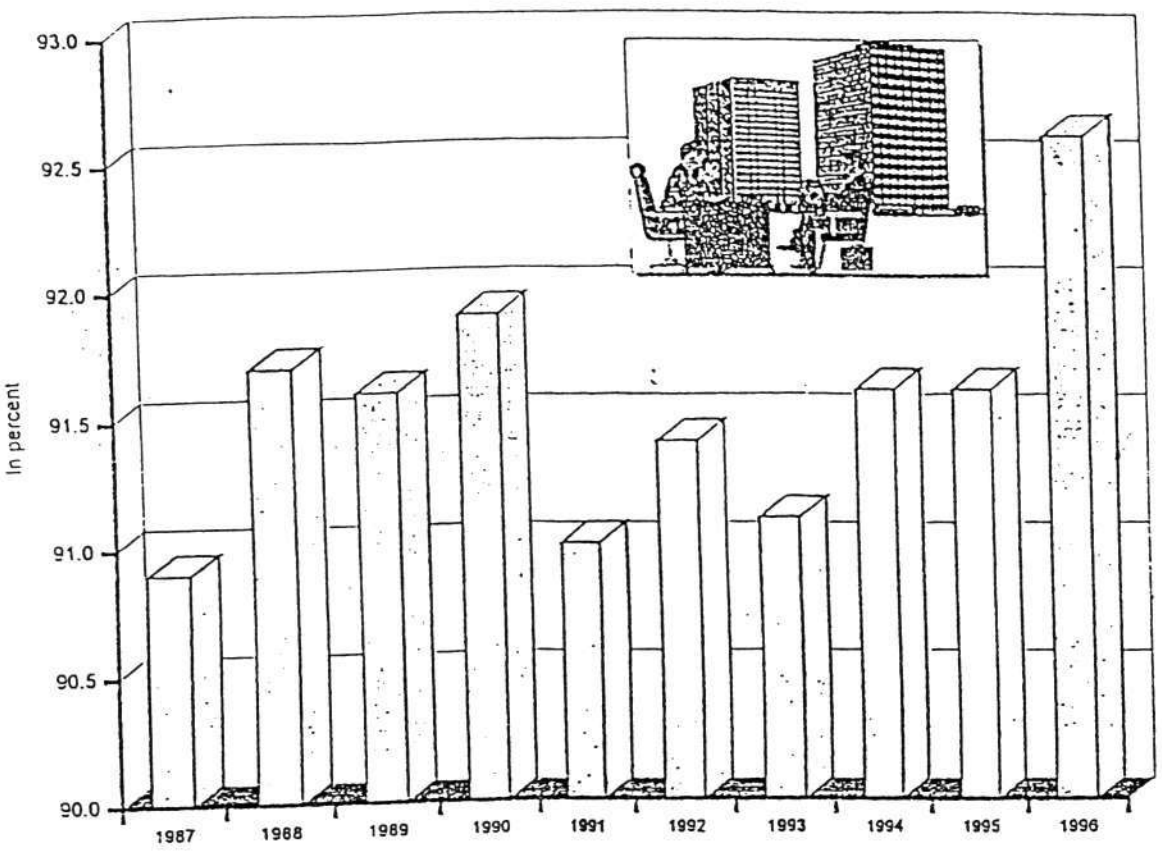
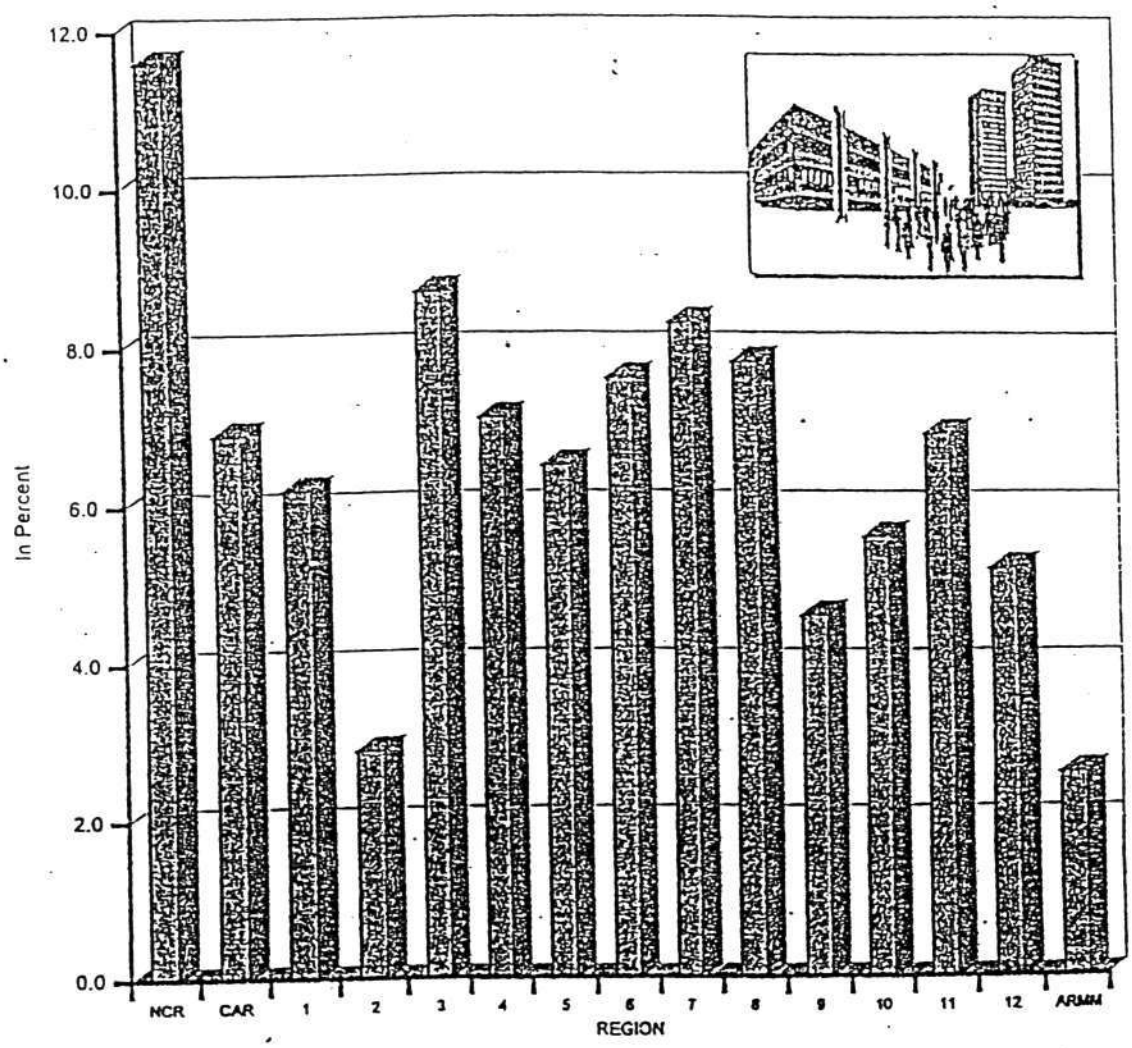


Figure 6

UNEMPLOYMENT RATE, BY REGION: 1996



Table

TELEPHONE DISTRIBUTION BY REGION
As of December 31, 1997

REGION	INSTALLED LINES	POPULATION	TELEPHONE DENSITY (Installed)
I	242,742	3,931,261	6.17
II	23,630	2,640,554	0.89
III	427,199	7,218,913	5.92
IV	734,047	10,463,047	7.02
V	133,363	4,488,068	2.97
VI	258,204	5,983,675	4.32
VII	380,290	5,214,527	7.29
VIII	89,182	3,511,714	2.54
IX	44,457	2,930,263	1.52
X	115,683	4,139,703	2.79
XI	339,941	5,331,644	6.38
XII	60,468	2,473,078	2.45
NCR	2,808,957	9,814,977	28.62
CAR	64,814	1,309,811	4.95
ARMM	45,319	2,087,362	2.17
TOTAL	**5,768,296**	**71,538,597**	**8.06**

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Table 15

GROWTH IN CELLULAR MOBILE TELEPHONE SERVICE SUBSCRIPTION
1992 to 1997

Year	1992	1993	1994	1995	1996	1997
Number of Subscriber	56,044	102,400	171,903	493,862	959,024	1,343,620

GROWTH IN RADIO RAGING SERVICE SUBSCRIPTION

Table 16

Year	1990	1992	1994	1995	1996	1997
Number of Subscribers	14,652	71,758	228,547	324,816	491,025	704,138

GROWTH IN PUBLIC TRUNK REPEATER SERVICE SUBSCRIPTION

Table 17

Year	1991	1994	1995	1996	1997
Number of Subscribers	1,938	5,982	18,799	32,998	45,859

GROWTH OF BROADCAST STATIONS AND CATV NETWORKS NATIONWIDE

Table 18

Service	1992	1993	1994	1995	1996	1997
AM	294	278	299	317	328	330
FM	201	242	241	288	317	399
TV	88	88	98	116	128	159
CATV	147	282	405	558	753	894

INTERNET SERVICE IN MAJOR CITIES

Table 19

CITY	NO. OF ISP'S	CITY	NO. OF ISP'S
Angeles	2	Iloilo	3
Bacolod	6	Legaspi	2
Baguio	2	Metro Manila	66
Batangas	2	Naga	2
Cabanatuan	1	Puerto Princesa	1
Cagayan de Oro	4	Roxas	2
Calamba	2	San Fernando, La Union	1
Cebu	7	San Pablo	1
Dagupan	1	Subic	1
Davao	3	Tacloban	2
Dumaguete	2	Tabliran	1
General Santos	2	Tarlac	1
Iligan	2	Zamboanga	4