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Telecommunications Sector

Current status and future paths

The World Bank
Global ICT Department[1]

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Vietnam's infrastructure challenge

As Vietnam becomes richer it faces challenges in adapting its infrastructure policies and institutions. While the old challenges of providing basic services to all remain, new challenges are emerging, such as accessing new sources of finance, refining planning processes, preparing for rapid urbanization, improving the efficiency of infrastructure service providers, developing stronger institutions to encourage private finance of infrastructure or direct private provision of infrastructure, and developing more targeted approaches to poverty alleviation.

This report on Telecommunications Strategy - Current Status and Future Paths is one of six volumes dealing with *Vietnam's Infrastructure Challenge.* Other volumes deal with

Infrastructure Cross Sectoral Issues, Urban Development, Transport, Water Supply and Sanitation, and Electricity.

The work for these reports was carried out between 2004 and 2006 by World Bank staff and consultants. The reports have been revised to take account of comments made by the Government in workshops during May 15-17, 2006. The comments of numerous colleagues from the World Bank, the United Kingdom's Department for International Development Bank, the Asian Development Bank, and the Japan Bank for International Cooperation are gratefully acknowledged.

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List of Acronyms

ASEAN	Association of South East Asian Nations
BCC	Business cooperation contracts
BOT	Build, operate and transfer
BTA	Bi-lateral trade agreement
DGPT	Department General of Post and Telecommunications
DPM	Deputy Prime Minister
ETC	Electricity Telecommunication Company[2]
FPT	Corporation for Financing and Promoting Technology
GNI	Gross national income
HCMC	Ho Chi Minh City
ICT	Information and communications technologies
IDRC	International Development Research Centre (Canada)
ISP	Internet service provider
IT	Information technology
ITU	International Telecommunications Union
IXC	Internet exchange carrier
MOST	Ministry of Science and Technology
MOT	Minstry of Trade
MPI	Ministry of Planning and Investment
MPT	Ministry of Posts and Telematics
NIPTS	National Institute of Post and Telecommunications Strategy
OOG	Office of Government
OSP	On-line service provider
PTF	Post and Telecommunications Finance
SME	Small and medium sized enterprises
SOE	State owned enterprise
SPT	Saigon Post and Telecommunications
VAS	Value added services
VDC	Vietnam Data Corporation
VEC	Vietnam Electricity Corporation
VIETTEL	The Military Electronic and Telecommunication Company
VIETSHIPTEL	Vietnam Maritime Telecommunication Company
VNPT	Vietnam Post and Telecommunications Corporation
VPS	Vietnam Postal Service
VTI	Vietnam Telecommunications International
VP Telecom	Viet Power Telecom, formerly ETC
USD	United States dollar
VOIP	Voice over Internet Protocol
WB	World Bank
WTO	World Trade Organization

2. Source for this acronym: US Telecommunications Industry Association and interviews with ETC; this firm is now called Viet Power Telecoms or VP Telecoms.

I. Overview

Vietnam's telecommunications sector has continued to expand rapidly, primarily due to mobile growth, and appears poised to continue expanding in the future. With a population of just over 80 million (comparable to Germany), Vietnam is one of the major emerging markets of the ASEAN region. Over the past three years, Vietnam has sustained an average annual growth of about 42% in total teledensity.[3] This figure is higher than China and is one of the highest in the world. The primary growth driver is mobile telecommunications, which has grown an average of 53% each year over the last four years. Some forecasters estimate that Vietnam could reach a total teledensity in excess of 50% as soon as the end of 2009.[4] Total teledensity as of 2004 was slightly ahead of India, somewhat behind Indonesia, but still less than half that of the Philippines or Thailand. Figure 1 below shows the total teledensity of Vietnam and other selected Asian countries.

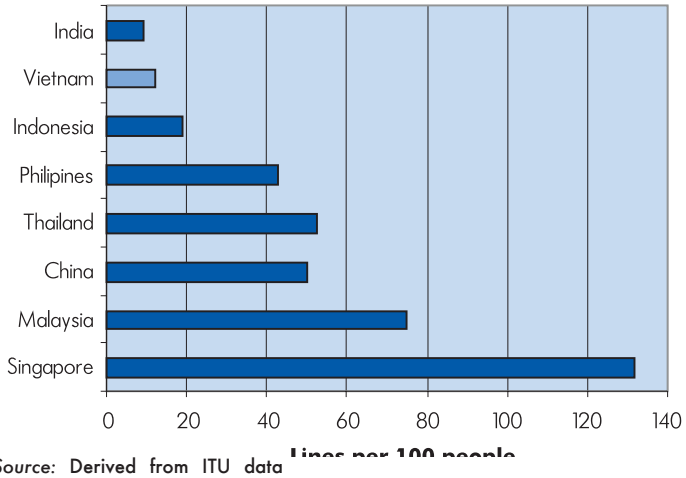
It is estimated that the 2005 figure for total teledensity is about 19.9,[5] almost even with Indonesia.

In terms of industry revenue growth, Vietnam is currently one of the three fastest growing communications markets in Asia, with estimated total industry revenues of $1. 88 billion in 2005 and a forecast $5 billion by 2010.[6] The Vietnamese market is still one of the smallest in Asia, however. (See the table below.)

Since the launch of the Doi Moi (literally "change and newness") policy in the early 1990s, Vietnam has been implementing a program to increase competition in many telecommunications market segments, has ended the monopoly of the Vietnam Post and Telecommunications (VNPT), has introduced the Internet, has separated poli-

Figure 1

Total Teledensity in Selected Asian Countries (2004)



Source: Derived from ITU data

Note: Fixed line data for Thailand are from 2003

3 "Teledensity" refers to telephone lines per 100 population; here "total teledensity" is used to ensure that it is clear that both mobile and fixed telephone lines are being included in the analysis.

4. See Business Monitor International (BMI), Vietnam Telecommunications Report, Q3 2005

5. BMI, ibid.

6 Pyramid Research, Vietnam Country Outlook, September 2005

Table 1:
Telecom Market Size and Growth by Asian Country

Country	2004 Total Telecom Revenue (US$m)	2005 Total Telecom Revenue (US$m)	Percent Growth
Australia	13,331	14,916	10.6%
China	70,881	78,936	10.2%
Hong Kong	5,836	6,236	6.4%
India	15,246	18,554	17.8%
Indonesia	8,519	10,213	16.6%
Japan	144,167	141,035	-2.2%
Malaysia	4,634	4,948	6.4%
New Zealand	2,787	2,903	4.0%
Philippines	4,079	4,581	10.9%
Singapore	3,978	4,015	0.9%
South Korea	25,963	26,749	2.9%
Taiwan	10,563	10,306	-2.5%
Thailand	5,621	6,255	10.1%
Vietnam	1,567	1,877	16.5%

Source: Pyramid Research

cy/regulation from operations, has begun to separate post from telecoms, and has substantially reduced international and other prices. A Bilateral Trade Agreement (BTA) with the United States is in force, which contains time-delimited targets for market opening and foreign (US) investment. The government has announced its intention to accede to the World Trade Organization, and has begun studies on the telecommunications portion of the needed WTO offers. Internet cafes and shops are flourishing in all cities and many towns, development plans in telecommunications and related areas have been drafted and adopted, and in 2002 a new Ministry of Posts and Telematics (MPT) was created.

With respect to competition, the monopoly of VNPT has been ended in every line of business, with actual or licensed competitors in place in Internet, paging, cellular, and even local service provision. However, VNPT continues to dominate the sector through high market share (estimated at 90 to 94% of the entire sector) and though multiple ownerships in each market segment. And much of the new entry is through other state owned enterprises (SOEs), the military, and through non-ownership business cooperation contracts (BCCs[7]), not through the ownership participation of private entities. Figure 2 below provides a summary view of the sector.

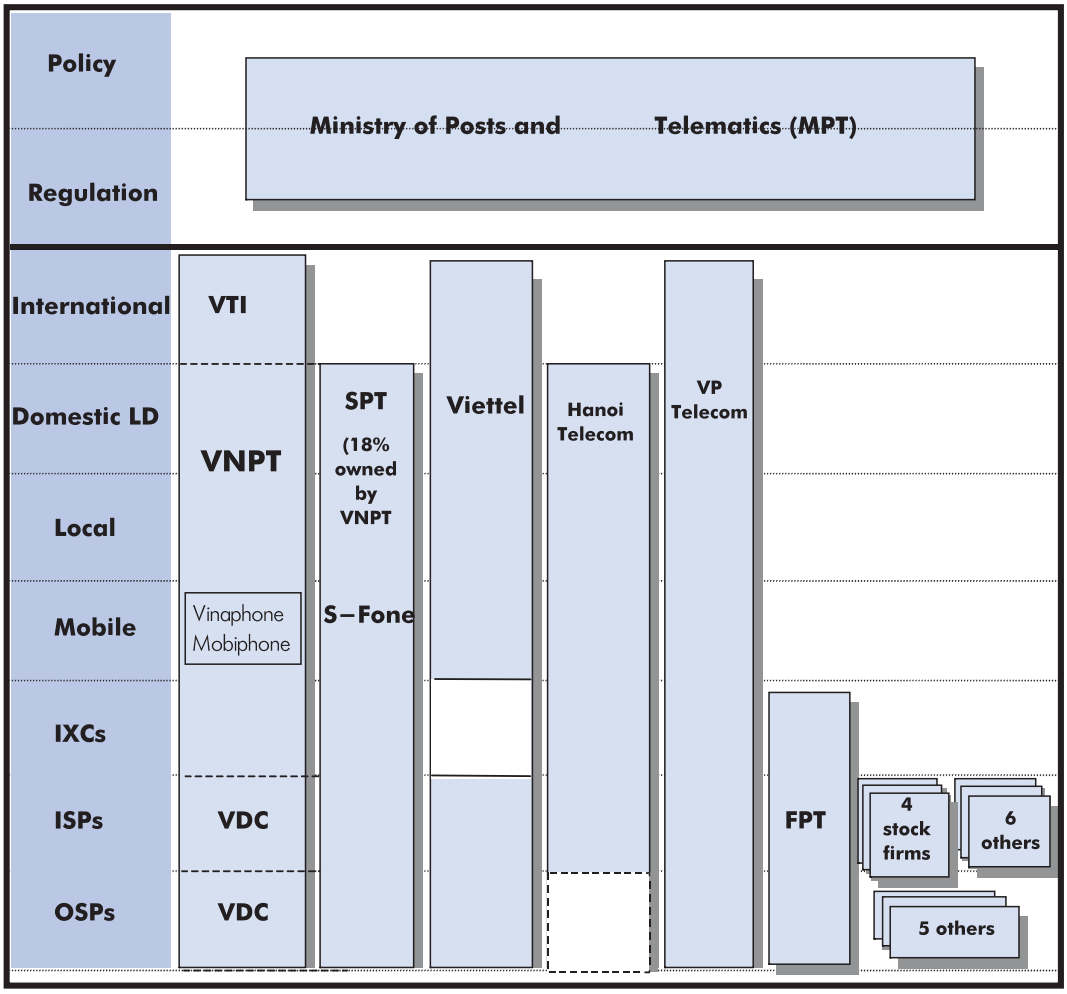
As shown in the chart, VNPT is active in each industry segment, owns the two active carriers (Vinaphone and Mobiphone) in the most rapidly growing segment, mobile telephony, and has a partial ownership in SPT (Saigon Post and Telecommunications), a potential major competitor active in most segments. Viettel, Viet Power Telecom (sometimes known as VP Telecom, formerly ETC) and Hanoi Telecom have been licensed in most industry segments, and are emerging as potential national competitors to VNPT.

Other notable aspects of Vietnam telecommunications include:

- Prices for international calling and leased lines have dropped markedly, by about 70% in the last two years. These prices are now about 7% or more below regional averages, according to MPT and one independent analysis. This is a major achievement.

7. BCCs are schemes in which foreign companies finance capital investment and share in revenues, but have no ownership share and no or limited management control. These are discussed at length in section III.

Figure 2. Vietnam Telecommunications Sector Structure



- The Internet got underway in Vietnam quite recently, in November 1997, but has grown very rapidly. There were an estimated 7.5 million users as of the end of 2004 and 11.6 million as of the end of 2005, a remarkable achievement. This is still a moderately low penetration rate of 14.3 percent, however, and penetration is largely limited to urban areas.[8]
- Efficiency of the telecommunications sector, as measured in lines per employee, is quite low by regional standards, and the affordability of some telecommunications services is also poor.
- Voice over Internet Protocol (VOIP) is now available on a limited basis in parts of Vietnam by dialing an additional number. In other countries the cheap price of VOIP has helped to lower prices substantially, and this effect is anticipated in Vietnam.
- Regulation is undertaken by MPT; there is little discussion at this point of creating an independent or quasi-independent regulator. However, MPT is obligated to modern-

8 . BMI, ibid.

ize its regulatory procedures under the BTA, and has begun consultations with some stakeholders, primarily SOEs and other ministries. There has been little regulatory movement to analyze and restrict potentially anti-competitive practices alleged against the dominant VNPT, such as delaying financial and technical interconnection with other providers, and maintaining high prices for calls to nearby Thailand.

Despite Vietnam's impressive progress in areas such as teledensity, price reductions and increasing competition, the sector is still behind other countries in the region in many areas. A recent rating of Asia-Pacific telecommunications markets in terms of risk, maturity, potential and regulation, ranked Vietnam 14th out of 14 countries reviewed, behind Pakistan, Thailand and Indonesia.[9]

Vietnam was ranked 158 out of 167 in Reporters Sans Frontieres 2005 Annual World Wide Press Freedom Index, which partially reflects "the main obstacles to the free flow of information on the Internet."[10]

Progress is notably lagging in priority areas such as:

- Increasing competition and private participation in all segments by encouraging new private entrants, improving the interconnection regime, and regulating prices in a progressive way
- Developing modern, transparent regulatory institutions and processes, including in the area of spectrum management
- Reforming and restructuring VNPT, including by "equitization" (privatization)
- Increasing rural telecommunications infrastructure and access.

To make significant progress in these areas, it will be necessary to create a roadmap for development through an open dialog with stakeholders, and to move toward drafting a new, modern telecommunications law that will attract investors and protect consumers. Government action to modernize the policy and regulatory environment in these areas would accelerate and improve the performance of the sector.

9. BMI, ibid.

II. Policy and Institutional Framework

Main Laws and Regulations

The main goals for developing the telecommunications sector in Vietnam are defined in the:

- Post and Telecommunications Ordinance of 2002
- Decision 158/2001/QDTTG of October 18, 2001, approving Vietnam Post and Telecommunications development strategy through 2010 and general approach through 2020
- National Institute of Post and Telecommunications Strategy (NIPTS) ICT strategy, adopted by MPT in October 2005, which sets goals for telecommunications and ICT for the year 2010 and 2020.

These and other key decisions affecting the telecommunications sector are shown in the table below.

Table 2:
Major Decrees and Decisions in Telecommunications

Prime Ministerial Decision No. 99/1998/ND-CP	26 May 1998	Regulation of posts and telecommunications prices
Decision No. 81/2001/QD-TTg	24 May 2001	Action to implement Directive 58-CT/TW and step up the application and development of ICT in 2001-5
Decree No. 55/2001/ND-CP	23 August 2001	Management, provision, and use of Internet Services
Decision 158/2001/QDTTG	18 October 2001	Approval of VNPT strategies through 2010 and 2020
PM Decision No. 33/2002/QD-TTg	8 February 2002	Approval of the plan for Internet development for 2001-5
Ordinance (Law) No. 43/2002	1 October 2002	Regulates telecom networks and services, licensing procedures and prices; defines types of telecom services
Decree No. 90/2002/ND-CP	11 November 2002	The functions, tasks, powers and organizational structure of MPT
Ministry of Posts and Telematics (MPT) Decision No. 148 /2003/QD-BBCVT	26 August 2003	Provisional interconnection fees set and lowered from previous levels
MPT Decision 217/2003QD-TTg	27 October 2003	Telecom providers with less than 30% market share can set their own prices
Document No. 16/BBCVT-KHTC	6 January 2004	Price setting rules for enterprises Cost based tariffs
Decree No. 24/2004/ND-CP	14 January 2004	Issuance of spectrum management regulations
Decree No. 160/2004/ND-CP	3 September 2004	Issuance of telecom regulations
MPT Reg. 191/2004/QD-TTg	8 November 2004	Created Vietnam Public Telecommunications Service Fund
MPT Reg. 04/2004/TT-BBCVT	29 November 2004	Provides sanctions for violations of post, telecom and radio frequencies
Decision No. 58/2005/QD-TTg	23 March 2005	Approves VNPT experimental conglomerate
Prime Minister's Decision No. 246/2005/QD-TTg	6 October 2005	Approves ICT-IT development strategies through 2010 and 2020

Sources: World Bank interviews; USAID, Competition Review of the Vietnamese Telecom Sector, 2005

Strategic objectives under these plans and decisions include to:

- Develop a national information infrastructure with advanced technology, high capacity, high quality of service and nation-wide service
- Build a telecommunications sector that is a leading sector in the economy, with an annual growth rate of 20-25%
- Reach penetration in "e-Vietnam" (e-commerce, e-government, e-citizen access) comparable to the regional ASEAN average by 2010

Specific objectives detailed in the NIPTS plan include:

- Reach a penetration of 32-42 total telephone lines per 100 population by 2010
- Reach 25-35 Internet users per 100 population by 2010, with 30% broadband access
- Achieve 10 PCs per 100 population by 2010.

The laws and decrees reflect a slow but ongoing liberalization of the telecommunications sector. This progress toward liberalization is now being enhanced by three major factors: (1) comparisons by decision-makers with traditional rival China, which is seen as being 5-10 years ahead in terms of telecommunications and ICT development and inward investment; (2) comparisons with other ASEAN nations, and (3) the drive to accede to the World Trade Organization (WTO) in the near future.

The most important and comprehensive of the above-listed laws and decrees was the Telecommunications Ordinance (law), which took effect on October 1, 2002, after approval by the Standing Committee of the National Assembly. This 79-article ordinance continues the telecommunications reform process in Vietnam, and is expected to encourage further private and foreign interest in the sector. This new ordinance has many provisions, including:

- Enterprises from any economic sector are allowed to provide most telecommunications and postal services, except "essential" ones such as construction, development and management of the infrastructure such as the "national axis [backbone] network, and international, mobile and local phone networks," which will be undertaken by state-owned enterprises.
- Licenses for network establishment and service provision have a maximum duration of 15 years, telecommunications service provision licenses have a life of 10 years; and licenses for telecommunications cables on the continental shelf and in exclusive economic zones have a life of 25 years.
- Enterprises with a market share of more than 30 percent are prohibited from using their market power to hinder new entrants.

Decrees implementing the law have been issued and cover:

- Postal administration
- Telecommunications administration
- Spectrum management.

Copies of the latter two decrees are attached in the Annexes.

Specific other noteworthy reform measures taken by the government in the last several years include:

- Creating the new MPT in place of DGPT, to set policy in and regulate "telematics" (telecommunications plus IT)
- Decreeing that post is separate from telecom in 2005, with a plan to actually separate financial and operational aspects of the two functions by or in 2007
- Passing a regulation in 2005 creating the Vietnam Public Utility Telecommunications Service Fund. This will serve as the Universal Service Obligation (USO) mechanism for the country, and will be capitalized

at $31.5 million, with 40% contributed by the state. The balance will come from enterprises operating in the sector. In future, 5% of mobile revenues will go into the fund, along with 4% of long distance revenues and 3% of domestic long distance revenues.

- Passing a law in 2005 allowing for electronic transactions, and preparing a draft law on ICT with Korean donor support, scheduled to be issued in 2006
- Reducing prices on international calling, leased lines, Internet access and interconnection fees, to the point that MPT and at least one independent analysis states that a market basket of prices is about 7% below regional averages[11]
- Signing a Bilateral Trade Agreement (BTA) with the United States in December 2001, which covers telecommunications, and which provides time-delineated market opening and ownership measures for (US) investors over six years
- Recognizing the principles of "significant market power" and "asymmetric regulation" in recent pricing regulations, which allow all service providers with less than 30% market power to set their own prices
- Issuing licenses to new operators in the areas of basic services, international, mobile, Internet exchange providers (IXPs), Internet service providers (ISPs), and other market segments.

Table 3:
Allocation of Major Responsibilities in Telecommunications Policy

Deputy Prime Ministers (DPMs)	Of the 4 Deputy PMs, one (the First Deputy Prime Minister) holds the portfolio for telecommunications, one holds the portfolio for ICT, and one holds the portfolio for e-government
Office of Government (OOG)	This office serves as the PM's and DPM's secretariat and clearinghouse, and also coordinates inter-departmental policy and institutional initiatives. OOG runs the in-house e-government program, which focuses on building intra-departmental and provincial networks
Ministry of Post and Telematics (MPT)	Sets policy for and regulates the telecommunications sector; representative of the State's capital interests in facility-based operators, including the dominant VNPT
Ministry of Trade (MoT)	Sets policy and develops legislation and programs in the area of e-commerce and trade
Ministry of Science and Technology (MOST)	Develops R&D programs in telecommunications and ICT; sets ICT standards. Was formerly the chief policy actor in ICT, but this role was changed with the creation of MPT
Ministry of Planning and Investment (MPI)	Ensures that sufficient and timely investment is available for approved development in IT (defined broadly to include telecommunications)
National Steering Committee on ICT	Monitors implementation of the national IT plan (which covers telecommunications, ICT, and the ICT projects, functions and responsibilities of all ministries and agencies)

11. World Bank consultant Jose Monedero used ITU criteria and procedures in this analysis. Mondero, Revisions to Telecom Prices Summary Report, December 2003. Price levels have continued to fall substantially since this detailed analysis was undertaken. Price levels are discussed in more detail in section V, Sector Performance.

Allocation of Responsibilities for Policy-making and regulation

The laws, decrees and decisions shown in the section above allocate policy responsibilities in the sector as shown in the exhibit below.

The key policy and regulatory functions related to telecommunications are formally assigned to the Ministry of Post and Telematics (MPT). Selected divisions of interest within this important new ministry are shown in the figure below.

The MPT departments of telecommunications and radio frequency shown in the organization chart provide the regulatory function. There is no discussion at present about creating an independent or quasi-independent telecommunications regulator. However, MPT has taken the initiative to modernize some of its consultative procedures, including:

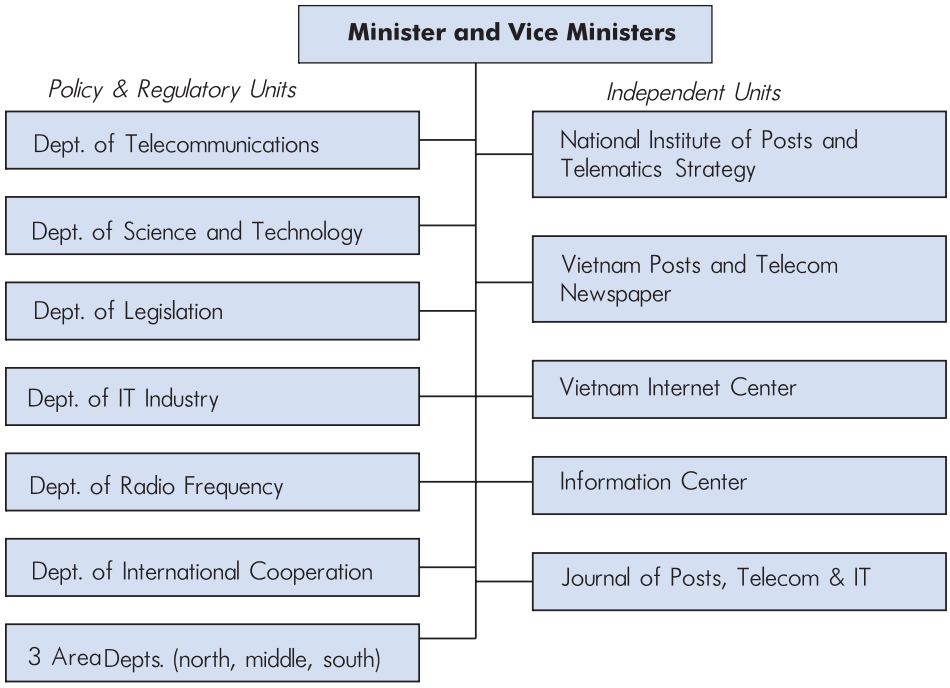
- Announcing in December 2003 that it would undertake stakeholder consultations in drafting the new IT draft law, which is scheduled to be submitted to the National Assembly by 2007
- Holding a series of round table seminars with stakeholders, sponsored by the UNDP, with the goal of developing a national IT and broadcasting strategy.

Furthermore, the Vietnam-US BTA includes by reference the WTO Telecommunications Reference Paper, and hence requires changes in regulatory procedures. The BTA itself specifically requires some changes in regulatory and market procedures, as follows:

- Making licensing criteria transparent (although the choosing of local partners in the issuance of licenses may be excepted from the transparency requirement)
- Allowing public comment regarding the for-

Figure 3

Selected Units from the MPT Organization Chart



mulation of laws, regulations and administrative procedures

- Eliminating discriminatory prices and fees over a 4 year period
- Prohibiting abuse of monopoly power.

While encouraging, these BTA measures alone will not meet WTO accession requirements with respect to telecommunications requirements. Also, the key areas of interconnection, universal access and radio frequency management are not addressed in the BTA, except by incorporating the WTO Telecommunications Reference Paper, which gives very brief (albeit important) guidance.

III. Market Structure and Ownership

Steps Toward Liberalization

Evolution of the Sector. Until the late 1980s, the telecommunications sector in Vietnam was characterized by strict state regulations, monopolistic market conditions, and tight control of all kinds of telecommunications services. The year 1986 marked the beginning of the Doi Moi reform programs, the gradual privatization (locally called "equitization") of some state-owned enterprises (SOEs) in various sectors, the corporatization of other SOEs, and the beginning of gradual liberalization in the telecommunications sector.

Until 1993 the Department General of Posts and Telecommunications (DGPT), a unit of government, was the sole public telecommunications provider in Vietnam. In that year, two separate organizations were created: DGPT was made the strategic, regulatory and development agency, and the newly created Vietnam Post and Telecommunications (VNPT) was given the state monopoly for operating the national telecommunications network. VNPT offered and continues to offer all types of telecommunications services, and is active in all 61 provinces and in all cities.

Also in 1993, the country's first national information technology (IT) policy was developed, and reflected the plans for gradually transforming the entire economy into a market economy, instead of a command one.[12] This IT plan was codified in the landmark 1993 Resolution 49/CP on the Development of Information Technology.

In 1995 Vietnam joined ASEAN and witnessed the normalization of trade relations with the United States. This normalization eventually led in 2001 to signing a Bilateral Trade Agreement (BTA) between the two countries; this BTA has an important telecommunications component. In 1996 a national program was instituted to establish a modern ICT (information and communications technologies) infrastructure. DGPT Decree No. 109 of 1997 continued the liberalization trend, with more competitors allowed to enter what was once a monopoly market.

From 1997 to the present, more licenses in all lines of business have been issued, and increased attention has been focused on the telecommunications and related sectors. This attention has been driven by several factors:

- Liberalization of the laws governing small business formation have resulted in the creation of over 25000 SMEs per year, one of the few major areas of growth and job creation in the economy. These new jobs are important, since millions of school-leavers each year will be emerging from the educational system and will require employment. Decision-makers recognize that these new small firms need to use telecommunications effectively, and that even more growth and jobs could be created by increasing the ICT adoption rate among SMEs. Upgrading of these firms in

12. Note that "IT" in Vietnam policy usually reflects all of what most observers would now call information technology, telecommunications, software/hardware industry, and internal computerization projects.

the ICT area is an excellent area for progress in poverty reduction; this has been recognized by inclusion of telecommunications and ICT in the World Bank's poverty reduction strategy for the country. [13]

- Countries which Vietnam compares itself to, including China, Thailand and the Philippines, are forging ahead in telecommunications and ICT.
- As part of its drive to participate in trade and the regional and global economy, Vietnam recognizes the need for good, effective telecommunications.

As a result of these factors, decision-makers in the Parliament, the Communist Party and in the Government have identified telecommunications as a leading economic sector.

Current Structure and State of Competition

Ownership and Market Structure. VNPT remains the dominant public telecommunications provider, and participates in all activities in the sector. As the largest telecommunications provider, VNPT is a conglomeration of divisions, SOEs (state-owned enterprises), joint stock companies, joint venture companies and other companies and units under one umbrella that offers a full complement of telecommunications services. The figure on the next page shows the organizational chart for VNPT. This organization structure includes the various VNPT internal divisions, as well as numerous subsidiary member units, including the national network company (VTN), the data network company (VDC), the international communications company (VTI--with a BCC with Telstra,), 61 provincial and city operating companies (with several BCCs including Telstra, France Telecom, and NTT), design and construction companies, research and training centers, a finance company, a hotel, a hospital, and various others.

VNPT also owns the two dominant cellular companies: Mobifone (which had a BCC arrangement with Comvick) and Vinaphone (holding contracts with Nokia). These two companies are part of VNPT's Vietnam Mobile Telecom Services division (VMS). In addition, VNPT has several paging companies (ABC, MCC, Phonelink, Polink, and SEPRO), and payphones (GPC, supplied by Sapura).

VNPT installed 1.148 million new fixed lines in 2004, in line with expectations, is estimated to have installed about 1.3 million additional fixed lines in 2005, and is forecast to install about 1.75 million in 2006. The result of this rapid growth is that fixed line penetration should pass 10% by the end of 2006.[14] If achieved, this will represent significant progress.

It is estimated that VNPT retains about 90 to 94% market share of the entire telecommunications market. As shown in Figure 2 in Section I, VNPT is active (and is dominant) in every line of business and market segment.

Other players which are moving to enter all segments include Viettel, an SOE owned by the military, Viet Power Telecom, a firm owned by the electricity SOE, Hanoi Telecom, and SPT (Saigon Post and Telecommunications). Of these, SPT has the most complex ownership, being 87% owned by 11 government organizations, including 18% by VNPT; with the remaining 13% being owned by individuals, private companies, and staff. SPT retains about 2.6% market share of the entire telecommunications market, compared to 90-94% for VNPT.

Figure 4 below shows the structure and busi-

13. For more information on the growth of SMEs in Vietnam, see the Annex.
14. BMI, ibid.

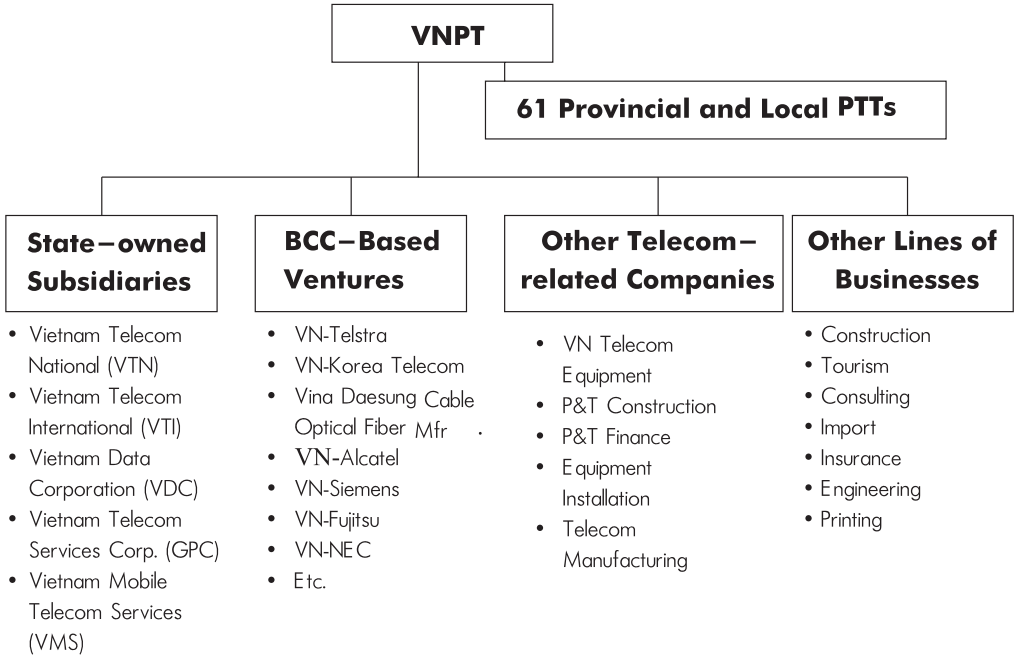
ness areas of VNPT. According to press reports, VNPT is preparing to modernize, corporatize and equitize its structure in 2006. Reportedly, the current plan is for regional operations to be incorporated into separate companies, with an overall holding company which will own shares in its subordinate affiliates. This will allow for investors, including foreign investors, to purchase shares, and for VNPT to raise needed capital. TeleGeography reports the moves as follows:[15]

> The Vietnamese government has given the green light to a plan to establish a new state-owned telecoms group, the Vietnam Post and Telecommunications Group (VNPTG) in early 2006. The new public entity will succeed Vietnam Post and Telecommunications (VNPT), which has been working towards privatising 41 of its subsidiaries. To date, 26 of these units have been spun off and preparations are under way for the remaining 15. The new group will retain a 50% stake in many of VNPT's fringe divisions including equipment manufacturing, software development, hardware installation, tourism, insurance and provision of value added services.

State of Competition by Market Segment. Competition has increased substantially in the Vietnam telecommunications market over the last decade, considering that in 1993 the market was still a total monopoly in all market segments. However, it should be noted that much of the current competition in the telecommunications sector in Vietnam has come from other SOEs (and the armed forces) entering the mar-

Figure 4

VNPT — Selected Affiliated Companies



Sources of info.: VNPT website and interviews, 2004.

15. See http://www.telegeography.com/cu/article.php?article_id=10221

ket, as they see the potential for profits and diversification, rather than from the private sector. A report by GIPI (the Global Internet Policy Initiative) states that VNPT has actively tried to prevent the licensing of truly private competitors, thus limiting the "competition" to other SOEs. The report also states that the "the delay in issuing SPT's CDMA mobile service [license] is clearly an example of VNPT's monopolistic power." GIPI concludes that VNPT has greater power than MPT to set prices, when the reverse is supposed to be true, and states that there is

Table 4:
Summary of Market Segments, Leaders and Challengers

Segment	Leader		Challengers	
Fixed Local & Long Distance	VNPT*	About 90% market share	Viettel SPT* Hanoi Telecom Viet Power Telecom	National license National license Hanoi license only National license
Int'l Services	VTI*	Owned by VNPT; BCC with Telstra	Viettel Viet Power Telecom	Owned by military Formerly ETC
Int'l & Domestic Leased Lines	VNPT*		Viet Power Telecom Viettel	Formerly ETC; Subsidiary of power company Owned by military
Mobile Services	Vinaphone*	43% mkt share 2005; est. to drop to 37% by 2010 Switch and related supply contract with Nokia; GSM technology; Owned by VNPT	SPT* (QS-FoneÚ) Hanoi Telecom	BCC with Korea SLD; CDMA technology; Forecast 10% share by 2010 Partially owned by VNPT; National license $656 million BCC with Hutchison for CDMA 3G; GSM technology now; Forecast 11+% share by 2010
	MobiFone*	39% mkt share 2005; est. to drop to 37% by 2010; BCC with Comvik in process of being liquidated; GSM technology; Owned by VNPT; equitization planned	Viet Power Telecom (VP Telecom) Viettel	Formerly ETC; CDMA technology; forecast 10% share by 2010 New agreement with Ericsson to provide GPRS-enabled network; Owned by military; GSM; Forecast 5% share by 2010, although over 500K additional subs in just 1st 6 months of 2005
ISPs (only major players shown)	VDC*	VDC=Vietnam Data Corporation; Owned by VNPT	Netnam SPT* FPT Viettel	SOE, Canadian assistance Partly owned by VNPT Partly employee owned Military
IXCs (Internet Inter-exchange carriers)	VDC*	ditto	Viet Power Telecom SPT* Hanoi Telecom	Very small share Very small share Very small share
OSPs (On-line service providers)	VDC*	ditto	Ten minor players	

Sources: World Bank interviews, Pyramid Research, 2005
Competitors in red (also indicated by an asterisk) are owned or partially owned by VNPT

almost no true private enterprise activity in the telecommunications marketplace.[16]

VNPT retains a high degree of dominance in almost every market segment, and has substantial multi-ownerships in many segments. The situation by segment is shown in Figure 2 in Section 1, is summarized in Table 4 below, and is described narratively below.

Fixed Local and Long Distance Services. VNPT dominates this market, with about 90%[17] of the total 6.85 million fixed local lines in service.[18] VNPT is partnering with Siemens in a $107 million effort to provide wireless in the local loop service in ten provinces in the central region. VNPT's monopoly power has been reduced, as licenses were issued over the last two years for local and long distance service to Viettel (a military SOE), SPT and Hanoi Telecom (in their respective cities only), and Viet Power Telecom (a nationwide SOE under the electric company, sometimes known as VP Telecom).

As stated above, VNPT owns an 18% interest in SPT, in addition to being the dominant carrier in this segment.

As described earlier, the Vietnam Public Utility Telecommunications Service Fund will provide funding for rural expansion of local service in un-served or under-served areas.

International Services. VTI, an SOE subsidiary of VNPT, was until recently the sole provider of international services in Vietnam. VTI was founded in March 1990 and operates under DGPT decision 324/QD-TCBD of September 9, 1996. VTI has gateway exchanges located in Hanoi, Ho Chi Minh and Danang cities, linked together by an SDH backbone; 6 satellite earth stations with 6 antennas working with Intelsat and Intersputnik satellite systems; and two in-service submarine optical fiber cable systems (T-V-H and SEA-ME-WE 3) connecting with other submarine cable systems. VTI is also active in the VSAT arena. VTI operates an all-digital system, and has about 1500 employees. VTI has a BCC with Telstra of Australia to develop international voice and data networks.[19] VTI had been planning to launch a satellite, Vinasat-1, in the near future. But the launch has been delayed, reportedly until 2008.

On July 29, 2002, MPT issued licenses to Viettel (an SOE under the military) and to Viet Power Telecom to undertake switched international telephone services.

Voice over IP (VOIP) international services are in operation by VNPT, Viettel, SPT (as noted above, partly owned by VNPT), Vishipel, Viet Power Telecom and Hanoi Telecom.

Under the BTA, (US) foreign private investors are supposed to be allowed to enter the market for "satellite" services by the end of 2005, with up to 49% ownership. (But see the BTA discussion below.)

International and Domestic Leased Lines. Regarding international and domestic leased lines, the situation is as follows:

- VNPT dominates the market and until recently had a monopoly on leased lines
- Currently Viet Power Telecom offers domestic leased lines, and has been recently given a license for international leased lines. This service is not yet operational
- Viettel also offers currently domestic leased lines and now has a license for international leased lines.

Due to increased competition, falling equipment costs, and in response to government pol-

16. GIPI, "Promoting Internet Policy and Regulatory Reform in Vietnam: Status of Telecommunications Development in Vietnam," Assessment Report, March 2004.
17. World Bank interviews with NIPTS, December 2005.
18. SPT, the only currently active competitor, has 23,000 fixed lines in the Saigon area.
19. For a list and brief description of all the BCCs in Vietnam, see the Annex.

icy changes, the dominant carrier VNPT has been dropping prices substantially. For example, in May 2005 VNPT dropped its monthly tariffs for leasing international capacity by 20 to 40%, and dropped its domestic rates by 10%.

Mobile Services. This market segment is the key driver of sector expansion in Vietnam, with growth rates averaging 53% per year for the past four years. Currently in Vietnam, competition occurs primarily between two national mobile operators, both owned by VNPT as part of its Vietnam Mobile Telecom Services (VMS) division, and both using GSM technology. The estimated 2005 market share of the 9.3 million mobile subscribers is Vinaphone at 43% and Mobifone at 39%, thus totaling 82% for VNPT.[20] Pyramid Research forecasts that Vinaphone's market share will decline to about 37% by 2010, that Mobiphone will also decline to about 37% by 2010, and that other firms will rise from negligible now to about 26% by 2010.

Pyramid also estimates that mobile teledensity matched fixed teledensity at the end of 2004 , with both at about 7.5% penetration, and that the recent CAGR[21] in mobile of "almost 50% will moderate to around 21%."[22] Pyramid in 2005 forecasts that mobile teledensity will reach about 27% by 2010, more than twice the fixed teledensity at that point.[23] BMI forecasts are more optimistic, estimating that mobile teledensity will reach about 39.9% by the end of 2009.

Vinaphone has a reported growth rate of 50,000 subscribers per month. Vinaphone spent about $1.1 billion USD on expanding service coverage in 2003. Mobifone has received BCC investments of $456 million USD from Comvik of Sweden. Although Mobifone and Vinaphone have a common parent, they seem to compete fairly vigorously. Total mobile revenues for all firms are estimated at about $1 billion for 2005, with only about 7.0% of this revenue coming from mobile data services. These figures are projected to climb to about $2.9 billion and 8.7% in 2010.[24]

MPT and VNPT are eliminating the Mobifone BCC arrangement with Comvik, and are reportedly changing to a new structure in which the government would retain 51% ownership, and shares for the remaining 49% would be sold to the public. A statement in April 2005 by Deputy Prime Minister Tran Duc Lai announced plans for the equitization of Mobifone and Vinaphone. Observers expect that sale of shares in Mobifone will take less time, since the main obstacle was the legal end of the Comvik BCC in May 2005, while the Vinaphone equitization will take longer, since the country's local post offices have a share in the ownership of this operator.[25]

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20. NIPTS estimates that VNPT market share of mobile is 85% in December 2005, a figure close to the Pyramid Research estimate shown here. (World Bank interviews, December 2005.)

21. CAGR = compound annual growth rate.

22.Pyramid Research, "Vietnam Country Outlook," September 2005, and Pyramid Research, "Communications Markets in Vietnam," February 2004, www.pyramidresearch.com. PR anticipates that GSM technology will continue to dominate the market through 2010, with CDMA gaining less than 20% share, due to low demand for data usage and higher CAPEX requirements. Intensification of competition is also forecast, due to MPT allowing newcomers to undercut the prices of the two VNPT subsidiaries.

23. Thus the national goal set forth by NIPTS of "reaching total teledensity of 32-42 by the year 2010" is currently on track and would likely be achieved, barring unforeseen circumstances. One factor that might slow growth could be foreign investor reluctance to commit billions in an environment where ownership is not allowed; see the discussion later on the BTA, BCCs, and on investment and financing.

24. Pyramid Research, ibid.

25. World Markets Research Center, WMRC Country Report: Vietnam (Telecoms), October 2005.

Four other mobile operators have been licensed and are operational: SPT[26] (using CDMA technology) , Hanoi Telecom, Viet Power Telecom (formerly ETC), and Viettel (an SOE under the military). SPT and its CDMA technology reportedly had difficulty in its first few months, due to high handset costs, lack of handset selection, and lack of SIM cards. As a result, CDMA subscriber growth was "tepid"[27] at first, although it may expand to as much as one third of subscribers by 2010.[28] Military-owned Vittel reportedly had net subscriber additions totaling 540,000 in the first half of 2005, making it a potential threat to the top two competitors. Vinaphone, one of those top two, was reported by Pyramid Research to be set for "imminent privatization, within two years," with Norway's Telenor as the likely major investor. Viet Power Telecom has allocated $200 million to a plan to reach two million customers with its CDMA 450 Mhz service.

Under the BTA, (US) foreign private investors were to be allowed to enter the market for "mobile" services by the end of 2005, with up to 49% ownership. However, Vietnam appears to be behind schedule in meeting those requirements (see the later discussion of the BTA).

Regarding technological evolution, BMI states that:[29]

> It does not appear that Vietnam has a clear policy towards the deployment of 3G [third generation] networks, and – to the detriment of its long term success – it is likely that permission for service launch will be done on an ad hoc basis. Hence in February 2005 Hutchison Telecom received a 15 year license to provide CDMA2000 services, which will include an upgrade to 3G as part of its BCC with Hanoi Telecom. [But] it is unclear when the 3G technology will be made available, and beyond this, no concrete plans have been confirmed by other players, with Mobifone currently limiting its trials to 2.75 G technology.

In November 2005, Deputy Prime Minister Nguyen Tan Dung reportedly turned down a request from broadcaster Vietnam Television to enter the lucrative mobile market. He reaffirmed an earlier ruling that no more mobile licenses would be issued, in order to ensure a high quality of service quality from the existing six operators.

ISP and Other Internet Services. There are three categories of Internet licenses in Vietnam: Internet exchange carriers (IXCs), which are wholesalers; Internet service providers (ISPs), which are retailers; and Internet online service providers (OSPs), which provide content and information services.

IXCs. The market for Internet inter-exchange carriers (IXCs) opened up in early May 2002 when FPT (also an ISP) and Vietel were licensed as IXCs, in addition to the previous monopoly Vietnam Data Corporation, a subsidiary of VNPT. Since then Viet Power Telecom, SPT, and Hanoi Telecom have been licensed as IXCs.

ISPs. The ISP market is dominated by VNPT, utilizing its subsidiary VDC--Vietnam Data Corporation. It holds 57% of the market.[30] Six organizations hold 99% of the market, and two of the six (VNPT and FPT) control 76% of the market. (See the exhibit below.)

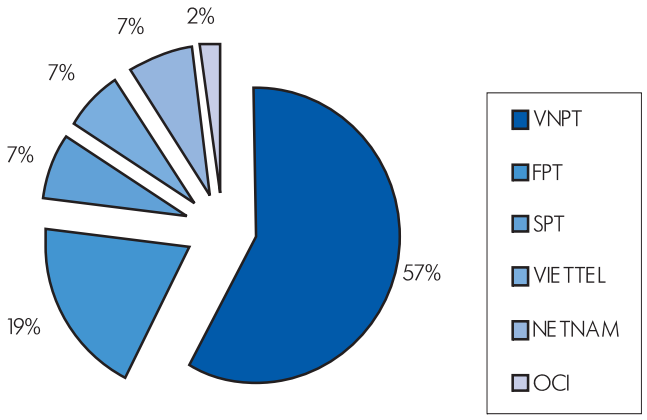
FPT (the Corporation for Financing and Promoting Technology), the second-largest ISP,

26. As noted above, VNPT owns an 18% interest in SPT, in addition to owning the two dominant cellular carriers.
27. Pyramid Research, ibid.
28. Pyramid Research, ibid.
29. BMI, ibid.
30. This figure and the chart are for the end of 2004. World Bank interviews in December 2005 with NIPTS indicate that VNPT still retained about "55 to 60% of the Internet market" at that point in time.

is a majority state-owned and minority employee-owned share-based company, which is active in computer distribution, training and software.

Netnam was created with assistance from Canada's IDRC, is a state-owned enterprise owned by the government Institute of Information Technology, and is used extensively by development agencies and professional Vietnamese. It offers Internet dial-up, high speed connectivity, bulletin boards, forums, file libraries, mirror sites, website creation, and business solutions.

Figure 5. Major ISPs Market Share



Source: World Bank interviews; USAID, ibid. Data from 2004.

Liberalization in the ISP area has currently led to 16 firms being licensed, although not all are active.[31] Four of these firms (Tham Tam, OCI, Viet Khang and Network Technologies) are stock (private) companies.

Note that VNPT has ownership of the dominant ISP and partial ownership of the third largest ISP, SPT.

OSPs. There are 11 Internet on-line service providers (OSPs) licensed in Vietnam, namely VDC (a subsidiary of VNPT), FPT, Netnam, SPT (partially owned by VNPT), Vietel, OCI, Viet Power Telecom, Vishipel, Netsoft, Elinco, and Techcom.

Foreign (US) investment with up to 50 percent equity was to be allowed in Internet services by the end of 2004 under the terms of the BTA (but see the discussion below). Private investment in Internet services is permitted to reach the 100 percent ownership level.

Private Sector Participation

Private sector participation in the telecommunications sector is on-going and increasing. There is now private sector participation in the mobile, Internet and paging lines of business, through BCC arrangements.

In December 2001 Vietnam and the United States signed a bilateral trade agreement (BTA) which provides for a substantial measure of foreign private investment in the Vietnamese telecommunications sector, on an ordered schedule over the next several years. The terms and timetable of this agreement are presented in the table below. It is anticipated that this timetable will be widened in scope to cover investors from all countries, as part of a Vietnamese WTO telecommunications offer to be forthcoming, perhaps in 2006.

In terms of the corporatization or privatization ("equitization") of VNPT, the obvious candidate, there has been little public discussion or consultation regarding this option. However, there have been significant moves to begin carving up portions of the company, especially mobile, for possible private and foreign equity investment.

Up to the present, the only avenue for private foreign involvement in basic telecom networks (other than the BTA provisions) has been through business cooperation contract (BCC)

31. USAID, 2005, ibid. See the Annex for a list of ISPs.

Table 5:
Vietnam-US BTA for Foreign Investment in Telecommunications

Phase	Segment	foreign (US) investment	Date	Timetable
0	All market segments	0%	Upon BTA	December 2001
I	Value-added telecom services	Up to 50%	2 years after agreement	By end of 2003
II	Value-added Internet services	Up to 50%	3 years after agreement	By end of 2004
III	Mobile, leased lines and satellite services	Up to 49%	4 years after agreement	By end of 2005
IV	Fixed line services (including long-distance)	Up to 49%	6 years after agreement	By end of 2007

schemes, in which foreign companies finance capital investment and share in revenues, but have no ownership share, and limited or no management control.

In most cases such BCC schemes suffer from various drawbacks which increase the cost of capital:

- Lack of ownership by the private investor and limits on management control have negative consequences, such as increased investor risk, reduction in the availability of capital, and reduction in the transfer of management expertise to the firm. Also, since the BCCs de-link management from facing investor risks, incentives for effective, profit-oriented management are reduced.
- The negotiation process in time-consuming
- The BCC arrangements were more attractive when the investors had the security of a monopoly situation. With the gradual opening up of the telecom market (mainly to local SOE competitors), there could be decreasing interest among foreign investors in these schemes.

Despite the problems with BCCs, it should be noted that recent BCCs have been negotiated with provisions which will allow for conversion to ownership arrangements in the future, if permitted. Furthermore, the BCCs have been a very effective method for bringing external capital and investment into the country. For example, the recent BCC between Hanoi Telecom and Hutchinson is bringing in $656 million in external investment, a non-trivial sum.

Citing the fact that BCCs remain the only vehicle for investment, and an unsatisfactory one, a recent USAID report stated that, "It is important to note that Vietnam is behind schedule in implementing the BTA."[32]Vietnam is moving to allow for equity investment in mobile and other lines of business, although a comparison of Vietnam with other Asian coun-

32 USAID, Competition Review of the Vietnamese Telecom Sector, 2005, p. 26. This report also cited various technical legal and regulatory changes that were required to keep the BTA on schedule. World Bank interviews in late December 2005 with Vietnamese officials in charge of equitization confirmed that "foreign companies are not allowed more than 30% ownership, especially in the telecoms sector." These officials stated that two options are being considered: 1. changing current BCCs into equitized companies; this would require a change in the foreign investment law to increase the 30% ceiling;or 2. changing current BCCs into JVs, an option favored by the foreign investors. This option would require changing various government decrees.

tries in terms of limits on foreign ownership shows that Vietnam is lagging behind more progressive telecom investment environments such as Singapore, and is even behind countries such as Indonesia, Laos and Cambodia. (See the table below.)

ual BCCs may do well. The US BTA signals the gradual end of the BCCs. This will likely not be an overnight phenomenon, but rather a gradual transition. (For example, the first non-VNPT BCC, with SPT, has a clause to convert the BCC to

Table 6:
Allowed Foreign Ownership of Telecoms, by Country

Country	% of Foreign Capital Allowed	Legal Forms Required/Allowed
Brunei	Not allowed	Not allowed
Cambodia	49%, with exceptions	None
Indonesia	Non-ASEAN: 35% ASEAN: 40% (with exceptions)	JV (joint venture); JO (joint ownership); Regional concessions
Lao PDR	Foreign JV partner provides at least 30% of the capital; no upper limit	JV or Wholly owned foreign entity
Malaysia	61% allowed for 1st 5 yrs, then 49% subsequently	Through acquisition of shares in existing operators
Myanmar	Not allowed	Not allowed
Philippines	40%	No restriction
Singapore	100%	No restriction
Thailand	49%	Joint venture
Vietnam	Not allowed	Only through BCCs

Sources: USAID, ibid.; World Bank research; source for Thai figure: ITI: Thailand Telecoms Market Report, 4/2005

Looking to the end of this decade, it appears likely that the dominance of VNPT in the market will be reduced. Non-VNPT entities are being encouraged to enter the market and make it more competitive.

It also appears likely that the BCC approach will be gradually replaced in the future by more investor-oriented mechanisms, although individ-

a joint venture when Vietnamese law permits.) If Vietnam accedes to the WTO, then the minimum standard will likely be imposition of the US BTA deadlines and requirements on the entire sector—and of course the BTA allows for direct investment. It appears likely that various BCCs will be renegotiated over time to allow for increasing direct investment, ownership and control.

IV. Investment and Financing

Revenue and Financing

Vietnam remains one of the smallest communications markets in Asia, with a total telecommunications revenue of about $1.88 billion in 2005.[33] This is largely due to having a relatively low GDP per capita combined with a high rural population with little access to telecommunications services.

However, in terms of 2004 to 2005 revenue growth, Vietnam, with a 16.5% increase, trails only Indonesia (at 16.6%) and India (17.8%) in growth in the Asia region.

Vietnam faces similar challenges to other developing countries in terms of financing substantial network rollout. To achieve a target of 35 lines per 100 population by 2010 from the current level of about 19.9 per 100 (fixed plus mobile), will require about $240 million per point (800,000 lines per point (one percent teledensity) times about $300 per line[34]), or about $3.6 billion in total. The total investment budget for VNPT for 2003 was only about $313 million USD, so this level of investment spread over five years (2005-2010) would total about $1.6 billion, a shortfall of $2.0 billion from what is required. And with VNPT's main sources of profits -- highly priced leased lines and international calling -- being cut dramatically, there is a question of whether it would be able to even make these investment targets. VNPT as a source of financing is further weakened by its inability to raise funds via bond or share offerings in private markets. Of course, the BCCs are generating hundreds of millions of dollars in fixed and mobile investment within VNPT and its competitors. But it seems questionable that **billions** of dollars of investment capital can be attracted, without allowing for equity participation.

Forecasts by Pyramid Research also bring revenues and investments into question. PR forecasts that overall fixed communications revenues will be fairly flat from 2006 to 2010.[35]

The components of this forecast are:

- Declines in revenues from international

33 Pyramid Research, ibid.

34 Total costs per line can be expected to be about $200 or even much less in urban areas, and mobile deployment costs per line are very low, but in rural areas the cost per line (even for mobile) will be higher. Costs per line will likely decline during the period, although the rapidly falling costs for electronics are not as important a part of the total cost as they once were. Also, it should be noted that the easy, pent-up demand is now being satisfied, and marketing, churn, and construction costs per line could rise as outreach to less motivated customers (with more choice) and to smaller towns is required. The costs of the "core network," including towers, rights of way, additional regional nodes to allow for administration, failure-tolerance, and to minimize backhaul requirements, will form a much larger part of the total expense, and hence will drive up the unit cost for the extensive rural deployments required in Vietnam to reach the bulk of the population. See www.srtelecom.com/imports/pdf/en/CDMA-Networks-ruralPB3.pdf. Note that two of the recent BCCs in Vietnam, Cable & Wireless and France Telecom, had total average costs of roughly $900-1000 per line.

35. Pyramid Research, ibid.

long distance (ILD; outgoing), domestic long distance (DLD) and data private circuits
- Very slight increases in local service revenues
- Declines in revenue per line for residential and business voice communications
- Increases in Internet revenues; but these are not enough to overcome the ILD and DLD declines.

In line with these predictions, VNPT reportedly posted somewhat disappointing revenues for the first half of 2005, running about 8% below plan, on an annualized basis.

Thus the questions are raised, what growth and technology strategy will VNPT pursue, and will the strategy be cost efficient and cost competitive? If the strategy is not highly competitive, financing may become a major issue. Financing sources are limited to retained earnings, supply credits, debt financing, equity issuance, and donor assistance. Under its current structure, VNPT is unlikely to raise funds through debt or equity issuance, and it appears likely that retained earnings may come under pressure. Outside donor assistance from some sources is on-going but will likely be small compared to the need.

Table 7
ICT Expenditures as a Share of GDP in Selected Countries

Country Name	Percent of GDP
Singapore	10.5
Malaysia	6.9
Malaysia	5.8
India	3.7
Thailand	3.5
Indonesia	3.4
Vietnam	2.4

Source: World Development Indicators 2004, 2005
Note: Data in italics are from 2002.

Continuing with the analysis of societal investment, the table below shows that Vietnam is spending a comparatively low percentage of GDP on ICT. With a figure of 2.4%, Vietnam ranks below all analyzed countries in the region, and is even one percent behind Indonesia.[36]

To avoid future financing problems, it will be important to attract private capital into the sector. This capital should be both domestic and foreign in order to meet the demand. Such private capital will likely only be attracted by major improvements in the regulation and operation of the sector, including:

- Restructuring and reforming VNPT
- Encouraging and licensing truly private operators
- Moving away from BCCs (or renegotiating them) to simple private ownership of facilities
- Making the official separation between the government and the dominant carrier more real in practice
- Eliminating the multiple player ownerships of the dominant carrier
- Creating an effective regulatory regime for interconnection, numbering and spectrum management
- Acceding to the WTO and meeting all its telecommunications requirements.

36. Note that defining and measuring the concepts used in this table are difficult, definitions used across countries may not be identical, and exact results should be used with caution. Also, "expenditures" are not the same as "investment," and could reflect high expenditures on low-cost-per-unit goods. Gross comparisons between countries may be useful, however.

Potential new Areas of Investment

There are a number of new technologies which promise lower cost and more customer-oriented methods for telecommunications access and service in Vietnam. These include broadband Internet access via wireline, WiMax and software-based VOIP; these are discussed below.

Broadband. Worldwide, the telecommunications market is basically organizing around two major types of technologies: fixed broadband and mobile narrowband. Vietnam, having started very late on fixed broadband, is very far behind the growth curve in this area, but is starting to catch up. In mobile narrowband, Vietnam also began late but not as late as broadband, and has had tremendous growth. Hence this area is better developed. Both arenas offer significant possibilities for investment.

Broadband Internet access via wireline in Vietnam has a low penetration, but is expected to grow rapidly due to high demand and recent price wars. It is estimated that there are currently (late 2005/early 2006) about 100,000 ADSL (asymmetric digital subscriber line) broadband subscribers in Vietnam, with VNPT holding about 45% market share. Major competitors include FPT (with about 30,000 subscribers in mid-2005) and Viettel (10,000 subscribers), which are both undercutting VNPT's price substantially. This price war has led to extremely low prices, including just $37/month for residential customers of VNPT (down from the previous price of $68 per month), and only about $2/month (sic) for a rock bottom ADSL package offered by FTP. This is one of the lowest prices in the world.[37] TeleGeography forecasts that the number of ADSL subscribers will pass 200,000 by 2007, and states that supply is still lagging demand.[38]

Viet Power Telecom and Vietnam Cable TV are partnering to offer broadband Internet access to cable TV customers, at very high data rates; this venture is in a nascent stage.

WiMAX. WiMAX is a new wireless standard being championed by Intel. It uses an antenna and two-way communications to replace backhaul or consumer communications. This new wireless standard is still in a formative phase of development, but the following characteristics are clear:

- 268mb/s in each direction, with realistic throughput of 70mb/s
- 30 mile range (48 km)
- Support for Voice over IP, multimedia, and data.
- Strong security features, including encryption.

WiMax will connect individual mobile users and home broadband subscribers directly to the Internet, providing an alternative to the cable and asymmetric digital subscriber line (ADSL) offerings available now. WiMax is appropriate for countries with large rural areas, where laying fiber optic cables is very costly. Vietnam is reportedly looking into WiMax, and Singapore is already conducting trials.

Software-based VOIP. Turning to international service, software-based VOIP service has substantial potential in Vietnam. An example of this type of service is Skype,[39] which has received considerable publicity recently. Skype (and other similar software packages) is free, downloadable software that enables users to

37. Thai News Service, "Tough ADSL Competition Keeps Prices Low in Vietnam," 10 Oct 2005
38. See http://www.telegeography.com/cu/article.php?article_id=7544.
39. See www.skype.com/ for more information.

make free calls anywhere in the world via the microphones in their computers. Skype uses P2P (peer-to-peer) technology to connect to other Skype users. Quality of service reportedly exceeds that of traditional land line phones. This service was launched in early 2004. Current penetration in Vietnam is apparently very small, but over time this and other similar services are expected to create further downward pressure on international calling rates in Vietnam and elsewhere.

These and other new technologies would appear to be fruitful areas for attracting private investment, with subsequent benefits for individual and corporate consumers, major investors and individual shareholders.

V. Sector Performance

Access to Services

Since the launch of the national economic reform process in the early 1990s, Vietnam has vastly improved and expanded its telecommunication infrastructure, especially in the availability of modern basic service and cellular services. From 1991 to 2005, the total number of lines in service in Vietnam grew from 100,000 to 16.2 million (of which 6.9 million were fixed and 9.3 million were mobile—note that mobile has already exceeded fixed). Total teledensity increased from 0.1 to 19.9 per 100 residents during the period. Because of this rapid expansion, most of the telecommunications infrastructure was built in the last decade. It is modern and digital. The North-South cable backbone was built in 1995. Today all major and regional urban centers have efficient telephone networks with extensive penetration.

Penetration in rural areas is below about 3% according to the ITU, compared to the overall penetration of 15 to 30% in the cities.[40] According to BMI research, one third of Vietnam's villages are in mountainous or other areas difficult to reach with cheap telecommunications solutions.[41] Currently 8298 out of 8921 communes in the country (about 93%) have at least one fixed line telephone. More than 40 provinces have 100% of their rural communes penetrated with one or more fixed line telephones. Copper cable is generally used, but in difficult locations such as remote areas, mountainous regions and islands, microwave point to point, point to multi-point, and satellite solutions are used. Most of this rural network is under the control and ownership of VNPT, although some other enterprises are preparing to enter the rural market. Cellular service is available in at least some locations in 61 of the 61 provinces. Internet service has been provided to some rural locations, based in commune and post offices. There are a few websites that provide information on rural agricultural production. Postal and newspaper distribution is relatively high, with 85.4 percent of rural communes reached by daily newspaper delivery. The rural market is thus better off than it was several years ago, but with only about 3% teledensity, this market is very much under-served.

Various donor assisted projects have been put in place to ameliorate the rural situation. For example, in September 2005 VNPT and Ericsson completed a JICA-funded project to install 140,000 phone lines in rural areas of the 10 central provinces. The effort was supported by a JICA low interest loan. Various other similar efforts are underway in rural areas, supported by loans or grants from Sweden, France and other donors.

The government has recognized the rural problem and has passed a regulation creating the Vietnam Public Utility Telecommunications Service Fund as a Universal Service Obligation (USO) mechanism to address the issue. Although the funding sources have been identified, operational details of this mechanism are still being worked out.

40. Penetration figures by province are not available.
41. BMI, ibid.

The number of pay phones was reported at 11,155 as of 26 December 2005, up from 10,703 at the end of 2004.[42] This is a low penetration rate, but the situation is mitigated in that many small businesses in towns and rural areas allow customers and passersby to use their business phones for a set fee.

As elsewhere in the region, the mobile market in Vietnam has enjoyed explosive growth. The number of subscribers increased from 22,500 in 1995 to an estimated 9.3 million by 2005, an average annual increase in excess of 80%. (Recent years have averaged about 53% annual growth.)

In the fixed line market, 1.1 million lines were installed in 2004, and an estimated 1.3 million in 2005, a 20% increase over 2004. Year on year growth rates in fixed lines have averaged over 20% for the past three years, a remarkable achievement.

Vietnam's 2004 total teledensity of 12.3 placed it ahead of India (9.1), but left it trailing behind regional neighbors and competitors Indonesia, China, Thailand and Malaysia, and Thailand. (See the chart below.) Note that the estimates for 2005 show Vietnam with a fixed line teledensity of 8.4 and mobile teledensity of 11.5, for a total of 19.9, another remarkable increase over the previous year's total of 12.3.

Vietnam only permanently connected to the Internet in November 1997, although it had been involved in various networking activities for five years before that. By year end 2003, according to the ITU, Vietnam had about 3.5 million Internet users and a very small number of hosts (see chart below). This user penetration

Table 8.

Total Teledensities (Lines per 100 Pop.) in Selected Countries

	1995			2004		
	Fixed	Mobile	Total	Fixed	Mobile	Total
China	3.3	0.29	3.59	24.1	25.8	49.9
India	1.29	0.01	1.3	4.3	4.8	9.1
Indonesia	1.69	0.11	1.8	4.6	14.1	18.7
Malaysia	16.57	5	21.57	17.6	57.3	74.9
Philipines	2.05	0.72	2.77	4.1	38.7	42.8
Singapore	40.52	8.68	49.2	43	89.1	132.1
Thailand	6.06	2.26	8.32	10.6	42	52.6
Vietnam	**1.05**	**0.03**	**1.08**	**6.98**	**5.3**	**12.3**

Source: ITU; note that the fixed line figure for Thailand is from 2003

Table 9.

Internet Use in Selected Countries

Country	Hosts	Hosts/10^5 Inhabitants	Users	Users/100 Inhabitants
			10^3	
China	*89,357*	*1*	*33,700*	*2.57*
India	86,871	1	18,481	1.75
Indonesia	62,036	3	8,080	3.76
Malaysia	107,971	43	8,692	34.53
Philippines	27,996	3	3,500	4.40
Singapore	484,825	1,155	2,135	50.88
Thailand	103,700	17	6,031	9.65
Vietnam	**340**	**0**	**3,500**	**4.30**

Source: ITU 2004

42. World Bank interviews with Vinaphone, December 2005.

was ahead of China, India and Indonesia, and slightly behind the Philippines. In terms of penetration, the Vietnam figure represents a low user penetration of about 4%. However, growth estimates since 2003 show Vietnam reaching a figure of about 11.6 million users by the end of 2005, for a penetration of about 14.3 per 100 population.

The growth of the Internet market segment was hampered until 2002, due to a firewall that stopped inbound traffic carrying any objectionable sexual or political material. Enforcement of the firewall policy was moved in that year from the government to the ISPs. The ISPs are still reportedly required to block in-bound traffic from about 200 objectionable sites.

As mentioned earlier, broadband Internet access is still in the nascent stages, and is limited to about 100,000 customers, despite high demand. Viet Power Telecom was reported in December 2005 to be testing a mobile Internet service with data rates of up to 156 kbps, for use in rural areas. This CDMA2000 technology will also support VOIP telephony. Lack of broadband access in urban and especially in rural areas is a major limiting factor for Internet access and usefulness; changing this will require major investment.

Internet access is hampered by the low penetration of personal computers, reported at 1.6 PCs per 100 population in 2004, and forecast at 1.9 in 2005 and 5.3 by the end of 2009.[43]

Table 10:
Telephone Main Lines per Employee

China	84.8	196.6	*158.7*
India	28.4	50.7	*90.7*
Indonesia	82.1	146.2	*181.3*
Malaysia	115.5	161.8	*219.4*
Philippines	72.5	176.7	*256.7*
Singapore	223.9	202.0	*221.2*
Thailand	99.6	144.4	*197.9*
Vietnam	**13.4**	**16.7**	**48. 9**

Source: ITU 2004, World Bank, 2005
2001 figures shown in italics. The Vietnam figure is for year end 2003, the latest figure available.

Efficiency

On the basis of the most commonly used indicator of efficiency (the number of telephone main lines per employee), Vietnam was lagging its regional comparators substantially. In each of the measured years, Vietnam had the fewest lines per employee, usually by a factor of two or more. Comparing Vietnam to China (Vietnam's traditional comparator in the region), showed that China was about three times as efficient on this measure. The figures for Vietnam are climbing, however, which is encouraging.

Pricing

Vietnam's "market basket"[44] for fixed line service prices is higher than China's and India's, but lower than other countries in the region, while its market basket of fees for mobile and Internet are still high by regional standards. See the table below.

43. BMI, ibid.
44. A "market basket" is a group of prices for different goods, added together for comparative purposes. Here the market basket for fixed line residential includes one fifth of the installation charge, the monthly subscription charge, and the cost of 15 peak and 15 non-peak local calls. The market basket for mobile is based on the pre-paid cost of 25 mobile calls on the same network and other networks, with calls including some mobile to fixed calls made during peak, off-peak and weekends. Thirty text messages per month are also included. The market basket for Internet includes 20 hours per month, with 10 at peak and 10 at off-peak times. Phone charges but not phone line rental charges are included if applicable. All market baskets were developed by the World Bank, using comparable ITU or World Bank figures.

VNPT, in an effort to increase take-up of landlines, launched a special promotion in December 2005 and January 2006, of a 30% reduction in the connection fee, and three months of free phone service, for customers who signed up for at least six months. Business customers who requested five or more lines received a 50% discount.

Tariff levels for two areas of key interest, international outbound calling and international leased lines fell dramatically during the period of 2001 to the present, such that outbound calling rates were at least 7% below the regional average, according to VNPT and independent analysis.[45] Tariffs were lowered twice in 2005 for mobile phones by VNPT, the market leader.

The chart below shows that effective

Table 11:
Market Price Baskets for Fixed, Mobile, and Internet Services in Various Asian Countries

	Price basket for fixed line (US$ per month, residential)	Price basket for mobile (US$ per month)	Price basket for Internet (US$ per month)
China	3.56	3.70	10.14
India	3.21	3.25	8.74
Indonesia	6.15	4.58	22.26
Malaysia	8.69	5.59	8.42
Philippines	12.20	4.03	17.05
Singapore	6.67	5.72	11.04
Thailand	8.34	6.84	6.98
Vietnam	4.27	6.89	19.85

Source: World Bank and ITU data, World Bank methodology. Data from 2004.

Table 12:
Evolution of International Telephone Service Charges (PSTN)

(all prices in USD)	December 2001	July 2002	2003	April 2003	2005
Zone 1: ASEAN, China, Taiwan, Hong Kong, Macao, Republic of Korea and Japan	1.70 - 2.30	1.50 - 1.70	1.30 - 1.40	0.90	0.43-0.55
Zone 2: USA, Canada, Australia, New Zealand, Europe, North Korea, Cuba and India	2.30 - 2.00	1.80 - 2.00	1.50 - 1.70	1.00	0.43-0.55
Zone 3: The remainder	2.30	2.0	1.70	1.10	0.64

Decision	Effective as of
Decision 897/2001/QD-BBCVT, October 30, 2001, DGPT	December 2001
Decision 476/2002/QD-BBCVT, June 13, 2002, DGPT	July 2002
Decision 25/2002/QD-BBCVT, Dec. 18, 2002, MPT	January 2003
Decision 47/2003/QD-BBCVT, March 20, 2003, MPT	April 2003
Decision 4088/2005/QD-GCTT August 03, 2005, VNPT	September 2005

45. The independent analysis was done in December 2003, and prices have continued to fall since then.

September 2005 (the date of the most recent change), outbound international calling rates had dropped by more than 70% compared to rates three years previously. This is a remarkable amount of change in a relatively short time.

VOIP services offered by VNPT and other licensed (and unlicensed) providers, offered at substantial discounts off of normal switched traffic, have helped to drive down the cost of international and national long distance voice and data communications, and to increase traffic volumes.

During the period between 2003 and 2005, charges for international private circuit leasing via submarine cable decreased by about 70% (see the table below). Again, this is a remarkable amount of change in a short period. Due to recent increased competition, dominant VNPT has been dropping prices substantially. For example, in May 2005 VNPT dropped its monthly tariffs for leasing international capacity by 20 to 40%, and dropped its domestic rates by 10%.

Under an MPT decision in 2003 (No. 217/2003QD-TTg), all telecommunications service providers with market shares of less than 30%, and thus deemed to have less than "significant market power," can set their own prices without approval from MPT. This decision covers all forms of telecommunications services, including mobile and Internet. This approach is a significant change from the previous practice of MPT approving (and often rejecting) all price proposals. This new regulatory approach has already led to substantial price drops. But some critics have contended that the new "significant market power" approach is not transparent in its application, and will not aid startup telecommunications providers.

Affordability

The monthly market price basket for fixed line service (described earlier) is about 9% of per capita GNI in Vietnam (see the table below). This is rather high by regional standards.

The market baskets for mobile and for Internet services are still very high by regional standards, with both shown as the highest in the region. Hence although prices have fallen substantially in recent years, they may still require work. A modern, independent and comprehensive study of prices is indicated.

Table 13:
Evolution of Private International Circuit Leasing Charge

		USD/month, Zone 1	USD/month, Zone 2
Decision 477/2002/QD-TCBD, June 13, 2002, DGPT	July 2002	$2824	$2824
Decision 26/2002/QD-BBCVT, Dec. 18, 2002, MPT	January 2003	$2400	$2400
Decision 54/2003/QD-BBCVT, March 20, 2003, MPT	April 2003	$1008--1440	$1080-1440
Decision 11/2005/QD-BBCVT April 28, 2005	May 2005	**$404-714**	**$404-714**

Source: World Bank interviews in 2004 and late 2005

Table 14:
Month Market Price Baskets as a Percentage of GNI Per Capita

	Monthly price basket for fixed line (percent of GNI per capita)	Monthly price basket for mobile (percent of GNI per capita)	Monthly price basket for Internet (percent of GNI per capita)	GNI per capita, Atlas Method (current US$)
China	3.32	3.44	9.43	1290.00
India	6.21	6.29	16.92	620.00
Indonesia	6.48	4.82	23.43	1140.00
Malaysia	2.24	1.44	2.17	4650.00
Philippines	12.51	4.14	17.49	1170.00
Singapore	0.33	0.28	0.55	24220.00
Thailand	3.94	3.23	3.30	2540.00
Vietnam	**9.32**	**15.04**	**43.31**	**550.00**

Sources: World Bank and ITU data, 2004

VI. Main Issues

The priority substantive public policy issues for development of the telecommunications sector in Vietnam are:

1. Increasing competition and private participation
2. Improving regulatory institutions and processes
3. Restructuring and reforming the dominant carrier
4. Improving rural access to telecommunications and information services.

Each of these priorities is related to the others: thus, competition is a powerful incentive for excellent performance. Credible, transparent and effective regulatory institutions and processes support competition and investment. Restructuring and reforming the dominant carrier will improve its competitiveness and the competitive nature of the market, and encourage better customer service by all providers. And improved rural access depends on encouraging regulations, investment, competition, tariffs, network interconnection, and the most effective use of scarce subsidy funds or other mechanisms. These priorities are discussed further below. The first four issues focus on substantive areas; the last two focus on processes for achieving progress.

Promoting Competition and Private Participation

This complex area involves three main sub-issues: new entry, interconnection, and pricing.

New Entry. The government has been licensing new providers in almost every segment, and has thus been increasing competition. This is laudable. However, there is no adopted roadmap which reveals government plans for increasing competition, private and foreign investment, other than the Vietnam-US BTA, which is limited to one country, is fairly narrow in scope, and is not on schedule. Such a roadmap could address the areas of using new technologies (such as broadband, fixed wireless access, VOIP, advanced mobile technologies, etc.) to encourage external direct investment and satisfy consumer demand. Discussion and adoption of such a roadmap would be useful in developing WTO telecommunications offers, part of the WTO accession process which is a stated government goal for the near future.

Other issues related to new entry, competition and private involvement include the issues of the BCCs and the role of private involvement in the sector. The BCCs have fueled network growth, and have brought in large external investments, but are not really satisfactory, long-term mechanisms for bringing in private capital and expertise. Real private investment, ownership, risk-taking, and management of enterprises are necessary to reap the benefits of a market economy.

MPT's adopted ICT Development Strategy document of 6 October 2005 does not give private sector enterprise estimates or goals for future market shares, nor does it provide a method for attracting private investment to achieve the strategy's many laudable goals. Licensing new entrants is very helpful and is on-going, although experience in other countries shows that many obstacles besides just

licensing usually lie in the way of true competition and private participation. Nor is it clear from the MPT plan or from current trends how much truly private investment will be attracted, versus investment from other SOEs and the military (which have dominated investment to date.) An on-going dialog between government and new and potential entrants is needed to encourage their participation.

Regarding licensing of new entrants, procedures for the award of licenses for major telecommunications network and service operators remain ill-defined and non-transparent, and there are at least some allegations that the dominant player has held up licenses for other players. Licenses are issued to connected parties, including SOEs, without transparent studies of the effects on the market, the qualifications of the potential awardees, discussion of possible competitive bidding, the need to attract private investors, or other factors. Other countries have moved to a class license approach for public telecommunications operators, and have commissioned public studies of the effects of, say, issuing new mobile licenses. In non-controversial, highly competitive segments (such as paging, ISP provision, etc.) many countries have moved to simple registration of any new provider, or even to just allowing anyone to perform the service without registration.

Interconnection. A key prerequisite for effective competition in any telecommunications sector is a transparently managed and non-discriminatory interconnection regime, under which major providers are obliged to provide cost-reflective rates and are prohibited from engaging in anti-competitive cross-subsidies. VNPT currently occupies a substantially dominant position in all market segments. Based on experience in many other countries, as real competition develops, VNPT and other large players may be tempted to use market and political power to manipulate interconnection rates and terms to their advantage, rather than being subject to a "level playing field," or even to a field "tilted" against them (which might encourage new private entrants). .

There is currently no transparent process to set or appeal interconnection disputes or rates, and the MPT is not well equipped to deal with the emerging problems in this area. There are a number of complaints surfacing regarding interconnection slowdowns practiced by the dominant carrier. There is no cost analysis of interconnection rates and no modeling of costs based on existing carriers or preferably on a model, efficient firm There is some progress in developing a "reference interconnection offer" (RIO), which is one standard approach to dealing with this problem; this progress should be encouraged.

Experience in many liberalizing markets has shown that interconnection rapidly emerges as the most important regulatory issue. Hence improving the quality and availability of information and regulation in this area is vital.

Pricing. MPT (and its predecessor DGPT) lowered tariffs considerably over the last six years, and very considerably in the last three years. However, there is no transparency to the process, no published study or modeling of underlying costs, and no true rebalancing (in that no below-cost prices have been raised).[46]

46. There has also been no discussion of "price capping." Price capping in telecommunications usually allows for one or more factors in a formula, which is applied to current prices and future allowed changes. Factors typically include an inflation factor which allows prices to rise, and an "x" factor (a negative factor) for increased productivity and reduced equipment prices. This latter factor is typically much larger than the inflation factor, so that over time the price levels in the sector are driven down towards (presumed) costs. Prices have been falling quickly enough in Vietnam that this topic has not been raised. But if and when prices begin to level out, it will be important for MPT to be familiar with this important regulatory tool.

Analysis of outgoing international calls shows that these rates, recently very high indeed, are now about 7% below regional averages. This is a remarkable achievement.

There remains a need to analyze and move away from cross-subsidies which are hard to analyze, inefficient, encourage inefficiency by market players, and may subsidize the wrong parties or programs. Subsidies likely currently run from international and domestic long distance to local service. Creation of competitively neutral, transparent subsidies should be a high priority. A transition plan can help plot the course from the current situation to a more modern system.

MPT has agreed to focus on tariff approval only for firms with more than 30% market share, which is a step in the right direction towards asymmetric regulation. However, there is no roadmap or agreed plan for moving toward a modern tariff review process for the firms with significant market power.

Finally, due to the drastic drops in prices reported by MPT, it is not clear what the source of financing for the on-going rapid expansion of the sector will be. Will current tariff rates suffice? Will borrowing be feasible? Will BCC arrangements suffice, or will private investment be attracted through reform, to fill in the gaps? A forward-looking professional analysis of these questions could help MPT and stakeholders understand the implications of recent and possible future regulatory actions.

Developing modern Regulatiory Institutions and processes

Vietnam is implicitly endorsing the principle of regulatory independence from operators with its statement that it wishes to accede to the WTO in the very near future, since accession will in practice require commitment to the Reference Paper on Regulatory Principles for Basic Telecommunications Services,[47] and since Vietnam has *already* committed to the paper by including it by reference in the BTA. An issue here is that although VNPT is nominally separate from MPT, in fact MPT has the role of owning VNPT, 90 to 94% of which is dominated by VNPT. Other countries have helped ameliorate this issue during a transition phase by having the ownership function vested in the ministry of finance or equivalent body. This issue is under discussion and undertaking this separation of functions would be a major step forward.

MPT was created by a decree in late 2002, and it seems unlikely that a new, separate regulatory body will be created under or outside of MPT in the near future. However, it would appear possible to create a two-step approach in which a "Regulatory Committee" could be formed in the near future within MPT, and then this could become the basis for a move to a Regulatory Authority at a later date.

In the meantime, following the WTO emphasis on strengthening regulators,[48] there are issues which should be addressed regarding the capacity of MPT, and of improving its regulatory processes. Areas of concern include increased transparency and public and stakeholder input, possible predatory practices in the market, and improved regulatory processes in tariff review, interconnection, licensing, and spectrum management.

In the long term, a separate regulator would be useful in Vietnam, as it has proved useful in over 100 other countries around the world. There is widespread agreement that an ideal regulator should have the following characteristics:

47. Technically, under WTO accession, what is required is that Vietnam would negotiate a schedule of commitments with its major trading partners, then submit these. In practice, the Reference Paper has been key.
48. Specifically, the Telecommunications Regulatory Reference Paper and GATS Articles III and VI.

- Neutral, fair, reasonable, impartial and objective in its dealings with all parties
- Transparent in its procedures, following the principles of providing notice, listening to all parties, making decisions based on the facts, issuing decisions that explain the principles used, and providing for appeals
- Highly competent in key areas, but willing and able to contract out for specific expertise
- Composed of a modest-sized staff that is not bureaucratic
- Staffed with personnel who are well trained, and often cross-trained in key disciplines such as economics, policy analysis, accounting, regulation, engineering and law.
- Possessed of a sound source of revenue that provides adequate funding for staff compensation and institutional facilities
- Undertakes regulation in conformance with the WTO Telecommunications Regulatory Reference Paper[49]
- Undertakes licensing and regulating markets in a manner consistent with GATS Articles VI, VIII and IX.

It should be noted that creating a separate regulatory body does not necessarily mean that the supervising ministry gives up its role in setting broad sector policy or even making decisions on particular important issues. The example of the Telecommunications Regulatory Authority of India (TRAI) is useful here. TRAI and its relevant ministry each have legislative authority, with the ministry's major responsibility being in the important area of licensing major new entrants. In areas such as licensing, where the ministry still retains ultimate authority, it can use TRAI to elicit public comments and develop recommendations—but the ministry is not bound by those recommendations. In this way, the ministry has the benefit of a full consultative process which takes in the considerations of all stakeholders, while still allowing the ministry a broad scope of power.

Other possible regulatory organizational approaches include that of Malaysia, in which the regulatory body uses the "layer regulatory approach." In this approach, each layer in the communications stack (content layer, applications layer, service layer, facilities layer) is either regulated, unregulated or partially regulated. Some analysts feel that this approach tends to break down "technology silos" and make regulation (and service) more responsive to end users.

The regulatory approach and structure should not be simply limited to telecommunications, but should cover the broad range of technologies that are converging in the ICT arena.

There are various specialized areas of regulatory process improvement which were already discussed earlier, namely licensing, pricing and interconnection. One important remaining area is spectrum management.

Particular attention needs to be given to managing the use of the radio spectrum. Implementation of improved management and licensing arrangements has the potential to optimize the economic benefit of this scarce resource, while also possibly generating substantial revenues. In most developing coun-

49 Under the Reference Paper, key minimum concepts include: a) prevention of anti-competitive practices by major suppliers; (b) transparent, non-discriminatory, and cost-oriented provision of interconnection by major suppliers, including either publication of interconnection agreements or resort to a 'reference interconnection offer' binding the service provider, and dispute resolution mechanisms; (c) transparent, non-discriminatory and competitively neutral universal service obligations; (d) public availability of licensing conditions and criteria; (e) independence of regulatory bodies from service suppliers; and (f) objective, timely, transparent and non-discriminatory procedures for the allocation and use of scarce resources (such as radio frequencies, numbering ranges and rights of way).

tries, the government "hoards" radio spectrum -- retaining an excessive amount for its own use, but actually not using it much. This is not efficient, and with the growth of mobile and wireless, considerable reallocations are often needed from government to private use. Automated spectrum monitoring, and computerization of spectrum management processes, are important areas for improvement in the management of this important public resource. Key sub-issues within spectrum management include:

- Adequate allocations for mobile GSM, CDMA and other wireless growth
- Bands for new services, and possible compensation for parties who are forced to leave bands
- Unlicensed bands
- Appropriate pricing for scarce spectrum allocated to commercial use
- Transition path to mobile 3G
- Potential for rural service
- Timeliness of regulation
- Computerized monitoring of licensed bands to prevent "piracy," interference, and unauthorized use
- Adequate funding and authority to regulate the spectrum using a modern approach.

Reforming and Restructuring VNPT

VNPT is currently an SOE and a conglomerate of divisions, dependent SOEs, subsidiary stock companies, non-profit divisions, and other companies. The MPT plan for this area states that, "MPT will focus on enterprise reform, introducing the corporation model to VNPT...." Truly corporatizing VNPT, and creating "arms-length,"[50] corporatized subsidiaries, would be a major step forward. However, it is not clear that comprehensive plans are in place on how to move forward in this area, although there are press reports and government announcements that the area is being addressed, and there have been announcements that VNPT's Mobifone will be partially equitized.

The multiple ownerships of VNPT and dominance in the sector are quite striking, especially in the cellular arena. Although observers and customers report that VNPT subsidiaries do compete against each other in the same lines of business, the current structure raises questions about whether competition is in fact inhibited.

The challenge of attracting telecom investments to support economic growth in a context where international tariffs are rapidly decreasing, thereby eliminating a major source of revenues for the dominant player and potential licensees, is a challenge Vietnam has in common with many developing countries. The challenge is compounded by the (partial) natural monopoly nature of telecom infrastructure (particularly in access infrastructure), and this challenge requires designing detailed market transition mechanisms.

Thus, the main challenge will clearly be to manage a transition in market structure that allows for increased public and private investment in the sector. Given the current market structure, this will initially be an exercise in corporate restructuring of VNPT (perhaps via carve-outs or spin offs). This restructuring would need to be accompanied by policies and regulations that reinforce the underlying goals of the corporate restructuring (e.g., tariff setting,

50. An "arms-length" subsidiary refers to an entity which has a separate accounting system and which pays market-based prices to its parent for goods and services. Such a subsidiary can still be under the full control of the parent, and subject to its policy and operational direction. But the "arms-length" nature of the financial relationship means that the subsidiary cannot give or receive hidden subsidies, and is thus much more amenable to privatization, because its accounting statements are clear and transparent.

including retail, wholesale and interconnection tariffs). This will put a heavy premium on institutional capacity to manage transition and governance, implying that capacity building at the ministry level will be a key feasibility factor moving forward.

VNPT is currently heavily involved in the manufacturing of equipment such as consumer telephone sets and other retail and wholesale communications items, for its own internal use and for external sale. In other countries it has been found that such involvement by the operator in equipment supply is inefficient and provides out of date and costly technologies. Getting VNPT out of this business will almost certainly be necessary to improve its efficiency and attractiveness to investors.

VNPT has not separated its postal operations from its telecommunications operations, although it has been announced that the two entities have been decreed as separate and that operational separation is under way. VNPT is heavily involved in the postal banking (giro) business. Virtually all telecommunications monopolies (or former monopolies) seeking outside investment have fully separated telecommunications from postal businesses, since the latter are usually money-losing, low technology, and highly labor-intensive -- the opposite of the telecommunications business.

VNPT, like most telecommunications monopolies or former monopolies, likely takes its customers somewhat for granted. In a competitive marketplace this approach must change, and the monopoly must become customer-oriented and demand-driven.

Increasing Rural Telecommunications Infrastructure and access

The number of telephone lines per 100 people shows a large variation between the large cities and rural areas of Vietnam, where the problem of thousands of un-served or under-served villages needs to be addressed. New methods need to be devised to encourage existing providers to enter rural areas, and to create new approaches where private capital clearly will not work. Vietnam is moving to create a universal service institution which will help ameliorate this problem; this effort should be encouraged and international best practices incorporated into its operation.

Similarly, Internet access is still low nationwide and is virtually non-existent in rural areas. New approaches are needed to bring Internet information to the rural areas where the large majority of the population lives. These approaches could either be direct or through intermediaries. Broadband access to the Internet is currently completely absent in rural Vietnam.

Experience in other countries has shown that private industry can be encouraged at no or low cost to enter rural markets, and that the "frontier" for private investment can be pushed back. Usually this requires the reduction of restrictive government rules and regulations. Beyond some point, private investment will not normally go to commercially unattractive locations, and then creative approaches can be used, such as negative bidding auctions, output based aid, the deployment of NGOs, the bundling of attractive and unattractive areas in licenses (with enforced rollout targets in the unattractive areas), reduction of risk for investors, encouragement of private cooperatives, low interest lending, using the government as a model user via procurement to drive the rollout of infrastructure, etc.

Having discussed the four major substantive issues, we now turn briefly to the two process-related issues: devising a roadmap and revising the current telecommunications law.

Devising a roadmap

Currently there is no roadmap for change in all of the above areas which has been discussed openly and agreed upon. Plans and decrees tend to be engineering documents or penetration goals, not well-thought-out mechanisms using policy changes that reflect international best practice. There is a need for more policy planning and linking processes and policy changes to anticipated results. The NIPTS ICT policy is a step in the right direction, but it too needs more focus on how to achieve laudable goals.

Revising the current Telecommunications Law

The current telecommunications ordinance (law) is relatively recent and has many progressive features. But it is not a modern telecommunications law that recognizes the interests of consumers, mandates modern regulatory procedures, encourages private entry and competition, and encourages investors. Nor is the law (or its implementing decrees) consistent with the BTA or the WTO.

The next section shows the way forward in moving to address these issues.

VII. The Way Forward

The challenge now facing government is to establish an effective policy and regulatory environment conducive to the continued growth of telecommunications, in order to optimize the performance of the sector in urban and rural areas and to the mobilization of private capital and expertise to properly manage the telecommunications firms in the sector.

Four main substantive priorities emerge. The first priority is to intensify and entrench pro-competitive policies for the sector, to reap the proven benefits of market competition. These priorities include encouraging new entry, improving the interconnection regime, and increasing the transparency and cost-orientation of pricing. The second priority is to support these pro-competitive policies by establishing highly credible, transparent and effective regulatory processes within MPT in the short run, so that these processes can be migrated to a non-ministerial regulatory institution in the long run. The third priority is to reform and restructure VNPT, using internal management change and external forces such as equitization. The fourth priority, for geographic areas that are not well-served by the market, is to adopt and implement a set of policies and programs that will systematically address inadequate access to telecommunications services, and more broadly to information services, in the thousands of villages and rural areas in Vietnam.

In addition to the four substantive reform priorities, there are two process-oriented areas, dealing with a roadmap for reform, and with revising the current telecommunications law.

Vietnam has done an excellent job of increasing its teledensity very rapidly indeed, from a very low base. Yet many countries have stumbled in managing the transition, when it comes to the difficult decision to let market forces take over under state regulation, instead of state command. It is not yet clear if, when and how Vietnam will deal with this challenge. A more detailed approach to address this area is discussed below.

1. Promote Competition and Private Participation

There are two separate but related goals for this area. One is to create competition because competition provides positive incentives for increased productivity and responsiveness to customer needs. The second is to facilitate multiple channels for investment in order to meet investment needs and meet performance targets.

To fulfill these goals, it is important to develop and publish a plan for eliminating the multiple-ownerships that the dominant carrier currently possesses in every market segment, especially mobile telephony. This plan or roadmap should also specify: the policy and regulatory steps that will be undertaken to substantially increase broadband penetration in urban and rural areas, attract truly private investment; how to implement simple and transparent processes for competitive new entry; how to reduce anti-competitive conduct; and how new and innovative telecommunications technologies will be encouraged and not obstructed by the government. A clear vision of a future industry structure needs to be devised

and disseminated. This structure would have a number of viable operators, each totally independent of each other, and all subject to impartial regulation.

Another way to help achieve the goals is to identify what is required to accede to the WTO in the telecommunications area. In the competitive arena, this will at least entail developing a credible telecommunications offer(s). Without specifying particular trade negotiation positions, it would appear that a credible offer would need to address issues such as: opening of various market segments to foreign participation; possibly increasing private ownership above 50% in at least some market segments; setting realistic time deadlines for proposed changes, and meeting the Telecommunications Reference Paper requirements which were already agreed to under the BTA, and which are likely to be key in WTO accession.

A third related way to promote competition is to continue to implement the pro-competitive market opening and investment provisions of the Vietnam-US BTA. Apparent lack of compliance with this agreement is not a good signal. Implementation of these BTA agreement obligations will positively affect the market, and will reduce investment risks and costs for the expansion of telecom networks in Vietnam.

Another key element of achieving competition and private entry is licensing. Licensing is an important threshold issue in this area. The government should initiate a comprehensive review of its current policies and practices for awarding licenses. The objective should be to move to a class licensing system that will streamline and clarify licensing procedures. A second, related, objective should be to increase transparency in the licensing process. Another objective is to ensure economically optimal use of scarce resources. Properly implemented, improved policies and practices could generate substantial non-tax and tax revenues for the State budget. It is recommended that such a review be completed before any new licenses are issued for radio-based services. The review should analyze how to attract truly private investment to obtain licenses, in addition to the SOE investment which has been very prevalent to date.

Interconnection is a very important and challenging area of improving competition and private entry. Enforcement of a credible and equitable network interconnection regime is critical to facilitate new entry as well as to provide incentives for existing operators to make investments. Currently the situation vis-a-vis interconnection difficulties is not clear, but the signs are that monopolistic abuse is likely. A study of this area should be undertaken, identifying carrier complaints, the effects of dominance, abuses if any, and ways to meet the WTO's very specific requirements in this area. (These latter include interconnection "at any feasible point...cost-oriented, ... transparent,... reasonable... timely... sufficiently unbundled...non-discriminatory....") Vietnam is very far from meeting these requirements at this point.

Features of a modern interconnection regulatory regime including publication of Reference Interconnection Offers (RIOs)[51] by dominant operators, and publication of time-bound interconnection dispute settlement procedures. Vietnam does not have these important features now.

Turning to the pricing aspects of promoting competition—until recently the Government policy has been to announce cuts in tariffs, driving international, long distance and leased line rates

51. An RIO is a detailed document that is publicly available, which presents the dominant carriers' technical and financial requirements for interconnection. The RIO is reviewed by the regulator and smaller operators for reasonableness before it is published, and dominant carriers are then obliged to accept any interconnection that meets the RIO requirements.

down toward and even below regional norms. Very recently the government took the positive step of freeing firms to set their own prices, unless they possessed significant market power.

However, regulation in pricing is now entering a much more technically difficult phase. Very soon the government regulators will need to wrestle with the difficult concepts of possible collusion on prices, possible application of inflation-linked "price cap" type formulas for maximum tariffs, dominant carrier abuses of pricing, and analysis of the costs underlying prices. Steps to address these issues should include: undertaking a comprehensive study to ascertain if indeed prices in all market segments have reached or are below regional norms or other appropriate levels; developing and publishing a plan for moving to a modern tariff-setting regime (including procedures, training, development of in-house or contracted out capacity, appeals of regulatory decisions, etc.); and undertaking a study of the needed sources of financing for continued growth in the sector. A special focus on rate rebalancing, to bring tariffs in line with underlying costs, is key here.

Note that a powerful argument can be made that Vietnam should be able to achieve prices which are noticeably lower than regional norms or international benchmarks. This is because new operators (as in Vietnam) can use the latest, lowest-cost technologies to achieve high service quality and high penetration, at substantially lower prices than neighboring countries in which capital investment took place as recently as a few years ago.

2. Develop modern Regulatory Institutions and processes

The government should act quickly to establish effective regulatory processes that will meet the tests of the current BTA, GATS, WTO accession and international best practices. These practices should be transparent, impartial and modern, and should allow input from all parties interested in a particular case or dispute.

A specific study should be undertaken on what role a non-ministerial telecommunications regulatory body should play, what it should look like, how it could meet WTO requirements, what legal changes would be needed to create it, what its charter should be, the role of the regulator versus that of the ministry, and how the new modern procedures could be migrated into this body. Such a study would allow a dialog to begin on the future of regulatory institutions in the sector.

The government should consider the useful Indian TRAI model discussed earlier, which allows for broad public consultation by the regulator but allows the ministry to retain the ultimate decision-making authority in selected areas. The Malaysian, Singaporean, and other progressive regulatory models should be studied and carefully considered.

MPT should investigate and act on a plan to create a Regulatory Committee within the Ministry; with the goal of having this Committee become the basis of a later Regulatory Authority. This Committee and the subsequent Authority, following best international practice, should not be limited just to telecommunications regulation, but should address all converging technologies in the ICT arena.

In the area of specialized regulatory processes, the government should undertake a comprehensive review of radio spectrum policies and procedures. The radio spectrum review should take into account the WTO Reference Paper requirements, which include: "The current state of allocated frequency bands will be made publicly available..." [except government use need not]; and "any procedures for the allocation and use of scarce resources, including frequencies, numbers and rights of way, will be carried out in an objective, timely, transparent and non-discriminatory manner...." As part of the review process, a forum for dialog between govern-

ment and commercial users of spectrum should be created, and annual meetings held.

3. Reform of VNPT

This area partly overlaps with the first area, in that promoting competition naturally implies the reform and restructuring of VNPT. Specific areas for reform include:

- Elimination of multiple ownerships in specific market segments
- Corporatization as a share-based entity of VNPT itself, and of VNPT's SOE subsidiaries which are amenable to corporatization
- Transitioning from BCCs to JVs, to accelerate delivery in selected VNPT service areas
- Creation of "arms-length" relationships (as described earlier) between the parent VNPT and its various subsidiaries, with the possible end result in the near-medium term of VNPT being a holding company of various corporatized enties readily amenable to equitization (privatization)
- Analysis and assessment of the complex VNPT organization to see if some simplification and streamlining could increase VNPT's ability to be more customer-oriented, better manage its operations, and create investor interest.
- Separation of VNPT's telecommunications equipment manufacturing business from its operator business
- Follow through on the separation of VNPT's postal and postal giro businesses from its telecommunications businesses.

4. Promote Extension of Rural Telecommunications infrastructure and access

The government should undertake a review of the situation with regard to rural telecommunications and Internet, focusing on ways to harness market forces, NGOs, cooperatives, lending to private entities, small businesses, and other creative methods, using proven international models. This review should also identify internationally proven methods for increasing penetration in remote areas where the private market may not work, using transparently bid subsidies as part of an output based aid initiative, where they are absolutely necessary, and apply these methods to rural Vietnam.

The review should also take into account WTO Reference Paper requirements in this area, which state that although WTO members may undertake any universal service obligation (USO) regime that they like, the USO scheme must be "administered in a transparent, non-discriminatory and competitively neutral manner...that is not more burdensome than necessary...." The new planned universal service mechanism for Vietnam should be designed with this requirement, and international best practices, in mind.

The government should undertake a study of a limited government-based approach in which government uses its power as a major purchaser of telecommunications services and infrastructure. In this approach, the government would invite tenders to build out rural services and/or infrastructure, but would not limit itself to using just one provider or supplier. Thus market forces would be utilized to decrease costs and increase speed of rollout. This study should also address the topic of policy measures that will increase broadband penetration in rural areas.

There are two important but more process-oriented reforms required to move the sector forward, as follows.

5. Develop and Publish a Telecommunications Development polycy Roadmap

Plans and roadmaps to date have focused on penetration levels and technologies, and have

always been internally developed. Here the concept is to develop a policy roadmap that will take the points above, elaborate them, and publish them for written and other feedback, before the roadmap is finalized. This will allow the first transparent stakeholder and public input into the sector, at a critical juncture in its development. It could also prove to be a useful input to a WTO accession package.

6. Begin dialog on Drafting a new Telecommunications Law

The new telecommunications ordinance of 2002 was a major step forward in terms of increasing competition and recognizing the key role that telecommunications and telematics play in the economy. But it is far from being a modern telecommunications law that the WTO, international best practice, or investors would recognize as a model. A dialog needs to begin, starting with a study, within the government, and between the government, stakeholders, the public, donors and experts on the nature of a future, new telecommunications law.

The way forward: Summary

The table below provides a summary of the recommended short and long term steps for moving the sector forward.

Table 15:
The Way Forward

	(0-2 years)	(up to 5 years)
1. Promote competition and private participation	Develop and publish plan for: eliminating multiple ownerships by the dominant carrier, encouraging new enterprises, and attracting private investment, implementing simple and transparent processes for authorization of competitive new entry, reducing anti-competitive conduct, increasing broadband penetration in urban and rural areas, and increasing new, innovative technologies	Implement plan specifics, monitor targets, publish results
	Develop WTO accession package in the area of market access commitments	Accede to WTO, implement offers made
	Continue to implement the pro-competitive elements of the Vietnam-US BTA	Finish implementing BTA
	Initiate comprehensive review of licensing procedures, with focus on class licensing for public telecommunications operators, increasing revenue, increasing transparency, and increasing private investment	Implement findings of the licensing review Create class licensing system

Table 15 :
The Way Forward (Continue)

	interconnection problems and practices	
	Establish and implement a modern interconnection regulatory regime including publication of RIOs by dominant operators, and publication of time-bound interconnection dispute settlement procedures.	Move toward cost-based interconnection Accede to WTO, implement requirements in this area
	Analyze WTO requirements in this area, apply to Vietnam	Adjust prices where study indicates
	Undertake a comprehensive study of price levels, with a focus on rebalancing. Examine reasonableness of price levels given that very low cost, recent technologies are available	Continue rate rebalancing in line with study findings. Re-examine the question via regular additional study Implement plan, moving towards cost-based tariffs
	Undertake rate rebalancing in line with study; examine actual or probable cross-subsidies	Take results and act on them
	Develop and publish a plan for moving to a modern tariff-setting and review regime	Implement plan
	Develop a plan to transition from BCCs to JVs, to accelerate delivery and efficiency in selected service areas	Take results and act on them. Monitor results and publish them
	Undertake study of future financing needs of the sector	
2. Develop modern regulatory institutions and processes	Establish regulatory processes that will meet GATS and WTO requirements, focusing on transparency and impartiality	Implement and improve regulatory processes anc capacity
	Launch study and begin dialog on long term plan for a non-ministerial regulatory body, study India (TRAI), Malaysia, Singapore and other relevant examples	Continue dialog, move toward creating new Regulatory Authority based on the Regulatory Committee and on international best practices
	Establish a "Regulatory Committee" which will avowedly be the basis for the future regulatory body	Undertake transfer of VNPT from MPT to other state agency. Ensure MPT impartiality
	Study transfer of VNPT ownership responsibility from MPT to other appropriate state agency.	Implement WTO and world best practice in these areas
	Initiate review of policies and practices in spectrum management, taking in to account WTO requirements	Continue forum meetings, take forum advice intc account in formulating spectrum policy .
	Create forum for discussion of commercial concerns in the area of spectrum management	

Table 15 :
The Way Forward (Continue)

	cellular	segments Finish corporatizing all VNPT SOE subsidiaries
	Corporatize VNPT, create "arms length" relationship with subsidiaries	Equitize (privatize) almost all remaining VNPT subsidiaries. Ensure all subsidiaries are customer-oriented.
	Assess VNPT organization and "equitize" some of its subsidiaries, allowing foreign investment and ensuring they are customer-oriented.	Attract private investment into equitized entities
	Make VNPT into an SOE holding company of equitized and non-equitized organizations	Execute separation of equipment manufacturing
	Plan separation of equipment manufacturing units from the operator portion of VNPT	
	Complete the separation of post and postal banking from the telecommunications portion of VNPT	
4. Promote extension of rural telecoms infrastructure and access	Undertake a review of methods to harness market forces to better serve rural areas, and of Universal Service Obligation mechanisms where required. Take WTO requirements into account. Include a focus on broadband Internet access for rural areas in the review	Implement market force findings, as well as selected USO schemes, while meeting WTO requirements. Implement, monitor and publish results of broadband recommendations
	Undertake study of government approach in which govt invites tenders to build rural services and/or infrastructure, but does not limit itself to using just one provider	Undertake government procurement of rural services and infrastructure (under a universal service program) in which competing multiple providers are utilized
5. Develop and publish telecom development policy roadmap	Develop a policy roadmap that elaborates and reflects the above areas; solicit and incorporate stakeholder and public comments	Implement roadmap on agreed time delimited schedule Input roadmap into WTO accession package
6. Begin dialog on a new telecom law	Commission study on international best practices in this area Begin internal and public dialog on shape and nature of a new law	Draft and submit new telecommunications law in line with revised sector roadmap

List of Annexes

Annex 1.
Excerpts from March 2005 Economist Intelligence Unit (EIU) Country Report on Vietnam

Country Briefing for Vietnam from the Economist Intelligence unit

CURRENT RATINGS

Overall Country Assessment:	C
Overall Score:	57
Infrastructure Assessment:	D
Infrastructure Score:	78

(A-E scale, E = very risky; 0-100 scale, 100 = most risky)

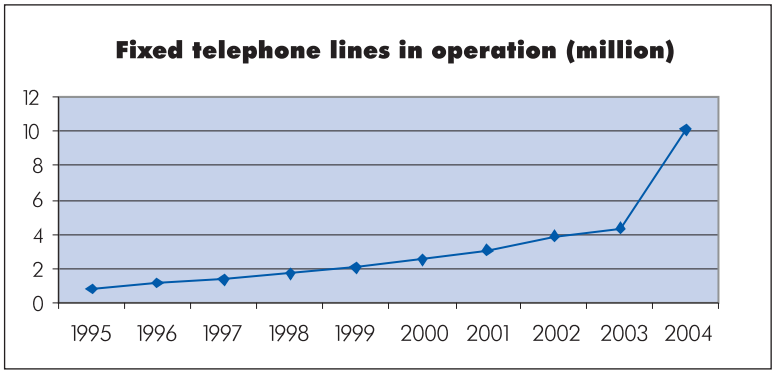
Resources and infrastructure: Transport, communications and the Internet

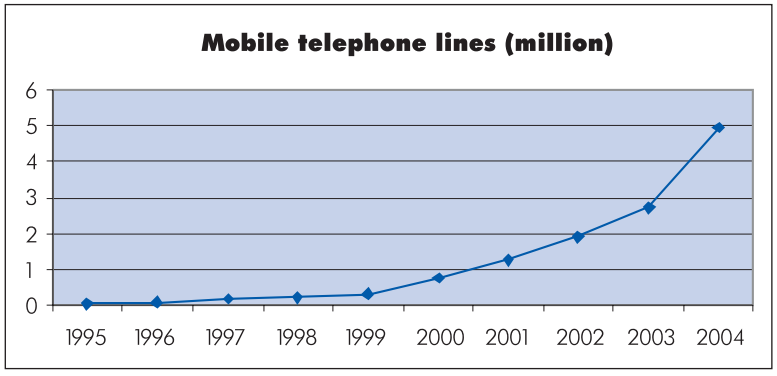
Vietnam's telecommunications industry has been growing rapidly, second only to that in China in recent years, according to the International Telecommunication Union, a Geneva-based industry co-ordinating body. In 2004 there were 9.7m telephones, with 5.2m main lines and 4.5m mobile phones. This represented 11.7 phones per 100 people, up from only 2.2 in 1997. Although the monopoly previously enjoyed by the state-owned Vietnam Post and Telecommunications Corporation (VNPT) has ended, with five new telecoms service providers in, or about to enter, the market, VNPT remains dominant. Rising competition has forced VNPT's mobile-phone provider, Vinaphone, to seek out subscribers more actively and to reduce tariffs. Despite falling prices, international telephone calls continue to be among the most expensive in the world. The government is hoping to launch a US$300m telecoms satellite, which could be in orbit as early as 2007.

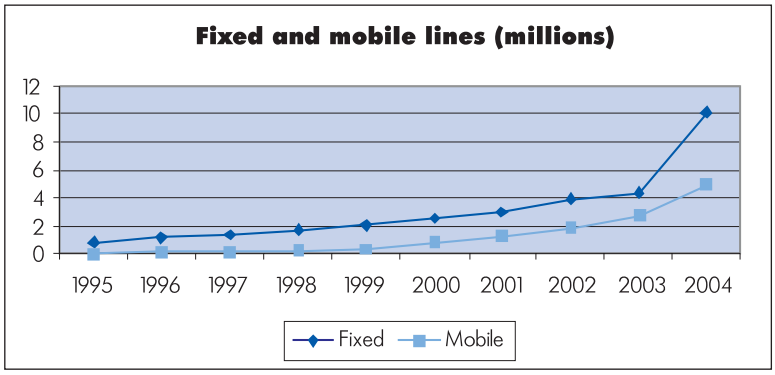
Full Internet services became available in mid-1998 in both Hanoi and Ho Chi Minh City. Internet usage remains expensive, and in 2004 there were just 3.7m Internet users, equivalent to 4.5 users per 100 people. Usage rates are well below those found in Thailand and Malaysia. The dominant Internet service providers are state-owned. Vietnam Datacommunications Company (VDC) controls 54% of the market, followed by Corporation for Financing and Promoting Technology (FPT), which controls about one-quarter of the market. A government firewall blocks access to some pornographic and politically sensitive sites abroad, but also limits bandwidth and makes confidential business transactions difficult. In an effort to boost investment in the information technology sector, the government is allowing a few firms to avoid the firewall.

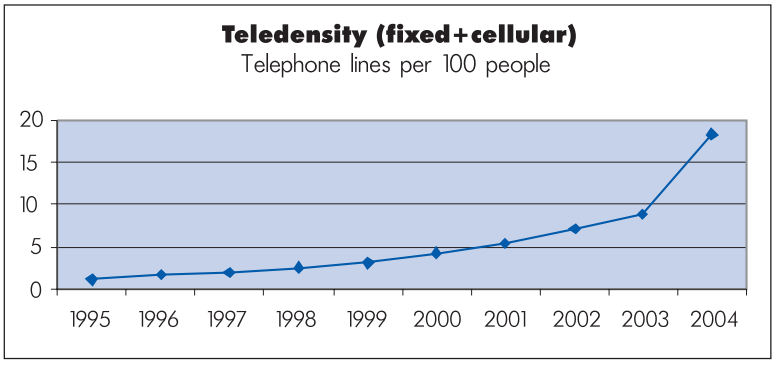
Source: EIU, Country Profile - Main report: September 7th 2005

Annex 2.
Charts on the Growth of Telecommunications in Vietnam
(source for all charts: ITU)









Annex 3.
SOE Status of Various Telecommunications Organizations as of December 2005

Organization	State owned enterprise? (NOT a joint stoct company)	Joint Stock Company?
VNPT	Yes	
VTI (Int'l, under VNPT)	Yes	
VDC (data, under VNPT)	Yes	
GPC (mobile cellular etc., under VNPT)	Yes	Reported plan in 2006 to become a JV
VMS (VN Mobile Services, under VNPT)	Yes	
Vinaphone	Yes	
Mobiphone	Yes	
VTN (VN Basic Telecom Network)	Yes	
VP Telecom (was Electricity Telecom Co.:ETC)	Yes	
SPT (Saigon Post and Telecom)		Yes
Viettel	Yes	
FPT		Yes
Vishipel (VN Ship Telephone)	Yes	
Netnam	Yes	
Hanoi Telecom		Yes

Source: World Bank interviews with NIPTS in December 2005

Annex 4.
ISPs Licensed in Vietnam

There were reportedly 16 ISPs licensed in Vietnam as of December 2005; these are shown below. Addresses are provided for the lesser known organizations. Under current law, ISP licensing is open to and unlimited for Vietnamese private individuals and private firms.

No.	Name of ISPs	Address
1	Tham Tam Stock company	154 Truong Cong dinh, Vung Tau, Ba Ria Vung Tau Province
2	OCI Joint stock Company	No. 123 Truong Dinh, District 3, HCMC
3	Viet Khang Joint stock Company	No. 47 Apt. B12B Ngoc Khanh street, Ba Dinh district, Hanoi
4	District No. 10 Electronic Company	No. 376 Dien Bien Phu street, HCMC
5	Technology Investment and Development Company, Ltd	No. 117- D1 Trung Tu living quarter, Dong Da District, Hanoi, Vietnam
6	Network Technology Joint stock Company	No. 16 Pham Dinh Toai street, District 3, HCMC
7	Electronic, chemical and information Co.	Defense Ministry, 18 Lang Ha street, Ba Dinh district, Hanoi
8	Electric Telecom Company (ETC--recently changed to Viet Power Telecom or VP Telecom)	No. 5D Nghi Tam Street, Tay Ho District, Hanoi
9	Hanoi Telecom Company	No. 02 Chua Boc Street, Trung Tu living quarter, Dong Da district, Hanoi
10	Army Electronic and Telecommunication (Vietel)	No. 01 Giang Van Minh, Hanoi
11	VDC	
12	SPT	
13	Netnam	
14	FPT	
15	Vishipel	
16	Netshoft (Ho Chi Minh City Post and Telecommunications Information Company)	

Annex 5.
BCCs in Vietnam

There have been 11 BCCs in Vietnam, as shown in the table below.

Note that the VNPT website provides a somewhat different list. Five of the 11 BCCs have been completed. The list below is derived from World Bank interviews in Vietnam in December 2005, and the USAID 2005 Competition Review of the Vietnamese Telecom Sector.

#	VN Partner(s)	Foreign Partner(s)	Services Offered/Purpose	Notes
1.	VNPT/VTI	Telstra, Australia	Development of international telecommunications network and services	Signing date: 1998 Contractual term: 6 years. Finished.
2.	VNPT-GSM	Comvik/Kinnevik, Sweden	Development of the nationwide mobile phone network and services	Contractual term: 10 years (02/06/1994-19/05/05). Investment: US$ 127.8 M. Finished.
3.	VNPT	Voice International Australia	Development and exploitation of paging services in HCMC	Contractual term: 9 years. Investment: US$ 725,000. Finished.
4.	VNPT	Sapura SDN-BHD Malaysia	Development and exploitation of the public card phone services in HCM area.	Effective date: 06 Oct. 1993. Contractual term: 8 years Sapura's share is $3,751,000; VNPTs' $1,615,000. Finished.
5.	VNPT	Worldcorp Holding Singapore	Development and exploitation of yellow page services	Contractual date: 5 years. Signing date: 12/12/94. Effective date 17/06/95. Foreign investment: US$ 842,000. Finished.
6.	VNPT	Korea Telecom	Development of internal network in Haiphong city and the provinces of Hai Duong, Hung Yen and Quang Ninh	Contractual term: 10 years. Signing date 20/08/94. Effective date: 27/04/96. Foreign investment: US$ 40M. To be completed soon.
7.	VNPT	Nippon Telegraph and Telephone (NTT), Japan	Development of internal network in the Northeast of Hanoi area. Construction of 240,000 new telephone lines	Contractual term: 15 years. Signing date: 23/07/1997. Foreign investment: US$ 194.4 million. Underway.
8.	VNPT	France Telecom (France)	Development of internal network of the east of HCMC. Contruction of 540,000 new telephone lines	Contractual term: 15 years. Signing date: 25/07/97. License issuance on 11/97/ Foreign investment US$ 467M. Underway.
9.	VNPT	Cable & Wireless (UK)	Development of telephone network in the east of Hanoi city. Construction of 250,000 new telephone lines	Contractual term: 15 years. Signing date: 28/07/97. Foreign investment: US$ 207 million. This BCC does not exist any more.
10.	SPT	S-Telecom (Korea)	Development and exploitation of mobile phone network and service	First non-VNPT BCC; began in 2000. Contractual term: 15 years. Has clause to convert to a joint venture when Vietnam law permits. Foreign investment: US$230M Underway.
11.	Hanoi Telecom	Hutchison Telecom	Build a CDMA network in Hanoi	Foreign injection of $656 million. Announced in 2005.

Annex 6.
Reform of Laws for Investment and for Increasing FDI

This annex provides a discussion of the Law on Foreign Investment, which governs investment in the telecommunications and other arenas. The discussion proceeds with various questions and answers, as provided by researchers and respondents in Vietnam. The responses were reviewed with Vietnamese officials in December 2005 by the World Bank Hanoi office for currency and accuracy.

1. What is the date of the current Law on Foreign Investment?

The Law on Foreign Investment was passed on November 12, 1996. There have been various subsequent amendments and re-issuances culminating in the most recent on June 9, 2000.

2. What topics does the law cover?

The law governs a wide range of issues, including the forms of direct capital investment, procedures for licensing foreign investment, management of foreign - invested enterprises, capital contributions, personnel matters, taxation, accounting, foreign exchange and liquidation.

3. Is there any discussion now on changing the law?

Certain shortcomings have been identified regarding the law on foreign investment and the legal framework governing enterprises in all economics sectors. These include the following:

- The forms of investment, establishment procedures and incentives vary significantly among the three major laws: the Law on Foreign Investment, the Enterprise Law and the Law on Promotion of Domestic Investment.
- Regarding incentives, foreign-invested enterprises claim that preferential tax rates are more favorable for domestic than foreign enterprises. The government states that common levels of corporate income tax, fees, services will soon applied to both kinds of enterprises.
- There are some specific differences between the VN - US BTA and the Law on Foreign Investment of Vietnam in areas such as capital contribution, national treatment, most favored nation, forms of enterprise, and principles of management and labor.

4. What is the status of change in these areas?

Many pieces of legislation are being prepared for submission to the National Assembly over the next two years, to provide a common legal framework for both domestic and foreign investment. A common framework for both the Law on Foreign Investment and Law on Promotion Domestic Investment shall create a common legal base for the business activities of all economics sectors, according to a spokesman for MPI's legislation department. However, it is unlikely there could be a single Code or Law governing the business of all economic sectors.

Foreign investors are currently subject to higher prices for certain services, though these forms of discrimination are gradually being abolished as Vietnam moves closer to national treatment of foreign investors, as required the Vietnam - US BTA and ultimately the WTO. In March 2003, the Government further liberalized the foreign investment law (Decree 27 amending Decree 24), moving forward a registration (vs. licensing) regime and making the process of

registration and licensing more transparent. Furthermore, in April 2003, the Prime Minister lifted the compulsory sale of foreign currency for both foreign and domestic enterprises.

5. Currently, what are the vehicles for investment for foreigners operating in Vietnam?

At present, two main possibilities are open to foreign investors in Vietnam. They may invest under the Law on Foreign Investment or the Law on Promotion of Domestic Investment. Forms of investment under the Law on Foreign Investment are well known, while those under the Law on Promotion of Domestic Investment have remained vague to some extent.

6. What reforms have been made in these areas?

Two major reforms have been undertaken in these two areas:

- Circular 73/2003/TT-BTC dated July 31, 2003 was issued by the Prime Minister providing guidance for the implementation of the regulation on capital contribution and the purchase of shares by foreign investors in Vietnamese enterprises set forth under Decision 36/2003/QD-TTg dated March 11, 2003. The main changes introduced by Decision 36 are the enlargement of the definition of Vietnamese enterprises entitled to receive capital contribution by, or to sell shares to, foreign investors and the clarification of the term "foreign investors" that was not properly defined under the Law on Promotion of Domestic Investment. However, several new related issues have arisen, such as the possibility of converting local enterprises into foreign invested enterprises and the reverse, when rates of capital contribution of foreign partners change.
- Though both the Law on Foreign Investment and Law on Promotion of Domestic Investment govern foreign investment, each introduces difference tax structures. This has caused confusion. On June 17, 2003, The Corporate Income Tax rates under these two Laws were harmonized at 28 percent, taking effect January 1, 2004 (instead of 32 percent and 25 percent respectively.)

7. How is more investment being encouraged in telecommunications and IT?

Vietnam promulgated its first Foreign Investment Law in 1987 following *doi moi* policy made by Sixth Party Congress in December 1986. Recognizing that Vietnam would have to compete with other nations in absorbing foreign investment, the 1987 Law established a remarkably liberal regime for foreign investment in Vietnam. Since 1987, this Law has been revised for several times, and most recently in 2000, to move closer into conformity with the principle of national treatment.

Before the Bilateral Trade Agreement (BTA) between Vietnam and the US, under the law of foreign investment, in the field of international and domestic telecommunications, it was not allowed to have direct or joint-venture investment. However, a decree clarifying the law was issued which allows foreign investment in telecommunications and IT through Business Cooperation Contracts (BCCs).

After the BTA was signed, a roadmap for change was drawn up. However, the law of foreign investment has not yet been amended to be in line with the US-Vietnam BTA.

The amended Law on Foreign Investment, effective July 1, 2000, aims to make Vietnam more attractive and friendly to FDI enterprises. The most important amendment grants foreign enterprises the right to mortgage their land-use rights. This power gives foreign enterprises the ability to borrow from foreign banks using the assets and property of their companies as collateral. Previously, only Vietnamese banks had the statutory authority to foreclose on land and property. This change is important

to foreign firms that wish to invest in the Vietnamese economy because it creates a new means of financing through which capital may be raised.

The government also sought to aid FDI (foreign direct investment) enterprises by passing amendments to the Law on Foreign Investment that: (1) allow the government to provide loan guarantees; (2) allow FDI enterprises to decide for themselves whether to set up reserve funds and to determine their size; (3) reduce the profit-remittance tax; (4) allow the remaining value of land-use rights contributed by the joint Vietnamese business party to be subject to liquidation; and (5) allow FDI enterprises to determine for themselves the forms of their investments and the reorganization of their capital structures.

Other amendments to the Law on Foreign Investment sought to minimize much of the red tape that burdens enterprises, such as governmental restrictions and procedures that are more burdensome in Vietnam than in other foreign investment areas. For example, the statute no longer requires unanimous approval by the joint venture's management board for changes affecting the corporation, but rather, it merely requires consensus decision-making. Moreover, some categories of FDI enterprises, especially those that export over half of their production, no longer will be required to obtain investment licenses but will only be required to register the enterprise. Thus, private firms do not have to secure "onerous government approvals" before they are able to invest legally as foreign companies in the Vietnamese market. An additional amendment allows enterprises to purchase foreign currencies from commercial banks to cover their current transactions. Finally, whereas in the past an enterprise usually bore the burden and expense of site work and obtaining land-use rights, it is now the responsibility of either the Vietnamese partner in the joint venture or the local people's committee to complete these tasks.

While FDI enterprises have welcomed these changes, many argue that the changes are diluted and insubstantial, especially considering that only twenty-three of the seventy-five proposed amendments were passed. Foreign investors generally view these changes as a positive step toward alleviating the day-to-day headaches faced by all foreign businesses in Vietnam. Furthermore, these changes help reduce the burdensome taxes that foreign investors must pay in order to maintain a presence in Vietnam.

Annex 7.
SMEs in Vietnam

Small and medium sized enterprises (SMEs) are a major focus of economic, job and IT development in Vietnam. Various figures on SME creation have been used, so a researcher in Vietnam was asked to clarify this matter. The result was as follows:

Question: The figure of "14000 new SMEs were created" has been cited. Was this a one time figure? How many SMEs are being launched each year now?

Answer: The "14000 newly created SMEs figure" is the approximate number of enterprises established in year 2000, the first year after the new Law on Enterprises of 1999 took effect. The response to the new Law on Enterprises of 1999 that abolished hundreds of needless licenses and permits for doing business has been quite impressive. During nine years prior to the implementation of this Law, only 30,000 enterprises were established nationwide, while under the new law, by August 2003, 71,500 firms were established, according to the VN Economic Times (of September 29, 2003). As of December 2004, the number of registered SMEs was about 172,800 and the number of operational SMEs was about 92,416.

It is estimated that SMEs create 49% of non-agricultural jobs in rural areas and 25-26% of the national labor force.

Among the new enterprises established under the Law on Enterprises of 1999, more than 90 percent are SMEs. These SMEs are generally of poor experience, low competitiveness, and vulnerable, according to analysts of the problem. They are generally not knowledgeable about IT, the Internet, marketing, foreign markets or trade. However, they do offer the most hope for job creation, and in fact have been a major engine for job growth in the last three years.

(Sources: World Bank Hanoi Office interviews in 2004 and in December 2005 with GSO, MPI and other government sources; VN Economic Times.)

Annex 8
Decree on Telecommunications
(Unofficial Translation)

THE GOVERNMENT DECREE No. 160/2004/ND-CP OF SEPTEMBER 3, 2004 DETAILING THE IMPLEMENTATION OF A NUMBER OF ARTICLES ON TELECOMMUNICATIONS OF THE POST AND TELECOMMUNICATIONS ORDINANCE

THE GOVERNMENT

Pursuant to the December 25, 2001 Law on Organization of the Government;

Pursuant to the May 25, 2002 Post and Telecommunications Ordinance;

At the proposal of the Post and Telematics Minister,

DECREES:

CHAPTER I

GENERAL PROVISIONS

Article 1.- Scope of regulation

1. This Decree details the implementation of a number of articles on telecommunications of the Post and Telecommunications Ordinance, which was passed on May 25, 2002 by the Standing Committee of the National Assembly.

2. The management, provision and use of Internet services shall comply with the provisions of the Government's Decree No. 55/2001/NDCP of August 23, 2001 and the relevant provisions of this Decree.

Article 2.- Subjects of application

1. This Decree applies to Vietnamese organizations and individuals; foreign organizations and individuals engaged in telecommunications activities in Vietnam in the establishment of telecommunication networks; provision and use of telecommunication services; manufacture, export and import of telecommunication equipment; construction and installation of telecommunication works.

2. Where the international agreements which Vietnam has signed or acceded to contain telecommunication provisions different from those of this Decree, such international agreements shall apply.

Article 3.- Assurance of safety for telecommunication networks and information security

1. Telecommunication networks constitute a national information infrastructure, must be protected and must not be infringed upon. Local administrations, people's armed force units and telecommunication enterprises shall have to coordinate with one another in safely protecting public telecommunication networks. Owners of private-use telecommunication networks, owners of special-use telecommunication networks, telecommunications service agents and service users shall have to protect their telecommunication networks and terminal equipment, actively participate in protecting public telecommunication networks, and at the same time notify telecommunication enterprises or competent State bodies of acts that destroy or infringe upon public telecommunication networks.

2. In the process of participating in telecommunications activities, agencies, organizations and individuals shall have to assure safety for telecommunication networks and information security, submit to the management, inspection, examination by competent State bodies and comply with their telecommunication network safety and information security assurance requests.

3. In emergency cases prescribed by the emergency state legislation, part or whole of telecommunication networks may be mobilized for service under decisions of competent State bodies.

4. At the requests of competent State bodies, telecommunication enterprises shall have to arrange locations, telecommunication network access points as well as other technical and professional conditions for such bodies to control and assure information security.

5. Telecommunication enterprises shall coordinate with professional units of the Public Security Ministry in urgently preventing and stopping the provision of services in cases of using telecommunication and Internet services to instigate violence and riots, infringing upon national security and opposing the State of the Socialist Republic of Vietnam.

6. The Post and Telematics Ministry shall coordinate with the Public Security Ministry and concerned agencies in guiding the assurance of telecommunication network safety and information security in telecommunication activities.

Article 4.- Assurance of confidentiality

1. Agencies, organizations and individuals engaged in telecommunication activities must comply with the legislation on State secret protection and take responsibility before law for the information contents they put into, store and transmit in telecommunication networks.

2. Information classified as State secret must be encoded according to law provisions on cipher if it is to be transmitted on telecommunication networks. The use of encoding techniques to assure confidentiality in commercial and civil transactions must comply with law provisions.

3. Confidentiality for all organizations and individuals' private information transmitted via telecommunication networks shall be assured according to law provisions. It is strictly prohibited to eavesdrop or secretly record information on telecommunication networks; steal or illegally use passwords and cipher keys as well as private information of organizations and individuals.

4. Telecommunication enterprises shall have to assure confidentiality for private information related to telecommunications service users, including their names, addresses, callers' numbers and called numbers, call time and other private information which users have provided when entering into contracts with the enterprises, except for the following cases:

a/ Telecommunication service users agree on the supply of the above-said information;

b/ Telecommunication enterprises have reached written mutual agreements on the sharing of information on telecommunication service users that violate telecommunication legislation in order to prevent acts of shirking contractual obligations;

c/ Telecommunication enterprises have reached written mutual agreements on the sharing and supply of information on telecommunication service users in service of the calculation of charges, printing of bills and collection of charges from customers;

d/ Upon requests of competent State bodies according to law provisions.

5. The control of information on telecommunication networks and Internet must be conducted by competent State bodies according to law provisions. Telecommunication enterprises, owners of private-use telecommunication networks, telecommunication service agents and users shall have to closely collaborate with, and fully supply relevant information

to, competent State bodies so that the latter can detect, stop and handle acts of abusing telecommunication networks to carry out terrorist activities, infringe upon national security or social order and safety.

CHAPTER II

TELECOMMUNICATION NETWORKS AND SERVICES

SECTION 1

TERMINAL EQUIPMENT AND INTRANETS

Article 5.- Subscriber terminal equipment and intranets

1. Subscriber terminal equipment mean users' fixed or mobile terminal equipment connected to public telecommunication networks through the end points of public telecommunication networks.

2. Subscriber terminal equipment are categorized as follows:

a/ Single-line subscriber terminal equipment are terminal equipment which do not have the circuit-switching or call-connecting function, including: fixed telephone equipment, mobile telephone equipment, fax equipment, paging equipment, modems, wireless Internet access terminal equipment, computers, equipment having the combined functions of the above-said equipment;

b/ Multi-line subscriber terminal equipment are terminal equipment which have the circuit-switching, call-connecting function, including PABX switchboards, wireless Internet access portal equipment and equipment with the call connecting function;

c/ Other subscriber terminal equipment as prescribed by the Post and Telematics Ministry.

3. Subscriber terminal equipment on the list of those subject to standard conformity certification, subscriber terminal equipment which transmit radio waves must comply with the regulations on standard conformity certification and on radio frequency and transmitter management and use if they are to be used on public telecommunication networks.

4. Intranet means a telecommunication equipment system established by an organization or individual (hereinafter called intranet owner) at a premises with a specified address and scope which the intranet owner has the full right to lawfully use for ensuring internal communication among the intranet members. Where the intranet owner is an individual, the intranet members shall be members of the household of which the intranet owner is the head or is a person authorized by the household head according to law provisions. Where the intranet owner is an organization, the network membership shall be determined according to the operation charter and legal document(s) prescribing the organizational structure and apparatus of such organization or to other relevant regulations.

5. Intranets are categorized into wire intranets (telecommunication equipment are linked together by telecommunication cables) and wireless intranets (radio equipment are linked together by radio waves or radio waves combined with telecommunication cables).

Article 6.- Positions of end points of public telecommunication networks

1. End points of public telecommunication networks are physical connection points belonging to the telecommunication networks, which satisfy technical standards to ensure the connection of service users' terminal equipment to the telecommunication networks.

2. End points of public telecommunication networks serve as a dividing line between the economic and technical responsibilities of telecommunication enterprises and those of service users. The scope from the end points to the users' side falls under the users' responsibility. The scope from the end points to the enterprises' side falls under the enterprises' responsibility.

3. Where telecommunication networks are used to provide telecommunication services for users via local loops (subscriber lines or trunk lines), unless it is otherwise agreed upon in the contracts between telecommunication enterprises and service users, the positions of end points of public telecommunication networks shall be determined to be on the subscriber side, which are:

a/ The last cable boxes installed in the subscribers' homes; or

b/ The subscriber line boxes or wire-connection slates of transmission equipment installed in the subscribers' homes if the condition stated at Point a above is not satisfied; or

c/The sockets for plugging the first subscriber terminal equipment (closest to the users) in the subscriber's homes, if the conditions stated at Points a and b above are not satisfied.

4. Where telecommunication networks are used to provide telecommunication services for users via satellite equipment (including transmitters or transreceivers) or base radio stations, or wireless Internet access portal equipment of telecommunication enterprises, if it is not otherwise agreed upon in the contracts between telecommunication enterprises and service users, the positions of the end points of public telecommunication networks shall be determined to be on the, subscriber side, being the antennas of the satellite equipment or antennas of the base radio stations or antennas of the wireless Internet access portal equipment.

Article 7.- Equipment, design, installation, maintenance, repair and connection of subscriber terminal equipment, intranets

1. Service users may purchase by themselves subscriber terminal equipment or hire them from telecommunication enterprises; may maintain, repair by themselves subscriber terminal equipment or intranets belonging to their properties or hire other organizations or individuals to do this work.

2. Service users may design and install by themselves subscriber terminal equipment or intranets within their premises up to the end points of public telecommunication networks or hire other organizations or individuals to do this work. The design and installation of subscriber terminal equipment and intranets must follow the State's procedures and rules and the Post and Telematics Ministry's regulations on construction and installation of telecommunication network facilities and telecommunication equipment.

3. The connection of subscriber terminal equipment and intranets to public telecommunication networks shall be effected by telecommunication enterprises under contracts signed with service users.

4. When connecting subscriber terminal equipment and intranets to public telecommunication networks, telecommunication enterprises may refuse to connect and request service users to remedy problems if they detect and have sufficient grounds to make conclusions that the installation of subscriber terminal equipment or intranets:

a/ Fails to satisfy technical standards prescribed by the Post and Telematics Ministry; or

b/ Causes unsafety to public telecommunication networks, telecommunication enterprises and service users; or

c/ Fails to ensure the service use purposes according to telecommunication regulations or the terms of the telecommunication service provision and use contracts.

5. For subscriber terminal equipment and intranets connected to exclusively leased channels, VSAT earth satellite station or Internet, telecommunication service users must use subscriber terminal equipment or intranets strictly for the right purposes stated in the telecommunication service provision and use contracts. They must not use or allow others to use subscriber terminal equipment or intranets for forwarding by any mode (automatic or manual) calls from terminal equipment they do not own

or terminal equipment outside their intranets via exclusively leased channels, VSAT earth satellite station, Internet and vice versa (in both incoming and outgoing directions).

SECTION 2

TELECOMMUNICATION NETWORKS

Article 8.- Public telecommunication networks

1. Public telecommunication networks include:

a/ Fixed telecommunication networks:

- Fixed earth telecommunication networks;

- Fixed satellite telecommunication networks.

b/ Mobile telecommunication networks:

- Mobile earth telecommunication networks;

- Mobile satellite telecommunication networks.

c/ Other public telecommunication networks prescribed by the Post and Telematics Ministry.

2. Management and operation of public telecommunication networks.

a/ The Post and Telematics Ministry:

- To formulate and promulgate or submit to the Prime Minister for approval telecommunication development strategies and plannings, including plannings on telecommunication networks and information resources;

- To submit to the Prime Minister for decision the establishment or cancellation of telecommunication relations with foreign countries;

- To decide to close or open domestic long-distance telecommunication directions in service of public-utility, security and defense tasks after consulting the Public Security Ministry and the Defense Ministry.

b/ Ministries, branches, local administrations at all levels and the Post and Telematics Ministry shall have to coordinate with one another to ensure that:

- The planning, design and construction of urban centers, residential areas, industrial parks, export-processing zones, high-tech parks, new economic zones and other public facilities include the planning on such telecommunication works as telecommunication centers, public service points, antenna masts, cable culverts and tanks, in-house cable lines, etc.

- Viba transmission lines, optical-fiber cables and copper cables are constructed along roads, bridges, culverts, pavements, streets or power lines;

- Other public and welfare construction works do not affect or obstruct the operation of telecommunication network works which have been constructed as planned.

c/ Organizations or telecommunication enterprises, when establishing and operating telecommunication networks, must:

- Observe development plans and plannings already approved by competent State bodies;

- Have telecommunication licenses granted by the Post and Telematics Ministry under the provisions of this Decree;

- Have information resource allocation decisions (if any) of the Post and Telematics Ministry;

- Observe branch standards, Vietnamese standards and international standards on construction and installation of telecommunication networks and works, promulgated or publicized by competent State bodies for compulsory application;

- Not cause harms to the environment and other socio-economic activities.

Article 9.- Local loops

1. Local loops constitute part of public telecommunication networks, including subscriber lines and trunk lines that connect local switchboards of telecommunication enterprises to service users' subscriber terminal equipment.

2. Subscriber lines are wire or wireless transmission lines connecting local switchboards of telecommunication enterprises to users' single-line subscriber terminal equipment.

3. Trunk lines are wire or wireless transmission lines connecting local switchboards of telecommunication enterprises to users' multi-line subscriber terminal equipment. According to technical standards, trunk lines are categorized into subscriber, analog and digital trunk lines.

Article 10.- National telecommunication backbone systems

1. National telecommunication backbone systems constitute part of public telecommunication networks, including domestic and international long-distance transmission lines and international communication portals, which are of special importance to the operation of the whole national telecommunication network and directly affect the national socio-economic development and assurance of national security and defense.

2. The Post and Telematics Ministry performs the function of State management over the national telecommunication backbone systems through mechanisms, policies and regulations on licensing, interconnection of telecommunication networks; interconnection standards, quality and charges, channel lease; common use of national communication infrastructures.

3. Only network infrastructure-operating enterprises which have licenses for establishment of domestic or international long-distance public fixed telecommunication networks can establish national telecommunication backbone systems and deal in the domestic or international long-distance channel lease service.

4. Network infrastructure-operating enterprises which only have licenses for establishment of public mobile telecommunication networks may establish local and domestic long-distance transmission lines for connecting together the equipment systems belonging to their networks but must neither use these transmission lines for providing the channel lease service nor establish international communication portals.

5. Other telecommunication enterprises must not establish national telecommunication backbone systems but may lease domestic and international long-distance channels for establishing telecommunication networks and providing telecommunication services strictly according to their licenses.

Article 11.- Broadcasting

1. Broadcasting means the transmission of codes, signals, data, scripts, sounds, images and other forms of information by cable lines, radio waves, optic means and other electromagnetic means.

2. The Post and Telematics Ministry performs the function of State management over broadcasting nationwide:

a/ To submit to the Prime Minister for promulgation national broadcasting development strategies and plannings; organize and direct the implementation of such strategies and plannings after they are approved by the Prime Minister;

b/ To promulgate legal documents on licensing, frequencies, standards, quality and tariffs for performing the State management in the broadcasting domain;

c/ To organize the inspection, supervision and handling of law violations in broadcasting; assume the prime responsibility for, and coordinate with the Defense Ministry and the Public Security Ministry in, inspecting and controlling the broadcasting in service of defense and security.

3. Before being submitted to the Prime Minister for approval, socio-economic development plannings related to broadcasting must be evaluated by the Post and Telematics Ministry to ensure that they are in line with the strategies, plannings and law provisions on broadcasting.

Article 12. - Private-use telecommunication networks

1. Private-use telecommunication networks are the ones established by private-use telecommunication network owners to ensure commu-

nication among network members, including two or more telecommunication equipment installed in different places with specified addresses and scopes on the Vietnamese territory, which the network members have the full right to lawfully use and are connected together via public telecommunication networks or transmission lines leased or constructed by the network owners themselves.

2. Private-use telecommunication network owners are Vietnamese agencies, organizations or enterprises or foreign agencies or organizations that operate on the Vietnamese territory and are licensed to establish privateuse telecommunication networks according to regulations. Network members are members of the agencies, organizations or enterprises licensed to establish the networks. Membership is determined according to the operation charters and legal documents defining the organizational structures and apparatuses of such agencies, organizations or enterprises or to other relevant regulations.

3. Based on the transmission modes used for network establishment, private-use telecommunication networks are categorized into wire private-use networks (telecommunication equipment are linked together by telecommunication cables), wireless private-use networks (telecommunication equipment are linked together by radio waves or radio waves combined with telecommunications cables).

4. Private-use telecommunication networks that require network establishment licenses include:

a/ Private-use telecommunication networks the members of which are Vietnamese agencies, organizations or enterprises or foreign agencies or organizations that lawfully operate in Vietnam, carry activities of similar nature or for similar purposes and are associated under their operation charters or legal documents defining the common organizational structure or common association forms and activities for their members.

b/ Wire private-use telecommunication networks which have transmission lines built by their owners themselves;

c/ Wireless fixed satellite and mobile satellite private-use 'telecommunication networks, excluding satellite private-use networks in mobile maritime, mobile aeronautical, broadcasting (radio and television) and amateur radio services;

d/ Wireless private-use telecommunication networks of Vietnam-based foreign diplomatic representations, consular offices, representative offices of international organizations, which enjoy diplomatic privileges and immunities.

e/ Other private-use telecommunication networks as prescribed by the Post and Telematics Ministry.

5. Except for the private-use telecommunication networks stated in Clause 4 of this Article, other private-use telecommunication networks shall not require network establishment licenses but must comply with regulations on interconnection, numbering, radio frequency and transmitter use licensing.

SECTION 3

TELECOMMUNICATION SERVICES

Article 13.- Classification of telecommunication services

1. Basic telecommunication services are services that instantaneously transmit users' information in the forms of signs, signals, data, scripts, sounds and images via telecommunication networks or Internet without modifying the forms or contents of information sent and received via networks.

2. Basic services include:

a/ Fixed telecommunication services (local, domestic and international long-distance):

- Telephony service (voice, far., data transmission in audio tapes);

Data transmission service;

- Television signal transmission service;

- Channel lease service;

- Telex service;

- Telegraph service.

b/ Mobile telecommunication services (local, nationwide):

- Mobile earth communication service;

- Wireless trunk telephone service;

- Paging service;

c/ Fixed satellite telecommunication service;

d/ Mobile satellite telecommunication service;

e/ Maritime radio service;

f/Other basic services prescribed by the Post and Telematics Ministry.

3. Supplementary services are services additionally provided together with basic services, further diversifying and perfecting basic services on the basis of technical properties of equipment or servicing capability of telecommunication enterprises. Telecommunication enterprises shall prescribe and publicize supplementary services they provide.

4. Value-added services are services that increase users' information use value by perfecting the information forms or contents or supplying the capability of storing and restoring such information on the basis of using telecommunication networks or Internet. Value added services include:

a/ E-mail service;

b/ Voice mail service;

c/ Network data and information access service;

d/ Electronic data exchange service;

e/ Value-added fax service, including storage and sending, storage and access;

f/ Code and protocol conversion service;

g/ Network data and information-processing service;

h/ Other value-added services prescribed by the Post and Telematics Ministry.

5. Internet services include:

a/ Internet connection service;

b/ Internet access service;

c/ Internet application service in telecommunications.

6. Basing itself on the post and telecommunication development strategy and telecommunication service market planning for each period, the Post and Telematics Ministry shall promulgate the list of basic and value added telecommunication services.

Article 14.- Resale of telecommunication services

1. Resale of telecommunication services is the form of direct purchase of telecommunication services from telecommunication enterprises on the basis of capacity leasing or traffic purchase through contracts signed with such telecommunication enterprises for providing telecommunication services for users. Resale of telecommunication services includes resale of terminal services and resale of services on the basis of leasing domestic or international long-distance channels.

2. Resale of terminal services:

a/ When reselling terminal services, all organizations and individuals shall be obliged to make business registration and pay taxes according to law provisions and sign service resale agency contracts with telecommunication enterprises and observe regulations on management of telecommunication service resale tariffs;

b/ For fixed telecommunication services, organizations and individuals may establish systems of fixed subscriber terminal equipment within the premises which they have the full right to lawfully use and resell services to users within such premises according to the right forms and quality agreed upon in the agency contracts on the basis of leasing local loops (trunk lines, subscriber lines) of telecommunication enterprises;

c/ For mobile telecommunication services, organizations and individuals may supply (sell or lease) mobile subscriber terminal equipment and resell services to users according to the right forms and quality agreed upon in the

agency contracts on the basis of purchasing traffic of telecommunication enterprises.

3. Resale of services on the basis of leasing domestic and international long-distance channels:

a/ Network infrastructure-operating enterprises may install telecommunication equipment systems within the premises they have the full right to lawfully use for resale of telecommunication services nationwide on the basis of leasing domestic and international long-distance channels of other telecommunication enterprises;

b/ Telecommunication service-providing enterprises may install telecommunication equipment systems within the premises they have the full right to lawfully use for reselling telecommunication services within industrial parks, export-processing zones and/or high-tech parks on the basis of leasing domestic and international long-distance channels of other telecommunication enterprises. Basing itself on the telecommunication development strategies and plannings, the Post and Telematics Ministry shall consider and decide on the cases of resale of telecommunication services outside industrial parks, export-processing zones or high-tech parks.

4. The Post and Telematics Ministry shall issue detailed regulations on technical and professional matters relating to the resale of telecommunication services such as the list of telecommunication services permitted for resale, subjects permitted to resell services, resale scope, and tariffs for service resale, numbering, interconnection and channel lease.

Article 15.- Telecommunication service provision and use contracts

1. The provision and use of telecommunication services shall be effected on the basis of contracts signed between telecommunication enterprises and service users.

2. Service provision and use contracts shall be expressed in writing, orally, payment modes or by other specific acts as provided for by law.

3. Where service provision and use contracts are expressed in writing:

a/ Basing themselves on law provisions on contracts and regulations of the Post and Telematics Ministry, telecommunication enterprises shall have to formulate and promulgate model telecommunication service provision and use contracts for uniform use within the whole enterprises. To guarantee the interests of telecommunication service users, the Post and Telematics Ministry shall prescribe a number of essential universal telecommunication services; telecommunication enterprises shall have to formulate model contracts and submit them to the Post and Telematics Ministry for approval;

b/ In addition to the principal contents prescribed for model contracts, the contractual parties may reach agreements on other contents of their contracts provided that such contents are not contrary to law provisions, do not infringe upon the State's interests, public interests, legitimate rights and interests of other organizations and individuals.

Article 16.- Refusal to provide services

In addition to general law provisions on contracts, telecommunication enterprises may refuse to enter into contracts or unilaterally suspend the performance of contracts signed with service users in the following cases:

1. Service users commit violations of the telecommunication legislation according to written conclusions of competent State bodies and fail to fulfil their responsibilities according to such written handling conclusions.

2. Service users breach the contract terms which the two parties have agreed to be conditions for contract suspension.

3. Service users shirk their obligation to pay service charges as prescribed to another telecommunication enterprise, if telecommunication enterprises have reached mutual written agreement on this matter.

Article 17.- Professional communication and urgent communication

1. Professional communication:

a/ Telecommunication enterprises may use domestic and international professional communication via telecommunication networks they have established for managing and administering their operation and dealing with technical and professional matters.

b/ Telecommunication enterprises shall have to prescribe the use subjects, scope and degree and issue regulations on management of professional communication within their enterprises according to the regulations of the Post and Telematics Ministry;

c/ Service charges shall be exempt for professional communication of telecommunication enterprises.

2. Urgent communication:

a/ Telecommunication enterprises shall have to promptly provide priority services for urgent communication cases prescribed in Article 7 of the Post and Telecommunication Ordinance.

b/ Urgent services are local telephone services used to call emergency service numbers of police, fire-fighting, first-aid and other agencies prescribed by the Post and Telematics Ministry;

c/ The Post and Telematics Ministry shall prescribe emergency service numbers in the national telecommunication numbering plan. Telecommunication enterprises shall have to notify users of, publish in public telephone directories, and publicize on the mass media, emergency service numbers prescribed by the Post and Telematics Ministry;

d/ Telecommunication enterprises shall have to provide service users with the possibility to access emergency services free of charge.

Article 18.- Subscriber numbers and public telephone directories

1. Subscriber number is a combination of numerals dialed (pressed) by a service user on the subscriber terminal equipment for connecting to another service user in the same numbering area or service network.

2. Public telephone directories are collections of information relating to the names, addresses, subscriber numbers and other relevant information (if any) of service users, stored in the form of traditional or electronic publication, and printed, distributed and managed by telecommunication enterprises according to the regulations of the Post and Telematics Ministry.

3. Service users may register or refuse to register their subscriber numbers in public telephone directories. If service users refuse to register their subscriber numbers in public telephone directories, telecommunication enterprises shall be responsible for keeping confidential information relating to such service users, except for the cases prescribed in Clause 4, Article 4 of this Decree.

Article 19.- Telephone directory assistance 1. Telephone directory assistance service is a telephony service provided by telecommunication enterprises to help service users to find out local subscriber numbers managed by the enterprises and registered in public telephone directories. When service users call the telephone directory assistance service numbers of telecommunication enterprises and give information relating to the names or addresses of service users, they shall be informed of the local subscriber numbers they look for.

2. The Post and Telematics Ministry shall prescribe the telephone directory assistance service numbers of telephone networks in the national numbering plan.

3. Telecommunication enterprises shall have to notify service users of, publish in public telephone directories, and publicize on the mass media, telephone directory assistance service numbers prescribed by the Post and Telematics Ministry.

4. Telecommunication enterprises shall have to provide service users with the possibility to access the telephone directory assistance service free of charge by the following modes:

a/ Self-organization of the provision; or

b/ Entrusting and signing contracts with other organizations or telecommunication enterprises to organize such provision.

Article 20.- Notification of subscriber number malfunctions

1. The service of notification of malfunctions of subscriber numbers of public telephony networks is a telephony service provided by telecommunication enterprises to help service users to notify the enterprises of the abnormal operation or communication disruption of local fixed subscriber numbers managed by such enterprises and requesting the remedy of such malfunctions.

2. The Post and Telematics Ministry shall prescribe the subscriber number malfunction notification service numbers of local fixed telecommunication networks in the national numbering plan. Telecommunication enterprises shall have to notify service users of, publish in public telephone directories, and publicize on the mass media, the subscriber number malfunction notification service numbers prescribed by the Post and Telematics Ministry.

3. Telecommunication enterprises shall have to provide service users with the possibility to access the subscriber number breakdown notification service free of charge.

Article 21.- Billing and payment of charges

1. Telecommunication enterprises shall have to make bills for payment of service charges in an accurate, full and timely manner for service users. Service users shall have to pay charges in a full and timely manner for using the services provided by the enterprises according to the prescribed tariffs.

2. Service charge payment bills must accurately, fully and clearly contain at least the following details:

a/ Charge for each type of telecommunication service;

b/ Total charge to be paid;

c/ The rate of exchange between the foreign currency for charge collection and Vietnam dong (if any);

d/ Value added tax (VAT).

3. For the monthly billing under contracts, unless the users do not so request, telecommunication enterprises shall have to provide, or entrust other telecommunication enterprises under contracts to provide, users with the bills enclosed with the detailed lists free of charge for once, enumerating:

a/ Domestic long-distance calls;

b/ International calls;

c/ Calls to the mobile communication networks.

4. Unless otherwise agreed upon between telecommunication enterprises and service users, the detailed lists enclosed with the charge payment bills must contain at least the following information on each charged call:

a/ Date of the call;

b/ Starting time and ending time or starting time and total call time;

c/ Called number (international call: country code, area code, subscriber number; domestic call: area code, subscriber number);

d/ Charge amount for each call.

Article 22.- Cross-border provision and use of telecommunication services

1. The cross-border provision of telecommunication services by foreign telecommunication enterprises for telecommunication service users on the Vietnamese territory must be effected under business contracts or commercial agreements with Vietnamese enterprises which manage and operate international communication portals.

2. The use of telecommunication services by users on the Vietnamese territory must be effected under contracts signed with Vietnamese telecommunication enterprises.

3. Basing itself on international practices, regulations on maritime, aeronautical safety assurance and Vietnamese telecommunication enterprises' capability of providing telecommunication services, the Post and Telematics Ministry shall prescribe the cross-border provi-

sion and use of telecommunication services for vessels in the sea and aircraft in the space of Vietnam and other special cases.

4. Vietnamese telecommunication enterprises licensed to provide telecommunication services abroad must observe Vietnamese law provisions and law provisions of the countries where they provide telecommunication services.

CHAPTER III
SERVICE PROVISION AND USE PARTIES

Article 23.- Telecommunication enterprises with telecommunication services holding dominant market shares

1. Telecommunication enterprises with telecommunication services holding dominant market shares are enterprises having their turnover or traffic market shares accounting for over 30% of total turnover or traffic of the type of telecommunication service in the geographical areas where they are licensed to provide, which may directly affect the penetration into such service market by other telecommunication enterprises.

2. Annually, the Post and Telematics Ministry shall identify and publicize telecommunication enterprises with telecommunication services holding dominant market shares.

3. Telecommunication enterprises with telecommunication services holding dominant market shares shall have the rights and obligations prescribed in Clause 2, Article 39 of the May 25, '2002 Post and Telecommunication Ordinance.

Article 24.- Telecommunication enterprises holding essential means

1. Telecommunication enterprises holding essential means are those holding over 30% of the capacity of the local loop in the geographical area where they are licensed to provide or over 30% of the capacity of domestic or international long-distance transmission channels; or over 30% of the number of base radio stations of the mobile earth communication network.

2. Annually, the Post and Telematics Ministry shall identify and publicize telecommunication enterprises holding essential equipment.

3. Telecommunication enterprises holding essential means shall have the responsibility:

a/ To plan and invest in building telecommunication networks to ensure the capacity of servicing the network interconnection and the transmission of the traffic of telecommunication services;

b/ To create favorable conditions for the negotiation and interconnection of networks and services between telecommunication enterprises' telecommunication networks in a fair and rational manner on the basis of efficient use of telecommunication resources and common use of interconnection positions and technical infrastructures under interconnection agreements between the involved parties;

c/ To formulate and submit to the Post and Telematics Ministry for approval model interconnection agreements for uniform application to telecommunication enterprises that have interconnection requests.

Article 25.- Telecommunication service agents

1. Organizations and individuals that wish to provide telecommunication services for users in the form of telecommunication service agency must sign telecommunication service agency contracts with telecommunication enterprises and make business registration according to law provisions. Telecommunication service agents are classified into commission agents and resale agents.

2. Commission agents may establish single-line subscriber terminal equipment in the premises which they have the full right to lawfully use; link subscriber terminal equipment to public telecommunication networks by subscriber lines for providing telecommunication services in such premises strictly according to the pre-

scribed service forms, quality and tariffs for commissions.

3. Resale agents may establish subscriber terminal equipment systems (single-line and multiple-line) within the premises they have the full right to lawfully use; link their terminal equipment systems to telecommunication networks by trunk lines or subscriber lines for reselling terminal services in such premises strictly according to the telecommunication service resale regulations of the Post and Telematics Ministry.

4. On the basis of law provisions on contracts and the Post and Telematics Ministry's regulations, telecommunication enterprises shall have to formulate and promulgate model telecommunication service agency contracts for uniform application within their enterprises.

5. Telecommunication service agents shall submit to the inspection and supervision by the Post and Telematics Ministry and competent State bodies of their provision of telecommunication services.

Article 26.- Reporting regime of telecommunication enterprises

1. The Post and Telematics Ministry shall prescribe and promulgate report forms for uniform application to telecommunication enterprises.

2. Telecommunication enterprises shall have to regularly or irregularly report to the Post and Telematics Ministry on their manufacture, business, technical and professional activities at the latter's requests and shall be accountable for the accuracy and timeliness of the reported contents and data.

3. Telecommunication enterprises shall have the responsibility to evidence their reported data if the Post and Telematics Ministry so requests and create conditions for the Post and Telematics Ministry to verify the reported data when necessary.

4.. Telecommunication enterprises that violate the reporting regime shall be sanctioned according to current law provisions.

CHAPTER IV

INTERCONNECTION

SECTION 1

INTERCONNECTION OF PUBLIC TELECOMMUNICATION NETWORKS

Article 27.- Interconnection principles

The Post and Telematics Ministry shall formulate and promulgate interconnection regulations on the following principles:

1. Telecommunication enterprises may request to connect their telecommunication networks to telecommunication networks or services of other enterprises, and at the same time are obliged to allow other telecommunication enterprises to connect to their telecommunication networks or services under fair and rational conditions.

2. The interconnection of telecommunication networks must be effected on the basis of efficient use of telecommunication resources and technical infrastructures which have been invested and constructed.

3. Service users are guaranteed to:

a/ Freely select telecommunication enterprises in an convenient and easy manner;

b/ Communicate with any users, regardless of which telecommunication enterprises such users have signed contracts with;

c/ Be provided with services and pay charges in a convenient and rational manner.

4. Technical requirements for interconnection are guaranteed to:

a/ Conform to the interconnection standards promulgated by the Post and Telematics Ministry;

b/ Ensure safety and integrity of each network and the entire public telecommunication networks.

5. Interconnection tariff shall be formulated on the basis of costs, rationally divided for the network components or service phases without discrimination among various types of service.

Where the interconnection tariff is inclusive of amounts contributed for the provision of public-utility telecommunication services; such amounts must be clearly stated.

Article 28.- Model interconnection agreements

1. Telecommunication enterprises holding essential means shall have to formulate model written interconnection agreements with transparent and non-discriminatory conditions and submit them to the Post and Telematics 1'zinistry for approval.

2. After being approved, model written interconnection agreements shall be made public for uniform application to all telecommunication enterprises that have interconnection requests.

3. In addition to the major contents prescribed in model written interconnection agreements, interconnecting enterprises may reach agreements with one another on other contents of such agreements provided that such contents are not contrary to law provisions and do not infringe upon the State's interests, public interests, legitimate rights and interests of other organizations and individuals.

Article 29.- Interconnection points

1. Interconnection points are points lying on the routes that interconnect two telecommunication networks, used to define economic and technical responsibilities between two telecommunication enterprises.

2. The geographical positions of interconnection points: unless otherwise agreed upon in the interconnection agreements of interconnecting enterprises or otherwise requested by the Post and Telematics Ministry, the geographical positions of interconnection points are prescribed as follows:

a/ Geographical positions of interconnection points for local communication are local switchboards or local tandem switchboards;

b/ Geographical positions of interconnection points for domestic long-distance communication are local tandem switchboards or long-distance switchboards;

c/ Geographical positions of interconnection points for international communication are long distance switchboards or international switchboards;

d/ Geographical positions of interconnection points for mobile communication are local tandem switchboards or long-distance switchboards or mobile switchboards.

3. The positions of interconnection points within a network structure are trunk portals of interconnected switchboards.

4. The number of interconnection points shall be agreed upon by the interconnecting telecommunication enterprises themselves, provided that it must abide by the interconnection principles prescribed in Article 27 of this Decree.

Article 30.- Common use of positions and common use of infrastructures

1. Common use of positions.

a/ Interconnecting telecommunication enterprises shall apply the principle of common use of positions to interconnection points at all places where practical conditions permit in order to improve efficiency in the use of ground areas, reduce costs and create favorable conditions for interconnecting enterprises.

b/ There are two methods of commonly using positions, namely commonly using real positions and commonly using virtual positions. The method of commonly using virtual positions shall be applied only when it is impossible to use the method of commonly using real positions because interconnection-providing enterprises cannot arrange ground areas and other necessary conditions.

2. Common use of infrastructure.

a/ Infrastructure consists of houses and buildings, cable culverts, cable tanks, cable posts, antenna towers, internal cable lines and accessory equipment within the buildings where are installed interconnection equipment

and other means which need to be commonly used in an economical and efficient manner, avoiding waste in investment and construction and creating favorable conditions for interconnection, given that the submitted proposals are rational, economically and technically viable and compliant with current law provisions;

b/ The common use of infrastructure is effected under contracts agreed upon between enterprises. In a number of necessary cases of interconnection and establishment of telecommunication networks, in order to guarantee the interests of the State, enterprises as well as service users, the Post and Telematics Ministry shall decide on the common use of telecommunication infrastructure when enterprises cannot reach any agreement.

SECTION 2

INTERCONNECTION OF PRIVATEUSE TELECOMMUNICATION NETWORKS, SPECIAL-USE TELECOMMUNICATION NETWORKS TO PUBLIC TELECOMMUNICATION NETWORKS

Article 31.- Interconnection principles

The interconnection of private-use or special use telecommunication networks to public telecommunication networks must ensure the following principles:

1. Private-use or special-use telecommunication networks must satisfy the technical standards applicable to public telecommunication networks.

2. Interconnection shall be effected under written interconnection contracts between telecommunication enterprises and owners of private-use or special-use telecommunication networks.

3. Private-use or special-use telecommunication networks must not be used for forwarding by any modes (automatic or manual) domestic and international long-distance calls (in both outgoing and incoming directions) between terminal equipment outside such networks.

4. Private-use and special-use telecommunication networks must not be directly interconnected, unless it is permitted by the Post and Telematics Ministry.

Article 32.- Interconnection points

1. Private-use telecommunication networks may be interconnected by trunk lines to public telecommunication networks at local switchboards, local tandem switchboards and at other interconnection points prescribed by telecommunication enterprises.

2. Special-use telecommunication networks may be interconnected by trunk lines to public telecommunication networks at local switchboards, local tandem switchboards, long distance switchboards and at other interconnection points prescribed by telecommunication enterprises.

Article 33.- Common use of infrastructure 1. Where owners of private-use or special-use telecommunication networks build by themselves transmission lines according to their network establishment licenses, they shall be responsible for the whole work of installing, operating and maintaining trunk lines. Telecommunication enterprises shall have to arrange areas for installation of transmission equipment (if any), cable conduits, cable tanks, antenna posts and masts and other accompanying equipment such as power sources, air-conditioners, etc., at the sites of their interconnection switchboards for owners of private-use or special-use telecommunication networks.

2. The use of telecommunication enterprises' infrastructure shall be effected under contracts signed between private-use or special-use telecommunication network owners and telecommunication enterprises.

3. Expenses for the use of telecommunication enterprises' infrastructure shall be agreed upon by private-use or special-use telecommunication network owners and telecommunication enterprises.

CHAPTER V

TELECOMMUNICATION NUMBERING

Article 34.- Telecommunication numbering plans

1. Telecommunication numbering plans are detailed regulations on the structure and use purposes of codes and numbers for uniform application in the whole country in order to ensure the operation of telecommunication networks and services. The collection of telecommunication codes and numbers is called telecommunication number budget.

2. Telecommunication numbering plans include:

a/ Plan on numbering of public telecommunication networks;

b/ Plan on numbering of signaling point codes;

c/ Plan on numbering of Internet domain names and addresses;

d/ Plan on numbering of other telecommunication service networks.

3. The Post and Telematics Ministry shall formulate, promulgate, amend and supplement telecommunication numbering plans.

Article 35.- Management of the telecommunication number budget

1. The Post and Telematics Ministry shall formulate and promulgate a Regulation on management of the telecommunication number budget.

2. Basing itself on the numbering plans and the number budget management plan, the Post and Telematics Ministry shall decide on the allocation or withdrawal of telecommunication codes and numbers to or from telecommunication enterprises as well as organizations and individuals.

3. Telecommunication enterprises shall have the following responsibilities:

a/ To fill in procedures to apply for codes, numbers and number blocks according to the Post and Telematics Ministry's regulations;

b/ To formulate plans on the use of telecommunication codes and numbers already allocated by the Post and Telematics Ministry;

c/ To grant numbers, lease numbers to, and withdraw numbers from, service users according to the Regulation on management of the telecommunication number budget;

d/ To report to the Post and Telematics Ministry the plans on, and the situation of, the use of telecommunication codes and numbers regularly or irregularly when the Post and Telematics Ministry so requests;

e/ Within the scope of allocated telecommunication number blocks, on the basis of the telecommunication numbering plans and the network development plans already approved by competent authorities, at least 60 days before changing subscriber numbers, telecommunication enterprises must notify the concerned service users of the time of, and necessary information about, the number change plans and instructions on the use of services after their numbers are changed. Telecommunication enterprises must bear all number change costs but shall not be liable for indirect damage caused by the number change to users.

4. Private-use and special-use telecommunication network owners, service agents and users that are granted or leased codes and/or numbers shall have to use such granted and/or leased codes and numbers according to the Regulation on management of the telecommunication number budget and the guidance of telecommunication enterprises.

5. The Post and Telematics Ministry shall withdraw service codes and numbers or subscriber number blocks already allocated for use for other purposes when telecommunication enterprises or network owners no longer need to use them.

6. When they need to change number blocks or the length of subscriber numbers, telecommunication enterprises and special-use telecom-

munication network owners must draw up plans, propose solutions and may only implement them after obtaining the Post and Telematics Ministry's written permission.

7. All agencies, organizations and individuals must pay charges and fees for using telecommunication codes and numbers according to law provisions.

CHAPTER VI

TELECOMMUNICATION LICENSES

SECTION 1

GENERAL PROVISIONS ON LICENSING

Article 36.- Licensing principles

1. Compliance with Vietnam's telecommunication development strategies, plannings and plans.

2. Priority shall be given to schemes that can be quickly executed in practice, with commitments to long-term provision for a majority of service users; schemes that provide services in deep-lying, remote, border areas and islands; schemes that provide public-utility telecommunication services, serve Party and State agencies, security and defense.

3. Where the licensing involves the use of frequencies or the number budget, licenses shall be considered and granted only if the allocation of frequencies or the number budget can be effected in line with the approved plannings.

4. The licensing of telecommunication enterprises that have foreign investors as their partners must comply with law provisions on foreign investment and international agreements which Vietnam has signed or acceded to.

5. It is strictly prohibited to purchase, sell or transfer telecommunication licenses of all kinds. In case of organizational change such as merger, dissolution, equitization or change of the State-contributed capital portions, agencies, organizations and enterprises shall have to report such to the Post and Telematics Ministry for re-grant or withdrawal of licenses strictly according to regulations on the licensed subjects.

6. Agencies, organizations and enterprises shall bear full responsibility before law for the accuracy of their dossiers of application for telecommunication licenses. On the basis of the application dossiers, the Post and Telematics Ministry shall conduct evaluation and grant or refuse to grant licenses under the provisions of this Decree. After receiving telecommunication licenses, agencies, organizations and enterprises shall be responsible for, and take initiative in, carrying out activities stated in their licenses and bear full responsibility before law for their manufacture, business and service provision activities according to law provisions and the provisions of their granted licenses.

7. All agencies, organizations and enterprises shall be obliged to pay licensing charges and fees according to regulations.

Article 37.- Telecommunication businesses that do not require licenses

1. Organizations, individuals and enterprises of all economic sectors that operate lawfully in Vietnam may register and conduct telecommunication business activities in the following domains without having to apply for licenses:

a/ Manufacture of telecommunication supplies and equipment (excluding radio transmitters and trans receivers);

b/ Export and import of telecommunication supplies and equipment;

c/ Provision of telecommunication services in the form of telecommunication service agency.

2. In the course of conducting telecommunication business activities, organizations, individuals and enterprises must observe law provisions on goods and service quality, regulations on information and advertisement, regulations on resolution of disputes and compensation and other relevant law provisions.

3. In addition to the provisions of Clause 2 of this Article:

a/ For the manufacture of telecommunication supplies and equipment (excluding radio transmitters and transreceivers), organizations, individuals and enterprises must observe the telecommunication equipment quality management provisions of Article 52 of this Decree;

b/ For the export and import of telecommunication supplies and equipment, organizations, individuals and enterprises must observe the telecommunication equipment quality management provisions of Article 52 of this Decree, the radio frequency and equipment use provisions of the Government's Decree No. 24/2004/ND-CP of January 14, 2004 on radio frequencies and the Prime Minister's regulations on goods export and import management for each period;

c/ For the provision of telecommunication services in the form of telecommunication service agency, organizations, individuals and enterprises must observe the telecommunication service agency provisions of Article 25 of this Decree.

SECTION 2

LICENSING OF THE ESTABLISHMENT OF TELECOMMUNICATION NETWORKS AND PROVISION OF TELECOMMUNICATION SERVICES

Article 38.- Licensing conditions

1. Conditions on subjects:

Being State enterprises or enterprises where the State holds dominant or special shares.

2. Conditions on professional and financial capabilities:

a/ Having adequate financial and professional manpower capabilities suitable to the scales of the schemes for execution as licensed;

b/ Having feasible technical plans on network development and service provision plans in compliance with current regulations on interconnection, information resource use, service tariff, technical standards and quality;

c/ Having contingency plans for assuring safety when technical incidents occur;

d/ Having equipment, facilities, technical and professional plans for assuring network safety and information security.

Article 39.- Licensing procedures

1. Application dossiers.

Each enterprise shall compile 3 sets of application dossier (1 original and 2 copies). Each dossier set consists of:

a/ The enterprise's application for a license;

b/ The business registration certificate or investment license;

c/The enterprise's organization and operation charter;

d/ The service provision scheme with the following principal contents:

- The business plan on types of services; service provision scope; service standards and quality; tariff; market and turnover forecast and analysis; total investment capital and allocation of capital for each period; investment form, capital mobilization plans; manpower;

- The technical plan on network configuration and equipment, including main and standby parts; network and equipment capability analysis; capacity of transmission lines; corresponding information resources; equipment and technical and professional measures for assuring information safety and security;

- Commitments to implement the scheme applied for a license for the long-term provision of telecommunication services for users, and to observe telecommunication management regulations.

2. Dossier-processing time and procedures.

The Post and Telematics Ministry shall receive application dossiers, conduct evaluation within 75 days, counting as from the date of receiving valid dossiers. In case of refusal, the Post and Telematics Ministry shall have to issue written notices, clearly stating the refusal reasons to the applying enterprises. Where application dossiers basically meet the technical and

professional requirements, the Post and Telematics Ministry shall solicit written opinions of the concerned ministries and branches on the enterprises' applications for telecommunication network establishment or telecommunication service provision licenses, then synthesize and submit them to the Prime Minister for approval. If receiving the Prime Minister's written approvals, within 15 days after the date of receiving such approvals, the Post and Telematics Ministry shall have to grant licenses to the enterprises.

3. Amendment and supplementation of the licenses' contents.

a/ While their licenses remain valid, if the enterprises wish to amend and/or supplement the licenses' contents, they must send dossiers of application therefor to the Post and Telematics Ministry;

b/A dossier of application for amendment and supplementation consists of an application for amendment and supplementation of the license's contents; a copy of the still valid license; a report on the e=enterprise's operation; a detailed written description of the amended and/or supplemented contents and other related documents;

c/ The Post and Telematics Ministry shall conduct evaluation and consider the grant of amended and/or supplemented licenses within 60 days, counting from the date of receiving valid dossiers. In case of refusal to grant amended and/or supplemented licenses, the Post and Telematics Ministry shall have to issue written replies, clearly stating the refusal reasons to the applying enterprises.

4. Extension of licenses.

a/ Enterprises which wish to extend their licenses must send extension application dossiers to the Post and Telematics Ministry 60 days before their licenses expire. An extension application dossier shall consist of an application for license extension and a copy of the still valid license;

b/ The Post and Telematics Ministry shall conduct evaluation and consider the extension of licenses within 60 days, counting from the date of receiving valid dossiers. In case of refusal to extend licenses, the Post and Telematics Ministry shall have to issue written replies, clearly stating the reasons to the applying enterprises;

c/ Each license shall be extended only once and the extended duration shall not exceed one year.

5. Withdrawal of licenses.

Telecommunication network establishment and service provision licenses shall be withdrawn in the following cases:

a/ Past 02 years counting from the date they are granted licenses but the enterprises have not yet carried out in reality activities stated in their licenses without plausible reasons. If wishing to apply for new licenses, enterprises having their licenses withdrawn shall have to fill in all procedures prescribed for application of new licenses;

b/ Enterprises are handled for violations in the telecommunication domain according to law provisions under which their licenses are withdrawn.

SECTION 3

LICENSING OF THE PROVISION OF TELECOMMUNICATION SERVICES

Article 40.- Licensing conditions

1. Conditions on subjects:

Enterprises of all economic sectors, which are established under law provisions.

2. Technical and professional conditions:

a/ Having technical plans on telecommunication equipment system development within their premises and public service points and feasible telecommunication service business plans in compliance with current regulations on network establishment, interconnection, information resource use, tariff, technology and service quality;

b/ Having contingency plans for assuring safety when technical incidents occur;

c/ Having equipment and technical and professional plans for assuring network safety and information security.

Article 41.- Licensing procedures

1. Application dossiers

Each enterprise shall compile three (03) sets of application dossier (1 original and 2 copies). Each dossier set consists of:

a/ The enterprise's application for a license;

b/ The business registration certificate or investment license;

c/ The enterprise's organization and operation charter;

d/ The service provision scheme with the principal contents prescribed at Point d, Clause 1, Article 39 of this Decree.

2. Dossier-processing time

The Post and Telematics Ministry shall conduct evaluation and grant licenses within 60 days, counting from the date of receiving valid dossiers. If there emerge matters in need of re-evaluation, the above-said time limit may be prolonged but must not exceed 75 days, counting from the date of receiving valid dossiers. In case of refusal to grant licenses, the? Post and Telematics Ministry shall have to issue written replies, clearly stating the reasons to the applying enterprises.

3. Amendment and supplementation of the licenses' contents; extension and withdrawal of licenses.

To comply with the provisions of Clauses 3, 4 and 5, Article 39 of this Decree.

SECTION 4

LICENSING OF THE EXPERIMENTATION OF TELECOMMUNICATION NETWORKS AND SERVICES

Article 42.- Subjects to be licensed

1. Telecommunication enterprises that wish to experimentally provide new telecommunication services for the public other than the services prescribed in their granted licenses or new telecommunication services involving the use of telecommunication resources.

2. Agencies, organizations and enterprises that wish to experiment private-use telecommunication networks involving the use of telecommunication resources.

Article 43.- Licensing procedures

1. Application dossiers

Each application dossier shall be made in 3 sets (1 original and 2 copies). Each set consists of:

a/ An application for a license for experimental establishment or experimental provision of services:

b/The scheme on the experimental establishment of a network or experimental provision of services, clearly identifying the experimentation purposes, scope and period; network configuration, types of services and the experimentation cooperation party (if any); projected tariffs (if any); frequencies, number budget for the experimentation (if any); terms and conditions for ensuring users' interests if the enterprise does not put services into official provision after the experimental service provision period expires;

c/ A copy of the telecommunication license (if any).

2. Dossier-processing time

The Post and Telematics Ministry shall conduct evaluation and grant or refuse to grant licenses within 30 days, counting from the date of receiving valid dossiers. In case of refusal, the Post and Telematics Ministry shall have to issue written replies, clearly stating the refusal reasons to the applying agencies, organizations or enterprises.

3. Extension of the experimentation period

a/ Enterprises that wish to extend the experimentation period must send extension application dossiers to the Post and Telematics Ministry 15 days before their licenses expire. Such an extension application dossier shall con-

sist of an application clearly stating the extension reasons and a copy of the still valid experimentation license;

b/ The Post and Telematics Ministry shall conduct evaluation and consider the extension within 15 days, counting from the date of receiving valid dossiers. In case of refusal, the Post and Telematics Ministry shall have to issue written replies, clearly stating the refusal reasons to the applying agencies, organizations or enterprises.

c/ The extended period or the total time of extensions shall not exceed one year.

4. Upon the expiry of the experimentation time limit, agencies, organizations or enterprises shall have to conduct a review, finalize the experimentation dossiers and report the experimentation results to the Post and Telematics Ministry.

5. After the experimentation period, if agencies, organizations or enterprises that conduct the experimentation wish to put their networks or services into official operation, they must apply for licenses to the Post and Telematics Ministry. The application procedures shall comply with the provisions of Sections 2 and 3, Chapter \/I of this Decree.

6. Withdrawal of licenses

Telecommunication network and service experimentation licenses shall be withdrawn in the following cases:

a/ Past 06 months, counting from the date they are granted licenses, but the agencies, organizations or enterprises have not yet carried out in reality activities stated in their licenses without plausible reasons. If wishing to apply for new licenses, agencies, organizations or enterprises having their licenses withdrawn shall have to fill in all procedures prescribed for application of new licenses;

b/ Enterprises are handled for violations in the telecommunication domain according to law provisions under which their licenses are withdrawn.

SECTION 5

LICENSING OF THE ESTABLISHMENT OF PRIVATE-USE TELECOMMUNICATION NETWORKS

Article 44.- Licensing conditions

Agencies, organizations or enterprises wishing to establish private-use telecommunication networks must ensure the following conditions:

1. The establishment of private-use telecommunication networks is only for ensuring communication among the network members, not for business purposes and profits.

2. Having technical and professional plans for assuring safety and security for private-use telecommunication networks.

Article 45.- Licensing procedures

1. Application dossiers.

Application dossiers: Each dossier of application for a license for establishing an private-use telecommunication network shall be made in 3 sets (1 original and 2 copies). Each dossier set consists of:

a/ An application for a license for establishing an private-use telecommunication network. The written request of the Foreign Ministry if the applicants are Vietnam-based foreign diplomatic representations, consulates or representative offices of international organizations which enjoy diplomatic or consular privileges and immunities;

b/ The applying agency's or organization's establishment decision or operation license or the applying enterprise's business registration certificate;

c/ The operation charter or legal document(s) defining the common organizational structure or the common form of association or activity of members (if any);

d/ The network establishment scheme, clearly stating the network establishment purpose; network configuration; categories of equipment; to be-used services; network members (if any); operation scope; to be-used tech-

nology; to be used frequencies, codes and numbers (if any).

2. Dossier-processing time

The Post and Telematics Ministry shall conduct evaluation and grant or refuse to grant licenses within 30 days, counting from the date of receiving valid dossiers. In case of refusal, - the Post and Telematics Ministry shall have to issue written replies, clearly stating the refusal reasons to the applying agencies, organizations or enterprises. If there emerge matters in need of re-evaluation, the licensing time limit may be prolonged but must not exceed 45 days, counting from the date of receiving valid dossiers.

3. Amendment and supplementation of the licenses' contents

a/ The licensed agencies, organizations or enterprises that wish to amend or supplement the network configuration, types of services or network operation scope must send dossiers of application therefor to the Post and Telematics Ministry;

b/A dossier of application for amendment and supplementation consists of an application for amendment and supplementation; a detailed written description of the proposed amendments and/or supplements; other documents related to the amendment and/or supplementation; and a copy of the still valid license;

c/ The Post and Telematics Ministry shall conduct evaluation and grant or refuse to grant amended and/or supplemented licenses within 15 days, counting from the date of receiving valid dossiers. In case of refusal to grant amended and/or supplemented licenses, the Post and Telematics Ministry shall have to issue written replies, clearly stating the refusal reasons to the applying agencies, organizations or enterprises.

4. Extension of licenses

a/ Agencies, organizations or enterprises which wish to extend their licenses must send extension application dossiers to the Post and Telematics Ministry 15 days before their licenses expire;

b/ An extension application dossier consists of a license extension application and a copy of the still valid license;

c/ The Post and Telematics Ministry shall conduct evaluation and consider the extension within 10 days, counting from the date of receiving valid dossiers. In case of refusal to extend licenses, the Post and Telematics Ministry shall have to issue written replies, clearly stating the refusal reasons to the applying agencies, organizations or enterprises;

d/ The extended period or the total time of extensions shall not exceed one year.

5. Withdrawal of licenses

Private-use telecommunication network establishment licenses shall be withdrawn in the following cases:

a/ Past one year as from the date they are granted licenses but the agencies, organizations or enterprises have not yet carried out in reality activities stated in their licenses without plausible reasons. If wishing to apply for new licenses, agencies, organizations or enterprises having their licenses withdrawn shall have to fill in all procedures prescribed for application of new licenses;

b/ Enterprises are handled for violations in the telecommunication domain according to law provisions under which their licenses are withdrawn.

SECTION 6

LICENSING OF THE INSTALLATION OF TELECOMMUNICATION CABLES IN VIETNAM'S EXCLUSIVE ECONOMIC ZONE OR CONTINENTAL SHELF

Article 46.- Licensing conditions

1. Commitments to observe Vietnamese laws and international agreements which the Socialist Republic of Vietnam has signed or acceded to.

2. Commitments to submit to the supervision by competent Vietnamese management

bodies and bear all expenses for this activity.

Article 47.- Licensing procedures

1. Application dossiers: Each dossier of application for a license for laying telecommunication cables in the exclusive economic zone or continental shelf of Vietnam must be made in 5 sets (01 original and 04 copies). Each dossier set consists of:

a/ An application for a license for laying telecommunication cables in the exclusive economic zone or continental shelf of Vietnam;

b/ The scheme on the laying of telecommunication cables in the exclusive economic zone or continental shelf of Vietnam, with the following contents:

- Nature, purpose and scope of the cable line, especially matters related to marine survey and submarine operations;

- Technical design and geographical position, precise co-ordinates of the telecommunication cable line to be laid;

- Plans on the construction and assurance of security and marine environment.

2. Dossier-processing time

a/ The Post and Telematics Ministry shall receive application dossiers and send them to the concerned ministries and branches for opinions before granting licenses.

b/ The Post and Telematics Ministry shall grant licenses within 90 days, counting from the date of receiving valid dossiers. In case of refusal to grant licenses, the Post and Telematics Ministry shall have to issue written replies, clearly stating the refusal reasons to the applying organizations.

c/ On the basis of the granted licenses, the Post and Telematics Ministry shall collaborate with the Public Security Ministry and the Defense Ministry in permitting vessels to engage in surveys, construction, repair and maintenance of telecommunication cables in the exclusive economic zone or continental shelf of Vietnam according to the licenses and law provisions.

3. Amendment and supplementation of the licenses' contents

a/ While their licenses remain valid, if the organizations wish to amend or supplement their contents, they must send dossiers of application therefor to the Post and Telematics Ministry;

b/ A dossier of application for amendment and supplementation consists of an application for amendment and supplementation of the license's contents; a copy of the still valid license; a detailed written description of the proposed amendments and/or supplements and other related documents;

c/ The Post and Telematics Ministry shall conduct evaluation and consider the grant of amended and/or supplemented licenses within 60_days, counting from the date of receiving valid dossiers. In case of refusal to grant amended and/or supplemented licenses, the Post and Telematics Ministry shall have to issue written replies, clearly stating the reasons to the applying organizations.

4. Extension of licenses

a/ The licensed organizations that wish to extend their licenses must send extension application dossiers to the Post and Telematics Ministry 90 days before their licenses expire. An extension application dossier consists of a license extension application and a copy of the still valid license;

b/ The Post and Telematics Ministry shall conduct evaluation and consider the extension of licenses within 90 days, counting from the date of receiving valid dossiers;

c/ In case of refusal to extend licenses, the Post and Telematics Ministry shall have to issue written replies, clearly stating the reasons to the applying organizations;

d/ Each license may be extended only once and the extended time shall not exceed one year.

5. Withdrawal of licenses

Licenses for laying telecommunication

cables in the exclusive economic zone or continental shelf of Vietnam shall be withdrawn when the licensed organizations are handed for violations in the telecommunication domain according to law provisions under which their licenses must be withdrawn.

CHAPTER VII

PROVISION OF PUBLIC-UTILITY TELECOMMUNICATION SERVICES

Article 48.- Public-utility telecommunication services

1. Public-utility telecommunication services include universal telecommunication services and compulsory telecommunication services, which are telecommunication services essential to the society and the State assures their provision with the quality and tariff prescribed by competent State bodies.

2. On the basis of the telecommunication and Internet development plannings, the Post and Telematics Ministry shall have the responsibility:

a/ To formulate the program on the provision of public-utility telecommunication services and submit it to the Prime Minister for approval;

b/ To prescribe, and give specific guidance on, the list, subjects and scope of provision of public-utility telecommunication services;

c/ To formulate and implement the annual plans on the provision of public-utility telecommunication services.

3. The concerned State management bodies shall base themselves on their respective functions, tasks and powers to coordinate with the Post and Telematics Ministry in implementing the programs and plans on the provision of public-utility telecommunication services.

Article 49.- Financial mechanisms to support the provision of public-utility telecommunication services

1. The State shall support enterprises to provide public-utility telecommunication services through:

a/ Interconnection charges;

b/ The Vietnam fund for public-utility telecommunication services.

2. The Vietnam fund for public-utility telecommunication services is a State financial institution, attached to the Post and Telematics Ministry and operating not for profits.

3. Sources for forming the Vietnam fund for public-utility telecommunication services include:

a/ Capital contributed by telecommunication enterprises: compulsory contributions of telecommunication enterprises to the Vietnam fund for public-utility telecommunication services shall be accounted in the enterprises' production and business costs. The Prime Minister shall specify the mechanism on contributions of telecommunication enterprises;

b/ The State budget's supports for the charter capital and capital for implementing the programs assigned by the Government;

c/ Official development assistance amounts and contributions of organizations and individuals at home and abroad;

d/ Other capital sources mobilized according to law provisions.

4. The Prime Minister shall decide on the organization and operation of the Vietnam fund for public-utility telecommunication services.

Article 50.- Rights and obligations of telecommunication enterprises providing public utility telecommunication services

1. To participate on an equal basis in implementing the State programs and projects on providing public-utility telecommunication services according to law provisions.

2. To fully and timely fulfil the obligation to make financial contributions to the fund for public-utility telecommunication services according to regulations.

3. To collaborate with, and create favorable conditions for, other telecommunication enter-

prises to implement programs and projects on providing public-utility telecommunication services according to regulations of the State management agency in charge of telecommunications.

4. To comply with the State regulations on the provision of public-utility telecommunication services.

CHAPTER VIII

TELECOMMUNICATION QUALITY STANDARDS

Article 51.- System of telecommunication quality standards

1. The system of telecommunication quality standards consists of standards for compulsory application and standards for voluntary application to telecommunication equipment, networks, network interconnection, services and works.

2. Compulsorily applied standards include branch standards, Vietnamese standards and international standards publicized by the Post and Telematics Ministry for compulsory application.

3. Voluntarily applied standards are those which organizations and individuals publicize to voluntarily apply.

4. The Post and Telematics Ministry shall prescribe the formulation, promulgation and application of telecommunication quality standards.

Article 52.- Telecommunication equipment quality management

1. The quality of telecommunication equipment is managed through standard conformity certification based on the standards publicized by the Post and Telematics Ministry for compulsory application or voluntarily applied by organizations or individuals in accordance with law provisions.

2. The mutual recognition of standard conformity certification of telecommunication equipment between Vietnam and foreign countries as well as international organizations shall comply with the agreements which Vietnam has signed or acceded to. The Post and Telematics Ministry is an agency representing Vietnam in participating in the mutual recognition agreements on standard conformity certification in the telecommunication domain.

3. The Post and Telematics Ministry shall prescribe and publicize the lists of home-made and imported telecommunication equipment subject to standard conformity certification before they are permitted for circulation in the Vietnamese market or connection to public telecommunication networks.

4. Organizations and individuals are encouraged to voluntarily obtain standard conformity certificates for telecommunication equipment not included in the lists stated in Clause .3 of this Article.

5. Telecommunication equipment which are domestically circulated and imported must comply with the goods labeling regulations and other law provisions.

6. The Post and Telematics Ministry shall specify the telecommunication equipment quality management contents, forms and procedures.

Article 53.- Telecommunication service and network quality management

1. The quality of telecommunication services and networks is managed through quality publicization based on the standards publicized by the Post and Telematics Ministry for compulsory application or voluntarily applied by organizations or individuals in accordance with law provisions.

2. The Post and Telematics Ministry shall prescribe the lists of telecommunication networks and services subject to quality management and standards for compulsory application.

3. For telecommunication services and networks on the lists of those subject to quality management, telecommunication enterprises

must publicize their quality standards which are not contrary to standards prescribed by the Post and Telematics Ministry for compulsory application and report to the Post and Telematics Ministry on their actual quality according to regulations. For telecommunication services and networks not on the lists stated in Clause 3 of this Article, telecommunication enterprises must formulate by themselves and publicize the quality standards applied thereto.

4. Organizations, individuals and enterprises are encouraged to voluntarily apply the quality management system. Telecommunication enterprises shall be responsible for the publicized quality standards, maintain the quality according to the publicized standards; ascertain that the owners of intranets which are operated for charges and interconnected to their networks and their telecommunication agents ensure the publicized quality of their telecommunication networks and/ or services.

5. The Post and Telematics Ministry shall promulgate regulations on the telecommunication service and network quality management, inspect and handle violations related to telecommunication service and network quality.

Article 54.- Telecommunication work quality management

1. The quality of telecommunication works is managed through quality inspection based on the standards publicized by State management bodies for compulsory application or voluntarily applied by telecommunication enterprises in accordance with law provisions.

2. The Post and Telematics Ministry shall prescribe the list of telecommunication works subject to quality inspection before they are commissioned.

3. The Post and Telematics Ministry shall promulgate regulations on the telecommunication work quality management, inspect and handle violations related to the quality of telecommunication works.

Article 55.- Quality test

1. The Post and Telematics Ministry shall promulgate regulations on telecommunication test management in service of the quality management aiming to build up and develop telecommunication testing agencies, coordinate and combine the testing capabilities of the establishments.

2. The mutual recognition of telecommunication test results between Vietnam and foreign countries as well as international organizations shall comply with the international agreements which Vietnam has signed or acceded to. The Post and Telematics Ministry is an agency representing Vietnam in participating in the agreements on mutual recognition of telecommunication test results and the designated agency within the framework of these agreements.

CHAPTER IX

TELECOMMUNICATION TARIFFS

Article 56.- Principles for the State management over tariffs

1. The State respects the telecommunication enterprises' right to set tariffs by themselves and to compete on tariffs according to law provisions, encourages them to raise efficiency, reduce costs of, and tariffs on, services in order to increase the society's use of services and the economy's competitiveness.

2. The State shall take necessary measures to stabilize tariffs, ensure non-discrimination in tariffs, protect the legitimate rights and interests of service users, telecommunication service providing enterprises and the State.

Article 57.- Bases for setting tariffs

1. Telecommunication service tariffs are determined on the basis of the production costs of services and the supply-demand relation on the market.

2. For services with their tariffs set by the State, their tariffs are determined also on the basis of national socio-economic development

and telecommunication development policies in each period as well as the rational interrelation to telecommunication service tariffs in the region sand the world.

Article 58.- Tariff management tasks and competence

1. The Prime Minister:

a/ To promulgate telecommunication service tariff management policies and mechanisms;

b/ To decide on tariffs on important telecommunication services which have impacts on many branches and socio-economic development.

2. The Post and Telematics Ministry:

a/ To decide on public-utility telecommunication service tariffs (excluding services on which the tariffs are decided by the Prime Minister);

b/ To decide on tariffs on telecommunication services which have impacts on the telecommunication market, for application to users of telecommunication enterprises holding dominant market shares;

c/ To decide on tariffs on interconnection between telecommunication enterprises;

d/ To prescribe the tariff management by telecommunication service-providing enterprises;

e/ To guide telecommunication enterprises to observe the State's regulations and decisions on telecommunication service tariff management. 3. Telecommunication enterprises:

a/ To account expenditures to determine telecommunication service costs;

b/ To set specific tariffs on telecommunication services not on the State-prescribed list strictly according to the tariff management regulations issued by competent State bodies;

c/ To observe competent State bodies' regulations and decisions on telecommunication service tariff management.

CHAPTER X

SETTLEMENT OF DISPUTES

Article 59.- Settlement of disputes between telecommunication service providers and users

1. The settlement of disputes between telecommunication service providers and users shall be effected through negotiations between the involved parties. Unless otherwise provided for in the telecommunication service provision and use contracts, the statute of limitations for dispute settlement is prescribed as follows:

a/ For tariffs, it shall be one month, counting from the date of receiving the first charge payment notice or bill or from the date of payment of service charges;

b/ For service quality standards and other violations, it shall be three months, counting from the date of service use or commission of violations.

2. Where the involved parties fail to reach any agreement through negotiations, they may request competent State bodies to settle their disputes according to law provisions.

Article 60.- Consultation, settlement of interconnection disputes between telecommunication enterprises

1. Telecommunication enterprises may request the Post and Telematics Ministry to settle disputes related to interconnection of public telecommunication networks.

2. The Post and Telematics Ministry shall consider and decide on the settlement of disputes within 30 days, counting from the date of receiving the enterprises' written requests for dispute settlement. In case of refusal to settle disputes, the Post and Telematics Ministry shall have to issue written replies, clearly stating the reasons therefor to the enterprises.

3. The dispute settlement shall follow the following order:

a/ The Post and Telematics Ministry organizes consultations between the involved parties. The time limit for such consultations shall not exceed 60 days, counting from the date the Post and Telematics Ministry decides to organize the dispute settlement;

b/ If the involved parties cannot reach any agreement after consultations, the Post and

Telematics Ministry shall issue decisions to settle disputes within 30 days after the end of consultations. After the Post and Telematics Ministry issues dispute settlement decisions:

- The two involved parties must execute the decisions;

- Where the enterprises disagree with the Post and Telematics Ministry's decisions, they may file further requests for dispute settlement or initiate lawsuits for settlement according to law provisions. During the time of filing further requests for dispute settlement or initiating lawsuits, the two involved parties must still comply with the Post and Telematics Ministry's dispute settlement decisions.

CHAPTER XI

INSPECTION, EXAMINATION, HANDLING OF VIOLATIONS

Article 61.- inspection, examination

All Vietnamese and foreign organizations and individuals carrying out telecommunications related activities in Vietnam shall be subject to the inspection and examination by the specialized post and telecommunication as well as information technology inspectorates and by competent State bodies according to law provisions.

Article 62.- Handling of violations Vietnamese and foreign organizations and individuals that commit law violation acts in the telecommunication domain shall all be sanctioned for administrative violations and handled according to current law provisions.

CHAPTER XII

IMPLEMENTATION PROVISIONS

Article 63.- Implementation organization The Post and Telematics Ministry shall have to promulgate detailed regulations and guidance on the implementation of this Decree.

Article 64.- Implementation effect

This Decree takes effect 15 days after its publication in the Official Gazette. All previous regulations contrary to this Decree are hereby annulled.

Article 65.- Implementation provision

The ministers, the heads of the ministerial level agencies, the heads of the Government attached agencies, and the presidents of the provincial/municipal People's Committees shall have to implement this Decree.

On behalf of the Government
Prime Minister

PHAN VAN KHAI

Annex 9
Decree on Spectrum Management
(Unofficial Translation)

DECREE No. 24/2004/ND-CP OF JANUARY 14, 2004 DETAILING THE IMPLEMENTATION OF A NUMBER OF THE NUMBER OF ARTICLES OF THE ORDINANCE ON POST AND TELECOMMUNICATIONS REGARDING RADIO FREQUENCIES

THE GOVERNMENT

Pursuant to the December 25, 2001 Law on Organization of the Government;

Pursuant to the May 25, 2002 Ordinance on Post and Telecommunications;

At the proposal of the Minister of Post and Telematics,

DECREES:

CHAPTER I

GENERAL PROVISIONS

Article 1. Scope of regulation

This Decree details the implementation of a number of articles of the Ordinance on Post and Telecommunications regarding the activities of managing and using radio frequencies, radio equipment and satellite orbits under Vietnam's sovereignty.

Article 2. Subjects of application

This Decree applies to Vietnamese organizations and individuals as well as foreign organizations and individuals using radio frequencies and equipment in Vietnam.

Where an international agreement which the Socialist Republic of Vietnam has signed or acceded to contains provisions on radio frequencies different from the provisions of this Decree, the provisions of such international agreement shall apply.

Article 3. State management over radio frequencies

1. The Government performs uniform State management over radio frequencies nationwide.

2. The Ministry of Post and Telematics takes responsibility before the Government for performing the State management over radio frequencies.

3. The contents of specialized State management over radio frequencies include:

a/ Formulating, and organizing the implementation of, radio frequency plannings; promulgating, or submitting to the Government or the Prime Minister for promulgation, legal documents on management and use of radio frequencies and equipment as well as satellite orbits;

b/ Effecting international coordination in, and registration of, radio frequencies and satellite orbits; allocating and fixing frequencies; granting frequency band licenses, licenses for use of radio frequencies and radio transmitters (hereinafter called radio frequency licenses); collecting and managing fees and charges for the use of radio frequencies according to law provisions;

c/ Examining and controlling radio frequencies, dealing with harmful interference and managing electro-magnetic compatibility;

inspecting and sanctioning administrative violations in the radio frequency domain.

Article 4. Interpretation of terms and phrases

In this Decree, the following terms and phrases are construed as follows:

1. "Fixed service" means a radiocommunication service between specified fixed points.

2. "Mobile service" means a radiocommunication service between mobile and land stations, or between mobile stations.

3. "Maritime mobile service" means a mobile service between coast stations and ship stations, or between ship stations, or between on-board communication stations.

4. "Aeronautical mobile service" means a mobile service between aeronautical stations and aircraft stations, or between aircraft stations.

5. "Broadcasting service" means a radiocommunication service in which the transmissions are intended for direct reception by the general public. This service may include radio transmissions, television transmissions or other types of transmission.

6. "Amateur service" means a radiocommunication service for the purpose of self-training, intercommunication and technical investigations carried out by amateur operators who are duly permitted and are interested in radio techniques solely with a personal aim and without profit interest.

7. "Station" means one or more radio equipment, including the accessory equipment, necessary at one location for carrying out a radiocommunication service. Each station shall be classified by the service in which it operates permanently or temporarily.

8. "Satellite communication station" means a station located in the atmosphere or on the surface of the earth for communication with one or more space stations or intercommunication with one or more stations of the same type via the reflecting satellite.

9. "Mobile station" means a station in the mobile service intended to be used while in motion or during halts at unspecified points.

10. "Coast station" means a station in the maritime mobile service, which is located on land or islands for intercommunication with ships and boats.

11. "Ship station" means a mobile station in the maritime mobile service located on board a ship or boat which is not permanently moored.

12. "Station located on fishing means" means a station located on a ship, boat or means, mobile or immobile on the sea, intended to be used for exploiting, processing, culturing and collecting aquatic resources, providing logistical services, investigating, exploring, examining, controlling and protecting aquatic resources.

13. "Aircraft station" means a mobile station in the aeronautical mobile service located on board an aircraft.

14. "Amateur station" means a station in the amateur service.

15. "Cordless telephone" (of an extended subscriber type) means a receiver-transmitter, consisting of two parts linked to each other by radio waves:

- "First part, base unit" is a fixed part, connected to a telephone network;

- "Second part, handset" is a part which may be placed fixedly or carried in motion and shares the same telephone number with its base unit.

16. "Out-of-band-emission" means emission on a frequency or many frequencies immediately outside the necessary bandwidth, which results from the modulation process, but excluding spurious emissions.

17. "Spurious emission" means emission on a frequency or many frequencies which are outside the necessary bandwidth and the level of which may be reduced without affecting the corresponding transmission of information.

18. "Unwanted emission" means emission consisting of spurious emission and out-of-band emission.

19. "Harmful interference" means interference which endangers the functioning of lawful

radio services, obstructs or interrupts a radiocommunication service currently permitted to operate.

20. "Allocation of a frequency band" means the designation of a given frequency band for use by one or many organizations or enterprises under specified conditions in a radio service or a radiocommunication system.

21. "Assignment of a radio frequency" means the permission by a managing agency for a station to use a radio frequency or a radio frequency channel under specific conditions.

22. "Primary service" means a service the name of which is printed in capital letters (example: FIXED) in the Table of Allocation of the Radio Frequency Spectrum to Services.

23. "Secondary service" means a service the name of which is printed in normal letters (example: Mobile) in the Table of Allocation of the Radio Frequency Spectrum to Services.

CHAPTER II

PLANNING ON, AND ALLOCATION OF, RADIO FREQUENCIES

Article 5. The radio frequency spectrum planning

1. The radio frequency spectrum planning is a plan on the division of the radio frequency spectrum into frequency bands reserved for different services in each period and the prescription of conditions for establishing the order in exploiting and optimally using radio frequencies nationwide.

The Ministry of Post and Telematics shall formulate and submit to the Prime Minister for approval the national radio frequency spectrum planning.

2. Basing itself on the national radio frequency spectrum planning, the Ministry of Post and Telematics shall promulgate the band planning, the channel planning and regional radio frequency plannings.

a/ The band planning shall specify the conditions and purposes for the use of a number of band sections for a specific category of radiocommunication service or radiocommunication system. The band planning is elaborated on the basis of the used technologies, the necessary band number limits, the service development demands and the bands reserved for new technologies and demands.

b/ The channel planning divides each band into different groups of frequency channels for a specific category of radiocommunication service according to a certain system of technical standards. The channel planning is elaborated on the basis of channel division recommendations and technical standards of the International Telecommunication Union for establishing the order in using radio frequency channels and restricting harmful interference between radio equipment.

c/ Regional radio frequency plannings establish zones for reusing frequencies for a specific category of radiocommunication service in a number of band sections in the frequency band of between 30 MHz and 3,000 MHz. The regional radio frequency plannings are elaborated on the basis of recommendations and technical standards of the International Telecommunication Union in order to raise the efficiency in the use of the radio frequency spectrum and limit harmful interference between radio equipment.

Article 6. Implementation of the plannings

1. It is strictly forbidden to manufacture, import or use radio equipment and radio-wave appliances in Vietnam in contravention of the planning (excluding equipment temporarily imported for re-export; equipment manufactured for export; and equipment for technological display at exhibitions or trade fairs).

2. The plannings on development of electronics, telecommunications, radio and television broadcasting and other socio-economic development plannings related to the use of radio frequencies must be evaluated by the

Ministry of Post and Telematics in terms of radio frequency before they are submitted to the Prime Minister for approval.

3. For radio equipment and telecommunication networks having used radio frequencies at variance with the planning before the planning takes effect, the Ministry of Post and Telematics shall prescribe specific measures and time limits for converting the equipment and frequencies to comply with the planning and suit the practical conditions for their use in Vietnam on the following principles:

a/ For equipment which may be adjusted with no conversion expense to operate in the frequencies in compliance with the planning, organizations and individuals must carry out the conversion procedures according to the deadline specified in the planning.

b/ For equipment which can not be adjusted to operate in the frequencies in compliance with the planning or equipment which may be adjusted but require conversion expenses:

- In the bands or zones of low use demand, organizations and individuals shall be permitted to use their equipment till they are fully depreciated but for no more than seven years as from the effective date of the planning, or till they are requested by the Ministry of Post and Telematics to stop using such equipment because of interference.

The replacement of broken-down equipment or the extension of networks shall not alter the deadline for the entire networks to stop operating.

- In the bands or zones of high use demand, organizations and individuals must carry out the conversion procedures according to the deadline specified in the planning and bear the conversion expense.

c/ Organizations and individuals having their bands withdrawn ahead of the deadline specified in the planning shall be refunded part of their conversion expenses which, however, shall not exceed the residual value of the equipment at the time of the band withdrawal. Organizations and individuals permitted to use these withdrawn bands shall have to pay the conversion expenses incurred by the organizations and individuals with their band withdrawn.

Article 7. Adjustment of the planning

1. Basing itself on the national telecommunication development policy, Vietnam's laws and the international agreements which Vietnam has signed or acceded to in the telecommunication and radio frequency domain, the Ministry of Post and Telematics shall adjust the planning on the radio frequency spectrum according to its competence or submit such adjustment to competent authorities for approval in each period.

2. Amendments and adjustments of the planning on the radio frequency spectrum, once promulgated by competent authorities, shall constitute part of the planning.

Article 8. Allocation of bands in service of defense and security

1. The allocation of bands for defense and security purposes shall adhere to the following principles:

a/ Bands for long-term use shall be allocated in proportions suitable to the requirements and tasks, taking into consideration international practices;

b/ Bands to be used for a definite period shall apply only to radio equipment currently in use but not be further furbished;

c/ Bands to be used irregularly for a short period, once being used, must be notified to the Ministry of Post and Telematics, except those classified State secrets;

d/ Where there arises a need to use bands reserved for socio-economic purposes for defense or security purposes, the written consent of the Ministry of Post and Telematics is required and it must be ensured that no harmful interference be caused to the communication networks in service of socio-economic activities.

2. In each period, the Ministry of Post and Telematics shall assume the prime responsibili-

ty for, and coordinate with the Ministry of Defense and the Ministry of Public Security in, making proposals on the allocation of bands for defense or security purposes, and submit such proposals to the Prime Minister for approval after consulting the Radio Frequency Committee. The Ministry of Defense and the Ministry of Public Security shall have to organize the management as well as economical and efficient use of frequency bands allocated to them for the right purposes.

3. In case of national security emergency, the Ministry of Defense and the Ministry of Public Security may use a number of bands not specified at Point a, Clause 1 of this Article to ensure communication in service of defense and security on the basis of coordinating with the Ministry of Post and Telematics under the plans already agreed upon.

CHAPTER III
RADIO FREQUENCY LICENSING

SECTION I
GENERAL PROVISIONS ON LICENSING

Article 9. Licensing principles

The radio frequency licensing shall adhere to the following principles:

1. Compliance with the telecommunication development strategies and plans; the national radio frequency spectrum planning and other frequency plannings specified in Article 5 of this Decree.

2. Assurance of efficient, rational and economical use of the radio frequency spectrum.

3. Observance of the national and international use norms and technical standards on radio frequencies.

4. Satisfaction of reasonable demands of organizations and individuals for the use of radio frequencies.

5. Guaranty of equality among users and among radiocommunication services of the same categories.

6. Rational prioritization of the demands for the use of frequencies in service of new technologies or the efficient use of the radio frequency spectrum.

Article 10. Radio frequency use charges

1. Radio frequency use charges are amounts collected under the State regulations to offset direct and indirect costs for the work of managing, examining and controlling radio frequencies and handling harmful interference; to ensure the implementation of the State's policies in each period and suit the actual situation.

2. The radio frequency use charge tariffs shall be determined on the basis of the value of the used frequency spectrum, the extent of frequency spectrum occupancy, the scope of coverage, the frequency use density of the bands and in the regions in which the licenses are granted.

3. Vietnamese organizations and individuals; foreign organizations and individuals in Vietnam shall only be granted the radio frequency licenses after paying the licensing fees and radio frequency use charges. The management and use of licensing fees and radio frequency use charges shall comply with the legislation on charges and fees.

Article 11. Cases of withdrawal of licenses

1. Radio frequency licenses shall be withdrawn in the following cases where:

a/ Past one year after being granted the band licenses or past six months after being granted the licenses for use of radio frequencies and radio transmitters, organizations or individuals still fail to actually deploy the contents of their licenses.

b/ Organizations or individuals use frequencies for wrong purposes, inefficiently, wasting the radio frequency spectrum they have been licensed to use.

c/ The radio frequency spectrum planning is adjusted.

2. The Ministry of Post and Telematics shall

issue decisions to withdraw licenses, clearly stating the reasons therefor.

SECTION 2

BAND LICENSING

Article 12. Band licenses

Band licenses are those granted to organizations and enterprises, entitling them to use a specified frequency band section under the conditions on the upper and lower limits of the frequency band (including the protective frequency band section), the scope of coverage, the maximum permitted level of out-of-band and out-of-coverage scope emissions and other conditions.

Article 13. Conditions for band licensing

In cases where the allocation of bands is feasible, the Ministry of Post and Telematics shall base itself on the following specific conditions to consider and grant band licenses to organizations and enterprises:

1. Having plans on development of radiocommunication networks and plans on commercial provision of telecommunication services, ensuring socio-economic efficiency and band use efficiency.

2. For public mobile telecommunication networks, there must be the demand for band deployment on a national scale; for exclusive-use telecommunication networks and intranets, there must be the high demand for the use of frequencies in a specified region.

3. Equipment must ensure the technical standards according to the regulations of the Ministry of Post and Telematics.

Article 14. Procedures forgranting band licenses

1. A dossier of application for a band license consists of:

a/ The application for a license, clearly stating the band applied for use and the scope of coverage;

b/ A lawfully notarized or authenticated copy of the establishment decision, for organizations, of the business registration certificate, for domestic enterprises, or the investment license, for foreigninvested enterprises or foreign parties to business cooperation contracts;

c/ A lawfully notarized or authenticated copy of the telecommunication network establishment and telecommunication service provision license (or the telecommunication network and telecommunication service experimentation license or the exclusive-use telecommunication network establishment license), for equipment requiring network establishment licenses;

d/ A scheme on establishment of a radiocommunication network, clearly stating the purpose, scope of operation, network configuration and technology to be used;

e/ The written registration of the list of radio transmitters (according to the form set by the Ministry of Post and Telematics).

2. A dossier of application for amendment and supplementation of the contents of a license:

In the effective duration of their licenses, if organizations or enterprises need to amend and/or supplement the contents of their licenses (except for the provision on the bandwidth), they must compile dossiers of application therefor. A dossier shall consist of:

a/ The application for amendment and/or supplementation of the contents of the license;

b/ A detailed report on the amendment and/or supplementation contents, and relevant documents.

3. Ninety days before the expiry date of their licenses, if organizations or enterprises meet all conditions and wish to continue using their allocated bands, they must compile dossiers as required for application for new licenses.

4. The place for receiving dossiers, guiding the declaration, handing and receiving licenses:

The Radio Frequency Department - the Ministry of Post and Telematics.

5. In the process of operation, organizations and enterprises shall have to strictly comply

with the conditions prescribed in their licenses; report and add in a timely manner changes in the technical parameters and the list of radio transmitters in their radiocommunication networks.

Article 15. Time limits for settlement of the band licensing

1. The Ministry of Post and Telematics shall evaluate and complete the consideration and granting of new licenses, amendment and/or supplementation of the contents of licenses within 45 days after receiving the complete and valid dossiers.

2. If the dossiers are incomplete or invalid, within five days after receiving them, the Ministry of Post and Telematics shall have to notify the applying organizations or enterprises thereof and guide them to supplement and complete their dossiers.

3. In case of refusal to grant new licenses or to amend and/or supplement the contents of licenses, the Ministry of Post and Telematics shall inform in writing the applying organizations or enterprises thereof, clearly stating the reasons therefor.

SECTION 3

LICENSING OF RADIO FREQUENCY AND TRANSMITTER USE

Article 16. Radio frequency and transmitter use licenses

Radio frequency and transmitter use licenses shall be granted to organizations and individuals entitled to exploit one or many radio frequencies and transmitters at specified locations or in specified regions, prescribing the conditions on receiving and transmitting frequencies, technical parameters of radio transmission, communication conventions and other conditions.

Article 17. Conditions for radio frequency and transmitter use licensing

1. In cases where the fixing of radio frequencies is feasible, the Ministry of Post and Telematics shall base itself on the following specific conditions to consider and grant licenses to Vietnamese and foreign organizations and individuals in Vietnam:

a/ The use purposes and communication objects are clear and compliant with law provisions;

b/ Equipment must satisfy technical standards prescribed by the Ministry of Post and Telematics for application (except for equipment for exhibitions or technical tests);

c/ Operators of sea-going ship stations, amateur stations and other cases must have radio operator's certificates granted or recognized by the Ministry of Post and Telematics;

d/ The locations for antenna installation and antenna heights must comply with the regulations of the Ministry of Post and Telematics and other law provisions on aviation safety assurance;

e/ The designs of the equipment systems must ensure the optimal use of the radio frequency spectrum and electro-magnetic compatibility with the surrounding environment.

2. Particularly for satellite communication stations operating via satellites of foreign countries or international satellite communication organizations, the Ministry of Post and Telematics shall base itself on the specific conditions prescribed in Clause 1 of this Article to consider and grant licenses only in the following cases:

a/ Satellite communication stations belonging to public telecommunication networks run by telecommunication enterprises licensed to establish networks and provide telecommunication services by the Ministry of Post and Telematics.

b/ Satellite communication stations of organizations and enterprises using the communication satellite service provided by telecommunication enterprises licensed by the Ministry of Post and Telematics.

c/ Satellite communication stations in the

broadcasting-satellite service, which have the press activity permits for radio and television broadcasting via satellite, granted by the Ministry of Culture and Information.

d/ Satellite communication stations in the maritime mobile- and aeronautical mobile-satellite services for maritime and aeronautical safety according to the regulations of the International Maritime Organization (IMO) or the International Civil Aviation Organization (ICAO).

e/ Satellite communication stations of foreign diplomatic missions and consulates, representative missions of international organizations in Vietnam, foreign high-level delegations visiting Vietnam and enjoying diplomatic privilege and immunities (hereinafter called "foreign representative missions"), foreign correspondents entering Vietnam for shortterm press activities.

The Ministry of Post and Telematics shall assume the prime responsibility for, and coordinate with the Ministry of Foreign Affairs and the Ministry of Public Security in, detailing the licensing of the use of satellite communication stations for foreign representative missions.

f/ Under the international agreements between the Socialist Republic of Vietnam and foreign countries or international organizations on satellite communication.

g/ Other cases prescribed by the Ministry of Post and Telematics.

Article 18. Dossiers of application for radio frequency and transmitter use licenses

1. Except for the cases prescribed in Article 24 of this Decree, for independently operating radio transmitters and radio transmitters belonging to the networks requiring no network establishment licenses, a dossier shall consist of:

a/ The application for a license;

b/ The declaration of application for a radio frequency and transmitter use license (made according to a form set by the Ministry of Post and Telematics);

c/ A lawfully notarized or authenticated copy of the establishment decision, for organizations, the business registration certificate, for domestic enterprises, cooperatives, or the investment license, for foreign-invested enterprises or foreign parties to business cooperation contracts.

2. For ship stations, radio stations on board river ships and boats, apart from the dossiers prescribed in Clause 1 of this Article, the following papers are also required:

a/ The written certification of the gross tonnage and the scope of operation of the ship or boat, or of the number of seats (for passenger ships);

b/ A lawfully notarized or authenticated copy of the operator's certificate, granted or recognized by the Ministry of Post and Telematics (for ship stations).

3. For radio transmitters on board fishing means: a/ If they belong to organizations or enterprises, apart from the papers prescribed in Clause 1 of this Article, a lawfully notarized or authenticated copy of the fishing-ship registration certificate or written certification of the gross tonnage of the ship or boat is also required.

b/ If they belong to cooperation groups or individuals, apart from the papers prescribed at Points a and b, Clause 1 of this Article, a lawfully notarized or authenticated copy of the fishing-ship registration certificate or written certification of the gross tonnage of the ship or boat is also required.

c/ The radio transmitters on board fishing means, which operate in the band of between 26.96 MHz and 27.41 MHz, shall fall into the category of radio transmitters subject to conditional use and requiring no radio frequency license as prescribed in Articles 24 and 25 of this Decree.

4. For stations in the broadcasting service, apart from the papers prescribed at Points a and b, Clause 1 of this Article, the following papers are also required:

a/ A lawfully notarized or authenticated copy of the press activity permit, granted by the Ministry of Culture and Information (for applicants being press agencies).

b/ A written proposal of the Ministry of Culture and Information or the provincial/municipal People's Committee (for applicants not yet classified as press agencies but tasked to re-broadcast the programs of the central and provincial/municipal radio or broadcasting stations.

5. For amateur stations, apart from the papers prescribed at Points a and b, Clause 1 of this Article, the following papers are also required:

a/ A copy of the amateur radio operator's certificate, granted or recognized by the Ministry of Post and Telematics;

b/ The copies of the passport and permanent residence card or temporary residence certificates or cards (for foreign operators).

6. For cordless telephones (of the extended subscriber type) not on the list of radio equipment subject to conditional use and requiring frequency use licenses, the dossiers prescribed at Points a and b, Clause 1 of this Article are required.

7. For stations belonging to foreign representative missions, apart from the papers prescribed at Points a and b, Clause 1 of this Article, the written proposal of the Ministry of Foreign Affairs is also required.

8. For radio transmitters belonging to the networks requiring the network establishment licenses, apart from the papers prescribed in Clause 1 of this Article, the following papers are also required:

a/ A scheme on establishment of a radio-communication network, clearly stating the network configuration, scope of operation, and technology and frequencies applied for use;

b/ A lawfully notarized or authenticated copy of the telecommunication network establishment and telecommunication service provision license (or the telecommunication network and telecommunication service experimentation license or the exclusive-use telecommunication establishment license).

Article 19. Extension of licenses

Thirty days before the expiry of their licenses, if the organizations or individuals wish to continue using them (without amendments and supplements), they shall carry out the procedures for applying for extension of their licenses. A dossier of application for license extension shall consist of:

1. The application for license extension;

2. A lawfully notarized or authenticated copy of the telecommunication network establishment and telecommunication service provision license (or the telecommunication network and telecommunication service experimentation license orthe exclusive-use telecommunication establishment license), which remains valid, for equipment requiring network establishment licenses.

Article 20. Amendment and supplementation of the contents of licenses

During the validity terms of their licenses, if the organizations or individuals wish to amend or supplement the contents of their licenses, they must compile dossiers of application therefor. A dossier shall consist of:

1. The application for amendment and/or supplementation of the contents of the license;

2. An additional declaration of changes (if any);

3. Other documents related to the amended and/ or supplemented contents.

Article 21. Time limits for licensing radio frequency and transmitter use

1. The Ministry of Post and Telematics shall have to grant new licenses; extend the validity of license, amend and/or supplement the contents of licenses within 20 days after receiving the complete valid dossiers.

2. If the dossiers are incomplete, within five days after receiving them, the Ministry of Post

and Telematics shall have to inform the applying organizations or individuals thereof and guide them to supplement and complete the dossiers.

3. In case of refusal to grant new licenses; to extend the validity of licenses, or to amend and/or supplement the contents of licenses, the Ministry of Post and Telematics shall inform in writing the applying organizations or individuals thereof, clearly stating the reasons therefor.

Article 22. Places for receiving dossiers, guiding declarations, and handing and receiving licenses

1. The places for receiving dossiers and handing and receiving licenses for the cases of application for new licenses for equipment belonging to radiocommunication networks requiring network establishment licenses and cases of application for amendment and/or supplementation of network establishment licenses:

a/ The Ministry of Post and Telematics;

b/ The regional Post, Telecommunications and Information Technology Departments.

2. The places for receiving dossiers and handing and receiving licenses for the cases of application for new licenses, for extension of the validity of licenses, and amendment and/or supplementation of the contents of licenses for equipment requiring no network establishment licenses; and the cases of application for amendment and/or supplementation of network establishment licenses which remain valid:

a/ The Radio Frequency Department;

b/ The regional radio frequency control centers under the Radio Frequency Department.

Article 23. Use of radio frequencies and transmitters in emergency cases

1. In emergency cases where the properties and human life are endangered, organizations and individuals may temporarily use the unlicensed radio frequencies and transmitters, provided that they must notify such immediately to the Radio Frequency Department under the Ministry of Post and Telematics when conditions permit.

2. When transmitting SOS information or signals, stations may transmit waves to attract the attention from frequencies other than those reserved exclusively for international and national rescue.

3. Upon receiving SOS information and signals, stations must immediately stop transmitting waves on the frequencies which might cause interference to such SOS information, and keep listening on the frequencies on which the SOS signals are transmitted, and render immediately all necessary assistance, and at the same time notify the search and rescue agency thereof.

SECTION 4

TYPES OF RADIO EQUIPMENT SUBJECT TO CONDITIONAL USE AND REQUIRING NO LICENSES

Article 24. Technical and operational conditions

1. Radio equipment subject to conditional use include short-range equipment with limited capacity, unlikely to cause harmful interference and not to be protected against harmful interference.

2. Technical and operational conditions of radio equipment subject to conditional use include allocated frequency channels, limited transmitting capacity, mandated transmitting mode, area permitted for operation, and other conditions.

3. In each period, the Ministry of Post and Telematics shall prescribe and publicize the list of radio equipment subject to conditional use. The contents of notification must contain fully the technical and operational conditions of equipment subject to conditional use.

Article 25. Responsibilities of users

1. Organizations and individuals using radio equipment prescribed in Article 24 must meet all the prescribed technical and operational conditions and shall not be required to apply for

radio frequency licenses.

2. It is strictly forbidden to use radio equipment which fail to meet the technical and operational conditions prescribed by the Ministry of Post and Telematics.

CHAPTER IV

EXAMINATION AND CONTROL OF RADIO FREQUENCIES, HANDLING OF HARMFUL INTERFERENCE, MANAGEMENT OF ELECTROMAGNETIC COMPATIBILITY

SECTION 1

EXAMINATION AND CONTROL OF RADIO FREQUENCIES, HANDLING OF HARMFUL INTERFERENCE

Article 26. Subjects to be examined and controlled

Vietnamese as well as foreign organizations and individuals using radio frequencies and equipment in the Vietnamese territory must submit to the radio frequency and equipment examination and control by the Ministry of Post and Telematics.

Article 27. Examination and control responsibilities

1. The Ministry of Post and Telematics shall have to examine and control radio frequencies and equipment nationwide so as to monitor and measure technical and operational parameters as well as the band occupancy extents of stations; determine interference sources; detect violating stations; handle harmful interference in accordance with Vietnamese laws and international agreements on radiocommunication, which Vietnam has signed or acceded to.

2. The results of examination and control, measurement of technical parameters and location of radio equipment, spectrum forms of signals, call-outs or identification signals and other evidences shall serve as the basis for determining and handling law violation acts in the radio frequency domain.

Article 28. Examination forms

1. Regular examinations shall be conducted according to examination programs and plans approved by the Ministry of Post and Telematics.

2. Irregular examinations shall be conducted when settling complaints or when the Ministry of Post and Telematics detects signs of violation of the law provisions on radio frequencies.

Article 29. Measures to restrict harmful interference

1. Organizations and individuals licensed to use radio frequencies and transmitters shall have to abide by the provisions of their licenses and take the following measures to restrict the harmful interference-causing possibility:

a/ To keep transmission frequencies within the permitted frequency deviation limit;

b/ To reduce the level of unwanted emission to the minimum value;

c/ To use the transmission mode with the minimum occupied bandwidth (excluding a number of special cases like spectrum spread);

d/ To restrict wave transmission in unnecessary directions;

e/ To use the minimum capacity enough to ensure the communication quality.

2. Stations in secondary services must not cause harmful interference to those in primary services and must not complain about harmful interference from stations in primary services, with their frequencies having been fixed or to be possibly fixed later.

Article 30. Handling of complaints about harmful interference

1. Organizations and individuals complaining about harmful interference must send to the Ministry of Post and Telematics the harmful interference reports, made according to a set form, and follow the guidelines of the Ministry of Post and Telematics in organizing the identification of interference-causing sources and

measures to handle harmful interference.

Organizations and individuals using radio frequencies and transmitters in harmful interference-affected areas shall have to cooperate with the Ministry of Post and Telematics in, and create conditions for, detecting quickly and accurately interference sources, and effectively handling harmful interference.

2. The Ministry of Post and Telematics shall handle harmful interference on the following principles:

a/ Prioritizing within-band emissions and restricting unwanted emissions to the lowest level;

b/ Prioritizing primary services while changing transmission frequencies and technical parameters of secondary services;

c/ In the same radio service, frequencies licensed later must be changed while frequencies licensed first be prioritized;

d/ Organizations and individuals using radio appliances in science, industry or medicine, electric and electronic equipment, when causing harmful interference to stations, must take measures to eliminate such interference (except for cases where the radio appliances operate in the right bands as prescribed) and must cease using these equipment when such use causes harmful interference to the navigation, safety and rescue services;

e/ Pending the overcoming of harmful interference, the following measures may be applied: changing frequencies, restricting transmitting capacity; changing the height and polarization and directional characteristics of transmission antennas; re-distributing working time of harmful interference-causing stations and other necessary measures, to such stations;

f/ The parties that cause interference due to their non-compliance with the contents of their licenses shall have to pay the expenses for change of frequencies and equipment as well as for handling of harmful interference.

Article 31. Handling of harmful interference between stations in service of socio-economic activities and stations in service of defense and security

1. Except for the bands already allocated for defense and security for long-term use prescribed at Point a, Clause 1, Article 8 of this Decree, when harmful interference occurs between stations in service of socio-economic activities and stations in service of defense and security, the stations in service of defense and security shall proactively change their transmission frequencies and technical parameters so as to avoid interference.

2. In case of necessity, the Ministry of Post and Telematics shall assume the prime responsibility for, and coordinate with the Ministry of Defense, the Ministry of Public Security and other concerned ministries and branches in, setting up inter-branch examination teams to deal with harmful interference.

SECTION 2

ELECTRO-MAGNETIC COMPATIBILITY MANAGEMENT

Article 32. Purposes of electro-magnetic compatibility management

Equipment and equipment systems which, when being put into use, generate an electro-magnetic energy in the frequency band of between 10 KHz and 3,000 GHz must ensure electro-magnetic compatibility so that they can operate stably, neither being affected with inference nor causing harmful interference to other equipment and equipment systems.

Article 33. Contents of electro-magnetic compatibility management

1. The State management over electro-magnetic compatibility covers the following contents:

a/ Formulating, promulgating, and publicizing the application of, electro-magnetic compatibility standards;

b/ Prescribing the electro-magnetic compat-

ibility certification for radio equipment, telecommunication equipment and radio appliances in science, industry and medicine;

c/ Accrediting and designating laboratories to test and agencies to recognize electro-magnetic compatibility standard compliance;

d/ Inspecting, examining and handling law violation acts in the field of electro-magnetic compatibility management.

2. The Ministry of Post and Telematics shall formulate and promulgate regulations on electromagnetic compatibility management.

Article 34. Certification and publicization of electromagnetic compatibility standard compliance

1. Certification of electro-magnetic compatibility standard compliance

In each period, the Ministry of Post and Telematics shall prescribe the list of radio equipment, telecommunication equipment and radio appliances in science, industry and medicine, which must be certified for electro-magnetic compatibility standard compliance.

Organizations and individuals manufacturing and/ or importing equipment on this list shall have to carry out the procedures forstandard compliance certification and affix the electro-magnetic compatibility standard compliance marks according to regulations on their manufactured and/or imported equipment before putting them into use or circulation on the market.

2. Publicization and assurance of electromagnetic compatibility standard compliance of equipment.

Organizations and individuals manufacturing and/ or importing electric and electronic equipment for civil use, equipment with unwanted radio emissions and other equipment shall have to publicize and ensure their equipment be compliant with relevant electromagnetic compatibility standards and affix the electromagnetic compatibility standard compliance marks according to regulations on their manufactured and/or imported equipment before putting them into use or circulation on the market.

3. The certification and publicization of electromagnetic compatibility standard compliance shall comply with specific regulations of the Ministry of Post and Telematics.

Article 35. Electro-magnetic compatibility-testing laboratories and -certifying agencies

The Ministry of Post and Telematics shall prescribe the requirements on the capability and operation of electro-magnetic compatibility-testing laboratories and -certifying agencies and the procedures for designation of such testing laboratories and certifying agencies.

Only the results of electro-magnetic compatibility testing and certification by testing laboratories and certifying agencies designated or accredited by the Ministry of Post and Telematics may be used in electro-magnetic compatibility management activities.

CHAPTER V

INTERNATIONAL COORDINATION AND REGISTRATION OF RADIO FREQUENCIES AND SATELLITE ORBITS

Article36. Subjects of international coordination and registration

Organizations and individuals, when using radio frequencies for international radiocommunication, for the systems of satellites on the geostationery or non-geostationery orbits or when using radio frequencies in such a way likely to cause harmful interference to radio services of other countries, or wishing to be internationally recognized, must effect international coordination and/or registration of radio frequencies or satellite orbits.

Article 37. Responsibilities of the Ministry of Post and Telematics

The Ministry of Post and Telematics shall have the following responsibilities:

1. To organize the coordination with other countries and the registration with the International Telecommunication Union of

radio frequencies and satellite orbits in order to protect the national interests and sovereignty.

2. To specify the management, use and international registration of satellite orbits under Vietnam's sovereignty.

3. To assume the prime responsibility for, and coordinate with the Ministry of Foreign Affairs, the Ministry of Defense and the Ministry of Public Security in, organizing the coordination of radio frequencies with other countries bordering on Vietnam.

Article 38. Responsibilities of organizations and individuals

1. Vietnamese as well as foreign organizations and individuals in Vietnam shall be obliged to comply with the regulations of the Ministry of Post and Telematics in effecting international coordination and registration of radio frequencies and satellite orbits.

2. Organizations and individuals wishing to use the positions of satellite orbits under Vietnam's sovereignty must obtain the permission of the Ministry of Post and Telematics and observe the regulations on satellite orbit registration and coordination charges and other relevant law provisions.

Article 39. International registration of radio frequencies

1. A dossier of application for international registration of radio frequencies shall consist of:

a/ The official dispatch, applying for international registration of radio frequencies;

b/A copy of the license for use of radio frequencies and transmitters;

c/ The written declaration for international registration of radio frequencies (made according to a set form).

2. Dossier-receiving place:

The Radio Frequency Department, the Ministry of Post and Telematics.

3. Basing itself on the dossiers of application for international registration of radio frequencies, the Ministry of Post and Telematics (the Radio Frequency Department) shall consider and compare them with the international and national regulations on technical and professional standards so as to reach agreement on the contents of, and carry out the procedures for, international registration.

4. The use and exploitation of internationally recognized radio frequencies must comply with the provisions of the international Radio Regulations.

Article 40. International registration of satellite orbits

Organizations and enterprises wishing to make international registration of satellite orbits must submit their dossiers to the Ministry of Post and Telematics and strictly carry out the procedures prescribed by the International Telecommunication Union and the Ministry of Post and Telematics.

CHAPTER VI

COMPLAINTS, DENUNCIATIONS, INSPECTION AND HANDLING OF VIOLATIONS

Article 41. Inspection

All Vietnamese and foreign organizations and individuals in Vietnam, that use radio frequencies, manufacture and use radio equipment and/or equipment subject to electro-magnetic compatibility certification, shall submit to the inspection and examination by the specialized post, telecommunication and information technology inspectorate and by competent State agencies.

Article 42. Handling of violations

1. Organizations and individuals committing acts of violating the law provisions on radio frequencies shall, depending on the nature and seriousness of their violations, be administratively sanctioned or examined for penal liability, if causing damage, they must pay compensation therefor according to law provisions.

2. Those who abuse their positions and pow-

ers to commit acts of violating the provisions of this Decree and other relevant law provisions in the radio domain shall, depending on the nature and seriousness of their violations, be disciplined or examined for penal liability, if causing damage, they must pay compensation therefor according to law provisions.

Article 43. Complaints and denunciations

1. Organizations and individuals shall have the right to complain about administrative decisions and acts of State agencies, officials and employees in the implementation of this Decree.

2. Individuals shall have the right to denounce to competent agencies organizations' or individuals' acts of violating the provisions of this Decree.

3. The competence, order and procedures for settling complaints and denunciations shall comply with the law provisions on denunciations and complaints.

CHAPTER VII

IMPLEMENTATION PROVISIONS

Article 44. Implementation effect

This Decree takes effect 15 days after its publication in the Official Gazette. All previous regulations contrary to this Decree are hereby annulled.

Article 45. Implementation responsibility

The Ministry of Post and Telematics shall, within the scope of their functions and powers, have to guide the implementation of this Decree.

The ministers, the heads of the ministerial-level agencies, the heads of the Government-attached agencies and the presidents of the People's Committees of the provinces and centrally run cities shall have to implement this Decree.

On behalf of the Government
Prime Minister

PHAN VAN KHAI

End Notes

Concessioning of Services

In Vietnam there has been no concessioning of local or other telecommunications services. There has been little or no discussion of using Build-Own-Tranfer (BOT) or similar mechanisms in telecommunications. As discussed in the paper, private sector participation to date has been limited to: 1. business cooperation (BCC) schemes, which convey no ownership rights, even temporarily, or 2. investment via the Vietnam-US BTA.

Quality of Service

Data are not available from the ITU, VNPT or MPT on the number of faults per 100 lines per month in Vietnam. However, VNPT did supply the following information on call completion ratios.

Successful call ratios:

2000	43.5%	60%
2001	43.25%	64.45%
2002	53%	63%

Source: VNPT, 2003 figures.

These ratios would appear to be quite low by world and regional standards.

Focus on Telecommunications

This chapter focuses largely on telecommunications, rather than ICT, in order to be compatible with the overall study on infrastructure issues of which this chapter forms a part.