Trade in Telecommunication Services in the Lao PDR

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Contents

Acronyms

ADSL	Asymmetric Digital Subscriber Line
AFAS	ASEAN Framework Agreement on Services
ASEAN	Association of South East Asian Nations
BTA	Bilateral Trade Agreement
BWA	Broadband Wireless Access
CDMA	Code Division Multiple Access
EDGE	Enhanced Data Rates for GSM
EV-DO	Evolutionary data only or data optimized (CDMA)
FDI	Foreign Direct Investment
FTPD	Foreign Trade Policy Department
GATS	General Agreement on Trade in Services (WTO)
GATT	General Agreement on Tariffs and Trade
GDP	Gross Domestic Product
GMPCS	Global Mobile Personal Communications by Satellite
GPRS	General Packet Radio Service (GSM)
GSM	Global System for Mobile Communications
HF	High Frequency
ICT	Information and Communication Technologies
IP	Internet Protocol
ISPs	Internet Services Providers
IT	Information Technology
ITU	International Telecommunications Union
LDC	Least Developed Country
Mbps	Megabits/second
MFN	Most Favored Nation
MMS	Multimedia Messaging Service
MIC	Ministry of Information and Culture
MOIC	Ministry of Industry and Commerce
NAPT	National Authority on Post and Telecommunications
NAST	National Authority on Science and Technology
OECD	Organization for Economic Cooperation and Development
PCS	Personal Communications Services
SIM	Subscriber Identification Module
SMS	Short Message Service

UNCPC	UN Common Product Classification System
VoIP	Voice over Internet Protocol
VSAT	Very Small Aperture Terminal
WiFi	Wireless Fidelity
WiMAX	An air interface standard for fixed broadband wireless access (BWA) systems employing a point-to-multipoint architecture
WTI	World Telecommunications Indicators (ITU)
WTO	World Trade Organization

Introduction

The Lao PDR submitted its application for membership to the World Trade Organization (WTO) in July 1997, and nearly ten years later, in October 2007, Laos presented its initial offer in services. In June 2008, it submitted a revised offer in services having doubled the initial coverage in sectors and subsectors, including partial commitments in the telecommunication services sector. At the same time, Laos is participating in regional trade liberalization discussions as a member of the Association of South East Asian Nations (ASEAN), where services are also key to the negotiation process through the ASEAN Framework Agreement on Services (AFAS), particularly ‘e-ASEAN’ – one of the priority sectors. In February 2005, the Lao-US Bilateral Trade Agreement (hereafter USBTA), became effective.

Each of these three initiatives address market access, national treatment and most-favored nation treatment obligations. Issues relating to domestic regulation and government transparency also arise in each. As such, Laos must have a thorough understanding of its domestic laws, regulations and policies affecting trade in services, including telecommunications services, as it negotiates trade agreements to ensure that: 1) the legal framework is consistent with the resulting obligations under trade agreements, and 2) the Government is capable of implementing its obligations once it becomes a party to an agreement. Challenges will arise as Laos works to incorporate existing and potential trade obligations into its national legal and regulatory framework. This report is designed to help Lao PDR understand its existing and potential trade obligations with respect to telecommunications services and the gaps which exist between its current legal framework, its obligations under the USBTA and its potential obligations under AFAS and the WTO’s General Agreement on Trade in Services (GATS).

The telecommunications services sector is a fundamental component of the Lao economy and its rapid development is vital to attracting domestic and foreign investment and facilitating and adding value to all other types of economic activities. Telecommunications services are the basis for growth in manufacturing, agriculture and other services industries. Often, the telecommunications sector is considered a key economic activity in and of itself. Because of this, liberalization of infrastructure services, for example telecommunication services, tend to receive significant attention from trading partners.

This report provides a brief overview of the importance of telecommunications services to economic development, including experiences of other developing countries. Part 2 describes the existing state of the market for telecommunication services in the Lao PDR to identify the potential benefits and challenges of liberalization in the market. Part 3 examines the current and potential trade obligations that arise under the USBTA, AFAS and the GATS with respect to the telecommunications sector. It also analyzes the relationship between the USBTA and GATS and explains the effect of the GATS most-favored-nation obligation. Part 4 compares the existing legal and regulatory framework in the Lao PDR to those current and potential obligations. Finally, Part 5 provides recommendations for ways to bridge the gap between Lao's trade obligations and its current legal framework.

1. Global Profile of Telecommunication Services

The telecommunications sector plays an important role in the global economy, connecting people, businesses, governments, and markets. Telecommunications services are instrumental in disseminating information to the world, which in turn contributes to economic growth and financial stability, disperses knowledge on global issues and problems, and raises political and cultural awareness. A well-functioning telecommunications sector provides a foundation for other economic activities and is a key economic activity in itself.

This section will give a brief overview of the role played by the telecommunications sector in economic development as a result of the introduction of new technologies and the shift from monopoly service providers to competitive markets. It also examines the effect of competition on the telecommunications sector on developing countries and profiles Pakistan, Rwanda, and Uganda as examples.

OVERVIEW OF TELECOMMUNICATIONS IN ECONOMIC DEVELOPMENT

It took over 100 years for the number of telephone subscribers in the world to reach one billion (1887-1997). It took four years to reach two billion and slightly more than three years to reach three billion subscribers. In the two years from 2005 to 2007, an additional one billion subscribers were added.[1]

This dramatic change results from two phenomena – technological advances which produced a low-cost mobile phone and competition in the market for telecom services. In 1995, 75 percent of the mobile phone market was served by monopoly providers; by 2006 78 percent of service was provided in a competitive market. Put another way, in 1995, about 15 countries allowed competition in fixed line services and 45 countries allowed competition in wireless services. By 2006, there was fixed line competition in about 100 countries and wireless competition in over 140 countries.

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1 ITU World Telecom/ICT Database. See also, “World Bank, 2006 Information and Communications for Development: Global Trends and Policies” at 5.

Technological developments that facilitated the growth of mobile telephony and spurred widespread access to the Internet came at a time when many governments were beginning to open the telecommunications sector to competition. In fact, it was easier from an institutional perspective to allow new entrants to provide mobile services and internet access because there were fewer established vested interests affecting these new services.[2] Many developing and least developed countries initially viewed mobile services as a luxury good affordable only to certain segments of the society, and thus, less attractive to monopoly fixed line incumbents. As Table 1-1 demonstrates, the markets for mobile telephony and Internet access services are much more likely to be competitive than the market for fixed telephony.

Table 1-1

World Telecommunication Services—Percent Monopoly vs. Competition in Basic, Mobile, and Internet (2005)

	Basic Services		Mobile Cellular Services		Internet Services	
	Monopoly	Competition	Monopoly	Competition	Monopoly	Competition
Africa	49	51	8	93	8	92
Americas	39	61	24	76	7	93
Asia-pacific	41	59	21	79	4	96
Arab states	66	34	13	87	24	76
Europe	18	82	4	96	0	100
World	39	61	13	87	7	93

SOURCE: *ITU World Telecommunications/ICT Development Report 2006*

The effect of a competitive market can be seen directly in the telecom sector through the increase in the number of subscribers and available services and the decrease in the costs to consumers. An OECD study cites economic analysis of the impact of telecom policy on sector specific performance and on performance of the economy as a whole. It states that a lack of competition in the telecom sector resulted in prices that were 70 percent higher than in markets where competition existed.[3] Further it notes a study of 86 developing countries from Africa, Asia and Latin America that finds the introduction of privatization and competition lead to significant improvements in performance of the sector.[4] In this study,

> a comprehensive reform program involving both policies and the support of an independent regulator produced an 8 percent higher level of mainlines and a 21 percent higher level of productivity compared to years of partial or no reform.

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2 Pierre Guislain and Christine Zhen-Wei Quiang, "Foreign Direct Investment in Telecommunications in Developing Countries" in World Bank, Information and Communications for Development 2006.

3 Julia Nielson and Daria Taglioni, "Services Trade Liberalization: Identifying Opportunities and Gains," TD/TC/WP(2003)Final (6 Feb 2004) at 89 ("OECD Trade Policy Working Paper No. 1").

4 Id. at 98, citing Fink, Mattoo and Rathindran, "Liberalizing Basic Telecommunications: Evidence from Developing Countries," paper presented at the OECD-World Bank Services Experts Meeting, OECD, Paris, 4-5 March 2002.

Telecommunications is the vital intermediate input required by all economies. Improvements in telecommunications services have striking effects on the ability of an economy to grow as a whole. A study by Deloitte Touche concluded that a 10 percent increase in telephone penetration results in a 1.2 percent increase in the growth rate of GDP.[5] Other studies support this result, finding that developing countries with full telecom liberalization tend to grow almost 2 percent faster than other developing countries.[6]

A 2005 study found that mobile phones had a significant impact on economic growth. Using data for the period 1996-2003, it found that each ten mobile subscribers per 100 people in developing countries generate GDP per capita growth of 0.59 percent.[7] According to the ITU, "telecommunications services lie at the heart of the information society, both as a direct creator of wealth and as an enabler of wealth creation in related services."[8]

Telecommunications is also the fundamental building block for an "information society," one that can provide access to e-education, e-health, e-government, e-commerce and many other aspects of a digital economy. Information and communications technology (ICT), according to the World Bank, is

> "crucial to sustainable poverty reduction, because it makes a country's economy more efficient and globally competitive, improves health and education services and creates new sources of income and employment for poor people."[9]

With the advent of digital technology, developing countries can "leapfrog into the Information Society,"[10] if they have consistent, predictable and transparent policies and regulation that "enable operators to tailor their service offerings and technical choices as effectively and efficiently as possible."[11] Barriers to entry, such as unwritten policies on foreign ownership, absence of licensing procedures and lack of clear interconnection regulations will deter investment and capital (both foreign and domestic). As the World Bank says, a certain regulatory structure needs to be in place:

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5 Presentation by Telenor at WTO 10th Anniversary of the Basic Telecom Negotiations (20 Feb. 2008), available at http://www.wto.org/english/tratop_e/serv_e/telecom_e/sym_feb08_e/berg_e.pdf

6 OECD Trade Policy Working Paper No. 1 at 99, citing Mattoo, Rathindran and Subramanian "Measuring Services Trade Liberalization and its Impact on Trade Growth: An Illustration," World Bank Working Paper 2655 (2001).

7 "Africa: The Impact of Mobile Phones. Moving the Debate Forward," The Vodafone Policy Paper Series, No. 2 (Mar. 2005).

8 ITU, "Trends in Telecommunication Reform, 2004/05: Licensing in an Era of Convergence" (2004) at 2 ("ITU Trends 2004/05").

9 World Bank, "2006 Information and Communications for Development: Global Trends and Policies" (2006) at 5 ("World Bank 2006").

10 ITU Trends 2004/05 at 1.

11 World Bank 2006 at 8.

> "Opening markets to new entrants (including small domestic entrepreneurs), rebalancing retail tariffs, establishing an effective cost-based interconnection regime, securing reasonable access to existing infrastructure, and making radio spectrum available to a wider range of service providers."[12]

As will be discussed in Part 3 both the GATS and the USBTA support this type of regulatory structure.

Telecom in developing countries

The introduction of competition and adoption of a consistent, transparent and predictable regulatory framework has resulted in rapid development of the telecommunications sectors in numerous developing countries. A recent study reviewing the ICT sectors in Tanzania, Uganda and Kenya concluded that sector reform had resulted in growth in the communications sector in Kenya of 21 percent a year between 2000 and 2005 compared to just 7 percent growth in the overall economy.[13] In Uganda, the communications sector grew 46 percent a year between 2000 and 2005 compared to just 11 percent growth in the overall economy.[14] "As a result, the contribution of the communication sector to GDP rose from 1.4 percent to 2.5 percent in Kenya and 1 percent to 4.2 percent in Uganda.[15] In contrast, failure to implement legal and regulatory reforms can slow sectoral growth, as it has in Zambia and Ethiopia.[16]

In some developing countries, mobile telephony is increasing penetration rates in underserved rural areas while generating new jobs in the same areas. For example, in Bangladesh, mobile operator GrameenPhone has helped lower prices, increase competition, connect remote and underserved areas, and improve mobile penetration (from .3 percent in 1997 to more than 6 percent in 2004). GrameenPhone's Village Phone (VP) Program helps low-income women in rural areas start their own pay-phone service by helping them borrow money to purchase equipment and by training them on the technology and tariff system. VP Program operators

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12 Id. at 8.

13 Telecommunications Management Group, Inc., "Trade in Information and Communications Services: Opportunities for East and Southern Africa, Final Report on Kenya, Tanzania and Uganda" (2007) ("TMG Report"), at 60, available at http://siteresources.worldbank.org/EXTINFORMATIONANDCOMMUNICATIONANDTECHNOLOGIES/Resources/282822-1208273252769/Trade_in_ICT_services-opportunities_for_E&SA_mod.pdf.

14 Id.

15 Id. at 61.

16 Telecommunications: The Persistence of Monopoly, Arnold J, Guermazi B. and Mattoo A. in Mattoo A. and Payton, L, Services Trade & Development: The Experience of Zambia (Palgrave Macmillan and the World Bank 2007) pp. 101-153 ("The Experience of Zambia").

reportedly earn an average BDT 5,000 per month—more than twice Bangladesh's per capita income.[17]

Rwanda

Rwanda provides a good example of the impact of competition and regulation in a least developed country. Rwanda is a landlocked country with a population of about seven million people and a telecommunications network that was severely disrupted by civil war in the mid 1990s. In 1998, it had a monopoly fixed-line operator (Rwandatel) under the Ministry of Transport and Communications and a single mobile phone network. At that time, it had a teledensity of 0.28 percent and 15,000 fixed telephone lines. In 2001, Rwanda adopted a new telecommunications law, which established an independent regulator, the Rwanda Utilities Regulatory Authority (RURA) and established a framework for a competitive telecom market. To complete the framework in 2004 and 2005, RURA adopted regulations regarding licensing, interconnection obligations and pricing, dispute settlement among operators, consumer protection, universal service funding, and anti-competitive practices.

There are no limits on foreign ownership of telecom service providers in Rwanda. Rwandatel was sold in 2005 to a group of U.S. investors and two other private companies have been licensed to provide fixed line service. There is a duopoly in mobile phone service, which is scheduled to end in 2008 and a number of ISPs. As a result of these changes, the availability of service has increased and prices have decreased. Teledensity in 2007 was 6.77 per hundred. While the number of fixed lines per hundred is going down, the number of mobile phone subscribers is increasing at an annual rate of growth of 50.5 percent. The price of an international call to the United States was US$1.26 in 2003 and is now 58 percent lower (US$0.53). Similarly, the price of monthly prepaid basket of minutes for mobile phones has decreased 35 percent from US$17.17 in 2003 to US$11.25 in 2006.

Pakistan

In Asia, Pakistan has benefited significantly from the introduction of competition in the telecom sector and adoption of a regulatory framework to support competition. In 1996, Pakistan created an independent regulatory body, the Pakistan Telecommunications Authority and began privatization of the monopoly fixed-line operator, Pakistan Telecommunications Company, Ltd. Since that time, Pakistan has opened all sectors of the telecom market to competition, adopting in 2004 a licensing framework that facilitated new entrants in the fixed and mobile markets (including wireless local loop), for local, long distance and international. There are multiple providers in every category.

Telecom services are the fastest growing sector in Pakistan and the one that attracts the most foreign investment. Teledensity has risen from 4 percent in 2003 to 53.41 percent in 2007.[18] The

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[17] ITU, World Telecommunication/ICT Development Report 2006, Measuring ICT for Social and Economic Development, 2006.

[18] Presentation of Zainab Hussain Siddiqui**,** Senior Project Manager, Ministry of Information Technology, Pakistan at WTO 10th Anniversary of Basic Telecom Negotiations (20 Feb. 2008), available at

number of fixed line subscribers has grown only slightly from 4.04 million in 2003 to 4.86 million in 2007. In contrast, mobile phone subscribers rose from 2.4 million in 2003 to 78.8 million in 2007. Fierce competition in the mobile phone sector resulted in growth of 170 percent in 2006 and 80 percent in 2007. Even though Pakistan has low population density, about 70 percent of the population is now covered by one or more telecom service provider. Prices for all types of service are now 70 to 80 percent lower than in 2003.

Pakistan allows 100 percent foreign ownership of telecom operators. There has been tremendous investment since the new regulatory framework was adopted in 2004. In 2005-2006, foreign direct investment (FDI) was over US$1.8 billion, constituting 54 percent of all FDI in Pakistan. In 2006-2007, FDI again reached US$1.8 billion, constituting 35 percent of all FDI in Pakistan.[19]

Uganda

Uganda currently allows competition in facilities based and wireless telecommunications. It is a least developed country with a population of approximately 27 million (2004),[20] much of it rural. Uganda's telephone density grew from 0.28 per hundred persons in 1998 to 20.6 per hundred in 2008.[21] In 1993, Uganda licensed its first mobile service provider. By March 2008, it had about 5.5 million subscribers.[22] Fixed lines have also increased significantly from 56,000 in 2001 to almost 130,000 in December 2006. As of December 2006, there were 17 licensed internet service providers and an estimated internet penetration of 2.2 percent.[23]

Prior to legal reform and the introduction of competition in the telecom sector, the quality of service in Uganda was extremely poor. Long waiting lists existed for fixed line services; penetration rates were low; fraudulent diversion of lines was prevalent; and service was primarily concentrated in Kampala.[24] The monopoly provider, the Ugandan Posts and Telecommunications Corporation (UPTC), was not a large revenue earner for the Government and essentially was self-regulated.

Government efforts to reform the legal framework for the telecommunications sector began in the early 1990s, with the licensing of the first mobile service provider, Celtel Limited. The Uganda Communications Commission (UCC) was established in 1997 and enacted numerous regulations

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http://www.wto.org/english/tratop_e/serv_e/telecom_e/sym_feb08_e/siddiqui_e.pdf. The statistics in this paragraph are from Ms. Siggiqui's presentation.

19 Pakistan Telecommunications Authority, "2007 Annual Report," available at http://www.pta.gov.pk/index.php?option=com_content&task=view&id=361&Itemid=590.

20 ITU, World Telecommunications/ICT Development Report 2006, v1.01.

21 Uganda Communications Commission, "Market Review, March 2008 ("UCC March 2008 Review"), available at http://www.ucc.co.ug/MarketReviewMarch2008.pdf.

22 Id. at 7.

23 Id. at 26.

24 Less than 10 percent of Uganda's population lived in Kampala in 2002. Shirley, M., F. Tusubira, F. Gebreab, and L. Haggerty. Telecommunications Reform in Uganda. World Bank Policy Research Working Paper 2864 (June 2002) ("World Bank Paper 2864"), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=636227.

governing the sector.[25] Table 1-2 describes the general characteristics of UCC. By 2000, Uganda had significantly altered the telecommunications market. UPTC was split from the Ministry of Works, Housing and Communication and put into a government-owned corporation, Uganda Telecom Limited (UTL). In June 2000, 51 percent of UTL was sold to a private consortium for US$33.5 million. In addition, UCC licensed Mobile Telephone Network, a South African company to provide any kind of telecommunications services. Between 1995–2000, new investment totaled $203 million in Uganda's telecommunication sector.[26]

Since 2000, there have been further reforms to open all telecommunications services to competition and to streamline the licensing process. In 2006, the UCC adopted a technology neutral approach to licensing, with three kinds of licenses – infrastructure provider, service provider and reseller. Many services are subject to a "general authorization."[27] Ten service providers have both an infrastructure and service provider license; six have service provider licenses and five have reseller licenses. Four additional infrastructure licenses were issued to provide infrastructure services and 15 service provider licenses have been issued.

As a result of new entry, quality of service in Uganda has improved significant. The average waiting time for a fixed line declined from six days to two in urban areas and from 20 days to three in rural areas between 2001 and 2005.[28] The percentage of telephones faults cleared by the next working day increased from 40 percent in 2001 to 93 percent in 2005, while call completion rates on the local fixed network increased from 47.9 percent in 2001 to 97.2 percent in 2005.[29]

Competition in the telecommunications sector has led to dramatic growth in that sector and in the economy as a whole. The telecom sector grew 46 percent a year between 2000 and 2005, compared to just 11 percent for the overall economy, contributing 4.2 percent to Uganda's GDP in that period.[30] The mobile services sector has become a major driver of economic growth, employing 1,000 people directly and providing downstream employment of over 90,000 jobs.[31]

Table 1-2

Characteristics of the Uganda Communications Commission

Characteristic	UCC
Relations with Ministry of Works, Housing and Communications	Separate. But Minister gives guidelines only. Major licenses are approved by the Minister upon UCC's recommendation. Minister approves UCC"s budget.
Nomination, appointment of regulator	Nominated by private professional groups or Minister and appointed by Minister with cabinet approval. The Executive Director is nominated by the

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25 An impetus to rapid legal and regulatory form was the feeling that a poor telecommunications infrastructure was an impediment to attracting investment and that donor agencies would no longer assist (by lending) state-owned telecommunication companies. Id.

26 World Bank Paper 2864.

27 These services include closed user groups, payphones and internet cafes.

28 TMG Report at 16.

29 Id.

30 Id. at 61.

31 Id.

	Commissioners.
Removal of regulator	For cause, specified in law.
Independent sources of funds	Fees.
Limits on discretion	Law and contracts detail powers.
Powers to compel information	Can compel information and has access to good information. All licensees must submit an annual report according to the UCC format.
Open to public scrutiny	Members of public are on the commission; held public consultative workshops on important issues; licensing procedures are published; and public comment on proposals.
Appeal to independent body	Tribunal and courts. Courts are independent. The Uganda Communications Tribunal is designed to be a neutral oversight body and offers a process for dispute resolution. Several disputes have been settled.

SOURCE: Shirley (2001) and (2002).

Zambia

In contrast to the countries described above, Zambia has seen much slower growth in telecommunications networks and services. ZAMTEL, the incumbent fixed line service provider, remains 100 percent government-owned. Zambia has had a regulatory body, the Communications Authority of Zambia (CAZ), since 1994. However, CAZ remains part of the Ministry of Commerce and Transport and a member of CAZ sits on the board of directors of ZAMTEL. This lack of independence has made it difficult for CAZ to take actions to strengthen competition in the sector.[32] It also results in actions favoring ZAMTEL, such as a waiver of the requirement for licensed operators to pay five percent of their revenue to CAZ.[33]

ZAMTEL is the monopoly provider of fixed-line services operating the only international gateway. Other operators have failed to enter the market because CAZ requires an application/licensing fee of USD50 million.[34] ZAMTEL also provides mobile services to compete with the two licensed providers. This has led to further deterioration in fixed-line service.[35] In 2006, there were 108 telephone faults per 100 lines.[36] In addition, Zamtel's monopoly has allowed it to cross-subsidize its other operations, such as mobile services.[37]

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32 Munsaka, J., "Zambia Telecommunications Sector Performance Review" (February 2004) at 13, ("Munsaka I"), available at http://www.researchictafrica.net/modules.php?op=modload&name=News&file=article&sid=376. The Zambia Experience at 109.

33 Munsaka, J., "ICT Sector Performance in Africa: A Review of Seven Countries," ("Munsaka II") at 29, available at http://www.researchictafrica.net/modules.php?op=modload&name=News&file=article&sid=398

34 Munsaka I. at 5.

35 Id.

36 Id. World Bank, "ICT at a Glance: Zambia," http://devdata.worldbank.org/ict/zmb_ict.pdf

37 The Zambia Experience at 110.

Mobile service has grown but not as quickly as in other countries -- penetration was only 22 percent in 2007.[38]

Ethiopia

Ethiopia is another country which demonstrates the consequences of a lack of reform in the telecommunications sector. The Ethiopian Telecommunications Company, which is 100 percent state-owned, has a monopoly on fixed, mobile, internet services and international gateways. This has resulted in one of the lowest penetration rates for mobile services, 1.45 percent, in the world. In the absence of mobile services competition, Ethiopia is one of the few countries where fixed line penetration (2.5 percent) exceeds mobile phone penetration.[39]

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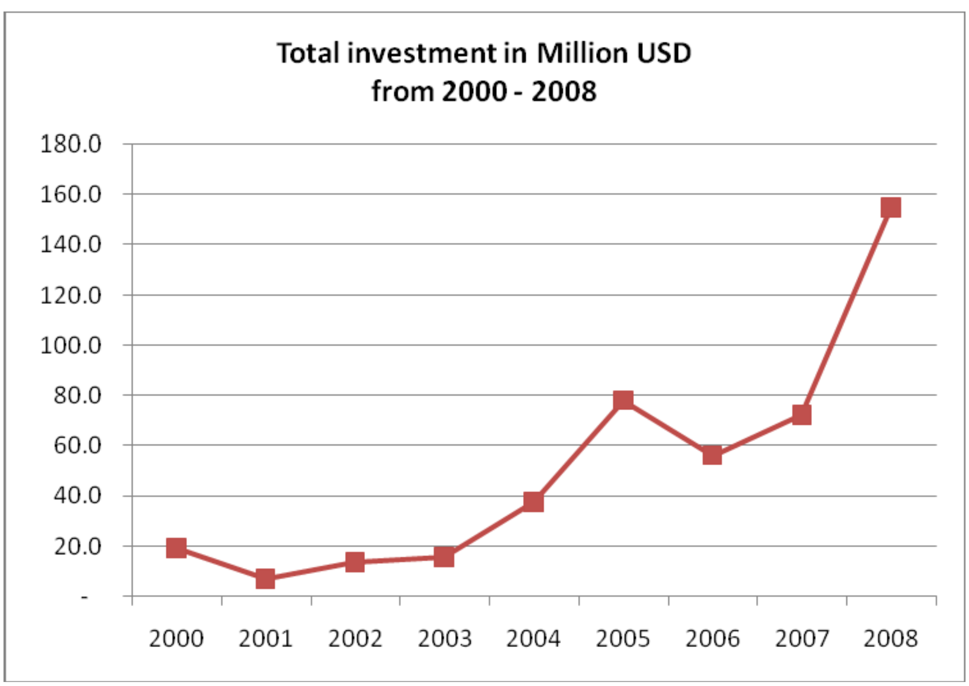
[38] ITU Country Report (2008), available at http://www.itu.int/ITU-D/icteye/DisplayCountry.aspx?countryId=259.

[39] ITU Basic Indicators, available at http://www.itu.int/ITU-D/icteye/Reporting/ShowReportFrame.aspx?ReportName=/WTI/BasicIndicatorsPublic&RP_intYear=2007&RP_intLanguageID=1 (fixed-line) and http://www.itu.int/ITU-D/icteye/Reporting/ShowReportFrame.aspx?ReportName=/WTI/CellularSubscribersPublic&RP_intYear=2007&RP_intLanguageID=1 (mobile penetration).

2. Telecommunications Sector Profile in Lao PDR

Lao People Democratic Republic (Lao PDR) is located in the central part of the Indochina peninsula. The country covers about 236,800 KM^2 and has a population of just under six million (2007 census). Lao PDR shares borders with 5 countries: Vietnam to the East, China to the North, Union of Myanmar to the Northwest, Thailand to the West, and Cambodia to the South. During 2001-2005, Lao PDR had an average annual GDP growth rate of 6.2 percent. During 2006-2007, annual GDP growth increased to 8.0 percent, and the average GDP per capita was approximately USD 700. The service sector contributed to 26 percent of Laos' GDP. In 2008, the telecommunications sector accounted for approximately 1.6 percent of the total GDP and is considered one of the fastest growing sectors in Laos. For example, since 2000, competition in the telecommunications boosted investment in the sector dramatically. Investment per year jumped from USD 19 million in 2000 to USD 154.9 million in 2008 (see Figure 2-1) .

Figure 2-1
Investment in Lao PDR, 2000-2008 (USD millions)



Source: Ministry of Planning and Investment (MPI) and interview with companies, 2008

This section provides a brief overview of the telecom sector in Laos, including the legal and regulatory framework, the development of the sector from one telecommunications service provider to five, market structure, and a brief examination of issues that impact the sector. The Government of Laos may wish to consult the non-published 2008 study (World Bank) of Lao PDR's telecommunication sector for an excellent description of the market players, structure and other statistical information not included in this study.

LAO TELECOMMUNICATIONS POLICY

The former Ministry of Communications, Transport, Post, and Construction (MCTPC) has formulated a new draft of telecommunications sector policy framework for 2007-2010.[40] The objectives are to develop the national telecommunication infrastructure, especially in regional and remote areas of the country; establish a financially viable telecommunications sector through sustainable investment in telecommunications infrastructure by the private and public sectors as well as aid agencies; improve the efficiency and effectiveness of telecommunications service delivery to end users; achieve cost-effectiveness in meeting end-user demand for telecommunications services at affordable prices; and strengthen regulatory capability and skill sets within the government so as to ensure a high standard of sector governance and oversight of market participants.

Major policy initiatives to ensure sustainable improvements in the efficiency and effectiveness of the delivery of telecommunications services include to:

- Create the Telecommunications Regulatory Authority of Lao PDR (TRAL) to ensure fair and transparent regulation of the sector;

- Create regulations based on the Telecommunications Act 2001 for the effective governance of the telecommunications sector; and

- Standardize the licensing regime with all operators required to secure the relevant licenses under the Licensing Regulation in respect of services which they provide.

Although, this draft policy is not yet officially approved by the government, many things have been implemented accordingly. For example, an Internet gateway is under construction, and the government is encouraging operators to share facilities to make more efficient use of infrastructure investments. Also, beginning in 2009, annual spectrum fees are applied to all operators.

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[40] Following a review of the state of the telecommunication sector and the future telecommunication requirements of its citizens, the Government of Laos' intention is to stimulate economic growth, create jobs and facilitate Laos' participation in the Greater Mekong Sub-Region, in ASEAN, WTO, and in the global information economy to achieve the targets set in the Millennium Development Goals (MDGs) and in the declarations of the World Summit on the Information Society (WSIS).

LEGAL AND REGULATORY FRAMEWORK

There are three major government agencies involving the telecom and ICT in Laos. The National Authority on Posts and Telecommunications (NAPT) makes telecommunications policy and regulates the telecommunications sector. The National Authority on Science and Technology (NAST) sets policy regarding information technology and regulates ISPs, Internet cafes, and telecenters. The Ministry of Information and Culture (MIC) is responsible for policies and regulations relating to culture, media, information, and contents issues, particularly with respect to the Internet. There are overlapping responsibilities among NAPT, NAST and MIC with respect to licensing ISPs and Internet cafes.

In contrast to the fast development of the telecommunications and information technology sectors in Laos (described below in detail), the legal framework to support the development of these sectors still lacks detail and is insufficient to create an effective and efficient environment for fair competition. The existing telecommunications law in Laos, the “Telecommunications Act,” is brief and vague. A revised version of the Telecommunications Law, which provides significantly more detail, is under consideration.

Lao PDR’s current legal and regulatory framework for the telecommunications sector consists of the following basic instruments:

- Law on Telecommunications, No. 02/NA (10 April 2001) (“Telecom Law”), which in very general terms describes the regulation of the telecommunications sector;
- Decree Creating the National Authority of Posts and Telecommunications (“NAPT”), No. 375/PM (22 October 2007) (“Decree 375”);
- Labour Law, No. 002/NA (14 March 1994) (“Labour Law”), which regulates labor relationships;
- Law on Promotion of Foreign Investment, No. 11/NA (22 October 2004) (“Investment Law”);
- Decree Regarding the Implementation of the Law on the Promotion of Foreign Investment, No. 301/PM (12 October 2005) (“Decree 301”);
- Decree on Trade Competition (“Competition Decree”), No. 15/PMO (4 February 2004); and
- Decree on the Management of Foreign Exchange and Precious Metals (“Decree on Foreign Exchange”), Presidential Decree Law No. 01/OP (August 9, 2002).

To our knowledge there are no implementing decrees or regulations to provide the details needed to fill the gaps in the Telecom Law.

National Authority on Post and Telecommunications

NAPT was created under Decree No 375/PM on October 22, 2007. The postal and telecommunications policy and regulatory functions were removed from the Ministry of

Communications, Transportation, Post, and Construction[41] and a separate entity --- NAPT --- was created under the direct authority of the Prime Minister. The head of NAPT is considered to be at the level of a Minister and reports to the Prime Minister. NAPT is responsible for policy making in the telecommunications sector; regulation of posts, telecommunications and information technology; and the formulation of strategy for long-term development planning of the telecommunications sector. See Exhibit 2-1 for more detailed listing of NAPT's primary functions.

Exhibit 2-1
Primary functions of the NAPT

The National Authority on Post and Telecommunications

1. Drafts laws, ordinances, regulations, strategies and development plans on posts, telecommunications and ICT to submit to Government;

2. Develops regulations to implement law and ordinances as well as development strategies and plans related to posts, telecommunications, and information technology;

3. Regulates the interconnection and access to networks

4. Regulates Internet exchange including the gateway

5. Plans, assigns and allocates radio spectrum; controls and monitors radio spectrum and radio equipment; allocates radio spectrum and satellite orbital slots and coordinates use of radio spectrum;

6. Grants licenses in posts, telecommunications, radio frequency and Internet access;

7. Regulates the quality of posts, telecommunications and information technology networks, plants, products and services;

8. Regulates numbering resources, area codes, domain names and addresses used in the fields of posts, telecommunications and information technology;

9. Manages international cooperation in the field of posts, telecommunications and ICT;

10. Monitors all licensees and takes steps to cure all regulatory breaches in the fields of posts, telecommunications and ICT; and

11. Facilitates human resource development under the Institute of Post and Telecom and ICT.

SOURCE: *Ministerial Decree No. 375/PM,*

National Authority on Science and Technology

NAST, which also falls under the authority of the Prime Minister's Office, is responsible for: (i) coordinating country-wide and local efforts in the research and management of scientific and technological affairs; (ii) studying and selecting scientific and technological advancements in other countries and adjusting them where necessary to suit Laos' socio-economic development; and (iii) supervising government agencies whose operations are related to scientific and technological areas. NAST prepares the government's policy on the development of ICT in Laos. NAST also implements numerous projects relating to IT development, such as the e-government project currently underway.

41 With the creation of NAPT, the Ministry of Communications, Transportation, Post, and Construction (MCTPC) became the Ministry of Public Works and Transport

DEVELOPMENT OF LAO TELECOMMUNICATIONS SECTOR

Before 1990, the Enterprise of Post and Telecom Lao (EPTL), a state-owned entity, was the sole provider of telecommunication services in Laos. In 1993, EPTL was split into two entities: Enterprise of Telecom Lao (ETL) and Enterprise of Post Lao (EPL). In 1995, Lao Shinawatra Telecom (LST) was created with 30 percent Lao government ownership and 70 percent Thai ownership (i.e. Shinawatra) to provide mobile phone services in competition with ETL. In 1996, the government and Shinawatra signed a Master Agreement on Telecommunications Development in Lao PDR. Under this Agreement, LST merged with ETL to form Lao Telecommunications Co. Ltd. (LTC), of which the government owns 51 percent and Shinawatra owns the remaining 49 percent. Until October 2001, LTC had a monopoly on the provision of all forms of telecommunications services. Since then the government has authorized four additional companies for a total of five companies to provide telecommunications services:

- LTC;
- ETL, a 100 percent-owned government company, was re-established in 2000;
- Millicom (Tigo) was set up as a joint venture with Swedish investors (22 percent government and 78 percent foreign investor) in 2003;
- Sky Telecom and Net was set up as a joint venture with Thai investors (30 percent government and 70 percent foreign investor) was established in 2005; and
- Lao Asia Telecom (LAT), later named Lao Star Telecom, was established as a joint venture with a Vietnamese company (51 percent government and 49 percent VietTel) in 2008.

Following the introduction of competition in 2001, the telecommunications sector has developed rapidly in terms of technology, network coverage, and number of users. In 1993, the backbone was a microwave system with a limited capacity of only 34 Mbps. At that time, the international gateway was through satellite links and microwave system. The teledensity was very low at 0.3 percent and the tariffs were very high especially for international calls, which were about 2 USD/minute.

Much of the old microwave system has been replaced by fiber optic networks and the remaining microwave system has been upgraded. Almost all operators have their own gateways to connect overseas via fiber optic cables, microwave, and satellite. Network coverage has also increased rapidly; and people living in big cities now have access to the telephone almost all the time. Customers can buy phone cards almost anywhere in Laos at a very low price. Laos' teledensity has increased dramatically to 25 percent. In rural areas, the telecom network is gradually improving and all 139 districts throughout the country have telephone service.

According to a 2006 study 'Improving the Competitiveness of the Telecommunications Sector in Lao PDR,'

> "Available evidence suggests that Lao tariff rates for fixed wire services rose to 2 cents per minute while mobile rates fell to around 7 cents per minute, with substantial off-peak discounts. These rates were comparable to those in Thailand, which in turn were internationally competitive. International Long Distance (ILD) rates fell rapidly in the

early 2000s to a level lower than the regional average. This decline was driven by improved technology, enhanced competition, and by increased access to low cost unlicensed VoIP in urban Internet cafes. Total telecommunications revenue as a proportion of GDP is 1.6 percent in Lao PDR, and slowly rising, as against 3.6 percent and stable in 2004, for the East Asia and Pacific region as a whole (Hay, 2006)."[42]

Table 2-1

Comparative Indicators : Lao PDR and East Asia and Pacific

Country and Region	Price of Call to the United States (US$ per 3 minutes)				
	2000	2001	2002	2003	2004
Lao PDR	9.20	6.37	5.67	5.39	1.11
East Asia and Pacific	4.32	2.90	3.21	2.92	1.20
	Total Telecommunications Revenue (% of GDP)				
Lao PDR	1.5	1.5	1.5	1.4	1.6
East Asia and Pacific	3.2	3.5	3.7	3.7	3.6

Source: Hay (2006)

Table 2-2 shows the development of technology and services from 1993 to present in Lao PDR.

Table 2-2

History of Technology Development in Lao Telecommunications Sector, by Service Area

Date	Technology
FIXED PHONE	
1993	Analog Switching AXE Digital Switching
1994	FETEX-150 (PSTN)
1995-98	FETEX-150 (PSTN) S-12 Digital Switching (E-family)
1999- Present	FETEX-150 S-12 (E-family) S-12 (J-family) Soft Switch
MOBILE	
1993-1995	Analog System (Amps 800 MHz)
1996-2000	Digital GSM 900 MHz (postpaid only)
2000-2002	GSM 900 MHz (postpaid and prepaid system)

[42] Trade Analysis and Reform Project (TARP): Round, Executive Summary of Improving the Competitiveness of Telecommunication Sector in Lao PDR. Accessed May 2009.

Date	Technology
2003	Dual band GSM 900/1800 MHz (postpaid and prepaid)
2004- Present	Dual band GSM 900/1800 MHz (postpaid and prepaid system) GPRS, EDGE, 3G, EVDO CDMA 2000 1X 450 MHz (prepaid only)
INTERNET	
1999	Dial-up (gateway: 64 Kbps, via satellite) Sun Server and Cisco Network Equipment
2000-2003	Dial-up and wireless (gateway: 512 Kbps, via satellite)
2004- Present	Dial-up, ADSL and Broad brand Internet, WiFi, WiMax (gateway: more than 100 Mbps via Microwave and Optical Fiber)
TRANSMISSION SYSTEM	
1993	Radio High Frequency (HF) system linked domestically Laos to Thailand via Microwave system HF via Hong Kong to other countries F3 Satellite earth station via Australia and the Intersputnick Satellite earth station via Moscow
1994-2000	Satellite earth station using Standard A, 512 kbps 34 Mbps Microwave back bone link from north to south VSAT
2000- Present	Gateways via optical cable, satellite, and microwave. Optical Fiber for backbone link from North to South and East to West and to major provinces. Microwave Link STM-4 as backup system for backbone VSAT, IPSTAR

Source:Lao Telecom Company (LTC).

MARKET STRUCTURE

The variety of telecommunication services offered in Laos has improved since 2001. ETL and LTC are the two largest telecommunications companies in Laos and provide almost all types of services. Each of these two companies has their own fiber optic network as the backbone system, covering all 139 districts in Laos. The other three licensees provide a more limited range of services. For example, MMS, SMS, ring back tone, Internet, data inquiry, and voice mail services are available to consumers. See Table 2-3 for a summary of services and technology categorized by operator.

Table 2-3

Summary of Services and Technology by Operators, 2008

Operators and ISP	Services	Fixed Phone (PSTN)	Mobile Phone			Wireless Phone (CDMA)	Internet				Other		Transmission			Gateway
			GPRS	EDGE	3G		Dial up	ADSL	Wi-Fi	WiMax	Leased line	VSAT/IPSTAR	Microwave	Fiber Optic	Satellite	
Lao Telecom (LTC)	Voice, data, email, internet access, SMS, leased line, video conference, and international roaming.	✓	-	✓	✓	✓	✓	✓	✓	-	✓	✓	✓	✓	✓	✓
Telecom Lao (ETL)	Voice, data, email, internet access, SMS, leased line, video conference, and international roaming.	✓	✓	-	-	-	✓	✓	-	-	✓	-	✓	✓	✓	✓
Milicom (Tigo)	Voice, data, email, internet access, SMS, and international roaming.	-	-	✓	-	-	-	-	-	✓	-	-	-	-	✓	✓
Star Telecom	Voice, data, email, internet access, SMS, leased line, and international roaming.	✓	✓	-	-	-	-	-	-	-	-	-	-	✓	✓	✓
Sky Tel & Net	Data, email, internet access, and leased line.	-	-	-	-	✓	-	-	-	✓	✓	✓	-	-	✓	✓
Planet Online	E-mail and internet access.	-	-	-	-	-	-	-	-	✓	-	-	-	-	-	-
Lane Xang Internet (LIS)	E-mail and internet access.	-	-	-	-	-	-	-	✓	-	✓	-	-	-	-	✓

SOURCE: Interviews with the companies, August 2008

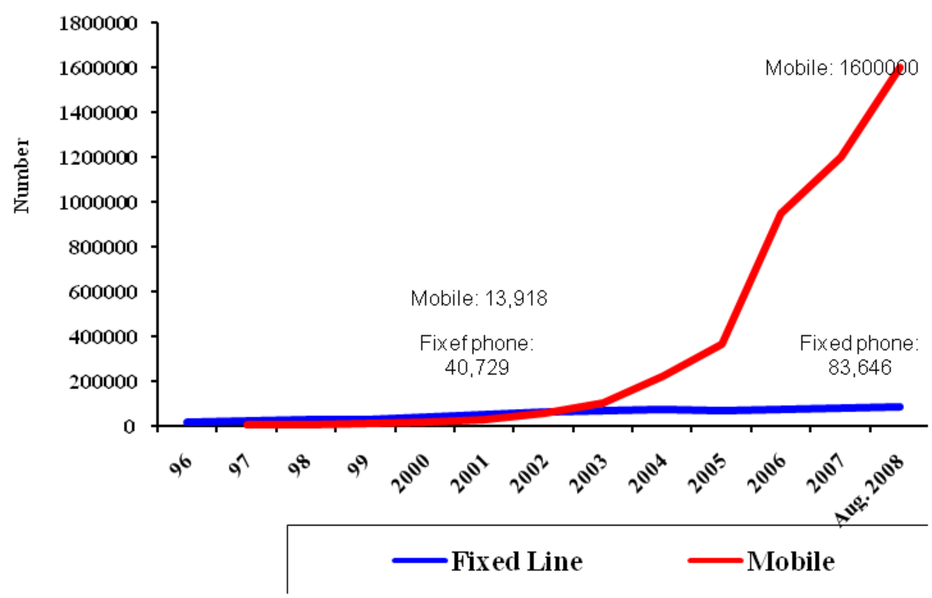
Mobile and fixed telephony

Even though prices for local calls on mobile phone are four times higher than prices for fixed line local calls, use of mobile phones has increased dramatically. This increase can be attributed to the ease of obtaining a mobile phone in contrast to installation of fixed line service. In early 2001, the first prepaid GSM mobile system was introduced to the market. At that time there were about 14,000 subscribers. By mid-2002, the number of mobile users (65,000) in Laos exceeded the number of fixed line users. Currently, the number of mobile users, approximately 1.6 million, comprises about 95 percent of total telephone users in the market. Fixed line subscribers total slightly less than 84,000, though it is important to note that fixed line subscribers have grown almost ten percent a year since 2001.

Most of the increase in telephone penetration in Lao PDR is due to mobile phone usage. Figure 2-2 shows a much higher penetration level because many mobile phone customers have two to three SIM cards from different operators and switch the cards out depending on where they can get network coverage and the best pricing for services. On the other hand, the chart underestimates telephone penetration because it does not take account of people who live along the Mekong River and use mobile phone service from Thailand so that calls to Thailand are local calls, not international calls.

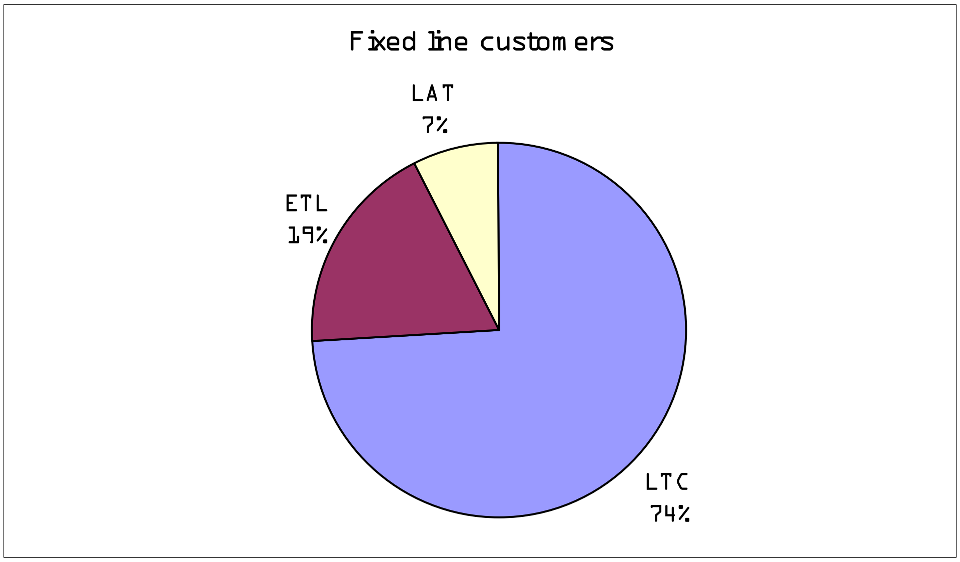
Figure 2-2

Fixed and Mobile Lines in Laos, 1996 – 2005.



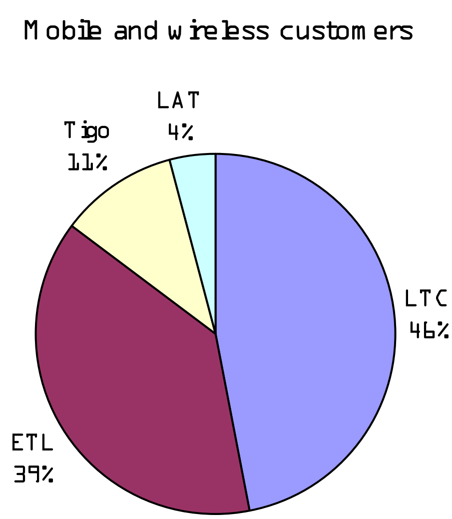
Figures 2-3 and 2-4 show the market share by operators in Laos.

Figure 2-3
Market Share of Fixed Line by Operator, 2008



SOURCE: interview from operators and ISPs in August, 2008.

Figure 2-4
Market Share of Mobile Services by Operator, 2008



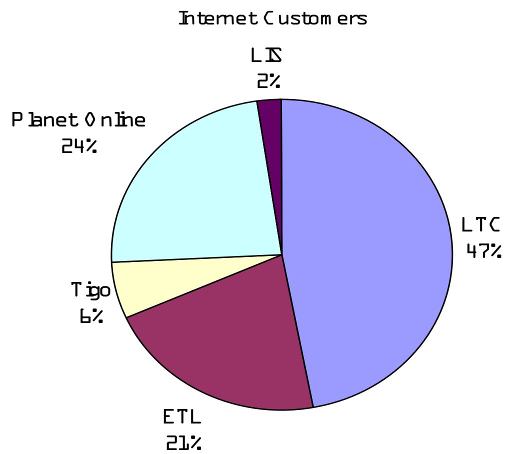
SOURCE: interview from operators and ISPs in August, 2008.

Internet

Internet services in Laos have been growing rapidly since 1990. According to NAST, there are 1,283 dial up subscribers, 2,820 ADSL subscribers, 198 Internet satellite subscribers (IPSTAR), and 33 leased line subscribers. In addition, some operators are offering Internet access via mobile phones and one ISP is offering Internet access through a wireless network. There are an estimated 600 Internet cafes in Laos, of which approximately 400 are located in Vientiane. Nonetheless development in Laos is quite slow compared to neighboring countries, such as Thailand and Vietnam. The penetration rate for Internet access is only 1.1 percent. The main causes of this low rate and slow development include an insufficient telecom network, lack of consumer purchasing power, lack of IT knowledge, lack of electricity, lack of content in Lao language, and high cost to subscribe. Figure 2-5 shows the market share and number of subscribers of the internet service providers.

Figure 2-5

Percentage of Internet subscribers by operator, 2008



SOURCE: interview from operators and ISPs in August, 2008.

Laos is a land-locked country. Today, the government is taking advantage of its geographical location to promote Laos as a land link to neighboring countries providing all types of services, including telecommunication services. For example Laos has developed an optical cable that runs north to south, and east to west, thereby linking a country through Laos to other countries (e.g., Thailand through Laos to Vietnam, Thailand through Laos to China, China through Laos to Cambodia, etc). Both ILD (IDD and VoIP) voice and data are carried via this medium offering shorter distance, lower transit charge, and better quality. These services not only benefit Laos, but also other countries.

The draft Telecommunications Policy addresses telecommunications tariffs. It states “The government’s socio-economic development plan requires the modernization of the telecommunication sector to allow society to use all types of telecommunication facilities with high quality and at affordable prices. The Telecommunication Tariffs Policy will be based on the following principles:

(i) Effective competition will drive down prices and drive up quality of service;

(ii) Prices should be transparent and comprehensible;

(iii) Widening of access to telecommunication services requires affordable prices; and

(iv) Interconnection prices should be cost-based.

Tariffs are not only related to financial analysis but must consider socio-economic factors. It is important for customers to be able to identify ‘best value for money’”.

Tariffs and Interconnection

The government established the maximum level of tariffs in 2003. In fact, tariffs are fixed by operators and are market driven. On June 30, 2008, NAPT announced that all operators must notify and receive approval from NAPT before changing tariff prices, including special promotions within an operator’s own network. The average local call charge is 2 US cents/minute and domestic long distance charges vary from 3.6 to 4 US cents/minute. International long distance charges are uniformly 20 cents.

Interconnection prices are negotiated between telecom operators and range from 0.5 to 1 US cent/minute for local calls and 1 US cent/minute for domestic long distances. While the government encourages each operator to share facilities such as towers backbone networks, there is no legal obligation to do so, and NAPT does not have the authority to impose interconnection arrangements if the licensees are not able to agree. The inability of licensees to agree on interconnection terms has led to duplication of networks, such as the parallel north-south backbone networks of ETL and LTC.

Universal Access

About 85 percent of Laos’ population lives in rural areas where the telecom network infrastructure is very limited. The government has recognized the importance of providing access to telecommunications services in rural areas. Article 5 of the Telecom Law authorized the creation of a Telecommunication Development Fund. Although this law was enacted in 2001, the Fund has not been established and there is no governmental mechanism to promote universal access to telecommunications services.

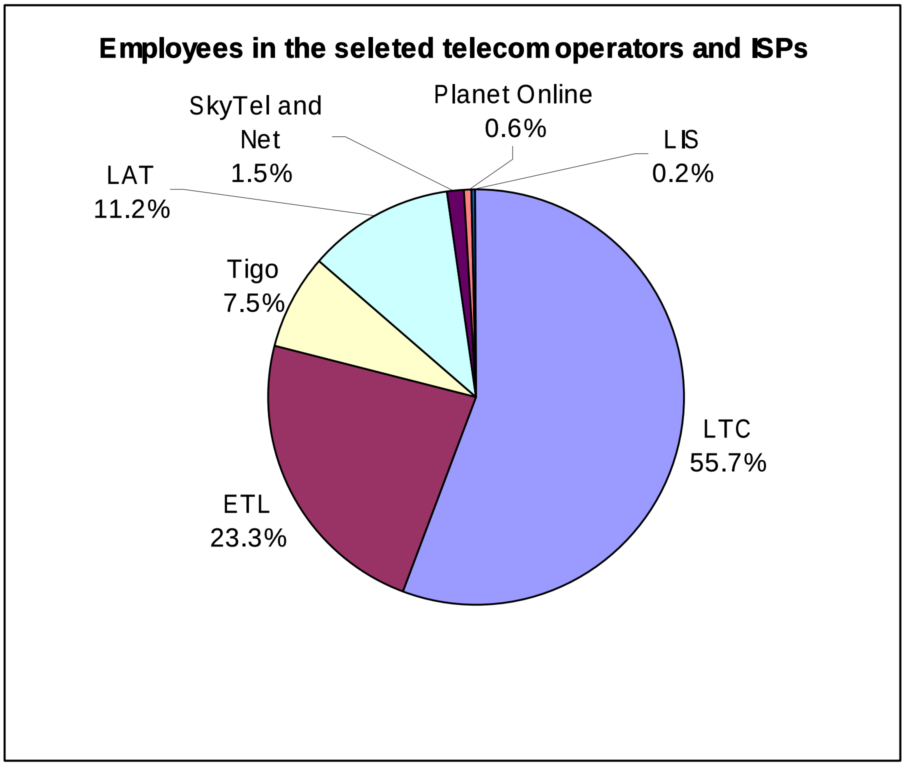
Universal Access Provision: Telecom Law

To develop up-to-date telecommunications systems progressively, the Government of Lao P.D.R. authorizes the set up of the Telecommunications Development Fund which sources from internal support, foreign countries, international organization funding, and from a share of fees and charges for telecommunications services.

Human Resources in ICT field

According to a 2007 census, there were 3,688 employees working in ICT field. This number is strikingly low, constituting only 1.1 percent of the total workforce in Laos. (See Figure 2-6 for a breakdown of employees by telecom operators and selected ISPs).

Figure 2-6



Source: statistical yearbook 2007 and interview with companies, August 2008.

The majority of employees have been trained in local institutions, i.e. National University of Laos, Telecom Training Center, and private colleges. Only a small portion of ICT experts have studied abroad. There is a significant shortage of skilled workers, especially with respect to software programming.

NAPT itself suffers from a lack of human resources, with only 30 employees working in four departments: Telecom and Internet department, Planning and Cooperation department, Post department, and the Administration department.

Pending issues

As noted above, the legal framework needed for development of telecommunications and information communications sector is lacking in Lao PDR. The shortcomings are described in Section 5, along with a set of recommendations. Here we highlight three areas of particular importance.

Independent Regulatory Body

Laos does not have a sufficiently independent regulatory body for telecommunications in light of the amount of government ownership in the sector. NAPT is part of the Prime Minister’s office, not a separate independent agency, and takes direction from the Prime Minister. It is hard to see how NAPT can act in an impartial manner when a dispute arises between a 100 percent owned licensee and a licensee with little or no government ownership. In addition, through its ownership interest, the government has the power to direct the business operations of a number of companies at the same time that it is setting overall sector policy. Legitimate concerns from trading partners could arise on this issue because a direct connection/relationship between the 'regulator' and an 'operator' is considered a conflict of interest, especially when the regulator is in an enforcement position as well as possibly possessing proprietary knowledge of competitors operating structure.

One Gateway

Each of the licensed telecommunications firms currently operate their own gateways, which connect Laos to Thailand, Vietnam, China, and Cambodia via fiber optic cables, satellite, and microwave. However, NAPT's Department of Telecom and Internet, is considering the establishment of a national Internet gateway. To date, NAPT has not made any formal proposal.

Other countries have taken this approach. The Gambia, for example, with help from UNDP, constructed a national gateway in 1999.[43] USAID has supported the development of technical architecture for a national Internet gateway, [44] as part of a multi-year effort to promote the use of the Internet as a means of fostering sustainable social and economic development in approximately 20 African countries.[45] It is important to note, however, that at the time Gambia established its internet gateway, Gamtel had a monopoly on fixed line service. Furthermore, the USAID project ran from 1996 to 2001, a time when many African countries had monopoly service providers.

While there may be merit in NAPT's idea of a national internet gateway, the gateway must be designed in a way that allows competition in the underlying telecom network to flourish. All network providers and ISPs must have access to the gateway on non-discriminatory terms and conditions. Issues of fair competition arise if the gateway operator is also one of the network providers or ISPs. In addition, there is a concern if NAPT requires all operators to use the national gateway, instead of whatever arrangements for international transit they already have in place.

Many countries have established a national "internet exchange point" where internet service providers can exchange domestic traffic and avoid the expense of international transit fees. For example, in Uganda, some of the ISPs and other telecommunications providers created a non-profit organization to build and operate an internet exchange point.[46] This effort has significantly reduced costs to the service providers, and therefore to their customers.

Frequency Allocation

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[43] See, Bakary N'jie, "Internet Gateway for Gambia," presented at the The African Internet and Telecom Summit (June 2000), available at http://www.itu.int/africainternet2000/Documents/doc53_e.htm.

[44] USAID Leland Initiative: Africa Global Infrastructure Project, available at http://www.usaid.gov/regions/afr/leland/techdsgn.htm.

[45] See, ITU, "Leland Initiative," available at http://www.itu.int/ITU-D/ict_stories/themes/case_studies/leland.html.

[46] See www.uixp.co.ug.

Demand for radio frequency is expected to increase dramatically in the near future with the expansion of the GSM, CDMA, 3G and microwave networks and the use of satellites. It is very important to design a method of allocating radio frequency that will facilitate market entry, increased investment and development of new services.

Management of radio frequency is carried out by NAPT's Department of Telecommunications and Internet. At present, there are no rules governing the allocation and assignment of radio frequency to operators. In the case of GSM, the spectrum was assigned equally to four operators without charge. In other cases, NAPT appears to assign spectrum on a first-come, first-served basis but this makes efficient use of the spectrum for new entrants very difficult. . To counter these limitations, the government has implied that it will limit market entry for the provision of telecommunication services (fixed and mobile) to the five existing operators. Such a limitation would deny Laos of new investment and the benefits of varied technologies, such as WiFi, and WiMax.

The existing Telecom Law gives the Ministry of Communications, Transport, Post and Construction the authority to administer and assign radio frequency and to impose charges and fees for the issuance of licenses to use radio frequencies. These responsibilities have been shifted to NAPT since November 2007. The draft telecommunications law, which the government is considering, is more specific. It envisions creation of a frequency spectrum plan and gives the government the right to assign spectrum through auction, tender or fixed price. But the existing law provides sufficient basis for the government to create a national frequency plan and assign spectrum in the most efficient way.

3. Description of Current and Potential Trade Obligations

This section outlines binding commitments that Laos has made in the telecommunications sector at the bilateral level (USBTA) and the regional level through AFAS as well as a very detailed description of telecommunications services obligations that fall under the WTO's GATS. It also provides a brief discussion of the relationship between the USBTA and the GATS given Lao PDRs existing commitments under the bilateral agreement. It concludes by addressing GATS provisions that apply to WTO least developed country members.

LAO – US BILATERAL TRADE AGREEMENT

Market Access and National Treatment. There are certain telecom specific obligations in the USBTA, as well as general provisions that apply to all services, including telecommunications. Articles 32, 33 and 34 of the USBTA provide unqualified market access and national treatment to U.S. providers of telecommunications services of all kinds. While the obligations of the United States are subject to the "terms, limitations and commitments" of its GATS schedule, Lao PDR did not place any limits on market access or national treatment in any services sector.

Transparency and Domestic Regulation. These general obligations, which apply to all services sectors and goods, relate to transparency in government action and the financial aspects of trade. The USBTA requires that laws and regulations affecting trade in services be published in a designated official publication before they can be enforced. To the extent possible, the public should be given an opportunity to comment on laws and regulations prior to their adoption. Finally, each party must allow (i) payment in U.S. dollars or other freely tradable currencies; (ii) unimpeded access to bank accounts and other financial services and (iii) repatriation of profits and capital.

ASEAN FRAMEWORK ON SERVICES

The AFAS envisions free trade in services by 2015. ASEAN identified four services sectors as the focus of attention for market access and national treatment commitments as an initial step. "eASEAN" is one sector, encompassing computer and related services and telecommunications services as defined in the GATS classification system. To achieve the goal of full market opening in the identified sectors, the ASEAN Economic Community (AEC) adopted a Blueprint in 2007.

The Blueprint states that ASEAN members should allow ASEAN foreign ownership in the eASEAN sector of 51 percent by 2008, 70 percent by 2010 and 100 percent by 2015. In addition, it says there should be no restrictions on market access and national treatment in Modes 1 and 2 and that any limitations in Mode 3 should be progressively removed by 2015.[47]

ASEAN has also adopted a Framework Agreement related to investment, creating an ASEAN Investment Area. Although initially aimed at promoting investment in manufacturing, the agreement also covers services with an obligation to provide national treatment to all investment (including in the services sector) by 2010.

THE GENERAL AGREEMENT ON TRADE IN SERVICES

The GATS is the first multilateral agreement on trade in services that incorporates legally binding rules and disciplines. The GATS entered into legal force in 1995, following the Uruguay Round of trade negotiations, which established the World Trade Organization (formerly the General Agreement on Tariffs and Trade).

The GATS consists of:

- A framework agreement, which sets general rules applicable to all services,
- Annexes that cover specific sectors and other obligations such as the Annex on Telecommunications, and
- Schedules of specific commitments, stating which services sectors a Member has agreed to open to foreign competition, and how open those markets are. The schedule can also include additional commitments beyond market access and national treatment.

General GATS Obligations of Members

The GATS establishes general rules that apply to all service sectors, whether or not the Member has made any specific commitments to allow foreign competition in services. The Annex on Telecommunications imposes additional requirements with respect to access to and use of the public switched telecommunications network (PSTN), regardless of whether a Member has made specific commitments in telecommunications services. The GATS and the Annex on Telecommunications require:

- non-discrimination
- transparency
- domestic regulation
- competition safeguards

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[47] The ASEAN trade agreement follows the WTO method of scheduling commitments by services sector, which is described below.

Non-discrimination or Most-Favored Nation

GATS Art. II requires Members to accord treatment to services and service suppliers from one Member no less favorable than that accorded to services and service suppliers from other Members. This obligation applies regardless of whether a Member has undertaken specific market access commitments on telecommunications of computer services. For example, if a Member decides to auction a wireless license, the Member cannot limit participation to service suppliers from Europe and Asia and exclude service suppliers from other WTO members. Nor can it charge a higher business license fee for suppliers from certain WTO Members.

Transparency of Government Actions

Article III of the GATS requires that a Member "make publicly available" all relevant laws, rules, regulations and administrative guidance concerning services. “Publicly available” means that the information is available in a widely-distributed publication or on a web-site or can be obtained or inspected at specified locations, including a website.

The GATS Annex on Telecommunications imposes additional requirements with respect to transparency in telecommunications services. It requires that conditions affecting access to and use of the public switched network are publicly available. This includes tariffs and conditions of service, technical interfaces, standards bodies, conditions for attachment of terminal equipment to the public switched network and all licensing criteria.

Domestic Regulation

Article VI of the GATS requires that every WTO Member maintain judicial, arbitral or administrative tribunals (or similar legal entities) and procedures for prompt review of administrative decisions. Article VI goes on to require that procedures for review must be objective and impartial. Article VI, however, does not mandate the specific form of review or any particular kinds of procedures.

Access to and Use of the Public Switched Telecommunications Network

In recognition of the essential role of communications for the provision of all services, the GATS Annex on Telecommunications requires a Member to ensure that all suppliers of public networks and services provide access to and use of their networks and services to all other service suppliers for which the WTO member has granted market access, on reasonable and non-discriminatory terms and conditions. This provision has been interpreted by a WTO dispute settlement panel to include access at reasonable prices. For example, if a Member makes specific commitments to allow foreign investment in hotels, then the hotel operator must have access to and use of the PSTN on reasonable and non-discriminatory terms and conditions.

The Annex on Telecommunications also imposes specific requirements on access to and use of the PSTN. Other telecom operators and service suppliers must be able to:

- Purchase or lease and attach terminal or other equipment which interfaces with the network and which is necessary to supply a supplier's services;

- Interconnect private leased or owned circuits with public telecommunications transport networks and services or with circuits leased or owned by another service supplier; and
- Use operating protocols of the service supplier's choice in the supply of any service, other than as necessary to ensure the availability of telecommunications transport networks and services to the public generally.

While many of the obligations contained in the Annex on Telecommunications only apply to foreign suppliers of services covered by a WTO Member's specific commitments, in practice, it is not practical to issue regulations covering only a small fraction of a Member's service suppliers. Therefore, most WTO Members have adopted provisions regarding access to and use of the PSTN that are applicable to all service suppliers.

Competition Safeguards

Adoption of competition safeguards is required by GATS Article VIII. Article VIII is relevant if the WTO Member legally maintains a monopoly on any service provider, such as a telecommunications operator. If that is the case, the WTO Member must ensure that the monopoly provider observes the MFN obligation with respect to the provision of its monopoly services in its dealing with foreign service suppliers. In addition, the WTO Member must ensure that the monopoly supplier does not abuse its monopoly position when competing with other service suppliers.

Specific GATS Obligations of WTO Members

In addition to the general obligations discussed above that apply to all WTO Members, there are specific obligations that apply to the service sectors included in a Member's Schedule of Specific Commitments. It is important to note, however, that the GATS does not generally require a Member to open its market to foreign service suppliers. Rather, each Member establishes the scope of permitted market access and the specific treatment to be accorded foreign service suppliers in its Schedule. A Decision of the General Council of the WTO in 2003 makes it clear that acceding least developed countries "shall offer access through reasonable concessions and commitments on trade in goods and services commensurate with their individual development, financial and trade needs."[48]

Schedules are divided by service sector. A Member can make market access commitments in some sectors and not others. Within each sector, a Member can make commitments for some subsectors and not others. If a sector or subsector is not listed, then the Member has undertaken NO specific obligations with regard to that sector or subsector. Once a Member includes a sector or subsector in its Schedule, then it assumes the obligations listed in the Schedule, as well as GATS obligations regarding transparency and domestic regulation.

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[48] WTO General Council Decision, "Accession of Least-Developed Countries," WT/L/508 (Jan. 20, 2003).

Members make commitments based on the manner in which service is delivered (mode of supply): cross-border supply, consumption abroad, commercial presence or the presence of natural persons (see Table 3-1).

Table 3-1
Modes of Supply

Mode of Supply	Description	Example
1) Cross-border supply	The provision of service from the territory of one WTO Member into the territory of another WTO member	A Vietnamese consumer making a call to a person in Lao PDR
2) Consumption abroad	The provision of service to a consumer from a WTO Member present in the territory of another WTO Member	A Thai mobile user roaming into Lao PDR
3) Commercial presence	The provision of service by a person or business of a WTO Member establishing a commercial presence in the territory of another WTO Member	A Singapore company opens an office in Vientiane to provide Internet access services
4) Presence of natural persons	The provision of service by a person of a WTO Member who enters the territory of another WTO Member	A Chinese national moves to Lao PDR to work for a Laotian company

The Schedule of Specific Commitments lists market access obligations, *i.e.*, whether a foreign service may enter the market or whether a foreign service supplier may supply a particular service. If a Member wishes to limit the number of suppliers, the participation of foreign capital or the form of investment, it must include those limitations in its Schedule.

The Schedule also lists national treatment obligations. National treatment requires that a service or service supplier from a WTO Member be accorded treatment no less favorable than that it accords to its own like services or service suppliers. As with market access, a Member may list specific limitations, such as limits on foreign ownership or nationality requirements for corporate directors and officers.

In addition to market access and national treatment, a WTO Member can make additional commitments in its Schedule. In the negotiations concerning basic telecommunications that concluded in 1997, some WTO Members agreed to a "Reference Paper" of regulatory commitments that they included as additional commitments in their Schedules. The objective of the Reference Paper obligations is to create a level playing field for competitors, that is, to reduce barriers to new entrants so they can compete on equal terms with the incumbent operators.

Scheduling Commitments in the GATS

In 1991 during the early stages of the initial GATS negotiations, the WTO adopted a classification system for services.[49] The system was based on the United Nations Central Product

49 “Services Sectoral Classification List,” MTN-GNS/W/120 (referred to as “W120”).

Classification (CPC). The CPC divided “communications” services into three major sectors: postal services, courier services and telecommunications services. “Telecommunications” services (CPC 752) was broken down into sub-sectors, each with a four-digit number and description. In adopting the CPC for the GATS negotiations, the WTO changed some of the subsector headings and incorporated some but not all of the sub-sector descriptions in the CPC. Exhibit 3-1 lists the subsectors in telecommunications services are as follows according to the W120.

Exhibit 3-1
Classification Nomenclature (WTO GATS W/120)

a. Voice telephone services (7521)	h. Electronic mail (7523)*
b. Packet-switched data transmission services (7523)*	i. Voice mail (7523)*
c. Circuit-switched data transmission services (7523) *	j. on-line information and data base retrieval (7523)*
d. Telex services (7523)*	k. electronic data interchange (7523)*
e. Telegraph services (7522)	l. enhanced/value-added facsimile services, including store and retrieve (7523)*
f. Facsimile services (7521 + 7529)*	m. code and protocol conversion
g. Private leased circuit services (7522 + 7523)*	n. On-line information and/or data processing (843)*
	o. Other

**The service constitutes only a part of the range of activities covered by the CPC concordance (e.g. voice mail is only a component of CPC item 7523).*

WTO negotiators created a distinction between (i) “basic” services, which involve the real-time transmission of customer supplied information without change in form or content (left side of the column above) , and (ii) “enhanced” or "value-added" services, which are generally computer-enhanced (right side of the column above). Thus, in most GATS schedule, telecommunications services are broken down between basic and value-added services and then further into subsectors. Generally, the Reference Paper obligations apply only to “basic” services.

With respect to basic services, negotiators reached an understanding[50] that a listed basic service covers, unless otherwise stated:

- Local, long distance and international service,
- Any wire-based or wireless technology,
- Facilities-based or resale-based supply and
- Public or non-public (closed user group) services.

[50] This understanding is reflected in “Notes for Scheduling Basic Telecom Services Commitments, S/GBT/W/2/Rev. 1 (Jan 16, 1997). This Note was issued by the Chairman on the Group on Basic Telecommunications, and is not legally binding. However, most accession countries have included the Note as part of their GATS schedule, which gives it legal effect.

DESCRIPTION OF SPECIFIC GATS OBLIGATIONS

These obligations apply only to services providers and services that are included in the Schedule of Specific Commitments.

Transparency

GATS Article III requires a Member to notify the WTO Council for Trade in Services of any new measures or changes to existing measures affecting services for which specific commitments have been made.

Domestic Regulation

Article VI states that in sectors where specific commitments have been undertaken, a Member has to administer applicable measures in a "reasonable, objective and impartial manner." Article VI also requires that:

- If licensing is required, the relevant authority must inform the applicant of the decision concerning the application "within a reasonable period of time" after the application is received and also, upon request, about the status of the application; and
- All qualification procedures, technical standards and licensing requirements must be
  - Based on objective and transparent criteria, such as competence and ability to supply the scheduled service;
  - Not more burdensome than necessary to ensure the quality of the service; and
  - Not in themselves a restriction on the supply of the scheduled service.

The standards of relevant international organizations (such as the International Telecommunication Union and the International Standards Organization) are taken into account in determining whether technical standards, licensing procedures and qualification procedures meet the GATS requirements.

Article IX prohibits a Member from applying restrictions on international transfers and payment for current transactions relating to its specific commitments, though there is an exception in case of serious balance-of-payment and external financial difficulties.

REFERENCE PAPER OBLIGATIONS

The Reference Paper obligations relate to competition safeguards, interconnection to the dominant carrier, transparency, universal service, allocation of scare resources and impartiality of the regulator. Lao PDR is proposing to undertake the Reference Paper obligations as part of its 6th Package of Commitments under the AFAS. If Lao PDR includes the Reference Paper in its AFAS and GATS Schedule of Specific Commitments, it would have the following obligations.

Non-Discrimination

The Reference Paper requires that the decisions of and the procedures used by the regulator be impartial with respect to all market participants. This makes clear that the regulator cannot favor the incumbent telecom provider and must provide all service suppliers with similar treatment.

Transparency

The Reference Paper requires that the regulator make publicly available all the licensing criteria, the period of time which is normally required to reach decisions on license applications and the terms and condition of individual licenses. Upon request from an applicant whose license is denied, the regulator must provide the reasons for the denial.

The Reference Paper does not require the regulator to set a deadline by which license decisions must be made, but rather to establish a time period that is "normally" required to reach licensing decisions. A WTO Member does not violate its commitments if it occasionally exceeds the "normal" period.

Competition Safeguards

The Reference Paper contains significant competition safeguards to prevent a "major supplier" from abusing its market position. A "major supplier" is a company that controls essential facilities or has the ability to materially affect the terms of participation in the market for telecommunications services. In the fixed line market, Lao Tel is clearly a "major supplier." In the mobile services market, the regulator would have to analyze whether any of the providers are a major supplier.

The Reference Paper requires that Lao PDR have in place measures (laws, decrees or regulations) that prohibit anti-competitive conduct. The Reference Paper provides some examples of anti-competitive practices – cross-subsidization, improper use of information, failure to make available information about the network -- but this list is not exclusive of the types of behavior that would be anti-competitive and should be prohibited.

The Reference Paper does not define the specific measures that must be adopted to protect against anti-competitive actions. It could mean requiring the structural separation of various lines of business of the major supplier or non-structural accounting separation. Protecting proprietary information may mean adopting prohibitions on unauthorized release of competitor's business and marketing plans, supported by adequate penalties. Measures to require public availability of technical and commercial information could refer to standards, network changes, additions or deletions, processing requests, timing changes and billing arrangements.

In addition, the Reference Paper requires a Member to have in place measures that prevent joint or collusive behavior as a result of the reference to "suppliers who, alone or together, are a major supplier." This can be accomplished through regulations specific to the telecom sector or through more general competition law.

Interconnection

Requiring interconnection is a fundamental principle of the Reference Paper. Interconnection is defined very broadly to cover all types of telecommunications services that are included in a WTO Member's Schedule. The regulator must ensure that a major supplier, provides interconnection:

- At any technically feasible network point
- under non-discriminatory terms, conditions and rates
- of a quality no less favorable than provided for its own like services, those of non-affiliated suppliers or subsidiaries or other affiliates
- in a timely fashion
- on non-discriminatory terms, conditions and rates
- at cost-oriented rates
- sufficiently unbundled so that the supplier need not pay for network components it does not need
- on request, at network termination points other than those offered most users, subject to reasonable charges.

In practice, the regulator must ensure that a major supplier not discriminate in location, information, ordering procedures, ordering intervals, provisioning intervals, billing arrangements, maintenance and testing, characteristics of interconnection, credit terms and warranties or guarantees of service.

The Reference Paper does not define terms such as "reasonable," "unbundled," "cost-oriented," "timely," etc. A WTO dispute settlement panel, established to hear a dispute between the United States and Mexico regarding the rates charged by Telmex (the incumbent carrier) for international termination, interpreted "cost-oriented" to mean "related to the costs incurred in supplying the service." It said that the term "reasonable" suggested that the interconnection rates should be "suitable to the circumstances or purpose", i.e. that they should reflect the overall objectives of the provision that the rates represented the costs incurred in providing the service.

The panel concluded that Telmex did not interconnect with U.S. suppliers at cost-oriented rates. It accepted evidence provided by the United States (and not contradicted by Mexico) that the same network elements used to connect U.S. suppliers, when used for domestic interconnection, cost on average 75 percent less than international interconnection. The panel found that "a difference of over 75 percent above Telmex's demonstrated cost-ceiling is unlikely to be within the scope of regulatory flexibility allowed by the notion of 'cost-oriented rates' in the Reference Paper."

In addition to specifying the terms of interconnection, the Reference Paper also requires that procedures applicable to obtaining interconnection to a major supplier's network be publicly available. A major supplier also must publish a reference interconnection offer or make public all its interconnection agreements. Lao PDR must establish an independent body (which could be the regulator) to resolve disputes between a major supplier and its competitors regarding the appropriate terms, conditions and rates for interconnection. This interconnection dispute settlement mechanism must be available upon request and must make decisions "within a reasonable period of time." The manner of resolving interconnection disputes is not dictated, but can be by reference to terms, conditions or rates already established or based on the facts presented to the decision-making body.

Domestic Regulation

The Reference Paper focuses specifically on two areas that are often the subject of regulation – universal service and allocation and use of scarce resources. With respect to universal service, it is clear that each WTO Member has the right to define the scope of universal service and the specific means of achieving universal service. The general GATS regulatory disciplines govern the creation and administration of universal service obligations – they must be transparent, non-discriminatory, competitively neutral and not more burdensome than necessary for the kind of universal service adopted.

Scarce resources include radio spectrum, telephone numbers and rights of way. The same general principles apply to procedures for the use and allocation of these resources. The allocation must be done in an objective, timely, transparent and non-discriminatory manner. In addition, the current state of allocated frequencies must be made publicly available, though allocations for government use do not have to be specified.

The final provision of the Reference Paper deals with the regulatory body. Although a WTO Member does not have to create a particular kind of regulatory body, whatever government entity is charged with regulating the telecommunications sector must be independent and not accountable to an operator of telecommunications services. In addition, the regulator must act impartially with respect to all operators.

Summary of Obligations Regarding Telecommunications Services

Below is a summary of the obligations that a WTO Member would have if it included in its Schedule of Specific Commitments market access and national treatment for all basic telecommunications services and enhanced telecommunications services and adopted the Reference Paper.

Non-Discrimination

- Provide like treatment to services and service suppliers from all WTO Members, and
- To the extent included in a Schedule of Specific Commitments, provide like treatment to foreign and national services and service suppliers.

Transparency

- Inform the applicant within a reasonable period of time of the decision regarding an application (if a license is required),
- Provide applicants with the status of the application, if requested,

- Publish all licensing criteria and normal period of time required to review and issue licenses, and
- Provide reasons for denial of license.

Domestic Regulation

- Administer all laws, rules and regulations concerning scheduled services in a reasonable, objective and impartial manner.
- Qualification procedures and licensing requirements must be
  - Based on objective and transparent criteria,
  - Not more burdensome than necessary to ensure the quality of service, and
  - Not a restriction on the supply of the service.
- Do not impose restrictions on international transfers and payments for current transactions relating to scheduled services.

Competition Safeguards

- Ensure that a monopoly supplier does not discriminate in the provision of its monopoly service,
- Ensure that a monopoly supplier does not abuse its monopoly position if it competes against other suppliers in a sector in which specific commitments have been made,
- Have in place measures to prevent anti-competitive practices by a "major supplier," which is defined as a supplier that has the ability to affect prices in the market (anti-competitive practices include, but are not limited to, cross-subsidization, improper use of information and failure to make available information about the network), and
- Have in place measures that prevent joint or collusive behavior, *i.e.*, suppliers who, alone or together, are a major supplier.

Interconnection

- A Member must ensure that a major supplier provides interconnection:
  - At any technically feasible network point,
  - On non-discriminatory terms, conditions,
  - At non-discriminatory and cost-oriented rates,
  - Of a quality no less favorable than provided for its own like services, those of non-affiliated suppliers or subsidiaries or other affiliates,
  - In a timely fashion,
  - Sufficiently unbundled so that the supplier need not pay for network components it does not need, and
  - Upon request, at network termination points other than those offered most users, subject to reasonable charges.

- Procedures applicable to obtaining interconnection to the major supplier's network must be publicly available.
- The major supplier also must publish a reference interconnection offer or make public all its interconnection agreements.
- There must be an independent body to resolve disputes between the major supplier and its competitors regarding the appropriate terms, conditions and rates for interconnection. This interconnection dispute settlement mechanism must be available upon request and must make decisions "within a reasonable period of time."

Universal Service

- Each Member has the right to define the scope of universal service and the specific means of achieving universal service.
- Universal service programs must be created and administered in a manner that is transparent, non-discriminatory and competitively neutral and not more burdensome than necessary for the kind of universal service adopted.

Scarce resources

Scarce resources include radio spectrum, telephone numbers and rights of way.

- The allocation of scarce resources must be done in an objective, timely, transparent and non-discriminatory manner.
- The current state of allocated frequencies must be made publicly available, although allocations for government use do not have to be specified.

Impartial Regulator

- The regulatory body must be separate from and not accountable to an operator of telecommunications services, and
- The regulatory body must act impartially with respect to all operators.

RELATIONSHIP BETWEEN US-LAO BTA AND GATS

Article V of the GATS permits WTO members to enter into "an agreement liberalizing trade in services" without providing the benefits of that agreement to other WTO members if certain conditions are met. The agreement must have substantial sectoral coverage and provide for elimination of substantially all national treatment discrimination. *The USBTA probably does not meet the conditions set in Article V because it does not contain a mutual elimination of discriminatory provisions in all services sectors.* While Lao PDR made many commitments, the United States referred only to its existing GATS commitments and undertook no new obligations with respect to services vis-à-vis Lao PDR. Also the United States never notified the USBTA to the WTO as a preferential trade agreement as required by Article V of the GATS.

As a result, upon accession to the WTO, through operation of the most-favored-nation provision in Article II(1) of the GATS, all WTO members would receive the benefits of the market access and national treatment commitments in the USBTA. The only way to avoid this result is for Lao PDR to take a MFN exemption with respect to measures implementing the USBTA under Article II(2) of the GATS. Alternatively, Lao PDR could seek agreement during accession to treat the USBTA as a preferential trade agreement allowed under Article V, thereby avoiding the effect of Article II(2).

The issue of MFN treatment could have arisen as a result of the U.S.-Vietnam Bilateral Trade Agreement (US-Vietnam BTA) upon Vietnam's accession to the WTO. Like the USBTA, the US-Vietnam BTA did not include mutual obligations and was not notified to the WTO under Article V. The issue did not arise, however, because Vietnam's GATS commitments either equal or exceed those undertaken in the US-Vietnam BTA.

In the telecommunications sector, the US-Vietnam BTA included numerous restrictions on market access and national treatment in all services sectors in the US-Vietnam BTA. There are foreign ownership restrictions, phase-in of commitments and limited sectoral coverage. In basic telecom services, for example, Vietnam made no Mode 1 commitment. In mode 3, the US-Vietnam BTA provided for an opening of up to 50 percent foreign ownership in value-added services and 49 percent in basic telecom services over an extended period from entry into force of the BTA. In addition, Vietnam reserved the right to limit national treatment of U.S. investment in telecommunications.

Vietnam improved its commitments in telecommunications services as part of the WTO accession process. For example, it introduced a distinction between facilities and non-facilities based telecom services, allowing 51 percent ownership in non-facilities based services upon accession to the WTO and 65 percent after three years from accession. For private networks operating on a non-facilities basis, its WTO commitments allows 70 percent foreign ownership upon accession. Therefore upon accession, the question of MFN treatment for telecom services commitments (and all other commitments) never arose.

FLEXIBILITIES AND OPTIONS FOR PHASING IN COMMITMENTS

Flexibility for Least Developed Country

The GATS includes provisions that provide flexibility for least-developed countries (LDCs) in respect to the commitments they should undertaken in services, as an initial WTO member and as part of accession to the WTO. GATS Article IV recognizes the "special difficulty" of LDCs in assuming GATS commitments. Article XIX.2, states that developing countries can assume commitments on a lesser scale "in line with their development situation."

In addition, WTO members have adopted guidelines for accession by LDCs. The GATS Subcommittee on Least Developed Countries agreed to guidelines on LDC accessions.[51] The

[51] Communication to the General Council, Accession of Least-Developed Countries, Draft Decision WT/COMTD/LDC/12 (5 December 2002).

guidelines state that WTO members will “exercise restraint” in making requests of LDCs seeking membership, and that acceding LDCs “shall offer access through reasonable concessions and commitments…commensurate with their individual development, financial and trade needs.” It also calls for reasonable transition periods to commitments and that “optional sectoral market access initiatives shall not be a precondition for accession to the WTO.” These guidelines do not carry the weight of a legal right under the WTO, but provide some support for LDCs in the negotiation of its Schedule of Specific Commitments.

The challenge for an LDC seeking membership is to take advantage of these declarations in light of members’ legal rights in setting the price for accession. Members can indefinitely delay an accession because accession terms must be agreed by consensus. WTO members have demanded and gotten significant sectoral coverage during the accession process, notwithstanding the GATS provisions and guidelines cited above. This is particularly true for telecommunications and financial services, which many members believe are crucial for economic development generally and the basis for all trade in services. As can be seen in the chart attached as Appendix XX, Vietnam, Cambodia, Nepal and Jordan undertook significant obligations in telecommunications service as part of their accession.

Options for Staging Market Access or National Treatment Commitments

There does remain some flexibility for Laos in undertaking services commitments. Commitments can be staged to come into effect over a period of years. Staging can include a period of time before additional licenses are granted in a particular subsector. Permissible limits on foreign ownership can also be staged to come into effect over a period of years. Staging can occur with respect to the modes of supply. For example, cross-border services can be allowed a certain number of years from WTO accession.

The schedules in Appendix A demonstrate the flexibility in scheduling commitments in telecom services. Many of the commitments are scheduled to go into effect one or more years from accession.

4. Comparison of Potential Trade Obligations with Lao PDR's Current Legal Framework

The following chart compares the obligations under the GATS,[52] USBTA, AFAS and AEC Blueprint with (i) existing laws and decrees, (ii) a proposed draft law, the "Communications Act 2004" and (iii) a draft offer to be presented to ASEAN as part of the 6th Package of Commitments under the AFAS. The following laws and decrees have been reviewed:

- Law on Telecommunications, No. 02/NA (10 April 2001) ("Telecom Law")
- Labour Law, No. 002/NA (14 March 1994) ("Labour Law")
- Law on Promotion of Foreign Investment, No. 11/NA (22 October 2004) ("Investment Law")
- Decree Regarding the Implementation of the Law on the Promotion of Foreign Investment, No. 301/PM (12 October 2005) ("Decree 301")
- Decree Creating the National Authority of Posts and Telecommunications ("NAPT"), No. 375/PM (22 October 2007) ("Decree 375")
- Decree on Trade Competition ("Competition Decree"), No. 15/PMO (4 February 2004)
- Decree on the Management of Foreign Exchange and Precious Metals ("Decree on Foreign Exchange"), Presidential Decree Law No. 01/OP (August 9, 2002)

As noted previously, potential obligations under the GATS, USBTA, AFAS and AEC fall into four categories: non-discrimination, transparency, domestic regulation and competition safeguards.

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[52] The GATS obligations are based upon a "full" set of commitments -- unlimited market access, 100 percent foreign ownership and national treatment commitments, as well as incorporation of the Reference Paper as an additional commitment.

Non-discrimination. In the area of non-discrimination, the comparative chart demonstrates that Laos' laws and decrees do not provide non-discriminatory treatment to foreign service providers. The unwritten policy of limiting foreign ownership in basic telecom services providers is inconsistent with the national treatment obligation in the USBTA and potential GATS obligations. The draft law is not sufficiently clear about market access for the private sector.

Transparency. Transparency obligations relate to publication of information both by the Government and by the major suppliers of telecommunications services. Current Lao laws and decrees are not sufficient to meet these transparency obligations. There are numerous unwritten policies affecting telecommunications and no central location for publication of existing regulations. Telecommunications network and service providers are not required to make any information available about their networks, pricing or terms and conditions of service.

Domestic Regulation. Obligations in this area relate to review of administrative decisions, regulations on licensing service providers, use of foreign exchange and access to the telecommunications network and services. Current Lao laws and decrees provide for free exchange of currency and the Draft Telecom Law requires access to and use of the telecommunications network and services. There are no provisions, however, regarding appeal of administrative decisions or licensing.

Competition Safeguards. Competition safeguards refer to measures to prevent anti-competitive conduct of the major suppliers of telecommunications networks and services, as well as measures to ensure impartial regulation of telecommunications service providers. Most of these requirements are contained in the Reference Paper, which is part of the USBTA and a potential GATS obligation. The Competition Decree and the Draft Telecom Law sufficiently address general anti-competitive conduct, such as price-fixing and collusion. However, the provisions in the Draft Telecom Law regarding interconnection obligations are not sufficient. For example, there is no requirement that major suppliers provide cost-oriented interconnection. There are no provisions regarding impartiality of the regulator, non-discriminatory allocation of scarce resources and non-discriminatory application of universal service charges.

Source	Description of Obligation	Existing Lao Laws/Decrees	Proposed Draft Law	Comments
NONDISCRIMINATION				
GATS Art. II(1) AFAS Art. IV(1) and IV bis	Laws and regulations provide for most-favored nation treatment Commitments are applied on a MFN basis within ASEAN, except in cases of bilateral free trade agreement between two ASEAN members			This obligation does not need to be reflected in law but laws should be reviewed to make sure there is no discrimination among service suppliers based on their country of origin
GATS Art. XVII(1) USBTA Art. 33	Laws and regulations provide for national treatment – Limitations are permitted if included in schedule of specific commitments Note: Lao PDR did not schedule any limitations on national treatment	Unwritten policy limiting foreign ownership in basic telecom services to 49 percent Decree 301 Art. 25, 42 Investment in telecom subject to receipt of concession rights from government, requiring approval of Prime Minister after review by Committee for Planning and Investment (“CPMI”), memorandum of understanding and contract on activities development Art. 28 Permanent foreign labor limited to 10 percent of total labor in enterprise (Also Investment Law Art. 12(5)) Art. 32.1 20 percent of total registered capital has to be imported within 60 working days from date of establishment Art. 57 Foreign investment has to report to CPMI every six months and is subject to inspection Labour Law Art. 7 Employment of foreign workers shall be limited in number and in duration and detailed scheme for transfer of skills to Lao workers shall be established		This policy and Decree 301 are inconsistent with the national treatment obligation in the USBTA. To maintain these provisions as part of GATS commitments, Lao PDR would have to schedule them and obtain MFN exemption from trading partners because treatment offered to the United States is different.

Source	Description of Obligation	Existing Lao Laws/Decrees	Proposed Draft Law	Comments
AEC Blueprint ¶ 21	National Treatment Allow ASEAN foreign ownership in e-ASEAN sector of 51 percent by 2008 and 70 percent by 2010	Proposed ASEAN schedule caps foreign ownership at 49 percent[53] Decree No. 301, Art. 28 Permanent foreign labor limited to 10 percent of total labor in enterprise		The proposed schedule is inconsistent with the AEC Blueprint
GATS Art. XVI USBTA Art. 32 AEC Blueprint ¶21	Market Access -- Limitations that are permitted, if scheduled, are: limitations on the number of service suppliers (numerical quota, monopoly, exclusive service supplier or application of an economic needs test); limitations on the total number of service operations or on the total quantity of service output; limitations on the total number of natural persons that may be employed in a particular service sector or that a service supplier may employ; measures which restrict or require specific types of legal entity or joint venture through which a service supplier may supply a service; and limitations on foreign ownership. NOTE: Lao PDR did NOT schedule any limitations on market access in the USBTA.	Unwritten policy limiting foreign ownership in basic telecom services to 49 percent and entry only by investment in current licensees Unwritten policy requiring US$200,000 capitalization to get license to provide Internet services Telecom Law Art. 4 – Government promotes competitive and joint investments by domestic and foreign investors in the construction, development and extension of telecom networks and telecom services in the forms, types and scope determined by the government.	Art. 26(1) Subject to this Act, the Government shall have the exclusive right for the operation and provision of network facilities, network services, application services and content application services in and out of Lao PDR. (2) The right conferred on the Government by sub-article (1) shall include the rights of establishing, installing, maintaining, developing, constructing, promoting, hiring, selling and providing network facilities, network services, applications service and content application services in Lao PDR.	The limit on foreign ownership, the requirement to enter only through investment in an existing licensee and the capitalization requirement are inconsistent with the USBTA. The actual impact of Telecom Law Art. 4 is not clear but could pose market access barriers if the government (and not the investor) determines the “form, type and scope” of the investment. To maintain these provisions as part of GATS commitments, Lao PDR would have to schedule them and obtain MFN exemption from trading partners, other than the United States. Art. 26 of the draft law appears to take away all market access for the private sector. The scope of this provision needs to be reviewed.
AEC Blueprint ¶21	Remove all restrictions for eASEAN services on Modes 1 and 2 by 2008 and Mode 3 by 2015 Access to ten subsectors in 2010and 15 in 2013	Proposed schedule states Mode 1 restricted to service through existing operators Mode 3 subject to local incorporation and possible limitation on number of licenses Foreign ownership limited to 49 percent in both		The proposed schedule does not meet the AEC Blueprint objective for Mode 1.

53 This information is based on the best available information at the time the document was drafted, a draft of Lao PDR’s ASEAN submission. In fact, Lao PDR’s Sixth Schedule submitted to ASEAN subsequently does NOT contain a limit on foreign ownership.

Source	Description of Obligation	Existing Lao Laws/Decrees	Proposed Draft Law	Comments
		basic and value-added telecom services More than ten subsectors are listed		
		TRANSPARENCY		
GATS Art. III USBTA Art. 4(1), (5) and (6)	Each Member shall publish promptly and, except in emergency situations, at the latest by the time of their entry into force, all relevant measures of general application which pertain to or affect the operation of the GATS. International agreements pertaining to or affecting trade in services to which a Member is a signatory shall also be published. Every measure (law, regulation, rules, decree, etc.) must be published before it is effective. Each publication shall include the effective date of the measure, the services affected, the relevant authorities charged with implementation and a contact point within each authority from which relevant information can be obtained. Each party shall designate an official journal in which all measures of general application shall be published on a regular basis. Each party shall make copies of the official journal available to the public.	The laws of Lao PDR are available in English on the website of the National Assembly.	Art. 5(2) A declaration under this Act and any applicable law shall be published in the [Gazette].	There is no "official journal" in which all laws and decrees are published. The information required by the USBTA is not published. The draft law is a first step because it would require the publication of decrees or regulations pertaining to telecom services but the provision does not fully implement the USBTA requirement.
USBTA Art. 4(2)	Each party shall provide access to data on the national economy and individual sectors, including information on foreign trade.			There is no law requiring that such data be published with respect to telecom services.
USBTA Art. 4(3)	Each Party shall allow, to the extent possible, an opportunity to comment on the formulation of measures affecting trade in services.			There is no provision for public comment on laws or decrees prior to adoption.

Source	Description of Obligation	Existing Lao Laws/Decrees	Proposed Draft Law	Comments
USBTA Art. 4(4)	All measures that are not currently available shall be made available. Only measures that are publicly available will be enforced.			Lao PDR has numerous unwritten policies affecting telecom services. This is not consistent with the USBTA.
GATS Telecom Annex ¶4	Relevant information on conditions affecting access to and use of public telecommunications transport networks and services is publicly available, including: tariffs and other terms and conditions of service; specifications of technical interfaces with such networks and services; information on bodies responsible for the preparation and adoption of standards affecting such access and use; conditions applying to attachment of terminal or other equipment; and notifications, registration or licensing requirements, if any.		Art. 66 The Authority shall maintain and make available to the public a register of tariffs for services, which may include terms and conditions, in addition to pricing. Art. 57 Numbering and electronic addressing plan shall be made available to the public. Art. 58 The Authority shall determine technical standards, subject to approval by the Ministry.	Current law does not require telecom network and service providers to make any information available. There is no information published on technical standards for network equipment. The Draft law goes part way by requiring publication of tariffs and other terms and conditions for services, as well as the number plan and electronic addressing plan. It also designates the regulator as the body that will set standards. It does not require publication of network technical interfaces, conditions on attaching terminal equipment to the network or any licensing requirements.
DOMESTIC REGULATION				
GATS Art. VI(1) USBTA Art. 4(7)	In sectors where specific commitments are undertaken, each Member shall ensure that all measures of general application affecting trade in services are administered in a reasonable, objective and impartial manner.			There is no law requiring objectivity or impartiality in carrying out government actions.
GATS Art. VI(2)(a)	There is a mechanism for prompt review of regulatory decisions at the request of the affected service supplier. If the review procedures are not independent of the regulatory body entrusted with the decision concerned, then measures must be in place to provide for an objective and impartial review.			There is no review mechanism in place or contemplated by the Draft Law.
GATS Art. VI(3)	Where authorization is required for the supply of a service on which a specific			There is no law or decree on licensing and no set of procedures related to licensing.

Source	Description of Obligation	Existing Lao Laws/Decrees	Proposed Draft Law	Comments
	commitment has been made, the competent authorities of a Member shall, within a reasonable period of time after the submission of an application considered complete under domestic laws and regulations, inform the applicant of the decision concerning the application. At the request of the applicant, the competent authorities of the Member shall provide, without undue delay, information concerning the status of the application.			The Draft Law does not provide any procedures.
GATS Art. XI USBTA Art. 7(2)	A Member shall not apply restrictions on international transfers and payments for current transactions relating to its specific commitments.	Investment Law Art. 12(8) Foreign investors have right to repatriate profits, capital and other income Decree on Foreign Exchange, Art. 3 Those who need to use foreign exchange for any of the objectives stipulated in the Article 5 of this Decree Law may purchase foreign exchange at a commercial bank or a foreign exchange bureau in accordance with the regulations of the Bank of the Lao PDR. Art. 5 Foreign exchange sale of a commercial bank and foreign exchange use of both resident and non-resident in the Lao PDR shall be carried out in accordance with the regulations of the Lao PDR and to the following targets: (5). For the repatriation or transfer to the third country the profit, the dividend, the capital, the interest, other service charges of the foreign investors and the salaries and wages of foreign workers as stipulated in the Law Governing the Promotion and Management of the Foreign Investment in the Lao PDR;		The Investment Law implements these GATS and USBTA provisions.
USBTA Art. 7(1)	Unless otherwise agreed by the parties, all commercial transactions shall be made in US dollars or another freely	Decree on Foreign Exchange, Art. 3 A person, a legal person shall not directly pay nor receive in foreign exchange for the goods and		The Decree on Foreign Exchange limits the use of foreign currency to areas approved by the Government. These areas are not

Source	Description of Obligation	Existing Lao Laws/Decrees	Proposed Draft Law	Comments
	convertible currency.	services rendered to them or by them, nor settle the debts in foreign exchange within the Lao PDR except for the case the Bank of the Lao PDR has proposed and approved by the Government. Decree of Foreign Exchange Art. 5 Foreign exchange sale of a commercial bank and foreign exchange use of both resident and non-resident in the Lao PDR shall be carried out in accordance with the regulations of the Lao PDR and to the following targets: (1) To pay for imported goods; (2) To pay for import-export related services including but not limited to transit transportation, insurance and transit warehousing charges.		clear. The use of foreign currency in commercial transactions should be clarified to conform to the USBTA.
USBTA Art. 7(3)	Each party shall grant the better of MFN or national treatment with respect to (i) opening and maintaining banks accounts and access to funds deposited. (ii) payments, remittances and transfers of convertible currencies or financial instruments and (iii) rates of exchange.	Decree on Foreign Exchange Art. 7 The Bank of the Lao PDR shall announce the exchange rate derived from the market and officially adjusted, based on the daily average trading rate of the inter-bank market to the commercial banks and the foreign exchange bureaus as a reference to determine their own daily trading rates. Decree on Foreign Exchange Art. 8 A person, a legal person as a resident and a non-resident of the Lao PDR who legally earns foreign exchange may open a bank deposit account in foreign currency at a commercial bank within the Lao PDR and shall receive interest in foreign currency in accordance with the regulations of the commercial bank and shall use the money in the account in accordance with the Articles 3 and 5 of this Decree Law. Art 9 A person, as a resident and a non-resident of the Lao PDR may hold foreign exchange, may deposit it at a commercial bank within the Lao		The Decree on Foreign Exchange appears to treat foreigners the same as nationals with respect to bank accounts and payments outside of Lao PDR.

Source	Description of Obligation	Existing Lao Laws/Decrees	Proposed Draft Law	Comments
		PDR and use it in accordance with Articles 3 and 5 of this Decree Law. Art. 10 A non-resident of the Lao PDR may open a bank deposit account in Kip, obtained from selling foreign exchange to a commercial bank or a foreign exchange bureau, at a commercial bank within the Lao PDR and may use the balance in the account to purchase back foreign exchange		
GATS Telecom Annex ¶5	A WTO member must ensure that all services suppliers (including telecom service suppliers) have access to and use of network and services on reasonable and non-discriminatory terms and conditions If a WTO member makes market access commitments on any service sector, the service suppliers in those sectors must have access to and use of the public network, including leased lines, on reasonable and non-discriminatory terms and conditions (including price)		Art. 72 (1) A licensee shall, where requested by another licensee ("requesting licensee"), enter into agreements with the requesting licensee for the access to and interconnection of network facilities and network services on such terms and conditions as may be agreed to by the licensees. (2) The access provided by the licensees shall be: (a) on an equitable and non-discriminatory basis; and (b) of at least the same or more favourable technical standard and quality as the technical standard or quality provided in the licensees' own network facilities or network services.	There are no current provisions implementing this obligation. The Draft Law provision is sufficient, except that there is no reference to access to and use of private lines.
Competition Safeguards				
GATS Art. VIII(1) and (3)	There are measures in place to require a monopoly supplier to provide service in a non-discriminatory manner.	Not applicable because there is no monopoly		Not applicable because there is no monopoly.
Reference Paper Definitions	A "major supplier" is a supplier which has the ability to materially affect the terms of participation (having regard to price and supply) in the relevant market for basic telecommunications services as a result of:	Competition Decree, Art. 6 The Trade Competition Commission has the power to: - Determine market share, and the total volume amount of a business which is found to be dominating the market - Determine market share or assets that are		In order to apply Reference Paper obligations related to interconnection, there must be a way to identify "major supplier" in the telecom sector. The Competition Law gives the Trade Competition Commission the power to determine if a company is dominant but the regulator also needs this

Source	Description of Obligation	Existing Lao Laws/Decrees	Proposed Draft Law	Comments
	(a) control over essential facilities; or (b) use of its position in the market.	considered to dominate business management of another business entity		authority.
Reference Paper §§ 1.1, 1.2	There must be measures in place to prevent a major supplier from engaging in anti-competitive conduct. This includes prohibition on price-fixing, cartels, collusion, anti-competitive cross-subsidization, improper use of customer information, etc.	Competition Decree, Art. 6 The Trade Competition Commission has the power to: - Monitor and control business activities and order any business entity to solve, change, suspend or stop its behavior that is unfair Competition Decree Art. 10 It is prohibited for a business entity to act or behave so as to cause losses directly or indirectly, by such conduct as dumping, limiting or intervening with intent to eliminate other business entities. Art. 11 It is prohibited for a business entity to collude or make arrangements to engage in unfair trade practices in any form.	Art. 76 A licensee shall not engage in any conduct which has the purpose or effect of substantially lessening competition in a communications market. Art. 77 A Licensee shall not enter into any understanding, agreement or arrangement with any person, whether legally enforceable or not, which provides for: (a) rate fixing; (b) market sharing; (c) boycott of a supplier of customer equipment; or (d) boycott of another competitor. Art. 78. A licensee shall not, at any time or in any circumstances, make it a condition for the provision or supply or a product or service in a communications market, that the person acquiring such product or service in that communications market is also required to acquire or not acquire any other product or service either from the licensee or from another person. Art. 79. The Authority may, subject to the written approval of the Minister, direct a licensee in a communications market to cease conduct in that communications market which has, or may have, the effect of substantially lessening competition in any communications market. Art. 80. A licensee shall not discriminate between persons who acquire services of a particular kind in relation to: (a) the charges for the services; (b) the terms and conditions on which the services are supplied; or	Both the Competition Law and the Draft Law are sufficient to implement this obligation.

Source	Description of Obligation	Existing Lao Laws/Decrees	Proposed Draft Law	Comments
			(c) the performance characteristics of the service.	
Reference Paper § 2.2	Require that a major supplier provide interconnection at any technically feasible point in the network. Such interconnection is provided: under non-discriminatory terms, conditions (including technical standards and specifications) and rates and of a quality no less favorable than that provided for its own like services or for like services of non-affiliated service suppliers or for its subsidiaries or other affiliates; in a timely fashion, on terms, conditions (including technical standards and specifications) and cost-oriented rates that are transparent, reasonable, having regard to economic feasibility, and sufficiently unbundled so that the supplier need not pay for network components or facilities that it does not require for the service to be provided; and upon request, at points in addition to the network termination points offered to the majority of users, subject to charges that reflect the cost of construction of necessary additional facilities.	Telecom Law Art. 14(5) Telecom service providers have rights and duties to ensure interconnection and allocation of signal systems and telecom numbers of networks and information centres with other telecom service providers for the transmission of telecom information to their destinations within and outside the country	Art. 30 All individual licenses granted under this Act shall include the general license condition requiring (c) a licensee to enter into agreements with another licensee for the access to and interconnection of network facilities and network services on such terms and conditions as may be agreed to by the licensee and such other licensees or, in default of agreement, as may be determined by the Authority. Art. 72 (1) A licensee shall, where requested by another licensee ("requesting licensee"), enter into agreements with the requesting licensee for the access to and interconnection of network facilities and network services on such terms and conditions as may be agreed to by the licensees. (2) The access provided by the licensees shall be: (a) on an equitable and non-discriminatory basis; and (b) of at least the same or more favourable technical standard and quality as the technical standard or quality provided in the licensees' own network facilities or network services.	Current law is not sufficient. The Draft Law addresses some, but not all, of the Reference Paper requirements. This is perhaps because the Draft Law applies to all licensees, not just those with market power. Major suppliers should have additional obligations, such as cost-oriented pricing and timeliness, and providing interconnection to unbundled elements.
Reference Paper § 2.3	Require that procedures for interconnection with major supplier are publicly available			There is no such provision in current law or the Draft Law.
Reference Paper § 2.4	Require major supplier to publish interconnection agreements or a reference interconnection offer		Art. 75 (1) Any access agreement between the licensees for the provision of network facilities or network services shall be in writing and shall be registered with the Authority who shall maintain a register of access agreements. (2) The register may consist of a public part	The Draft Law allows confidential treatment of terms and conditions in an interconnection agreement. This is possibly because the Draft Law applies to all licensees. Major suppliers should be required to publish the entire agreement or

Source	Description of Obligation	Existing Lao Laws/Decrees	Proposed Draft Law	Comments
			and confidential part as agreed between the licensees	a reference interconnection offer applicable to all providers seeking interconnection.
Reference Paper § 2.5	Provide a dispute settlement mechanism for a service supplier requesting interconnection with a major supplier which is available: at any time or after a reasonable period of time which has been made publicly known The dispute settlement body must be an independent domestic body, which may be an independent regulatory body, which has the power to resolve disputes regarding appropriate terms, conditions and rates for interconnection within a reasonable period of time.		Art. 83 (1) Subject to sub-article (2), where the licensees are unable to resolve disputes in relation to or in connection with the supply of communications facilities or services including but not limited to the implementation of an interconnection agreement, either licensee may submit the matter in writing to the Authority to resolve the dispute. (2) The Authority shall only resolve a dispute referred to it in sub-article (1) where it is satisfied that the licensees have had reasonable opportunity to resolve the dispute and all attempts to resolve the dispute have failed (3) The Authority shall decide on any dispute referred to it in sub-article (1) within 30 days from the date of receipt of the request to resolve the interconnection dispute. (4) The decision of the Authority on any dispute referred to it in sub-article (1) shall be binding on the licensees to the dispute.	The provision of the Draft Law meets the obligation for a dispute settlement mechanism relating to interconnection.
Reference Paper § 3	Any universal service mechanism must be administered in a transparent, non-discriminatory, and competitively neutral manner. Universal service obligations must not be more burdensome than necessary.	Telecom Law Art. 5 The government authorizes the establishment of a Telecommunications Development Fund, contributions to such fund are from grants from domestic and foreign sources, international organizations and partially from telecom fees and telecom services charges	Art. 69 The Minister may direct the Authority to determine a universal service system including a Telecommunications Development Fund to promote the widespread availability and usage of communications services throughout Lao PDR under licences issued under the Act. Art. 70(1) The matters which may be addressed in a universal service system determined by the Authority may include but shall not be limited to: (a) the needs of underserved areas within Lao PDR;	Since the Fund has not been established, it is not possible to determine whether the Fund meets the Reference Paper obligations.

Source	Description of Obligation	Existing Lao Laws/Decrees	Proposed Draft Law	Comments
			(b) the needs of underserved groups within the community; (c) measures to encourage the installation of network facilities and the provision of network services or applications services to serve underserved areas and underserved groups; (d) the costs of providing such services; (e) the contribution amount and mechanism where all licensees are required to contribute to the Telecommunications Development Fund; and (f) such other matters as may be required by the Minister	
Reference Paper § 4	Where a license is required, make publicly available: all the licensing criteria and the period of time normally required to reach a decision concerning an application for a license and the terms and conditions of individual licenses. Provide the reasons for the denial of a license to an applicant upon request.		Art. 30 and Art. 44 sets out general license conditions for individual licensees and class licensees, respectively Art. 31 and Art. 45 In addition, the Minister may by declaration, determine and impose special individual licence conditions and special class license conditions.	The Draft Law describes the general terms and conditions for licensing but does not set out the criteria for issuing licenses or the time frame. Nor does it require notification of the reasons for denial of a license.
Reference Paper § 5	The regulatory body must be separate from, and not accountable to, any supplier of basic telecommunications services. The decisions of and the procedures used by regulators should be impartial with respect to all market participants.	Decree 375 creates NAPT as part of the Prime Minister's office	Art. 8 establishes Communications and Multimedia Regulatory Authority ("Authority"), which consists of Director General and Supervisory Committee and other members. The Minister is Chairman of the Supervisory Committee and the Minister appoints all members of the Authority. Art. 27 Minister has power to issue licenses (not Authority) Art. 33 Minister can modify, vary or revoke any individual license conditions Art. 35 Minister can suspend or revoke an individual license when it is deemed to be in	Since the government owns an interest in all the licensees, it is difficult to judge the impartiality of NAPT or the Authority proposed by the Draft Law. The Draft Law gives the Minister a great deal of power over licensing. At a minimum, any new law should affirmatively require impartiality by the regulators.

Source	Description of Obligation	Existing Lao Laws/Decrees	Proposed Draft Law	Comments
			the public interest. Art. 46(c) Minister can deregister class licensee when it is deemed in the public interest	
Reference Paper § 6	Any procedures for the allocation and use of scarce resources, including frequencies, numbers and rights of way, must be carried out in an objective, timely, transparent and non-discriminatory manner. The current state of allocated frequency bands must be made publicly available (except for identification of frequencies allocated for specific government).		Art. 53(1) The national frequency spectrum plan shall be made available to the public.	Since there is no current or proposed procedure for allocating scarce resources, it is not possible to judge whether the Reference Paper requirements are satisfied.

5. Recommendations/Policy Options

Lao PDR has implemented very few of its obligations with respect to trade in telecommunications services contained in the USBTA. The legal framework necessary to implement potential GATS or AFAS commitments currently does not exist in Lao PDR. Lao PDR's proposed schedule of commitments for the 6th Package of Commitments under the AFAS does not achieve the market openness and national treatment envisioned by the AEC Blueprint. In order to comply with the USBTA and prepare for AFAS and GATS commitments, Lao PDR will need to fundamentally alter its legal framework. In doing so, Lao PDR should seek development aid for training and for the assistance of persons who can help draft the laws and regulations that are needed.

One approach that Lao may want to consider is requesting legal and regulatory technical assistance as a condition precedent to assuming WTO obligations that are consistent with its USBTA obligations. If this is not attainable, then the objective should be included in the final Working Party report to set the aim and specific objectives of technical assistance to bring attention to the issue and help ensure that technical assistance will be delivered. However, the legal and regulatory changes that are required will take a number of years to accomplish and work should start well before WTO accession. .

Market Access and National Treatment

The USBTA, the GATS and the AEC Blueprint require market access and national treatment. In the case of the USBTA, there can be no foreign ownership limits, no limits on the number of licenses, no restrictions on foreign employees, etc. The AEC Blueprint calls for a minimum of 51 percent foreign ownership and no limits on market access for cross-border transactions as of 2008 and 100 percent market access and national treatment by 2015.

To comply with USBTA obligations and potential GATS commitments, as well as AFAS, Lao PDR needs to adopt a legal framework that

- Allows 100 percent foreign ownership
- Does not put limits on the number of licenses that will be issued
- Allows new entrants to decide the form of their investment and hire employees of their choice
- Eliminates the practice of regulating through unwritten policies

- Revises Decree 301 to remove the telecommunications sector from the category requiring enhanced government review, a memorandum of understanding with the government and approval of the Prime Minister, among other things

Other least-developed countries have negotiated phase-in of GATS commitments over a period of years. Lao PDR has agreed under the USBTA to allow unlimited market access and national treatment. The only way for Laos to undertake a phase-in of GATS commitments is to negotiate an MFN exception with its negotiating partners for that phase-in period or to negotiate acceptance of the USBTA as a preferential agreement under GATS Article V.

Transparency and Domestic Regulation

Transparency is a fundamental premise of the USBTA and the GATS. Both agreements require that all “measures” affecting trade in services be published promptly and, at the latest, by the time of their entry into force. The USBTA goes further, stating that measures which are not published cannot be enforced. The fundamental problem is the absence of relevant laws and regulations and the use of unwritten policies to govern the provision of telecommunications services. It is not possible for Lao PDR to live up to its USBTA obligations and potential GATS and AFAS obligations by relying on unwritten policies and case-by-case authorizations. A stable legal framework must be in place. The draft telecommunications law is not sufficient in its current form.

The draft telecommunications law needs to be revised to include provisions which:

- Clarify the difference between basic and value-added services
- Establish classes of licenses and licensing criteria and the normal period of time required to review and issue licenses
- Require NAPT to inform the applicant within a reasonable period of time of the decision regarding an application and the reasons for denial of license
- Require NAPT to base its licensing on objective and transparent criteria and to act in an impartial manner with respect to all market participants
- Give NAPT the ability to determine which licensees are major supplier, subject to additional license obligations
- Direct NAPT to publish all laws, regulations, licenses and decisions on its website
- Establish a mechanism to review NAPT and Ministerial decisions
- Require all licensees providing public telecom services to make access to and use of their network (including leased lines) available on non-discriminatory and reasonable terms and conditions (including price) and to make publicly available the terms and conditions of use and requirements for attaching terminal equipment and technical interfaces
- Require NAPT to seek public comment before adopting any regulations

Competition Safeguards

The Decree on Competition and the draft telecommunications law fulfill the potential AFAS and GATS obligation to have measures in place to prevent anti-competitive conduct. The question remains as to how the Trade Competition Commission and NAPT will carry out their respective powers regarding prevention of anti-competitive conduct.

- Lao PDR should seek development assistance to clarify the respective powers of the Trade Competition Commission and NAPT with respect to the telecom sector and provide training to NAPT on competition issues

Interconnection

The Reference Paper contains numerous provisions regarding interconnection to a major supplier's network. The current Telecom Law is very brief, stating that "telecom service providers have rights and duties to ensure interconnection." This is not sufficient to meet the Reference Paper provisions. The draft telecommunications law includes some, but not all, of the Reference Paper provisions relating to interconnection. NAPT should seek development assistance to prepare and adopt a regulation governing interconnection that contains, at a minimum, the following provisions:

- Definition of "major supplier"
- Procedures for determining which licensees are major suppliers
- Specific obligations on major suppliers to provide interconnection
  - At any technically feasible network point,
  - On non-discriminatory terms, conditions,
  - At non-discriminatory and cost-oriented rates,
  - Of a quality no less favorable than provided for its own like services, those of non-affiliated suppliers or subsidiaries or other affiliates,
  - In a timely fashion,
  - Sufficiently unbundled so that the supplier need not pay for network components it does not need, and
  - Upon request, at network termination points other than those offered most users, subject to reasonable charges
- A requirement that a major supplier publish a reference interconnection offer and make available procedures applicable to obtaining interconnection to its network

Universal Service

Any universal service funding mechanism which Lao PDR creates must be transparent, non-discriminatory and competitively neutral and not more burdensome than necessary for the kind of universal service adopted.

Scarce resources

Lao PDR should seek development assistance to draft regulations regarding allocation and assignment of radio spectrum and numbering

The procedures should provide for assignment in a timely, transparent and objective manner.

POLICY COORDINATION AND DIALOGUE

In many countries, the Trade Ministry is the lead negotiating agency for multilateral, regional and bilateral trade agreements. These negotiations cover a wide range of trade topics (e.g. agriculture, manufacturing, intellectual property, services, standards, and customs valuation), which fall under the responsibility of several other ministries or regulatory authorities. A country engaging in multiple trade negotiations needs to devise a system of policy coordination and dialogue that helps facilitate the flow of information between government entities as well as with the private sector for which these trade agreements are supposed to benefit.

Intra-governmental coordination

In Laos, it would appear that intra-governmental coordination in the telecommunications services sector is on an ad-hoc basis. There also seems to be a bit of fragmentation with regard to the approach in different trade negotiations/agreements and the outcome of existing or potential telecommunications services obligations contained within those agreements. The Ministry of Investment and Planning (MoIP) is the lead trade negotiator for AFAS and the MOIC is the lead trade negotiator for WTO accession and implementation of the USBTA. Both Ministries must work with NAPT on telecommunications policy and NAST on telecommunications and ICT issues that are encompassed in trade agreements. Depending on the forum, either the MOIC (WTO accession/USBTA) or MoIP (AFAS) will function as the focal point to coordinate with the line ministries. It would seem that sharing information between the line ministries has been not been efficient, which has led to different approaches in the above mentioned trade negotiations. For example, the USBTA is open in all modes for U.S. investors, but AFAS commitments and Laos' revised GATS services offer both contain limited partial obligations.

It is really important for Lao trade negotiators, regulatory authorities, and relevant line ministries to 1) fully understand the current telecommunications sector policy environment, existing/potential obligations in the telecommunication sector under each trade agreement, and the implications of each agreement in terms of trading partner expectations; and 2) be able to devise negotiation approaches that are in line with domestic policy and international obligations.

- Create a formal intra-governmental telecommunication services committee that would include representatives from MOIP, the MOIC's FTPD, NAPT, NAST and professional staff that support the National Assembly. The committee would advise on trade negotiation commitments, regulatory reform, technical assistance, and knowledge sharing.

Private sector policy dialogue

The Lao Government should also consider developing a formal dialogue with the private sector to strengthen domestic buy-in of trade obligations and the regulatory reform that will result from implementing trade obligations. Often times, the private sector is in the best position to inform the government on policy issues that impact the sector because they are directly interacting with consumers and feel market fluctuations. An advisory committee on telecommunication services will help keep stakeholders informed of the Governments objectives and aims of participating in the trade negotiations as well as consult stakeholders on sector challenges in light of these trade negotiations. It could also increase transparency of Government policy interventions by seeking input from the private sector on proposed policy measures, or for example, existing policies that do not meet private sector needs or policies that inhibit or serve as obstacles to growth.

Appendix A. Comparative Chart on Basic and Value Added Telecommunication Services

NEPAL, VIETNAM, CAMBODIA, AND JORDAN

All basic telecommunications services are scheduled in accordance with the 1) Chairman's note on technology neutrality and include resale, unless otherwise specified and 2) Chairman's not on spectrum. All include Reference Paper unchanged.

Nepal	Vietnam	Cambodia	Jordan
Basic Telecommunications Services (a) Local telephone service (b) Domestic telephone service (c) International telephone services (d) Telex service (e) Domestic and international telegraph service Market Access (1) (2) None (3) No limitation on number of service providers will exist on January 1, 2009. However, foreign participation permitted through a joint venture with up to 80% equity participation. National Treatment (1) (2) None (3) None, except the majority of the members of the Board of Directors of a joint venture should be Nepalese nationals	Basic telecommunication services[a] (1) None, except: *Wire-based and mobile terrestrial services*: Service must be offered through commercial arrangements with an entity established in Viet Nam and licensed to provide international telecommunication services. *Satellite-based services:* Subject to commercial arrangements with Vietnamese international satellite service suppliers duly licensed in Viet Nam, except satellite-based services offered to: *Upon accession*: off-shore/on sea based business customers, government institutions, facilities-based service suppliers, radio and television broadcasters, official international organization' representative offices, diplomatic representatives and consulates, high tech and software development parks who are licensed to use satellite-earth stations; Three years after accession: *multinational* companies, which are licensed to use satellite-earth stations. (2) None. (3) None, except: *Non facilities-based services:* Upon accession joint ventures with telecommunications service suppliers duly licensed in Viet Nam will be allowed. Foreign capital contribution shall not exceed 51% of legal capital of the joint ventures. Three years after accession: joint venture will be allowed without limitation on choice of partner. Foreign capital contribution shall not exceed 65% of legal	a. Voice telephone services b. Packet-switched data transmission services c. Circuit-switched data transmission services d. Telex services e. Telegraph services f. Facsimile services g. Private leased circuit services Market Access (1) Services provided only over the circuits leased from Telecom Cambodia. Starting no later than 1 January 2009: None (2) None (3) Provided exclusively by Telecom Cambodia. Starting no later than 1 January 2009: None National Treatment (1) (2) (3) None	a. Voice telephone services d. Telex services e. Telegraph services f. Facsimile services g. Private leased circuit services Market Access (1) International callback is not allowed. Starting no later than 31 December 2004, none. (2) None (3) Jordan Telecommunications Company (JTC) has the exclusive right until 31 December 2004. Starting no later than 31 December 2004, none. National Treatment 1) International callback is not allowed. Starting no later than 31 December 2004, none. (2) None (3) Unbound. Starting no later than 31 December 2004, none.

Nepal	Vietnam	Cambodia	Jordan
	capital of the joint ventures *Facilities-based services*: Upon accession, joint venture with telecommunications service suppliers duly licensed in Viet Nam will be allowed. Foreign capital contribution shall not exceed 49% of legal capital of the joint ventures. 51% gives management control of the joint venture. <u>National Treatment</u> (1) (2) (3) None		
	<u>Virtual Private Network</u> (1) None, except: *Wire-based and mobile terrestrial services:* Service must be offered through commercial arrangements with an entity established in Viet Nam and licensed to provide international telecommunication services. *Satellite-based services:* Subject to commercial arrangements with Vietnamese international satellite service suppliers duly licensed in Viet Nam, except satellite-based services offered to: *Upon accession*: off-shore/on sea based business customers, government institutions, facilities-based service suppliers, radio and television broadcasters, official international organization' representative offices, diplomatic representatives and consulates, high tech and software development parks who are licensed to use satellite-earth stations; Three years after accession: multinational companies, which are licensed to use satellite-earth stations. (2) None. (3) None, except: N*on facilities-based services:* Upon accession, joint ventures shall be allowed without limitation on choice of partner. Foreign capital		b. Packet- switched data transmission services c. Circuit- switched data transmission services <u>Market Access</u> (1) (2) None (3) Service provided only over circuits leased from JTC. Starting no later than 31 December 2004, none. <u>National Treatment</u> (1) (2) (3) None

Nepal	Vietnam	Cambodia	Jordan
	contribution shall not exceed 70% of legal capital of the joint ventures. *Facilities-based services*: Upon accession, joint venture with telecommunications service suppliers duly licensed in Viet Nam will be allowed. Foreign capital contribution shall not exceed 49% of legal capital of the joint ventures. National Treatment (1) (2) (3) None		
(a) Internet including e-mail (b) E.mail (c) Voice mail (d) Video text (e) Fax mail (f) VSAT (g) Audio Conference (h) Pay phone (i) Pre-paid calling card (j) Local, long distance and international data communication (k) Radio paging (l) Trunked mobile Market Access (1) (2) None (3) None, except: Foreign participation permitted through a joint venture with up	Value-added services h. Electronic mail i. voice mail j. On-line information and data base retrieval k. Electronic data interchange (EDI) . l. Enhanced/value-added facsimile services, including store and forward, store and retrieve m. Code and protocol conversion n. On-line information and/or data processing (incl. transaction processing) Market Access (1) None, except: *Wire-based and mobile terrestrial services:* Service must be offered through commercial arrangements with an entity established in Viet Nam and licensed to provide international telecommunication services. *Satellite-based services:* Subject to commercial arrangements with Vietnamese international satellite service suppliers duly licensed in Viet Nam, except	Value-added services h. Electronic mail i. voice mail j. On-line information and data base retrieval k. Electronic data interchange (EDI) . l. Enhanced/value-added facsimile services, including store and forward, store and retrieve m. Code and protocol conversion n. On-line information and/or data processing (incl. transaction processing) Market Access (1) (2) (3) None National Treatment (1) (2) (3) None	Value-added services h. Electronic mail j. On-line information and data base retrieval k. Electronic data interchange (EDI) . l. Enhanced/value-added facsimile services, including store and forward, store and retrieve m. Code and protocol conversion n. On-line information and/or data processing (incl. transaction processing) p. Internet services (excluding telephone and facsimile services) Market Access (1) (2) None (3) Service provided only over circuits leased from JTC. Starting no later than 31 December 2004, none. National Treatment (1) (2) (3) None

Nepal	Vietnam	Cambodia	Jordan
to 80% equity participation. National Treatment (1) (2) (3) None	satellite-based services offered to: *Upon accession*: off-shore/on sea based business customers, government institutions, facilities-based service suppliers, radio and television broadcasters, official international organization' representative offices, diplomatic representatives and consulates, high tech and software development parks who are licensed to use satellite-earth stations; Three years after accession: multinational companies[1] which are licensed to use satellite-earth stations. (2) None. (3) None, except: *Non facilities-based services* Upon accession: business cooperation contracts or joint ventures will be allowed. Foreign capital contribution shall not exceed 51% of legal capital of the joint ventures. Three years after accession: Foreign capital contribution shall not exceed 65% of legal capital of the joint ventures. *Facilities-based services*: Upon accession, business cooperation contracts or joint ventures (JV) with telecommunications service suppliers duly licensed in Viet Nam will be allowed. Foreign capital contribution shall not exceed 50% of legal capital of the joint ventures. Fifty-one % gives management control of the joint venture. National Treatment (1) (2) (3) None		Paging Market Access (1) (2) None (3) The total number of service suppliers is subject to an economic needs test. Starting no later than 31 December 2004, none. National Treatment (1) (2) (3) None Public pay-phone services (booth services) Market Access (1) International callback is not allowed. Starting no later than 31 December 2004, none. (2) None (3) The total number of service suppliers is subject to an economic needs test. Starting no later than 31 December 2004, none. National Treatment (1) International callback is not allowed. Starting no later than 31 December 2004, none. (2) None (3) None
	Internet Access Services Market Access		

Nepal	Vietnam	Cambodia	Jordan
	(1) *Wire-based and mobile terrestrial services:* None, except: Service must be offered through commercial arrangements with an entity established in Viet Nam and licensed to provide international telecommunication services. *Satellite-based services:* Subject to commercial arrangements with Vietnamese international satellite service suppliers duly licensed in Viet Nam, except satellite-based services offered to: *Upon accession:* off-shore/on sea based business customers, government institutions, facilities-based services suppliers, radio and television broadcasters, official international organization' representative offices, diplomatic representatives and consulates, high tech and software development parks who are licensed to use satellite-earth stations; Three years after accession: multinational companies' which are licensed to use satellite-earth stations. (2) None (3) None, except: *Non facilities-based services:* Upon accession: joint ventures with telecommunications suppliers duly licensed in Viet Nam will be allowed. Foreign capital contribution shall not exceed 51% of legal capital of the joint ventures. Three years after accession: joint venture will be allowed without limitation on choice of partner. Foreign capital contribution shall not exceed 65% of legal capital of the joint ventures. *Facilities-based services:* Upon accession, joint venture (JV) with telecommunications service suppliers duly		

Nepal	Vietnam	Cambodia	Jordan
	licensed in Viet Nam will be allowed. Foreign capital contribution shall not exceed 50% of legal capital of the joint ventures. National Treatment (1) (2) (3) None		
Mobile telephone services Market Access (1) (2) None (3) None, , except: -- By 2004 two mobile operators will be licensed- -- No limitation on number of service providers will exist on January 1, 2009. However, foreign participation permitted through a joint venture with up to 80% equity participation. - Mobile technology will not be prescribed but will be left to the choice of the operator upon the date of accession. National Treatment (1) (2) (3) None		Mobile Services Market Access (1) (2) (3) None National Treatment (1) (2) (3) None Additional commitment Cambodia commits to permit licensed suppliers of mobile telecommunications services choice of technology used in the supply of such services.	Mobile Voice and Data Services Market Access (1) (2) None (3) Duopoly will be maintained until 31 December 2003. Commercial presence is subject to 51% foreign equity limitation. Starting no later than 31 December 2004, none. National Treatment (1) (2) (3) None
			GMPCS Market Access (1) (2) None (3) None, except through local authorized provider (gateway provider).

Nepal	Vietnam	Cambodia	Jordan
			National Treatment (1) (2) (3) None

[a] Basic telecom services consist of : voice telephone services, packet-switched data transmission services, circuit-switched data transmission services, telex services, telegraph services, facsimile services, private leased circuit services, videoconference services, video transmission services, excluding broadcasting, mobile telephone (terrestrial and satellite), mobile data (terrestrial and satellite), paging, PCS, trunking and Internet exchange service (IXP).

Appendix B. Telecommunications Sector Glossary

Source: WTO website.

Networks or facilities	The ensemble of equipment, sites, switches, lines, circuits, software, and other transmission apparatus used to provide telecommunications services.
Public network	A country's telephone system, including local loops, exchanges, trunks, and international links for providing telephone service to the general public.
Non-public (private) network	Any network used to communicate within an organization (as distinct from providing service to the public) or to supply such communications to organizations, based on the configuration of own or leased facilities. The term includes networks used by private companies, state enterprises, or government entities. Self-use of private networks and services is addressed by the GATS Annex on Telecommunications, whereas the ability of competitive providers to sell use of such networks and services to organizations is addressed through commitments taken in GATS schedules.
Facilities-based service supplier (or operator)	A telecommunications service provider owning, as opposed to leasing, networks used to provide telecommunications services.

Resale-based service supplier	The subsequent sale or lease on a commercial basis with or without adding value, of a service provided by the facilities-based telecommunications operator. A resale service supplier or reseller is a company that leases bulk-rated plant (e.g., transmission) capacity from facilities-based carriers and uses that capacity to provide services to individual customers or groups of customers at prices high enough to make a profit yet sufficiently below the equivalent rates of the facilities-based carriers to attract customers.
Bypass	Arrangements or facilities whereby a customer can access long-distance, international, or other services without using the local operating company's switched network, thus avoiding payment of access charges. More generally, any means whereby customers avoid usage of a monopoly service or facility.
Interconnection/Interconnection charge	A charge levied by network operators on other service providers to recover the costs of the interconnection facilities (including the hardware and software for routing, signaling, and other basic service functions) provided by the network operators.
Tariff/Unbundled Tariff	Tariffs are the schedule of rates and regulations governing the provision of telecommunications services. Unbundling of tariffs is where each component of a communications service or product is priced separately, so that customers may select only those components needed and be charged accordingly.
Cost-based pricing	The general principle of charging for services in relation to the cost of providing these services.
Cross-subsidization	The practice of using profits generated from one product or service to support another provided by the same operating entity.
Universal service	The concept that every individual within a country should have basic telephone service available at an affordable price. The concept varies, among countries, from having a telephone in every home and business in the wealthier countries to most inhabitants' being within a certain distance or time away from a public telephone in developing countries.

Frequency, spectrum / spectrum management	The spectrum or range of radio frequencies available for communications, industrial, and other uses. Frequency bands or segments are assigned to various categories of users for specific purposes, such as commercial radio and television, terrestrial microwave links, satellites, and police. At the international level this is done by the International Frequency Registration Board (IFRB) of the International Telecommunication Union (ITU). Individual national regulatory agencies monitor the occupancy of the radio spectrum and allocate frequencies to individual users or a groups of users so as to enable a large number of services to operate within specified limits of interference.
Packet-switched data transmission	A data communications service in which a data stream is divided into units called packets that are separately routed to a destination where the original message is then reconstituted.
Private leased circuit service	The service of providing permanent transmission connection between two customer premises for the exclusive use by a customer. This service may be provided over facilities owned or operated by an operator or over transmission capacity sold or leased by a non-facilities-based telecommunications provider, or reseller, and may use terrestrial or satellite facilities. It generally does not involve central office switching operations. Also called a private leased lines.
Mobile services	Radio communications services between ships, aircraft, road vehicles, or hand-held terminal stations for use while in motion or between such stations and fixed points on land.
Cellular service	A terrestrial radio-based service providing two-way communications by dividing the serving area into a regular pattern of sub-areas or cells, each with a base station having a low-power transmitter and receiver. Although cellular radio is primarily a means of providing mobile telephone service, it is also used to provide data services and private voice services, and as an alternative to fixed wired telephone service where this is scarce, such as in developing countries.
Paging service	A service that allows transmitting a signal, usually only an alarm tone, via radio from any telephone in the public-switched network to a personal, portable receiving device in a defined operating area. More sophisticated systems provide audible or visual display messages.

Trunked radio system	A method of operation in which a number of radio frequency channel pairs are assigned to mobile and base stations in the system for use as a trunk group.
Personal communications systems or services	A service that enables access to telecommunications services by allowing personal mobility. It enables each user to participate in a user-defined set of subscribed services as well as to initiate and receive calls on the basis of a unique, personal, network-independent number. It can be used across multiple networks at any fixed, movable, or mobile terminal regardless of geographical location.
Teleconferencing / Video conferencing	A two-way telecommunications service that allows live video images and speech of participants in a conference to be transmitted between two or more locations. Videoconferencing services generally require digital transmission.