

2008

TELECOMMUNICATIONS SECTOR



IV. TELECOMMUNICATIONS SECTOR

1. Sector Overview

At present the telecommunications sector in Thailand is dominated by mobile communications. There are about 43 million mobile subscribers versus approximately 7 million fixed lines. Furthermore, growth in the mobile market remains strong (3.6 million net additions during Jan-March 2007) compared to the fixed segment, which is stagnant. Broadband network infrastructure is growing rapidly, but is still insignificant.

Fixed line network – At the end of 2007, Thailand's total number of line capacity was 8.73 million. The total number of lines connected was 7.2 million, or around 82% of line capacity. In 2007, the tele-density rate was 11.47 lines per 100 residents.¹⁷ In 2001, the ratio was 9.75 lines per 100 residents. The penetration rate has been sluggish in recent years with an increase of 2.3% during the five-year period of 2001-2006. This is largely due to exponential growth in the cellular mobile service market.

There are currently three providers of fixed line telephone service: TOT Corporation Public Company Limited (TOT), True Corporation Public Company Limited (True) and TT&T Public Company Limited (TT&T). In 2007, TOT had the largest share of overall fixed line services at 57.73% of the total market. The second largest player was True with a 25.84% market share. TT&T has the lowest market share at 16.43%. In metropolitan areas, there were only two service providers, True and TOT. True holds the largest market share serving 52.73% of the metropolitan market. TOT and TT&T serve the provincial areas, the former leading the market in the provincial area with a 67.78% share. Another major player in fixed line services is CAT Telecom Public Company Limited (CAT), which is the sole international phone service provider in Thailand.

Mobile phone services – As of March 2007, the total number of mobile subscribers was 43.5 million with a penetration rate of 66%.¹⁸ The mobile communications market has enjoyed substantial growth in recent years with a compounded annual growth rate from 2001-2006 more than 80%. The ratio of mobile phone subscribers per 100 inhabitants was 40.1 in 2001. In 2007, growth in the mobile sector remains strong with 3.6 million net additions during January-March 2007.¹⁹ In addition, mobile services have greatly improved access for the rural areas, revealed by the extensive service coverage of the main mobile service provider AIS.²⁰

¹⁷The teledensity rate is calculated based on 2006 population at 62.8 millions.

¹⁸Business Monitor International Ltd., Thailand Telecommunications Report Q3 2007

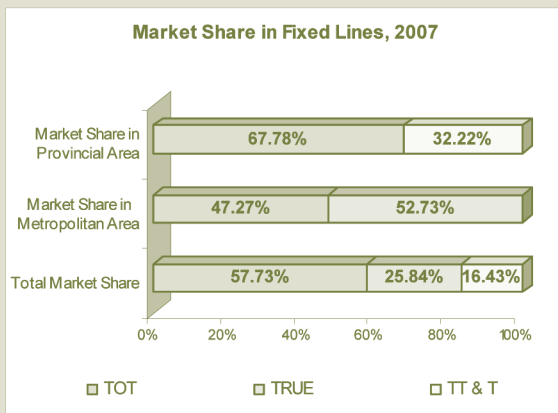
¹⁹Business Monitor International Ltd., Thailand Telecommunications Report Q3 2007

²⁰AIS website (http://www.gsmworld.com/cgi-bin/ni_map.pl?cc=th&net=ad)

There are currently six mobile service operators. The three largest are Advanced Info Services (AIS), Total Access Communication (DTAC) and True. AIS is the largest player in the market, with a market share of 48.43% in March 2007. The second largest market share belongs to DTAC (30.73%) and True (18.76%). AIS has enjoyed the largest market share, although its market share has been falling in recent years.

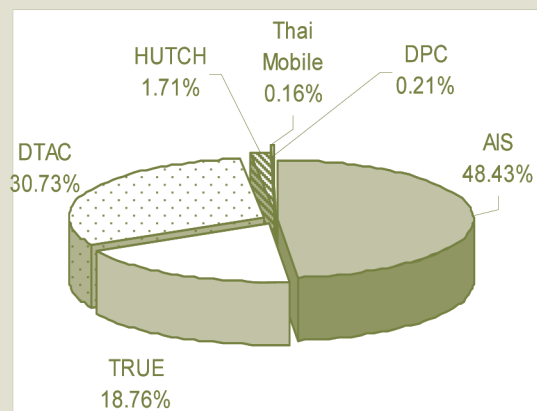
The mobile services segment is highly concentrated: the three corporations (AIS, DTAC, and True Move) hold approximately 98% of total subscriptions. In fact, the two market leaders (AIS and DTAC) have about 79% of the subscribers, arguably creating a potential for duopolistic firm behavior. However, at this time, there is little indication of ownership concentration limiting output. The sector saw declining levels of “average revenue per unit” (ARPU) for mobile operators and strong growth in the number of subscribers: about 3.6 million net additional subscribers just in the first quarter of 2007.

Figure 45: Market Share in Fixed Line Services



Source: TOT

Figure 46: Mobile Services (as of June 2007)



Source: Market Report, 1st Quarter, 2007, NTC

Internet access – As of June 2007, there were 59 licensed internet service providers (ISP). In 2006, there were approximately 2.4 millions internet service subscribers and 8.4 millions internet users. The growth rate of internet users between 2005 and 2006 was around 13%. The ratio of internet subscribers per 100 inhabitants was 3.81. However, the ratio of internet users might reflect a better picture of the population’s access to the internet. In 2006, the number of internet users per 100 inhabitants was 13.07. The internet service provider with the largest market share is True, holding approximately 1.23 million subscriptions or around 17% of the total market.

TELECOMMUNICATIONS SECTOR

For broadband internet, the size of the sector is still small with 105,000 subscribers in 2006; however, broadband service is growing rapidly. The year-to-year growth rate was more than 700% from 2003 to 2004. The number of users should be much higher than the number of subscribers; however, official data is not available. According to True, the largest broadband internet service provider, its number of broadband internet users was 442,728 in 2006. Aside from True, there are several other broadband internet service providers. Most of the service providers are major telecommunications companies in Thailand or their subsidiaries. The main players in broadband are: True Corporation, Advanced Datanetwork Communications (a joint venture between AIS and TOT), TOT and TT&T plc. The two biggest service providers in Bangkok area are TOT and True, which have their own optical fiber cable networks in Bangkok and the vicinity. True has the largest market share of 85%. Most users are limited to the urban population and those with a high income levels. It is expected that broadband internet will continue to experience speedy growth as prices go down and demand for a system that can accommodate multimedia content continues to increase. Currently, the price of broadband service is in the range of ThB 299 – 1,000 per month. The actual and potential internet technologies are as follows: (a) asymmetric digital subscriber line (ADSL), which uses the local telephone network; (b) fiber optic cable; and (c) broadband wireless access (BWA) technologies such as mobile 3G and WiMAX.

Table 14: Telecommunications Sector Indicators in 2006

Types	2006		2001		Annual Growth Rate (01-06) (Total # of subscribers)	Annual Growth Rate (01-06) Penetration Rate
	Subscribers	Per 100 inhabitants	Subscribers	Per 100 inhabitants		
Total Telephone Lines	47,888,900	73.95	-	-	-	-
Fixed Telephone Lines	7,073,400	10.92	6,049,100	9.75	3.2	2.3
Mobile Cellular	40,815,500	63.02	7,550,000	40.1	40.1	85.2
Internet Subscriber	2,403,700	3.81	-	-	-	-
Internet User	8,465,800	13.07	-	-	-	-
Broadband Internet	105,000	0.16	-	-	-	-

Source: ITU

The telecommunications subsector is drastically changing: mobile communications is a substitute for fixed, voice-over-internet is a substitute for traditional telephony, and video over the internet all create new possibilities for video distribution. Internationally, many firms are interested in becoming “triple play” businesses, providing voice, internet and television services. In this context, it is important to note the high level of concentration in Thailand’s telecommunications sector in both the fixed telephony and broadband access segments with only three to four players in each market. Because of this concentration, one must take into account the potential for abuse of market control in licensing and other regulatory policies.

2. Policy and institutional framework

The government's policy is to increase service coverage in telecommunications, especially for fixed lines and internet access, and to bridge the digital divide between the urban and rural areas. Liberalization of the sector is also an important pillar of development of the sector. The development of telecommunications is guided by a Telecom Master Plan for 2005-2007. The government's strategy focuses on five facets of the telecommunications sector: (e-government, e-commerce, e-industry, e-education and e-society), which will provide a strong foundation for the development of a knowledge-based economy. A series of measures has been introduced to achieve this goal, such as the provision of affordable computers, reduction of internet fees, and expansion of basic telephone services. For example, the hourly charge for broadband internet has decreased to ThB 4 and the minimum monthly charge is ThB 299.

Historically, the telecommunications sector in Thailand was dominated by two state-owned enterprises, TOT and CAT. TOT and CAT acted both as service operators as well as regulators supervising their concessionaires. A significant transformation in the institutional landscape of the sector occurred in 2004 with the establishment of the National Telecommunications Commission (NTC) as a result of the 1997 Constitution, which provided for liberalization of the sector. In the new governing structure, policy-setting, regulatory and operational functions were clearly established. The Ministry of Information and Communication Technology (MICT) sets policies and also supervises TOT and CAT. The National Telecommunications Commission (NTC) acts as an independent regulator. NTC also has a policy-making role in formulating a master plan on telecommunications development. NTC's regulatory functions include granting licenses, spectrum management, supervising network usage and network connection, controlling the standard of networks and equipments, allocating radio frequency, consumer protection, ensuring fair competition, and enforcing the law. In the August 2007 national referendum, it was proposed that NTC merge with the National Broadcasting Commission (NBC), another independent regulatory body yet to be established. NTC and NBC shall form a single independent regulatory body called the National Broadcasting and Telecommunications Committee (NBTC), which will regulate the entire telecommunications sector including voice, content and frequency activities under one umbrella.

TELECOMMUNICATIONS SECTOR

Since its establishment, the NTC has set criteria for the allocation of phone numbers and temporary measures for radio and frequency allocation. The NTC has issued six telecommunication licenses to TOT and CAT. The granted licenses cover the existing services provided by the two operators. NTC has also issued several more licenses to other infrastructure-based telecom service providers. As of 2007, it has issued 14 licenses for network and service providers under a type three telecommunications business license.²¹ A clearer regulatory framework for the operation of internet service providers has also been established, including licensing criteria, license fees, and interconnection charges.

Since the sector was liberalized, the market contains players from both state-owned enterprises and private organizations. TOT and CAT became corporate, in 2002 and 2003, respectively. They now have public company status, but 100% of their shares are still owned by the state and their activities are directed by policy set by MICT. It is still unclear how the privatization plan for both enterprises will proceed.

Agency	Policy	Regulation and Monitoring	Implementation
Ministry of Information and Communication Technology	✓		
National Telecommunication Commission	✓	✓	
TOT Corporation Public Company Limited			✓
CAT Telecom Public Company Limited			✓
Private Sector			✓

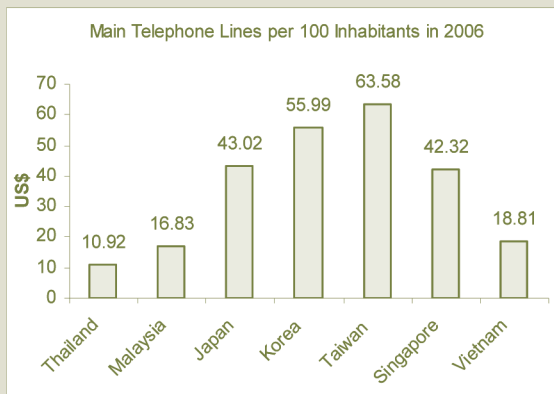
²¹Type three includes telecommunications network providers and service providers with their own network for lease and whose services may have impact on general public interest.

3. Sector performance and international comparison

Access to telephone services, both fixed as well as cellular, is no longer an issue for the development of telecom infrastructure. Although access to fixed telephone lines in areas outside of Bangkok and the vicinity is still low, the high penetration rate of mobile services has largely filled the gap. As a result, the majority of the population has relatively adequate access to voice telecommunications services.

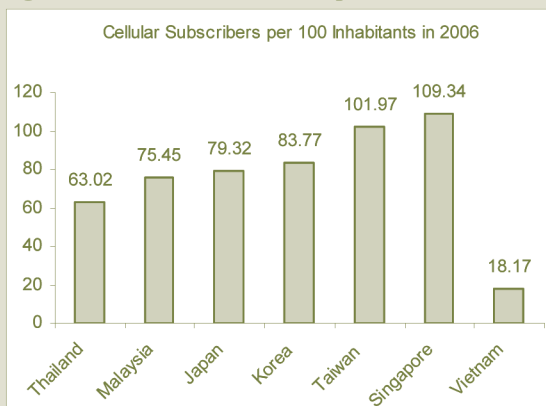
The penetration rate for fixed telephone lines per 100 residents was 10.92 in 2006. In comparison with other countries in the region, the rate is still low. Although the mobile phone market has been experiencing rapid growth, the penetration rate is somewhat lower than neighboring countries like Malaysia, or more advanced economies like Singapore, Japan. However, looking at the situation more closely, access to both fixed as well as mobile telephone services is no longer a priority concern. Mobile has become an effective and cost-effective substitute for fixed telephone service. Also, part of why the penetration rate is low for fixed lines is in fact because of limited demand rather than inadequate supply. The penetration rate of mobile services at 66% in 2007 coupled with AIS's extensive service coverage and continual strong growth in the mobile market indicate a relatively well-matured sector.

Figure 47: International Comparison of Fixed Telephone Lines Penetration Rate



Source: ITU, 2006

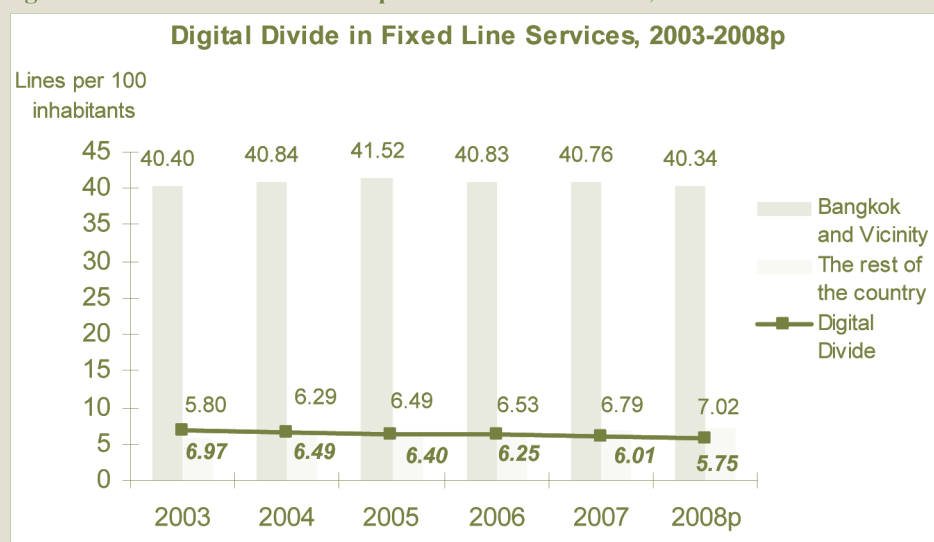
Figure 48: International Comparison of Mobile Phones Penetration Rate, 2006



Source: ITU, 2006

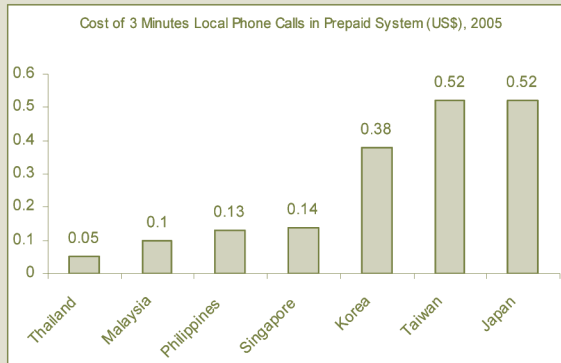
The digital divide is an issue for the development of telecommunications infrastructure. In 2007, the number of fixed telephone lines per 100 inhabitants was 40.76 in Bangkok and the vicinity, while the rate was 6.79 in provincial areas. The ratio between the urban and rural penetration rates, or what is referred to as the digital divide, was 6.79. With a predicted increase of connected lines in 2008, the digital divide should continue to decrease to 5.75 in 2008. However, the digital divide has less implication on telephone services given that mobile services have become an effective substitute for fixed lines. However, the unavailability of fixed telephone service in some more remote areas will have a stronger implication on the digital divide with respect to broadband access.

Figure 49: Urban and Rural Telephone Penetration Rate, 2006

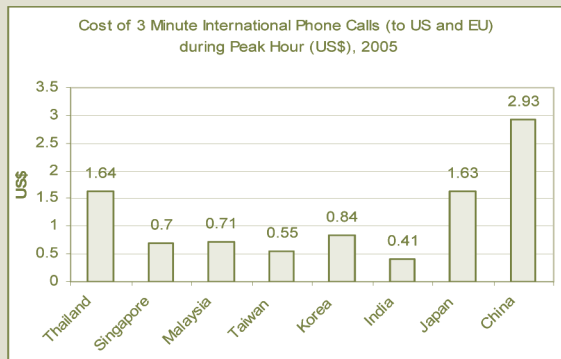


Source: TOT and Department of Provincial Administration

Thailand generally has competitive and affordable prices for telephone service. A flat rate of ThB 3 is charged for local calls. There are several pricing schemes for mobile services to accommodate consumers with different usage patterns. Compared with other countries, Thailand has lower costs for mobile phone services. In 2005, the price of a three-minute local call using a cellular line on a prepaid system was US\$ 0.05, while the rates in Singapore and Japan were US\$ 0.14 and US\$ 0.52, respectively. For international calls, Thailand's tariff rate is higher than in many countries but lower than China's. However, the indicator on the cost of international phone services may not fully reflect the current situation. For example, due to recent policy direction from the government which instructed TOT and CAT to reduce fees on international phone calls, rates of international phone calls to the United States (via the 007 and 008 dial code) was reduced to ThB 5-9 per minute. An international phone call via internet network also has a much lower cost. CAT's rate for international calls made via the internet is ThB 0.91 per minute.

Figure 50: International Comparison of Costs of Mobile Phone Services, 2005

Source: IMD World Competitiveness Year Book, 2007

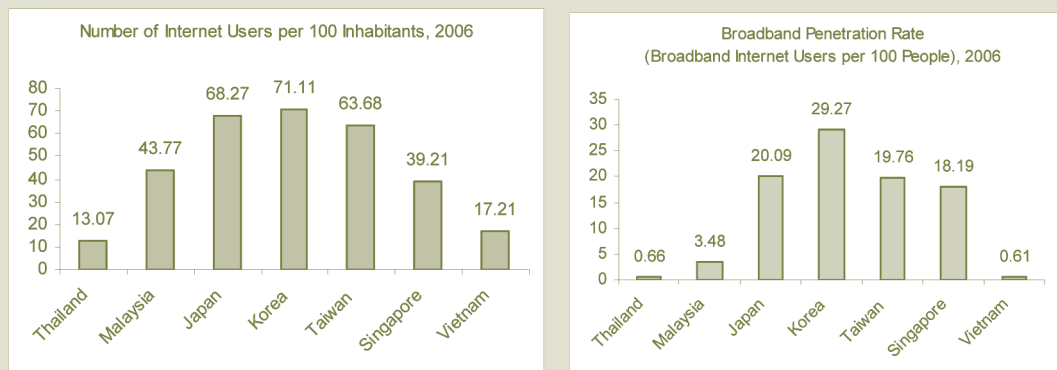
Figure 51: International Comparison of Costs of International Phone Calls

Source: IMD World Competitiveness Year Book, 2007

Access to the internet in Thailand is considered low when compared with other countries in the region. In 2006, the number of internet users per 100 people was only 13.07, while the number in Malaysia and Japan was 43.77 and 66.27, respectively. There is still a large gap to improve the country's internet access. Moreover, according to the IMD World Competitiveness Year Book 2007, Thailand ranked 49th out of 55 countries in number of internet users. Access to broadband internet is also very limited, reflecting the nascent stage of the market.

Before 2006, CAT had a monopoly on international internet gateway (IIG) services and charged relatively high prices to internet service providers. Such high costs charged on the use of international bandwidth and access to the IIG translated into high costs for internet services. The costs of internet services had been uncompetitive when compared with other countries. However, in 2006, the internet gateway fee was substantially reduced and the market on IIG services was opened to new competition. Consequently, prices for internet services in Thailand has become much more competitive (see Box 2).

Figure 52: Penetration Rates for Internet and Broadband Internet, 2006



Source: ITU, 2006

4. Private-sector participation and privatization

Thailand's telecommunications sectors was characterized by a duopolistic structure up until the 1990's, when increasing private participation took hold as state monopolies began to grant concessions to private operators. Traditionally, TOT owned a statutory monopoly in domestic telephone services while CAT had a monopoly over the provision of the IIG and internet services. In the 1990's, in response to rapid demand growth, TOT and CAT began to grant several concessions to private companies on a BTO contract basis. The concessionaires have an obligation to invest in the network and share revenue arising from their operations in exchange for the right to operate the system for a certain period of time. In fixed line services, concessions were granted to two private operators, True and TOT.

For mobile phone services, in 1990, TOT granted the concession to AIS while CAT granted the contract to UCOM (later TAC and DTAC). The two private companies have since established themselves as leaders in the mobile phone market. New competitors entered the market later in the early 2000's.

The two state-owned enterprises continue to control large shares of the market, particularly in traditional fixed-line and international long-distance services, while the private sector has been more active in emerging sectors such as mobile, internet and satellite services. In recent years, the market has also been penetrated by foreign telecommunications companies. In December 2005, the Telecommunications Business Law was amended which effectively raised the limit of allowable foreign ownership from 25 percent to 49 percent. In 2006, the two largest mobile operators, AIS and DTAC, were bought by Singapore-based Temasek and Norway's Telenor AS, respectively.

5. Investment prospects

There is large investment potential in the telecommunications sector, especially given rapid technological change and continual need to upgrade the system. As telecommunications technology converges with other media, investment is needed in new technology, such as 3G and broadband. In addition to investments in new technology and network coverage, there will be a recurring need to invest in maintenance of the system. The two state-owned enterprises, TOT and CAT, are likely to continue to play major roles in new investment, especially in the form of joint-ventures. With liberalization of the market, foreign players will become more present. To facilitate new investment and telecommunications sector development, regulatory issues have to be clarified to increase business certainty.

6. Key issues

The development of the telecommunications sector is closely linked with national competitiveness. It impacts on various facets of sustainable economic development such as energy efficiency, international trade competitiveness and human resources development. It is also instrumental in national security and the support of democracy through a free press. Despite the pivotal role of the telecommunications sector, there are several issues that need to be addressed in order for the sector to achieve its economic and social objectives.

Broadband access strategy – One of the most important emerging issues is a broadband access strategy for non-urban areas or more comprehensively, the broader broadband wireless access (BWA) strategy. The rural versus urban issue will be an important one with respect to broadband access. Wireless technologies offer the best potential for a cost effective roll-out of broadband in smaller or less dense markets. A strategy for BWA is needed.

Market structure – At a broad level, the market has been functioning fairly well given the consistent fast growth in mobile services and the decreasing prices. However, there are some distortions because of the revenue sharing arrangements and network interconnection arrangements resulting from the concessions. Looking forward, there is a potential for problems in the way the market functions because of concentration of ownership in the sector.

Regulatory framework – The NTC has brought much needed regulation to the sector and important benefits to the public. However, its effectiveness has been limited by several factors, and it still needs to address and implement actions on a larger scale. Investment is discouraged or delayed because of several factors related to uncertainty in the regulatory environment, specifically, untimely appointments of commissioners, delays in BWA authorizations, foreign ownership, and proposed legislation to establish a telecommunications and broadcasting regulator in place of the NTC.

Regulation of Thailand's telecommunications sector needs to address a challenging strategic agenda that includes:

- Regulatory processes that emphasize transparency and public consultation in order to reinforce legitimacy and minimize regulatory risk. The NTC should constantly be subject to public scrutiny. Information on policy decisions and operations should be disclosed to the public.
- Fair competition and consumer protection in the context of high concentration in the sector
- Timely deployment of new technologies
- Convergence in the sector. In the case of radio spectrum management, the convergence of different radio technologies onto the same spectrum bands, as is the case for mobile and broadband wireless access, argues for an approach to radio spectrum management that is technology neutral.
- The digital divide between rural and urban access to service. Given substantial success in providing rural access to mobile telephone services, a key emerging issue is rural access to broadband. Given the inherent advantages of radio technologies in providing telecommunications services in low density areas, a strategy for authorizing broadband wireless access will be important.
- Regulation on foreign ownership should be reviewed in order to achieve the appropriate balance between foreign and domestic investments.

TOT's future – TOT Corporation remains 100% state-owned. Its main business is the provision of fixed lines, a mostly stagnant market segment. Its overall ability to cover its operating expenses has become significantly dependent on revenues from its concessionaires. TOT's profitability is at risk. However, it also has one of the most extensive national networks that can be used to develop broadband infrastructure. How TOT positions itself will play a potentially large role on the development of the sector.

Box 2: CAT Telecom Reduces Internet Gateway Fees

Source: TeleGeography, 13 December 2006

CAT Telecom will cut fees for its international internet gateway (IIG) services by up to 63%, as a reaction to an influx of new competition. The Thai state-run telco's board yesterday approved a rate reduction of between 18% and 63%, including an average 30% cut in IIG costs for ISPs. Until recently CAT had a monopoly on IIG provision, but the National Telecommunications Commission decided in January 2006 to allow private firms entry into the market. In May it announced the award of IIG licenses to Advanced Datanetwork Communication (ADC) and True Corp. ADC, which offers broadband services including multimedia content, is a joint venture of the country's mobile market leader Advanced Info Services (AIS) and state-run fixed line telco TOT Corp, while retail broadband market leader True offers a full range of fixed and mobile telecoms services. The following October the regulator awarded another IIG license to ISP CS Loxinfo, Thailand's largest dial-up ISP. The IIG licenses are 'type 2' concessions (for operators with or without their own networks) allowing the leasing of international bandwidth from foreign operators to provide services to local ISPs via CAT's domestic links. A group of nine Thai ISPs, including Jasmine Internet, also announced a plan to apply for a joint IIG license.