Competition and Regulatory Reform in the Thai Telecommunication Markets *

Somkiat Tangkitvanich
Taratorn Ratananarumitsorn **

The Thai telecommunication market is plagued with problems of ineffective competition and poorly designed regulations. Prices of telecommunication services are generally higher than that of other Asian countries. Consumer complaints are common and consumer protection mechanisms are weak. Reforms have been initiated but the implementation is moving at a very slow pace. The National Telecommunications Commission (NTC), the regulatory body, has yet to be set up. The privatization of state-owned enterprises has also been delayed. These factors form a background for analysis on the state of competition and the regulatory reforms of the telecommunication sector in Thailand.

1. THE STATE OF COMPETITION IN THE TELECOMMUNICATION MARKETS

This section discusses the state of competition in four telecommunication markets: fixed-line telephone, international long-distance telephone, mobile phone and Internet access.

1.1 Fixed-line Market

The fixed-line telephone market is statutorily monopolized by the Telephone Organization of Thailand (TOT), a state agency in charge of domestic telephone.[1] In practice, however, there are two operators in the Bangkok Metropolitan Area; the TOT and Telecom Asia, the TOT's concessionaire. The situation is similar in the provincial areas where TOT and its concessionaire, TT&T, provide fixed-line services. The competition in both markets is limited to non-price areas, e.g., service quality and product differentiation. Price competition is nonexistent due to the restriction of price adjustment clauses in the concession contracts between TOT and its concessionaires.

As a result, prices for fixed-line telephone services, especially that of the long-distance calls, have not been adjusted for almost a decade and thus remain very high in comparison with other countries in the region. Table 1 compares the prices for fixed-line telephone services in Thailand and that of incumbent operators in Malaysia and the Philippines. Although a cheaper service based on Voice Over IP (VoIP) technology has been introduced by TOT, marketing efforts are not fully exerted due to ongoing disputes between TOT and its concessionaires.

1.2 International Telephone Market

The international telephone market is statutorily monopolized by the Communications Authority of Thailand (CAT), another state agency.[2] There is no private operator acting as a concessionaire in the international telephone market. A few companies; however, are subcontracted by the CAT to sell its calling cards such as the VoIP-based international call and other services. The competition in the market is also limited by the prohibition of callback services. The VoIP-based international call is generally suitable for corporate or high-volume users since the service requires pre-paid calling cards with minimum value starting from Bt. 500. The lack of effective competition again results in high prices compared with that of other countries in the region (Table 2).

1.3 Mobile Phone Market

The mobile phone market consists of three major private operators, AIS, TAC and TA Orange, all of which are concessionaires of TOT or CAT. The state agencies have also entered the market recently, but they are still minor players. As with the fixed-line telephones, the competition in the mobile market is active only in the non-price areas, where major operators compete in product differentiation through service quality, advertisements and value added services.[3] Unlike the fixed-line market, however, price competition in the mobile market is not restricted by conditions in the concessions, but by anti-competitive behaviors of the major operators, especially AIS, the dominant firm. Some of the behaviors are:

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** *Dr. Somkiat is Research Director for Information Economy, Science and Technology Development Program, TDRI. Mr. Taratorn is his researcher.*

Table 1 Comparison of prices for domestic long-distance calls *(as of June 2002)*

(Bt/minute)

Distance (km)	Thailand	Malaysia	Philippines
	TOT	Telekom Malaysia	PLDT
Up to 50	3	1.35	2.59
51–100	6	3.39	
101-150	9		
151–200	9	9.67	
201–350	12		
351–500	15		
More than 500	18		

Source: TDRI.

Table 2 Comparison of prices for international calls (as of May 2002)

(Bt/minute)

Destination	Thailand		Malaysia	Philippines	Singapore	Hong Kong
	CAT	Hatari Technology	Telekom Malaysia	PLDT	Singtel	HKIC
UK	30	20	22.6	17.15	14.0	27.4
USA	22	14	22.6		9.3	14.6
Japan	30	19	33.9		21.4	32.3
Australia	22	16	22.6		14.3	25.1

Source: TDRI.

- 'IMEI locking': Since starting their operations almost a decade ago, AIS and TAC had configured their networks to accept only logins by handsets sold by them as a means to bundle the overpriced handsets with the calling services. The practice continued until mid-2002 when the third operator, TA Orange, entered the market with a low-price handset strategy.[4]
- 'SIM card locking': TA Orange has configured its handsets to be usable with only its SIM cards to sustain its cheap handset strategy.
- SMS blocking: AIS had reportedly prevented users of new operators to send short messages (SMS) to its network until early 2002.
- Price discrimination: AIS has also set its price to discriminate against calling outside its network.
- Roaming refusal: AIS has reportedly refused to let TA Orange's customers to roam with its network.

The outcome of lack of effective competition is that the total cost of owning a mobile phone in Thailand is higher than that of other countries in the region (Table 3). The major components of the cost are higher handset prices (Table 4), and the high cost of minimum monthly charges. Promotional packages offered by the operators contribute to the reduction in calling charges but discounts are generally designed to benefit only heavy users whose usage is more than 500 minutes of airtime per month. Unsurprisingly during the past years, mobile operators, especially AIS, have sustained high rates of return on capital (See Table 5).

Table 3 Comparison of total cost of mobile phone usage (As of May 2002)

(Bt/month)

Monthly usage (minutes)	AIS	TAC	TA Orange	SingTel	SMART	HK Orange	Celcom
100	942	914	775	682	864	1,157	613
200	1,242	1,164	965	682	1,547	1,157	991
300	1,362	1,314	1,075	966	2,231	1,179	1,369
400	1,642	1,614	1,075	1,251	2,915	1,448	1,747

Notes: Total usage cost = handset price + monthly fee + airtime charge. The handset price is distributed for three years of usage.

It is assumed that users choose pricing package most suitable to their calling patterns.

It is assumed that the ratio of usage time for local and domestic long-distance call be 80:20, the ratio of usage during peak and off-peak time be 60:40 and the ratio of calling within the same operator and other operator be 40:60.

Source: TDRI.

Table 4 Comparison of prices of mobile phone handsets (As of May 2002)

(Bt)

Model	Thailand			Philippines	Singapore	Hong Kong	Malaysia
	AIS	TAC	TA ORANGE	SMART	SINGTEL	HK ORANGE	CELCOM
ERICSSON T68	23,900	23,900	-	8,616	10,413	16,385	10,721
ERICSSON A3618	5,100	7,900	5,400	-	-	-	3,949
ERICSSON T29	7,400	7,900	7,400	-	-	-	4,288
MOTOROLA T190	4,900	4,900	-	-	-	4,288	-
MOTOROLA V66	13,900	13,900	19,900	-	9,462	9,787	8,464
MOTOROLA V70	27,900	27,900	-	-	18,734	19,685	16,928
NOKIA 3310	5,900	5,900	3,999	-	4,516	4,288	2,948
NOKIA 5210	15,900	15,900	-	3,879	8,749	8,138	7,568
NOKIA 6510	18,900	18,900	-	9,047	13,741	13,086	11,968
NOKIA 8250	15,900	14,900	9,900	6,465	6,609	9,787	8,448
NOKIA 8310	17,900	19,900	19,400	7,323	10,413	14,186	11,968

Source: TDRI.

Table 5 Comparison of rate for return on capital employed (ROCE) of major mobile phone operators in Thailand

(Unit: %)

	AIS				TAC				Cost of capital
	Excluding handset		Including handset		Excluding handset		Including handset		
Year	ROCE	ROCE-Adjusted	ROCE	ROCE-Adjusted	ROCE	ROCE-adjusted	ROCE	ROCE-adjusted	MLR
1995	NA	NA	25.72	20.02	10.35	7.50	11.56	8.65	13.31
1996	NA	NA	35.42	31.35	8.18	7.87	9.07	8.72	13.60
1997	22.71	19.06	22.79	19.14	4.24	3.98	4.38	4.11	13.73
1998	13.41	5.82	13.26	5.71	7.94	7.18	7.86	7.10	14.77
1999	11.45	8.29	18.92	15.18	9.11	8.26	9.13	8.28	9.40
2000	20.54	17.08	28.50	24.32	12.15	9.83	13.51	10.98	8.42
2001	11.17	8.35	17.07	13.62	7.44	6.05	7.91	6.46	7.77

Note: ROCE measures accounting profitability while adjusted ROCE measures economic profitability (See NERA (2001) for a detailed definition).

Source: TDRI.

1.4 Internet Market

The Internet access market in Thailand is quite competitive with 18 Internet service providers (ISPs) providing services to consumers. However, the international gateway is still monopolized by CAT, and it has therefore been slow to adjust its price. During the past five years, CAT has reduced its price on an average of 5.5 percent per year. Previous research (Somkiat 2001) shows that the price of international half-circuit provided by the CAT are at least 40 percent higher than that of competitive operators (Table 6). The high cost of international half circuits inevitably reflects in high access prices, especially in the leased-line market. This is because the cost of the international bandwidth is about 50-60 percent of the cost of an ISP. Thus a 40 percent higher cost of the CAT's international half circuit will translate into 10-12 percent higher cost for end users.

Table 6 Comparison of prices of international half circuit of CAT and MCI WorldCom (as of July 2001)

Bandwidth (Mbps)	CAT normal price [1] (Bt/month)	CAT discounted price [2] (Bt/month)	MCI WorldCom price (Bt/month)
2	955,000	716,250	567,000
4	1,719,000	1,289,250	1,125,000
8	2,960,500	2,220,375	1,710,000
16	5,252,500	3,939,375	2,700,000
45	9,550,000	7,162,500	4,050,000

Notes: [1] CAT Order 76/2538 (6th revision 2001).
[2] 25% discounted from normal price for ISPs.

Source: TDRI.

2. ECONOMIC IMPACTS OF REGULATORY REFORM

High costs of telecom services due to ineffective competition reduces consumption of the services. This creates losses in consumer benefits that are not fully captured into higher profits for the operators, which translates into net welfare loss for the society. Under certain assumptions, the size of welfare loss is estimated to be half the difference in the competitive and noncompetitive prices (Cowling and Mueller 1978).[5] We have used in our estimation, the prices of most efficient operators in the region as proxies for competitive prices. Table 7 shows estimation of potential welfare losses based on these assumptions.

The Thai telecommunication market needs a radical reform to be on par with its regional counterparts. The reform packages should be composed of setting up an independent telecommunication regulator, liberalizing the market by introducing new competition and privatizing of state-owned enterprises.

We have estimated potential benefits of the regulatory reform of the Thai telecommunications markets. The estimation is based on a Social Accounting Matrix (SAM), developed by the Thailand Development Research Institute (TDRI) in the year 2000.[6] Assumptions used in the estimation include:

- The Thai telecommunication sector is 15 percent more productive as a result of the reform. This will bring the productivity of the Thai telecommunication sector to be more in line with that of other Asian countries. Note that the 15 percent productivity gain is rather conservative since the current productivity gap is about 20-40 percent, as shown in the last column in Table 7.
- The productivity gained in the telecommunication sector is passed on completely to the rest of the economy due to effective competition in the telecommunication sector. Thus beneficiaries of the reforms are all factors involved in the production process, i.e., from investors to laborers.
- The overall economy becomes more efficient in that it can produce more final products from the same amount of telecommunication services, which is considered an intermediate input.
- The reform does not bring about changes in the economy-wide price levels. In other words, a fixed-price model is assumed. The assumption can be justified by comparing a relatively small size of the telecommunication sector with the overall economy. It is also justified by the fact that the Thai economy is currently operating below its potentials with significant over-capacity in many manufacturing and service sectors and they have a relatively high rate of employment.

With the assumptions, it is estimated that the telecommunication reform will bring an increase of about Bt 20.8 billion to the Thai economy. This is equivalent to an increase of 0.47 percent in the GDP. Major beneficiaries from the reform are downstream telecommunications services, banking and financial services, hotel, education, printing, retail and wholesale trades and entertainment. These are sectors that heavily rely on telecommunication services.

3. THE PROGRESS OF REGULATORY REFORMS

This section discusses the progress of the regulatory reform. In particular, four topics will be addressed: the liberalization of the telecommunication markets under the World Trade Organization (WTO) framework, the establishment of an independent regulator, and the revision of the telecommunication laws and the privatization of state-owned enterprises.

Table 7 Summary of telecommunication pricing differences between Thailand and other Asian countries

(Unit: %)

Service	Average price differences	Maximum price differences	Estimated social losses with respect to the lowest regional prices
Domestic long distance[1]	59.1	82.7	41.4
International long distance[2]	27.3	57.7	28.8
Mobile phone[3]	26.0	45.1	22.6
Internet international half circuit[4]	> 43.0	NA	21.5

Notes: [1] Calling distance is between 351-500 km.
[2] The destination is USA.
[3] Usage time is 200 minutes per month.
[4] 45 Mbps half-circuit price between Thailand and USA.

Source: TDRI.

3.1 The liberalization commitment under the Basic Telecommunications Agreement (BTA)

The Thai government has so far expressed very little commitment to liberalize its basic telecommunication market for foreign competition (See Appendix 1 for its offer on basic telecommunication). According to a cross-country comparison (Marko 1998), Thailand's commitment in Southeast Asia is the least. Its commitment is even below the world average (See Table 8). In particular, the country has committed to open up only four basic telecommunication services for foreign competition: fixed line, telex, telegraph and facsimile. Mobile phone, international telephone, leased line and Internet services have been exempted from the liberalization package. The time frame for liberalization in 2006 also falls behind other Asian countries with comparable development level.[7]

In terms of domestic regulatory reform, the country has adopted the WTO regulatory Reference Paper. The Reference Paper provides a minimum standard on a number of regulatory issues: safeguard measures, interconnection, universal services, transparency of licensing criteria, separation of regulatory and operational functions and allocation of scarce resources. Although the Telecommunication Business Act has been legislated in late 2001 to fulfill some of these requirements, the overall implementation to comply with the Reference Paper has been delayed. This will be discussed in the next section.

3.2 The selection of the NTC

The Organization of Frequency Allocation and Regulation of Radio Broadcasting, Television and Telecommunications Businesses Act has been enacted in the year 2000. One major consequence of the Act is to set up the NTC, an independent body to regulate the telecommunication sector. The implementation of the Act will separate the regulatory and operational functions as required by the Reference Paper. The NTC will have power and duty to regulate the sector and issue bylaws in many areas ranging from licensing, interconnection, universal service, price regulations and consumer protection.

The Act has defined a selection process. It required that the selection of the NTC be completed within 120 parliamentary days after the publication of the Act in the Royal Gazette. However, the process has been plagued with scandals of impropriety and conflicts of interests among the selection committee and the candidates. The selection process was suspended after one candidate filed a lawsuit in the Central Administrative Court to nullify the selection result. The Court has overturned the selection process but appeals are going on. As a result, two years have passed without any regulatory body being set up.

3.3 The revision of the Telecommunication Business Act

The Telecommunication Business Act was enacted in late 2001. The Act provides regulatory frameworks on many issues including licensing, interconnection, pricing, universal services and consumer protection. However, many details are still left out from the Act and many bylaws need to be issued by the NTC before the law is enforceable. For example, the Act does not specify which services belong to each type of license. As a result, it will be impossible for the NTC to issue new licenses. The details of pricing and interconnection also need to be specified. As a result, considerable time is required before the Act can become fully operational.

In addition, certain sections in the Act need to be revised. Among the most obvious ones are:

- Section 8: The section restricts foreign share ownership of facility-based (Type III) telecommunication operator to 25 percent. The requirement was found to be unrealistic given the shortage of domestic financing capability.

Table 8 The level of liberalization committed under the BTA

Service	Indonesia	Malaysia	Philippines	*Thailand*	APEC Average	World Average
Voice Telephony	1	5	2	*2*	4	4
Mobile Telephony	3	5	2	*0*	4	4
Teletype	1	0	2	*2*	4	4
Telegraph	1	0	2	*2*	4	3
Facsimile	0	5	2	*2*	4	4
Pager	3	5	0	*0*	4	3
Packet Switched Data Transmission	2	5	2	*2*	5	4
Circuit Switched Data Transmission	1	5	2	*2*	5	4
Private Leased Circuit	0	5	0	*0*	4	4
Mobile Data Service	0	0	0	*0*	3	3
Personal Communication Service	3	0	0	*0*	2	3

Note: Maximum level of liberalization is 8 (the higher the number in the table, the deeper the liberalization committed).

Source: Adapted from Marko (1998).

- Section 58: The section was designed to protect consumers from operators collecting advance payments. However, the Act is written in such a way that it unintentionally precludes pre-paid services that are essential for mobile phones and Internet services.
- Facility-based and service based operators are indiscriminately subject to the same set of regulations. There is also no differentiation between operators with and without market dominance for interconnection and price regulations. As a result, there are potentials for over-regulation even when regulation is unwarranted.

Many sections also need clarification. Among the obvious are:

- Section 7: Definitions of license type are left undefined. For example, it is not clear whether an ISP will be categorized as a Type I or Type II operator since both types of license can be applied for a non-network operator.
- Section 25: There are some confusion concerning 'interconnection' and 'use of network.' The section confusingly uses the two words interchangeably without properly defining the terms.

As a result, without the necessary bylaws and guidelines issued by the NTC, the Act is not operational in almost every aspect.

3.4 The Privatization of TOT and CAT

The Thai government has planned to privatize the CAT and TOT at least since 1997 when the Master Plan for Telecommunication Development was adopted. However, the implementation has been delayed considerably. The TOT has recently been corporatized but it is still not listed on the stock market. During the past two years, the government has changed its course many times on whether the two state agencies should be organized under one holding company. The objectives of the privatization are also not clear. Although the stated goal of privatization is to increase efficiency of the state agencies, few attempts in this regard have been observed. For example, there has been no progress in selecting strategic partners for the two agencies even though they are critical to increase the competitive edge of the two agencies.

ENDNOTES

[1] The TOT was recently corporatized and renamed to TOT Corporation.

[2] It should be noted that TOT Corporation has a jurisdiction for providing international direct distance dialing (IDD) services for four neighboring countries: Malaysia, Myanmar, Laos and Cambodia.

[3] There are signs of price competition in the second half of the year when AIS, the largest operator, reduced its price after being forced to stop its IMEI locking practice.

[4] IMEI is an acronym for International Mobile Equipment Identity, a unique number given to every single mobile phone. When a phone is switched on, the number is transmitted and checked against a database. The database determines whether the phone can log onto the network to make and receive calls. An operator can prevent logins from users not having an IMEI number supplied by it, the act of 'IMEI locking,' and hence can profitably bundle the handset sales with the provision of its services.

[5] Particularly, it is assumed that firms maximize profit by setting the price so that the inverse of the price-cost margin equals the firm demand elasticity. In other words, Price/(Price-Marginal Cost) = Price Elasticity. Based on the assumption, the information on the demand curve is not required.

[6] A SAM is a matrix created by combining the National Income Account (NIA) and an Input-Output Table (IO-Table), both constructed by the National Economic and Social Development Board (NESDB). Thus, a SAM contains information included in both the NIA and the IO-Table and can capture the flow of products, income and expenditures among production sectors, government and households of various income groups.

[7] For example, Singapore has advanced its commitment to open up for international competition from 2002 to 2000 while Hong Kong has also advanced its liberalization from the previous commitment in 2006 to 1998.

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Appendix 1 Thailand-Revised Draft Offer on Basic Telecommunications

Modes of supply ***1) Cross-border supply*** ***2) Consumption abroad*** ***3) Commercial presence*** ***4) Presence of natural persons***

SECTOR OR SUB SECTOR	Limitations on market access	Limitations on national treatment	Additional commitments
Commitments undertaken in this offer are subject to the following general conditions: - Each service to be supplied in Thailand requires a specific license. - Licenses are granted only to service suppliers duly constituted according to the Thai legislation, which requires head office and management located in Thai territories. - Due to scarce resources, the number of licenses may be limited. - The services in the Schedule of Specific Commitments shall be on facilities basis. - The service provider shall be a Thai registered company with foreign equity participation not exceeding 20 percent of the registered capital and the number of foreign shareholders must not exceed 20 percent of the total number of shareholders of the company. - The Communications Authority of Thailand has exclusive right to link with Intelsat and Inmarsat. - Conditional upon passage and coming into force of all necessary new communication acts, commencing from the year of 2006, commitments on public telecommunication services will be introduced, and carried out in accordance with the implementing regulations to be issued by virtue of those acts.			
2.C. Telecommunications Services Public local, domestic long distance and international services: a. Voice telephone services b. Telex services c. Telegraph services d. Facsimile services :	1), 2) None, other than - traffic shall be routed through a gateway in Thailand operated by a supplier duly licensed; - the provision of concerned services shall be agreed by the supplier duly licensed of both ends. 3) Conditional upon passage and coming into force of all necessary new communication acts, commencing from the year of 2006, Thailand will introduce the market access elements as contained in those acts into the relevant parts of its Schedule of Specific Commitments relating to the supply of public telecommunication services. 4) Unbound as indicated in the horizontal section.	1), 2) None 3) Conditional upon passage and coming into force of all necessary new communication acts, commencing from the year of 2006, Thailand will introduce the national treatment elements as contained in those acts into the relevant parts of its Schedule of Specific Commitments relating to the supply of public telecommunication services. 4) Unbound as indicated in the horizontal section.	Conditional upon passage and coming into force of all necessary new communication acts, commencing from the year of 2006, Thailand will introduce into its Schedule of Specific Commitments on public telecommunication services its treatment on the subjects relating to competitive safeguards, interconnection, universal service, public availability of licensing criteria, separation of regulatory and operational functions, and the allocation and use of scarce resources.