CHAPTER 2

AN OVERVIEW OF THE TELECOMMUNICATIONS INDUSTRY IN MALAYSIA

This section gives a brief overview of Malaysian telecommunications industry. This includes historical development of the industry, roles and responsibilities of the authorities concerned in regulating and developing the industry as well as the profiles of five major operators.

2.1 HISTORICAL BACKGROUND

The introduction of telephone services in Malaysia started in 1891 with the first telephone exchange installed in Kuala Lumpur. During the initial development stage, there were only 21 telephones in Kuala Lumpur supported by 400 miles of telephone and telegraph lines. By 1908, the telecommunications system was then regarded fairly advanced particularly in Peninsular Malaya.

Realizing the importance of communications and the interconnection between postal and telegraph services, these two services were later incorporated under one service portfolio known as Post and Telegraph Department. The Department was responsible in providing all telecommunications services throughout Malaya. In 1946, under the

occupation of the Japanese, these two services were then segregated to form two separate entities. This major event saw the establishment of the Telecommunications Department.

In Sabah and Sarawak however, telecommunications continued to be administered under Posts and Telecommunications Department until 1967 when the separation of the two was executed. By 1st January 1968, Telecommunications Department Malaysia or Jabatan Telekomunikasi Malaysia (JTM) came into being with the merger of the Telecommunications Department of Sabah and Sarawak with that of Peninsular Malaysia.

In 1987, the operation of Malaysia's telecommunications services was transferred from JTM to Syarikat Telekom Malaysia Berhad (STM), which became a public listed company in 1991[1]. The government retained a majority shareholding in Telekom Malaysia Berhad to ensure that Telekom Malaysia's important operational decisions are consistent with government policy.

Telekom Malaysia introduced mobile services into Malaysia in 1985. Since then, the Government granted a number of licenses to private sector telecommunication operators in an effort to develop the country's telecommunications industry and infrastructure.

In 1999, the Government established the Malaysian Communications and Multimedia Commission (MCMC) as the regulatory body charged with overseeing the communications and multimedia industry under the auspices of the Ministry of Energy,

[1] Telekom Malaysia was incorporated as a privatized company on October 12, 1984.

Communications and Multimedia (MECM). The Ministry is responsible for planning and formulating a national policy of the communications and multimedia industry in Malaysia and for licensing telecommunications operators. The industry has transformed from a monopolistic regime with Telekom Malaysia's monopoly over mobile, fixed line and international telephony services to the current more transparent, more liberalized structure promoting increased competition and efficiency. On top of that, the government also encouraged foreign investors to provide the necessary capital investment and technological know-how and experience to promote the rapid development of the telecommunications market in Malaysia.

2.2 REGULATORY FRAMEWORK

The government introduced a new regulatory regime in November 1998 to govern the telecommunications, broadcasting and Internet industries. The Malaysian Communications and Multimedia Act (CMA), 1998 was enacted to address the convergence of the traditional telecommunications, broadcasting and internet industries and to promote greater transparency and clarity as well as industry self-regulation.

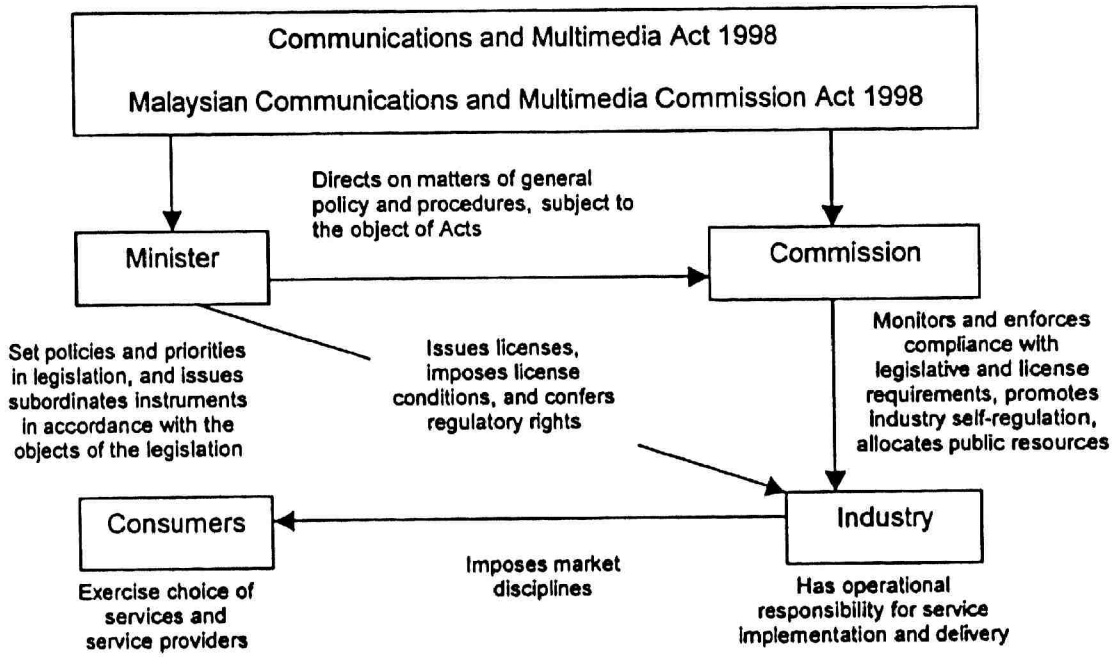
The communications and multimedia industry is regulated by the Malaysian Communications and Multimedia Commission (MCMC) which assumed this responsibility on April 1, 1999. Previously, the telecommunications industry was regulated by the Jabatan Telekomunikasi Malaysia (JTM), while the broadcasting industry was regulated by

the Ministry of Information. The Commission was established under the Malaysian Communication and Multimedia Commission Act, 1998 which came into force on November 1, 1998. The roles of the Commission include (refer Figure 2.1):

a) managing and overseeing the communication technology, multimedia and broadcasting sectors;
b) setting standards for the telecommunications equipment industry;
c) issuing licenses;
d) ensuring a transparent regulatory framework;
e) encouraging and promoting the development of the communications and multimedia industry, including the area of research and training;
f) encouraging and promoting self-regulation in the communications and multimedia industry.

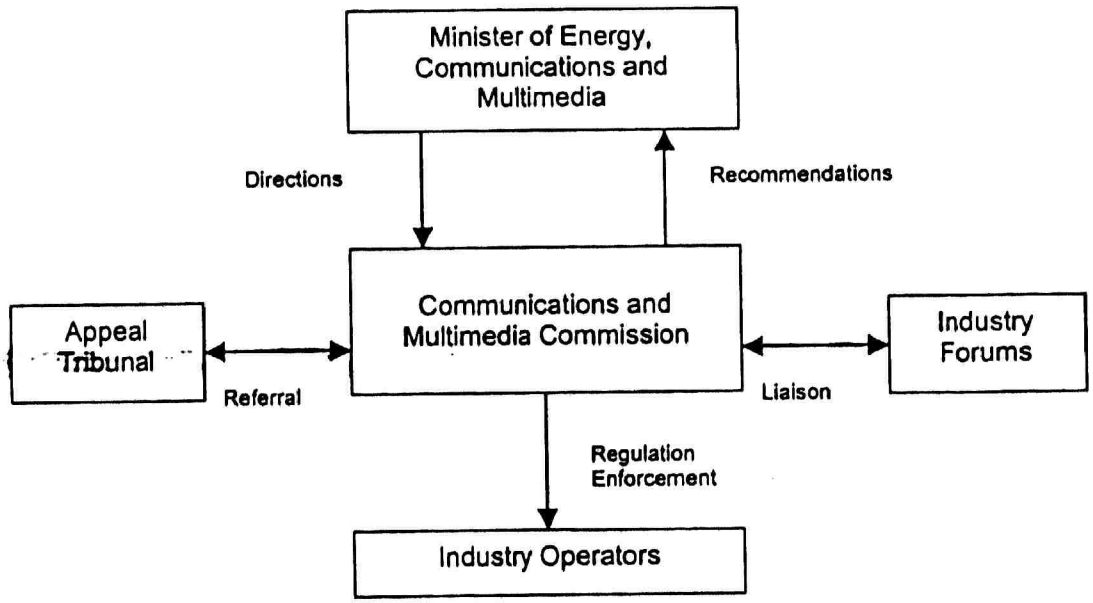
Under the CMA, the Commission has the power to issue directions to licensees, to make determinations, to hold public inquiries and to conduct investigations. The Commission is responsible for policy implementation while the Minister is responsible for policy making in respect to the communications and multimedia industry (refer Figure 2.2). The Minister is also responsible for issuing licenses to network and service providers under the recommendations of the Commission. The Minister is empowered to issue directions to the Commission on the exercise of its powers and performance of its functions under the CMA.

Figure 2.1: Roles of the Commission



Source: MCMC Annual Report 1999

Figure 2.2: The Regulatory Framework for the Telecommunications Industry in Malaysia



Source: Lee (2001)

2.3 STRUCTURE OF MALAYSIAN TELECOMMUNICATIONS INDUSTRY

The telecommunications industry can be usefully viewed, in principle, as a combination of three distinct components:

a) terminal equipment manufacturers/ providers

b) network providers

c) network services providers

The backbone of the system is the network of transmission lines and stations which makes possible the provision of services, with the terminal equipment providing the human interface.

2.3.1 Terminal Equipment

Terminal Equipment Manufacturers/ Providers cover firms providing the equipment at the terminal points of telecommunication networks, for instance, telephone equipment, facsimile machines, answering machines and pagers.

2.3.2 Network Providers and Network Services Providers

While in principle, they are distinct, in Malaysia and in most other countries, network providers and network service providers are usually delivered by the same companies.

With privatization however, more companies are providing both network and network services. In Malaysia, there are currently (refer Table 2.1):

- Seven licenses for fixed-line domestic services[2]
- Five licenses for international services
- Eight licenses for cellular services on five cellular systems

These licenses are held by six companies (following a number of takeovers). All but one of the six companies has licenses in at least two of the above areas. The remaining company has a license for fixed-line domestic service in a limited area.

[2] Telekom Malaysia Berhad, TT dotCom, Maxis Broadband, Celcom Transmission (m) Sdn. Bhd., DiGi, Fiberail Sdn. Bhd., and Prismanet (M) Sdn. Bhd.

Table 2.1: Operating licenses issued to main player of the industry

Operator	Maxis	Telekom Malaysia	Celcom	TIME	DiGi
Domestic Fixed Line	✓	✓	✓	✓	✓
International Gateway	✓	✓	✓	✓	✓
Payphone	×	✓	×	✓	×
Internet Service Provider	Maxis Net	TMNet	CelcomNet	TimeNet	iDigi
Cellular	✓	✓	✓	✓	✓
Spectrum	GSM900 (2×10MHz)	PCN1800 (2×25MHz) AMPS (2×11MHz)	GSM900 ETACS (2×17MHz)	PCN1800 (2×25MHz)	PCN1800 (2×25MHz)
Brand	*maxis*	TMTOUCH Mobifon ATUR 011	Celcom ART900	TIMECEL	DiGi

Source: Maxis Prospectus (2002)

2.4 DEVELOPMENT OF MOBILE TELECOMMUNICATION SERVICES

Mobile telecommunications services were first introduced in Malaysia in 1985, with the first mobile system using Nordic analogue technology, NMT450. Under the brand name of ATUR011, the system provided by Telekom Malaysia was claimed to be the first in Asia. With the installation of five mobile telephone exchanges and thousands of radio base stations, the service has provided almost nation-wide coverage.

In 1988, a new license was issued to STM Cellular Sdn. Bhd. to provide mobile services using more advanced analogue network ETACS 900. The following year, Alpine Resources Sdn. Bhd. (now Celcom Sdn. Bhd.) acquired all the shares held by the parent company, Syarikat Telekom Malaysia and took over the operation with the brand name of Celcom ART900. Within three years of operation, Celcom has successfully increased its subscriber base from 23 000 in 1990 to 123 330 in 1992, overtaking the incumbent market share.

Later in 1993, the market was liberalized and opened to new comers whereby six new licenses were issued. Given the availability of second-generation platforms featuring digital voice services and the emergence of several new mobile players, the cellular phone segment has grown rapidly throughout the years. Since the launch of the first digital mobile phone in May 1995 by DiGi using the GSM 1800 MHz platform, the digital-based (GSM) subscribers have attained eight percent of the total market by the end of the same year. In 1998, the total number of analogue subscribers was overtaken by the GSM subscribers with more than one million subscribers. To date, the GSM-based subscribers have dominated the market with up to 96 percent of the whole market. It is expected that by year 2005, all operators will be only offering the digital network platform to all subscribers.[3]

As for the whole industry, the total number of subscribers has increased from 1.513 million at the end of 1996 to 7.477 million at the end of 2001 while mobile penetration has

[3] All Mobikom 018 analogue subscribers were successfully reassigned to TM Touch digital network on October 28, 2002.

also increased from 7.1 percent to 31.1 percent during the same period. In terms of services, prepaid product remains a significant growth driver and accounted for 58.4 percent of total subscribers by end-2001, increased by 9.1 percent from year 2000. Figures 2.3 to 2.5 summarize the development of mobile services in Malaysia.

Behind the strong growth of the mobile sector in Malaysia, government policies and initiatives have been instrumental in promoting this success. In 1998, foreign companies were permitted to raise their equity in Malaysian telecom companies from 49 percent to 61 percent with the understanding that foreign equity would be wound back to 49 percent in five years[4]. In mid-2001, the government also announced the removal of 20 percent import duties and 10 percent sales tax on terminals and mobile infrastructure. Nevertheless, growth of the industry has also been attributed to other factors such as increase in the standard of living and fierce competition between the five operators in terms of network quality and value-added services.

Hence, we have also seen the introduction of more advanced high-tech value-added services such as short messaging service (SMS) application, Wireless Application Protocol (WAP), e-mail and mobile internet. The 'hype' around WAP has now moved towards General Packet Radio Services (GPRS) – capable of transmitting data for internet access on mobile phones of up to 114 kbps from the initial 9.6 kbps. To date, only TimeCel has launched the GPRS while the other four operators are still under trial period.

[4] Following the event, British Telecom acquired a 33 percent stake in Maxis Communications. On Sept. 14, 2001, Telenor increased its stake in DiGi and becomes the first majority foreign-owned service provider in Malaysia.

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Another new service, set to revolutionize the world of mobile telecommunication, is the 3rd Generation Mobile System (3G), which enables voice, images, data and internet to be transmitted at very high speed of up to 2 megabits per second. The MCMC received five bids for the allocation of spectrum blocks to implement International Mobile Telephone 2000 (IMT-2000) services (3G) and on July 30, 2002, MCMC announced the award of two spectrum blocks to Telekom Malaysia Berhad and UMTS (Malaysia) Sdn Bhd.

Despite this tremendous growth, Malaysian cellular telecommunications performance remains relatively low compared to other countries in the Asia Pacific region. Table 2.2 and 2.3 below set out comparative industry information for Malaysia and other selected Asia Pacific countries for the year 2001.

Table 2.2: Asia Pacific Mobile Subscribers by Country, 2001

Country	Total Subscribers	Yearly Growth (%)
South Korea	29 047 200	8.6
Taiwan	21 633 000	20.7
Singapore	2 858 800	21.0
Philippines	10 447 100	67.7
Malaysia	7 477 000	39.5

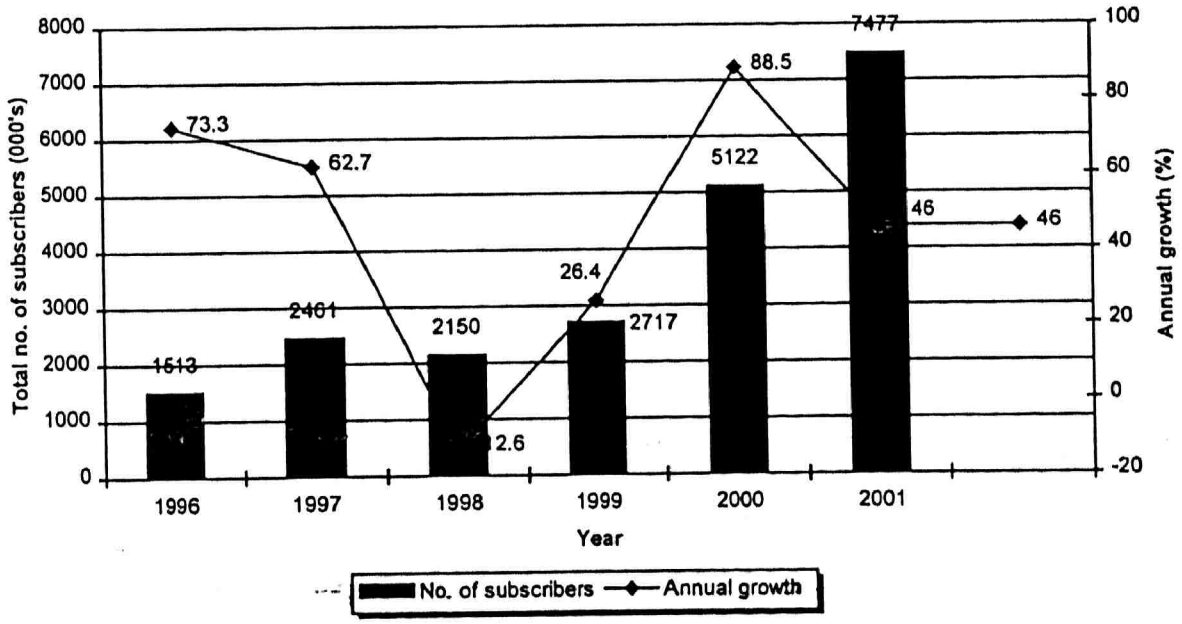
Source: 2002 Telecommunication and Information Highways in Asia: Telecommunications Market Overview

Table 2.3: Asia Pacific Fixed and Mobile Penetration Rate by Country, 2001

Country	Penetration Rate (%)		Year Mobile Passed Fixed
	Fixed Line	Mobile	
South Korea	22.7	60.6	1999
Taiwan	57.3	96.7	2000
Singapore	47.1	66.5	2000
Philippines	13.7	12.6	2000
Malaysia	19.6	31.1	2000

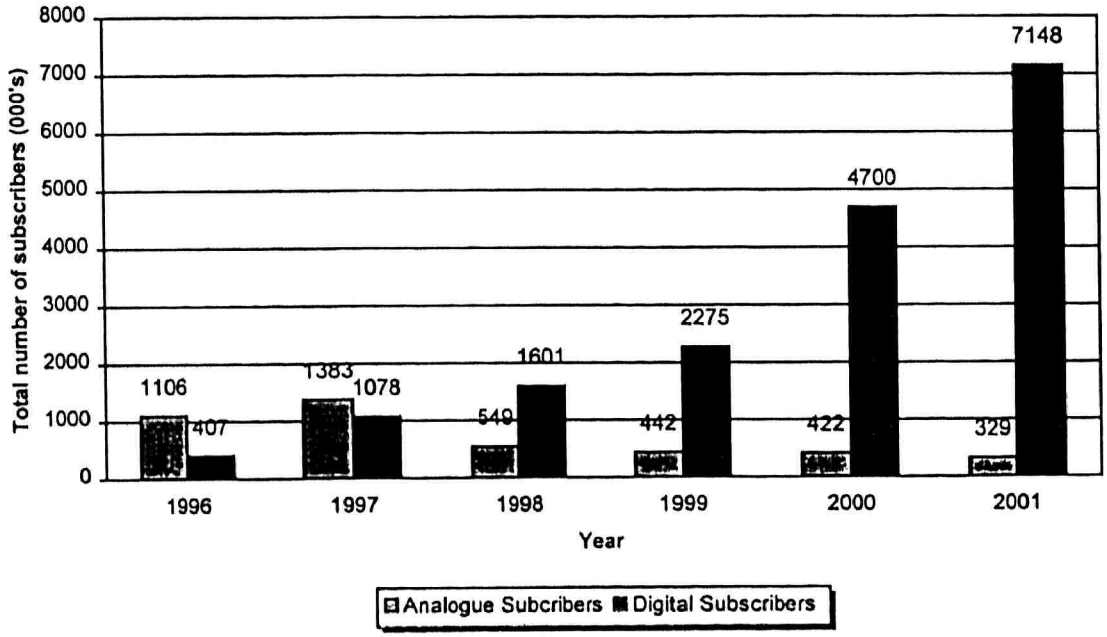
Source: 2002 Telecommunication and Information Highways in Asia: Telecommunications Market Overview

Figure 2.3: Growth of mobile services



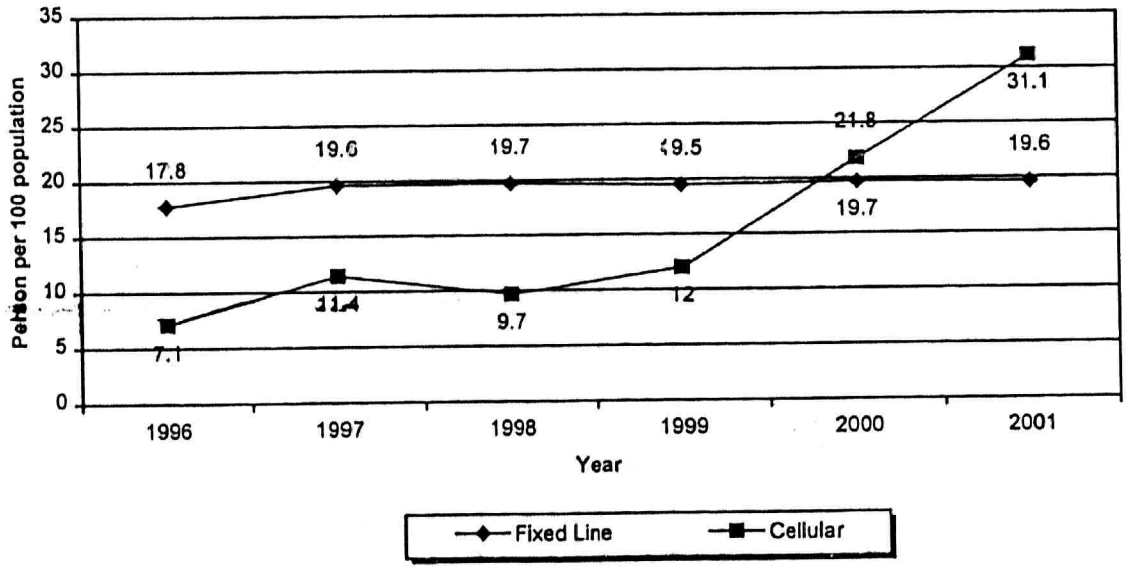
Source: Malaysian Communication and Multimedia Commission (MCMC)

Figure 2.4: Growth of mobile services by networks



Source: Malaysian Communication and Multimedia Commission (MCMC)

Figure 2.5: Penetration rate for fixed and cellular



Source: Malaysian Communication and Multimedia Commission (MCMC)

2.5 PROFILE OF OPERATORS

2.5.1 MAXIS

Maxis Communications (formerly Binariang) was established in 1993 by the industrial conglomerate Usaha Tegas. The following year it was granted a 20-year license by the Malaysian Government to build an advanced telecoms network and to offer mobile, fixed domestic wire line, international and satellite telephone, internet, cable TV and data transmission services.

Maxis witnessed rapid expansion in 2000 when its customer base nearly doubled to 1.4 million and the trend continued in 2001 to put it in a poll position in Malaysia's mobile market; by the end of the year it had approximately 2.3 million subscriber, of which 1.265 million took its 'Hotlink' prepaid option. Maxis launched WAP services in May 2000 and initiated GPRS trials three months later. At the end of 2001, Maxis's GSM network covered around 70 percent of the population.

In June 2002, Maxis underwent an USD 804 million IPO which saw 26.7 percent of the company floated. Ananda Krishnan holds 38.7 percent through Usaha Tegas and Maxis Holding, while a further 24.7 percent is held by Bumiputra. Maxis is now undergoing a move to acquire TimedotCom.

2.5.2 CELCOM

Celcom is the brand name for TRI's mobile operations and is the country's second largest cellular company, having been ousted from the number one position by rival Maxis in 2001. By the end of the year 2001, it had 2.13 million subscribers, up from 1.53 million twelve months earlier; 60 percent of those were prepaid. By the end of March 2002, its total subscribers had risen to 2.2 million comprising of 790 527 GSM post-paid subscribers and 1.25 million pre-paid subscribers.

Initially, Celcom was a wholly owned subsidiary of TRI. However, as a result of a recent change in ownership, Telekom Malaysia now holds 47.93 percent of TRI, with the other main shareholders being Deutsche Telecom (7.99 percent), Beringin Murni Sdn. Bhd. (7.83 percent), Employees Provident Fund (11.29 percent) and Tajudin Ramli (0.37 percent).

2.5.3 TELEKOM MALAYSIA

Former monopoly operator Telekom Malaysia provides national and international voice, data, telex and ISDN services in Malaysia. The company was established in 1986 when the regulatory authority, Jabatan Telekom Malaysia (JTM), spun off the then Syarikat Telekom Malaysia as an independent business. It

was partially privatized in 1990. The state telecoms operator also offers mobile services.

Through its wholly owned subsidiary TM Cellular, Telekom Malaysia operates a digital service called Tm Touch and an ATUR-450 analogue network which is principally aimed at rural customer. It ended 2001 with 1.36 million subscribers, 1.21 million of which were connected to the digital service, a 67.1 percent increase from 724 000 twelve months earlier. Of these, 817 000 were post-paid customers.

TM Cellular is wholly owned by Telekom Malaysia, which in turn is owned by Khazanah Nasional (35.91 percent), the Ministry of Finance (21.06 percent), the Employees Provident Fund (11.44 percent), Bank Negara Malaysia (8.15 percent) and others (23.44 percent).

2.5.4 DiGi

DiGi, formerly known as Mutiara Telecommunications, was established in September 1994 although it was not until the following May that it launched Malaysia's first digital mobile telephony service. In early March 2001, it reached the one million subscriber mark, which had risen to 1.039 million by the end of the year. DiGi was the first telecommunication company to be listed on the Kuala

Lumpur Stock Exchange Main Board under the infrastructure Project Companies category. It is also the first operator in Malaysia to launch the highly popular prepaid mobile phone service, known as DiGi Prepaid. In June 2002, DiGi was again the first to offer Automatic International Roaming and General Packet Radio Services (GPRS) to its prepaid mobile subscribers nationwide.

2.5.5 TIMEDOTCOM

TimedotCom, the telecoms division Time Engineering, was incorporated in Malaysia as a public company in December 1996 under the name Time Telecommunications Holdings; it took the name TimedotCom in January 2000. TimedotCom is the holding company for TT dotcom, TimeCel, Time Reach and Time dotNet.

TimedotCom provides GSM-1800 services via its subsidiaries TimeCel, formerly known as Time Wireless. TimeCel saw an impressive 158 percent increase in customers in 2000 to 645 000 at the end of the year. In 2001, its subscriber base rose by a further 86 percent to 1.2 million. In June 2000, TimeCel launched a WAP service, TimeWap and in December began offering GPRS in restricted areas.

The following tables and figure summarize general information of the operators and the market share for digital network platform (GSM), respectively.

Table 2.4: Digital Mobile Telecommunications in Malaysia, 2002

OPERATOR	NETWORK	DATE LICENSE ISSUED	YEAR OPERATION STARTED	BRAND NAME	ACCESS CODE	WAP	GPRS
TM Cellular	GSM	1 June 1984	June 1995	TM Touch	013	✓	Trials
Celcom	GSM	1 April 1989	Sept. 1995	Celcom	019	✓	Trials
Maxis	GSM	1 Jan. 1993	Aug. 1995	Maxis	012	✓	Trials
TimeCel	GSM	24 Dec. 1993	Aug. 1995	TimeCel	017	✓	✓
DiGi	GSM	8 Aug. 1994	May1995	DiGi	016	✓	Trials

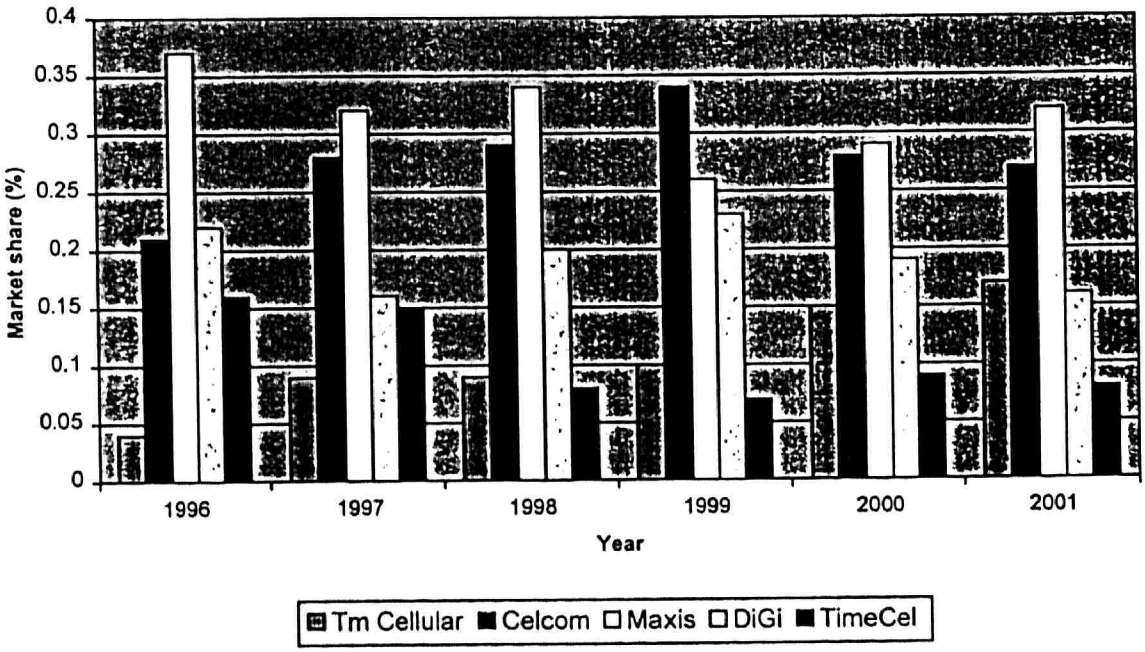
Source: Malaysian Communications and Multimedia Commission (MCMC)

Table 2.5: Digital Mobile Market Share (%)

Operator	1996	1997	1998	1999	2000	2001
TM Cellular	4	9	9	10	15	17
Celcom	21	28	29	34	28	27
Maxis	37	32	34	26	29	32
DiGi	22	16	20	23	19	16
TimeCel	16	15	8	7	9	8

Source: Malaysian Communications and Multimedia Commission (MCMC)

Figure 2.6: Digital Mobile Market Share (%)



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