The drive towards the Malaysian telecommunications reform is mainly motivated by low penetration rates, poor quality of services, inefficient management and imbalanced development. The solution to these problems is to change the delivery of telecommunications services from public provision to private provision via privatization. In addition, liberalization is also carried out to strengthen the degree of competition in the sector. Concomitantly, advances in information and communications technology have brought about new challenges to the regulatory regime in telecommunications sector.

There are four phases of regulatory regime in the Malaysian telecommunications sector. They are:

- 4.1 Pre-Privatization Era: 1957-87
- 4.2 Corporatization Era: 1987-90
- 4.3 Post-privatization Era I: 1991-97
- 4.4 Post-privatization Era II: 1998-present

### 4.1 Pre-Privatization: 1957-1987

**Who is the regulator?**

The Malaysian telecommunications sector had been operated by JTM (Malaysian Telecommunications Department), which was dealt solely with regulatory function and reported to Ministry of Energy, Telecommunications and Posts (METP)\(^\text{25}\). Whereas Ministry is a policy maker, which has the power to make regulation for the control of any telecommunications equipment besides having power to grant licenses, as stated in Telecommunications Act 1950, Section 3(1).
What was regulated?

In the Malaysia pre-privatization era, the government was directly involved in fulfilling the social obligations under the Universal Service Provider (USP). This has led to cross-subsidization by urban counterparts in the basic telephony service to rural, since the tariff for basic service is calculated on the basis of cost-plus pricing principle, that is, average cost plus a profit mark-up. There was no USP fund, but Telecommunications Fund was available. Director General has the right to controlled the tariff for basic service was regulated base on cost-plus pricing i.e. average cost plus a profit mark-up. Telecommunications services were 100% monopoly by the government.

How was the sector regulated?

For license issues, any offence of license contrary to Part IV of regulation was liable to fine only a small amount, not exceeding 500 ringgit (Act 1950, Section 21). For those who has intention to damage telecommunications plant will be fined for larger amount of 2 thousand or imprisonment up to 3 years or both (Section 25). There is no experience dealing with competition and no experience operating in a private sector environment and no system in place for private sector operation. With rapid technological development, there is a need to shift from providing basic telephone to value added services such as multimedia integration of voice, text, data, graphic, mobile radio, satellite besides paging, cellular and other value added services to enhance competition in telecommunications services.

Legal status of regulation

There was an old act took place namely the Telecommunication Act of 1950 (Act 20). It granted the government to provide all domestic and international telecommunications service either by itself or license to others to do so. It also enables setting up a regulatory body. This act was amended in year 1984 and 1985. In the Telecommunications (Amendment) Act 1984, the Minister has the power to make regulation for fees, rent or royalty payable on the license. Meanwhile, Telecommunications Amendments Act 1985 reformulated JTM as the government regulatory authority as well as allowed the minister to appoint Director General (D.G) of telecommunications for the purpose of performing the duties assigned to him under this act (Section 3B).

4.2 Corporatization Era: 1987 - 1990

As in other utilities sectors (such as power and water), legal reform such as privatization is the first step in a process of market reform. In the telecommunications sector, privatization began with corporatization. The process of privatization was not systematic in Malaysia. The government opted to give the project on a first-come-first-served policy instead of evaluating their business performance. The privatization of STM took place by the method of sale of equity. STM was established on January 1, 1987. It was given twenty-year license monopoly to take over the provision of telecommunications network and basic service from JTM. Inspite of regulatory reform in 1987, Malaysian government sold 25% of the assets to the private sector, the company's management continues to be dominated by the bureaucracy. On Nov 7, 1990, STM was listed on the Main Board of the KLSE and changed name from STM to Telekom Malaysia Berhad
(TMB). The government has only adopted its partial equity to the public and remained the largest shareholder in TMB.

**Who is the regulator?**

JTM remained as the regulator of the telecommunications industry. It monitored and enforced licenses granted by METP to STM. On the other hand, following the successful privatization, the role of the ministry has shifted from being a service provider to a policy regulator. The Ministry's main thrust was to facilitate growth of the industry to ensure the availability of the high quality, efficient and safe services at reasonable prices to consumers throughout the country.

**Legal status of regulation:**

The transformation from JTM to STM lead to a series of legislation changes. Firstly, the *Telecommunication Services (successor company) Act of 1985* was passed through Parliament to allow the transfer of telecommunications operating assets and liabilities from JTM to STM besides the transfer of staff. Secondly, *Telecommunication Act of 1950* was amended to permit a regulatory body to be set up. Thirdly, the Pensions (Amendment) Act 1985 appeal the Pensions Act of 1980 to protect retirement benefits to staff if they chose to retire instead of joining the new operating company. In addition, due to the more favourable terms and conditions of service in new successor company, there was a big shift of many experienced staffs from JTM to newly privatized entities [*Telecommunications Services (successor company) Act of 1985, section 9(2)*]. In terms of
employment, STM hold senior managerial positions to infuse the corporate culture into it. Finally, 28,364 staffs voluntarily accepted employment in STM from January 1, 1987, while 102 employees were transferred to the new regulatory authority (Daud 1989, p.119).

Telecommunication Amendment Act 1985 allowed government to appoint a Director General (DG) to be responsible for regulation, supervision and ensured public were protected in relation to telecommunications services. Function of DG of both Malaysia and United Kingdom are very similar. Both stress on the importance of the protection of public interest, encourage R&D and encourage foreign telecommunications businesses. The only different is that in the Telecommunications (Amendment) Act 1985, there is no mention of "competition" at all. The 1985 Act only emphasizes on the function of the DG in relation to the enforcement of standards, regulation and representation of government at international forum. In the case of UK, the Telecommunications Act 1984 encouraged effective competition in the provision of services and supply of apparatus amongst commercial companies in abroad.

What was regulated?

The entry condition in both payphone and cellular market have been substantially loosen. It was to ensure that the social obligation of providing rural telecommunications services is carried out by STM even though it is not towards it's commercial objectives.

---

26 For more detail about the employment agreement, see Kennedy (1990), p.215 & 216 and Syed Hussein Mohamed (1994).
How sector was regulated?

The government issued Privatization Master Plan (PMP) in 1985 as a privatization guideline to address how to make the privatization program effectively. Licenses have been awarded on a non-competitive basis. Virtually, all of the licenses have gone to Bumiputera firms. Thus, the ethnic issue was seemed like a key determinant of success in application those days.

4.3 Post-Privatization Era I: 1991-1997

Who is the regulator?

After the incorporation in 1990, government has split its role into two, i.e. JTM has been stripped of its operational function which is now played by STM in deciding whether to advise the Minister to approve, to amend or to reject a tariff increase. Its role was act as advisor to the ministers. However, the regulatory decision was in hand of government which may has been deliberated at the cabinet level. It focuses on operational services which is based on commercialization and dealing with marketing, customer orientation and infrastructure. STM was registered under Companies Act of 1965 with 100% state ownership and a share capital of RM500 million. Meanwhile, JTM remained its a regulatory role.

Legal status of regulation

In 1993, STM made its share listed in the KLSE with more than US$5billion capital and become the largest listed company at that moment. The regulations that took place were Telecommunication (Amendment) Act 1991 and Telecommunications
(Amendment) Act 1993. In 1991 Act, METP had given the power to make regulation for wider aspect such as sales, installation and maintenance of any telecommunications equipment.

**What was regulated?**

Competition forces incumbents to rebalance their tariffs as competitors enter the profitable markets and leave the subsidized markets to them. USP burden still was borne solely by TMB. The pricing mechanism adopted here was price cap with no regular tariff review. In 1985, there is a flat rate pricing mechanism for local call. After a long regulatory lag of 11 years, another tariff review had been taken place in year 1996.

**How was the sector regulated?**

Since 1994, competition has been accelerated based on segmentation. The government licensed 4 companies (Celcom, Maxis, DiGi Telecom and Time Telecom) in local telephony market since May 1994 to compete with the incumbent TMB. Penalty for any breach of license and for those who purposely damage telecommunications plant will be liable for a larger amount of fine compared with 1950 Act, of not exceeding RM100,000 (Act 1991, Section 21) and RM20,000 plus an imprisonment up to 3 years or both respectively (Act 1991, Section 25). In addition, National Telecommunications Policy 1992 was created to stipulate all operators of fixed and mobile telecommunications services provide interconnectivity to each other. At the same time, the USP burden was still solely borne by TMB.

---

27 See Naidu and Lee (1994) for Malaysia’s privatization objectives, (page 31)
4.4 Post Privatization Era II: 1998-Present

The telecommunications landscape in recent years is characterized by the convergence between telecommunications, broadcasting and computing. In order to ensure Malaysia is capable to participate in this competitive information age requires new policies, regulatory and legislative frameworks. A set of policies and regulations is necessary to enable a rapid transition to full competition. Some of the major issues confronting today including equal access, tariff restructuring, interconnection charges, Universal Service Provision (USP), spectrum management, new licensing structure and etc are discussed below.

4.4.1 Restructuring of Ministry

The regulatory structures prior to the commencement of the CMA 1998 was segmented by separate regulatory authorities and different ministries. The Ministry of Information regulated the broadcasting industries whereas JTM regulated telecommunications industry until March 31, 1999. Meanwhile, the information technology (IT) industry did not fall within any specific regulatory regime.

The Ministry of Energy, Communication and Multimedia (MECM) was established on November 1, 1998 through a restructuring of the METP. It was formed to develop the communications and multimedia industry based on the concept of convergence of telecommunications, broadcasting and computing services.
4.4.2 Legislative Changes and Regulatory Commission

The new Communication and Multimedia Act 1998 (CMA) was introduced to supersede the Telecommunications Act 1950 and the Broadcasting Act 1988. Meanwhile, the Malaysian Communications and Multimedia Commission Act 1998 (MCMCA) was came into effect on 1 November 1998, to establish the new regulator, Malaysian Communications and Multimedia Commission\(^{28}\) (MCMC). The development of both competition and privatization imply the need for independent regulatory agency. With the setting up of the Commission, JTM ceased to operate from April 1, 1999. MCMC consists of a few members\(^{29}\) which are appointed by the MECM. MCMC plays a critical role in:

- facilitating objective;
- formulating policies and guidelines;

\(^{28}\) See the Communications and Multimedia Commission Act 1998 or see appendix 4 for the functions of the commission.

\(^{29}\) The members of the Commission include a chairman, a member representing the government and not less than two but not more than three other members. They are appointed for a term of not less than two years, but not more than five years and they may eligible for reappointment for less than three terms.
Chart 1: Regulatory Stakeholders - Telecommunications

Prime Minister's Department
- may receive proposals directly
- refers proposal to EPUI Ministry
- depending on seriousness of content

Cabinet
- all telecom licenses approval
- all major policy issues

Ministry of Energy, Telecommunications and Posts
- refers all policy matters to EPUI for advice
- Cabinet to be referred for approval

Ministry of Finance
- Kelanah Holdings
- it is represented by on Board
- advise Ministry on Cabinet papers

Ministry of Information

EPU
- advise Ministry on Policy issues
- advise Ministry on Cabinet paper
- advise PM on telecom matters

JTM, ENERGY, POSTS
- all radio communication licenses for radiocomapatus
- apparatus approval and standards
- pricing, service quality, service provision
- frequency management and approval
- international license- ITU, APT, ASEAN POSTEL, INTELSAT, IMMARSAT
- interconnection

Source: adopted from Telekom Malaysia Berhad
• addressing key issues related to the communication and multimedia activities in the country based on government's national policy objectives\(^{30}\), and

• advising the MECM on regulatory issues (including pricing, standard, quality of service)

Both the CMA and MCMCA attempt to address the regulatory challenges posed by the convergence of the telecommunications, broadcasting and computing industries. They also seek to emphasize the principles of transparency and minimal regulation. The aim of these policies are to position Malaysia in a competitive world market level that can be measure up to the foreign competitors. But to what extent it has carried out is another question.

4.4.3 Entry-exit condition

Due to the phenomenon of technology convergence, telecommunications, IT and broadcasting industries have begun to trespass the revenue of the others. In Malaysia, convergence abolishes the traditional view of telecommunications as a natural monopoly. A pro-competitive licensing policy has been implemented with no barrier of entry to compete in each other markets. This new era is driven by the Multimedia Super Corridor (MSC) and the Communication and Multimedia Act (CMA) 1998. Effective April 1, 2000, the communication and multimedia industry enable the existing telecommunications, broadcasting and IT companies to migrate to a new convergence licensing regime and less regulated market structure for the industry. This open entry policy of telecommunication

---

\(^{30}\) See Appendix 5 for the main national policy objectives as provided in the Communications and Multimedia Act 1998.
services is given priority to ensure the MSC maintains its competitive edge, especially in the value-added network segmentation.

One of the economic characteristics of this sector is entry barrier of the interconnection with the incumbent operator. Removing barriers to market entry is more likely to improve sector performance than to damage it. Hence, regulation is here to optimize the sector performance by preventing the abuse of monopoly power from restricting output, discriminating to different customers and exploiting its market power contrary to the public interest. Without regulation, entry barriers may take place. In addition, there is no stimulus for the incumbent to reduced output and cost. Consequently, it leads to technical inefficiency and under-investment due to those potential losses of scale economies.

4.4.4. Tariff restructuring

In telecommunications, the wave of deregulation and competition has significant impact on the prices of telecommunications services. A tariff is a document that provides details about the rates approved for that service. There is no regulatory rule on which level of prices are regarded as 'too high', but observation of cost and price pattern over time is crucial. High price may incompatible with national goals of providing accessibility to services. Whereas, keeping low prices may lead a carrier with inadequate resources to upgrade facilities. Moreover, tariff increases will always have two conflicting sides: on the one hand, more capital for expansion will be available; on the other, the services will be shifted toward the wealthier population. Hence, regulatory intervention is necessary to ensure that prices will not be set too high to obtain profit.

60
In Malaysia, the purpose of tariff re-balancing is to reduce the cross subsidization of local service by long-distance service and make it possible for the incumbent to compete freely in long distance market. With competition, cross-subsidies should be eliminated so that incumbent cannot price below cost to drive out new entrants instead rates should be oriented costs as listed in CMA, Section 198 (B). Moreover, rate should be structured to attract investment into communication and multimedia industry as stated in CMA, Section 198 (D).

The pricing scheme of telecommunications providers is no longer restricted by a ceiling price and may take a flat rate for a certain number of calls. TMB previous rate was flat 13 sen for local calls since 1985. Then, it has introduced new time based tariffs of 3 sen per minutes local call rate after ten years in June 1996. The government may review and revert to flat rate for local calls tariff. This is the respond of TMB upon World Trade Organization (WTO) for tariff re-balancing in order to get more equal division of call revenue and allow the national communication service providers to come into Malaysia with the aim to increase the level of competition from both local and international operators which including new satellite mobile telephone operators.

Previously, mobile phone users had to pay two cap fees: The annual license fee of RM60 to JTM and RM60 monthly access fee to mobile operators. In line with the government's objective to develop a liberalized communications and multimedia industry, MCMC revoked the Automatic Telephone Using Radio (ATUR) Regulations 1986 on April 1, 2000 and the new Communication and Multimedia (spectrum) Regulation 2000 and CMA 1998 came into effect, the yearly license fees were waived for the use of cellular phones, pager, trunk radio, cordless telephone and leased channel with the advent of new convergence services and capabilities of ensuring a connected society. Malaysia six
cellular phone service providers have flexibility in changing the access charge within the range of RM10 to RM45 to customers. They need to introduce more advanced and attractive services packages, pricing, quality, variety of consumer choices and new technologies to cater for the fast expanding diverse market.

By comparison, RM20 cap for fixed-line phone and RM60 for mobility and flexibility is said to be a fair rate as service providers require huge capital investments and long gestation period to expand their coverage (The Star, April 1, 2000). The old structure of license fees is irrelevant because the fees were always a fixed sum and did not really reflect value-added activities. As a result, the convergence and technology innovation were neglected. The only disadvantage of the new structure is that it has caused loss of revenue from the waived annual license fee on the part of the government.

On the other hand, tariffs for internet will be reviewed to increase internet penetration rate. It is a means to reduce the cost of internet access, and thereby encourage as many people as possible to go online. It is important to make net access more affordable by eliminating the barriers to internet access. As stated in The Star, 30 May 2000, high cost of internet access is a major barrier which cause only 5%-7% of countries population of 22 million have accessed to internet. This rate is low compared to Singapore's 30-35%. We may try to use two-part tariffs towards peak hour and off-peak hour access tariff as implemented in Singapore\(^3\).

\(^3\) Singapore's two ISPs, SingTel and StarHub, have waived registration and access fees. Users only pay call charges of 1.4 cents (3.22 sen) per minute during peak periods and 0.7 cents (1.61 sen) per minute during off-peak periods, which are 6pm to 8 am.
4.4.5 Universal Service Provision (USP)

USP is an important regulatory policy in the telecommunications industry. Under the CMA 1998, USP refers to each company's obligation to roll out new facilities and provide services at affordable rates to less profitable areas such as rural or suburban areas. The goal of USP of telecommunications is to provide basic telephone services widely accessible to the general public. With the advent of USP, the provision of services in rural areas will gradually develop.

USP fund was established to cover excessive costs of serving the subscribers. With the implementation of USP, all players of the industry will be the fund contributors and responsible to set up services to the rural area, provided that several initiatives are given to boost their ability to do so. It is a good move to establish USP fund in this equal access competitive environment.

Due to the convergence, USP will no longer be confined to the telecommunications industry but extended to broadcasting and IT. Hence, in the near future, we might be able to watch broadcasting company showing children program or IT company providing computers or high speed internet connection to the rural school, which is done in US nowadays. This is consistent with one of the government's 10 national policy objectives for the communications and multimedia sector as enshrined in Section 3(2) of CMA 1998 which is to promote a civil society with information based services to enhance quality of work and life.

63
4.4.6 New Licensing Structure

The old licensing structure was based on a segmented market structure and technology biased (Business Time, April 1, 2000). The new licensing regime under the CMA has two broad types of license category. It is the consolidation of the old licenses into two categories, new licenses can be either individual licenses or class licenses. The categories of licenses are network facilities providers, network service providers, application services providers and as a subset of this last category, content applications service providers. The type of license required by an operator depends on the category and nature of activity being provided regardless of the technology used.

Furthermore, individual licenses will only for heavy consumer impact activities, Network facilities and services are regulated through individual licenses with detailed and specific provisions. Meanwhile, application providers are usually regulated by class license with diverse range of services. This is important in a way to promote greater accessibility of those services to the general public. All that requires is register with MCMC and observe generic rules and codes of conduct of the consumer interest and fair trading compared to previous restricted licensing. Whereas, content application providers have a responsibility to ensure users benefit in line with technological advances environment. This implies that it could promote better consumer welfare. However, the internet remains unregulated and this is vital to promote towards knowledge economy.

This new licensing structure corporate under a light handed regulatory regime, involves less regulatory intervention as well as comprise large number of online sector
activities. Under the new licensing structure, activities that were previously unlicensed will remain unlicensed. In addition, licensing requirements have been minimized and all current benefits to licensees will be carried forward to this new regime. Transition to the new licensing regime is optional for existing licenses. However, those who remain operating under old licenses shall not be entitled to any rights under the new regime. It is a means of liberalizing the telecommunications and multimedia industry by encouraging more players to enter the market and providing consumer with a wide variety of innovative services at reasonable costs. The fee structure is based on cost recovery basis and imposed on nominal registration fees for class licenses. The country communication companies are required to pay the minimum license fee of 0.15 percent of gross turnover or RM50,000 (whichever is higher). This is higher than what they were previously paying. (Business Time, April 1, 2000).

32 For more detail in defining the various license categories and the process in determining licensing transaction, see http://www.cmc.gov.my/licenceframe.htm, Attachment 1 and Exhibit 1 respectively.
Table 4.1: License categories and associated criteria

<table>
<thead>
<tr>
<th>Categories of providers</th>
<th>Individual</th>
<th>class</th>
<th>Exempt / not licensed</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Network Facilities Providers</strong></td>
<td>Satellite earth stations, broadband fibre-optic cables, switching equipment, radio communications including base transmission station, public payphone facilities and etc.</td>
<td>Niche or limited purpose facilities such as mobile, trunk, paging and etc.</td>
<td>Incidental facilities, private facilities, broadcasting and production studios, customer premises equipment, internet cross-connect equipment and etc.</td>
</tr>
<tr>
<td><strong>Network Services Providers</strong></td>
<td>Access and connectivity services, bandwidth services, mobile satellite communication services, mobile services, broadcasting distribution services and etc.</td>
<td>Niche access and connectivity services (E.g. trunk mobile)</td>
<td>Private network services, incidental network services, LANc, router internetworking and etc.</td>
</tr>
<tr>
<td><strong>Applications Service Providers</strong></td>
<td>PSTN, public IP, public switched data services, public payphone and etc</td>
<td>Internet access providers, messaging services (SMS, paging and etc), directory services, telegram services, private payphones and card services, audiointext hosting servicing and etc.</td>
<td>E-transaction services, call centres / interactive voice response, interactive information services, webhosting / client servers, network advertising boards and etc.</td>
</tr>
<tr>
<td><strong>Content Applications Service Providers</strong></td>
<td>Satellite broadcasting, terrestrial free to air TV, radio broadcasting, subscription television and etc.</td>
<td>-</td>
<td>Internet content services, internet webcasting, limited content services and etc.</td>
</tr>
</tbody>
</table>

4.4.7 Interconnection Charges

Interconnection to the incumbent carrier's network is usually crucial to the success of the new carrier. To extent to which the telecommunications market is open to competition depends on the rules of interconnection and access. Interconnection in telecommunications simply means the ability of carriers agrees to protocols for accepting and delivering traffic to one another. Operators without their own integrated networks initially have to rely on interconnection and will have to pay an interconnection price as a fee for calls to go through a network.

Interconnections with dominant carrier include technical issue, pricing of access, and unbundling of network components. All these are critical to establish an open competition market.

Licensing regulations ensure that there is no barrier entry for new entrants. Moreover, access regulations enable companies to enter each other's bundled digital services market. Examples of access regulations are cost-based interconnect requirements, equal access requirement and infrastructure sharing requirement (such as resale or unbundling rules).

Government should set policies that create incentives to use existing capacity rather than encourage carriers to duplicate facilities. An effective strategy to encourage the use of existing capacity is resale. However, JTM has not authorized resale. Resale could spurs competition by enabling new service providers to lease excess capacity at wholesale rates from existing carriers. In addition, it could reduce the foreign exchange deficit of the country due to high import, by creating an incentive for new entrant to use surplus fiber
and satellite capacity. The dominant carrier has an incentive to compete in both price and quality to retain or win back subscribers. This principle has been applied at the beginning of competition in US. To foster competition, FCC requires local carriers to provide number portability.\textsuperscript{33}

4.4.8 Equal access (EA)

Equal access (EA) is one of the key elements in the policy to liberalize the telecommunications industry. EA interconnection refers to the levies of an operator to cover the costs of carrying traffic that crosses network boundaries. The main objective of EA is to ensure that the consumers will have the best offer of choices and bring about consumer welfare. It is important that it intends to create a more competitive environment. Under EA, every fixed line operator in the country can freely market its domestic long distance and international direct dial services to the fixed line subscribers at competitive prices. EA allows the other operators to piggyback on TMB infrastructure. But, the problem is difficult to determine the right price. Sharing of transmission towers and access to other networks, including international gateways, satellite networks and internet exchange sharing will be definite. Therefore, operators would need to concentrate on their customer service and plan for the different attractive discount packages to beat the competitors. This forces them to focus on quality of services and product innovation.

MCMC has come up with two guidelines to act against anti-competitive practices in the industry. There are "Guideline on substantial lessening of competition" [RG/SLC/1/00(1)] and "Guideline on dominant positions in a communications market".

\textsuperscript{33} Number portable is number that use to ease in looking for a vendor from different platforms.
[RG/DP/1/00(1)]. Under section 137 to 139 of CMA 1998, the Commission is responsible to take legal action to cease licensee who either currently or potentially to dominant the market or those has substantial effect of lessening competition in a communication market. An example of misconduct is predatory pricing, where prices are set below production costs in short term in order to eliminate competitors and increase long-term profits.

4.4.9 Other policy issues

4.4.9.1 Standard

Price control must be supplemented by quality control. Uniform standard is needed to ensure that the quality of equipment is compatible and acceptable so that it does not discriminate against other vendors. Without such control, the regulated firm would offset its price control by reducing its standard of service. For example, the speed of installation and repair, the responsiveness of directory inquiry, having adequate investment of capacity to avoid congestion and modern transmission technology. Policy options for promoting quality range from incorporation of quality indices into the price control formula, set a standard financial penalty for poor quality, or warn the firm that low quality today will be reflected in lower prices at the next price review.

---

34 Chapter 2, part VI of CMA 1998 prohibit against anti competitive conduct.
4.4.9.2 Spectrum Management

Spectrum means the continuous range of not more than or equal to 420 terahertz of electromagnetic wave (CMA, Section 6). Recognizing that spectrum is a scarce resource, therefore, an optimal utilization of spectrum must be carried out to meet industry need. In Malaysia, in order to promote competition, certain competition methodologies must be implemented. For example, through open bidding for the allocation of spectrum will be implemented. The commission may issue a spectrum assignment\textsuperscript{35} to a person to use one or more specified frequency bands for the purpose consistent with the assignment conditions. These frequency band of spectrum assignments are determined by the Minister (CMA, Section 159).

4.4.9.3 Appeal Tribunal

Ministry may establish an Appeal Tribunal. This is a expert review body to review the appeal from those who was affected by the Commission decision. Appeal Tribunal comprises neutral and representative membership. It is a way to promote transparency of the Commission in its decision making process in a fast and low-cost manner of appeal which is not through court lawsuit. It also assists the performance of the Commission's function for the public interest. The decision of Appeal tribunal is decided on a majority vote of the members Chairman and at least two other members (Section 23). Appeal Tribunal may review any matter relating to the decision of the Commission except the certain determination by the Commission (CMA, Section 18).

\textsuperscript{35} Assignment means the right to use the spectrum, numbers or electronic address.
4.4.9.4 Self-regulation

This new regulatory structure allows the concept of self-regulation to set its own rules and standards without regulatory intervention, unless there is market failure and policy inconsistencies persist. Apart from social regulation, there are three others of regulation, namely economic regulation, technical regulation, and consumer protection. Each of this area has a provision of forum and each forum is responsible for developing codes. These forum and codes form the basis of self-regulation36. There are four separate areas towards self-regulation- Access, Consumer, Content and Technical Standard. One of the ten National Policy Objectives is to promote access, means ensuring all service providers have access to each other's network.

4.4.9.5 Consumer interest

People both within and outside industry need to be informed about the changes of technology to their business and the method or principles by which they will be regulated. The Commission must try to gain the confidence of the various stakeholders in a way that the players and public must be assured that the changes are for the greater good of all.

In sum, the new regulatory framework is based on network and application services unlike the old framework which is based on telecommunications and broadcasting. Hence, the new regulatory framework is designed on the following principles:

a) transparency- to ensure fairness and all market participants

36. See section 212 and 213 of CMA 1998 for more detail.
b) Technology neutral - to allow choice by both industry and consumers and facilitate innovation

c) Self-regulation - industry recommends code and standards

d) Industry development - industry is responsible for promotion, growth, creation and facilitation of industry development

e) Incentive-based regulation - regulatory concessions and rights are matching.

f) Social responsibility - to provide services to under-served group and

g) Consumer interest - to promote and protect the interests of users.