



Suruhanjaya Komunikasi dan Multimedia Malaysia
Malaysian Communications and Multimedia Commission

**A REPORT ON PUBLIC CONSULTATION
ON EFFECTIVE COMPETITION IN THE
ACCESS NETWORK**

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ABBREVIATIONS

ADSL	Asymmetrical Digital Subscriber Line
ANE	Access to Network Elements
ARD	Access Reference Document
ATU	ADSL Transmission Unit
C&M	Communications and Multimedia
CDMA	Code Division Multiple Access
CoC	Cost of Capital
CPE	Customer Premises Equipment
DLC	Digital Loop Carrier
DPL	Digital Power Line
DSL	Digital Subscriber Line
DSLAM	Digital Subscriber Line Access Multiplexer
FAC / FDC	Fully Allocated Cost / Fully Distributed Cost
FDI	Foreign Direct Investment
FTTC	Fibre to the Curb
FTTH	Fibre to the Home
FWA	Fixed Wireless Access
GSM	Global System for Mobile communications
HDF	Handover Distribution Frame
HDSL	High Bit rate Digital Subscriber Line
ISDN	Integrated Services Digital Network
LAN	Local Area Network
LLU	Local Loop Unbundling
LMDS	Local Multipoint Distribution Services
LRIC	Long Run Incremental Cost
MCMC	Malaysian Communications and Multimedia Commission
MDF	Main Distribution Frame
MMDS	Multimedia Multipoint Distribution Services
NPOs	National Policy Objectives
NTP 1994	National Telecommunications Policy 1994
NTP	Network Termination Point
OFC	Optical Fibre Cable
OLNOs	Other Licensed Network Operators
OSS	Operations and Support System
PSTN	Public Switched Telephone Network
QoS	Quality of Service
ROCE	Return on Capital Employed
SDSL	Symmetric Digital Subscriber Line
SLA	Service Level Agreement
SLCP	Sub- Loop Connection Point
UNE	Unbundled Network Elements
VDSL	Very high Data rate Digital Subscriber Line
WLL	Wireless Local Loop
WTO	World Trade Organization

GLOSSARY OF TERMS

This subsection contains a short glossary of the main terms used in this PC Paper.

“CMA” means Communications and Multimedia Act 1998 [Act 588];

“Access Forum” means a forum designated under section 152 of the CMA;

“Access List” means the list of Network Facilities and Network Services contained in the Commission Determination on Access List, Determination No. 1 of 2001, registered on 24 March 2001;

“Access Code” means a voluntary industry code prepared under section 153 of the CMA;

“Access Provider” means a Network Facilities Provider who owns Facilities and/or a Network Service Provider who provides Services that are included in the Access List and includes a holder of a registered licence under section 278 of the CMA; and

“Access Seeker” means a Network Facilities Provider, a Network Service Provider, an Applications Service Provider, or a Content Applications Service Provider who makes a written request for access to Network Facilities or Network Service that are listed in the Access List, including a holder of a registered licence under section 278 of the CMA;

“MAFB” or “Malaysian Access Forum Berhad” means the forum designated under section 152 of the CMA to be the Access Forum;

“MCMCA” means Malaysian Communications and Multimedia Commission Act 1998 [Act 589];

“MCMC” means the Malaysian Communications and Multimedia Commission established under the MCMCA;

“Mandatory Standard on Access” or “MSA” means the Commission Determination on Mandatory Standard on Access, Determination No. 2 of 2003, registered on 14 August 2003;

SECTION 1 – SUMMARY

1.1 INTRODUCTION

The purpose of this paper is to present the summary of comments received from the stakeholders in response to the Public Consultation Paper on Effective Competition in the Access Network (PC Paper), position of the MCMC and the way forward.

1.2 PUBLIC CONSULTATION

MCMC has invited submissions from the interested parties on the contents of the PC Paper to be provided to MCMC by 12 noon, 22 September 2003.

Further, a briefing session was also held on 12 September 2003 at PWTC, Kuala Lumpur, to provide the overview of the PC Paper and attendees were provided with the opportunity to put questions to MCMC and its adviser.

Following the public hearing, MCMC received written submissions from the following parties:

- i. Cable & Wireless Asia (C&W);
- ii. Celcom Malaysia Bhd (Celcom);
- iii. Digi Telecommunications Sdn Bhd (Digi);
- iv. Dr Tengku Akbar Tengku Abdullah (Dr Tengku Akbar);
- v. Maxis Communications Bhd (Maxis);
- vi. Telekom Malaysia Bhd (TMB); and
- vii. Time dotcom Bhd (Time).

MCMC would like to thank interested parties for their participation in this consultative process.

1.3 STRUCTURE OF THE REPORT

1.3.1 The remaining of this Report is structured as follows:

Section 2 provides some background on the PC Paper and provides an overview of the comments received including general comments submitted by the parties and MCMC's response.

Section 3 summarises the responses to the questions identified by MCMC in the PC Paper and MCMC's responses to those submissions.

Section 4 sets out MCMC's conclusions.

SECTION 2: BACKGROUND

2.1 OVERVIEW OF THE SUBMISSIONS RECEIVED

As anticipated, all the respondents excluding the incumbent, have by and large welcomed the initiative of MCMC to introduce Effective Competition in the Access Network. The Access Network is the fundamental input for developing high bandwidth services which will augur economic development and hence an appropriate tool for achieving the NPOs.

Due to factors such as ubiquity of the access network i.e. 97% share of access lines belong to TMB, cost of building new parallel infrastructure, limitations of alternative technologies in terms of reach, availability and affordability the access network remains a bottleneck facility. For promoting competition in this segment, ex-ante regulations are required.

2.2 GENERAL COMMENTS FROM INTERESTED PARTIES

2.2.1 **C&W** is of the view that MCMC is correct in identifying customer access as a fundamental input for high bandwidth and other telecommunications services. High bandwidth telecommunications services are critical to secure economic development, particularly in information related industries, and the attainment of the NPOs identified in the CMA.

There are strong a priori reasons for believing that competition cannot be effective in the supply of customer access. The cost of building a ubiquitous local customer Access Network is characterised as being largely fixed, sunk and joint to all services that use the customer access infrastructure. Because of the economies of scale embedded in the fixed, sunk (and written down) nature of local Access Network costs, incumbent local Access Network operators have the lowest cost base of any Access Network. With much of Malaysia's urban local Access Network now built, these cost characteristics suggest there can be little commercial opportunity for competitive supply of this infrastructure. The only exceptions are:

- Particular types of geographic area, where the costs of new build are not excessive; and
- The availability of new technologies that offer substantial cost savings or capacity advantages to challenge the cost characteristics of the ubiquitous incumbent network - as of this time, no technology exists that is able to challenge the fixed and sunk cost structure of the incumbent's local network on a ubiquitous basis.

Given these, there should be an expectation of regulation of the local Access Network if competition is to be effective in any other telecommunications service. This regulation needs to cover:

- The forms of access made available, e.g. unbundled ANE needed to provide service providers with the maximum scope for competitive supply and innovation;
- The price at which customer access is made available to competitors; and

- The QoS (both provisioning and fault repair times) available to competitors, since both these can potentially be used by an incumbent to exploit its dominant market positions. It is, therefore, essential that the MCMC look at both price and Service Level Agreement (SLA) regulation.

MCMC's PC Paper focuses on unbundling of the metallic local loop. This is important for the maximum level of competitive innovation in consumer and small and medium sized business markets. However, for larger business and enterprise users, it is important that attention is also given to unbundling fibre customer loops. If this is not done, business and enterprise users risk being left reliant on the incumbent local network, with no option of competitive service provision for fibre delivered very high-speed data services.

2.2.2 **DiGi** would like to applaud MCMC's effort to ensure Effective Competition in the Access Network. DiGi is of the view that it is paramount to maintain effective competition in any market, to ensure delivery of new services and choice of service providers to the customers. Indeed industry growth envisioned in the NPOs can only be achieved via the provision of service to customers in a competitive environment. Nevertheless, DiGi advocates that the introduction of effective competition should encourage optimum utilisation of existing infrastructure and the efficient allocation of resources. This holds true particularly in an environment where one operator is significantly larger than the other players. MCMC should undertake to ensure that there is fair and effective competition in the industry via the relevant regulatory instruments. In this regard DiGi is supportive of the consultative process adopted and would welcome the opportunity to participate in further consultation with the MCMC via the PI procedure, as well as discussions with other relevant parties.

2.2.3 **Dr Tengku Akbar** lauds MCMC for seriously pushing for effective competition policies whereby industry players either owners of access networks or access seekers will be able to operate on a level playing field. The opening of access to networks on a level playing field to all telecommunications and media operators alike will definitely benefit final consumers. Malaysia does not need many access network operators as the investments in these network infrastructures are huge and sunk and the returns take a long time to realise. Access seekers should be given access to the network on a level playing field with the access network owner and the access to network pricing should be just and equitable.

2.2.4 **Maxis** appreciates the proactive stance of MCMC to constantly introduce new policies to further promote development of the industry. Maxis supports the introduction of ANE for TMB's local copper Fixed Access Network, given its dominant position in several markets such as PSTN and dial up internet (by its subsidiary TMNet). Moreover, local copper access is fairly standard technology, deployed mainly for PSTN which has demonstrable returns and is not considered high risk.

Maxis considers the two key principles that are relevant for consideration by a regulator prior to embarking on regulatory intervention to further promote effective competition. These two principles are:

Availability of effective competition – If the market has several competitors competing both on infrastructure and service, then there is essentially little reason for promoting more effective competition via unbundling measures like ANE. Existing regulatory measures should be considered effective and any other regulatory efforts are best focused on facilitating further growth via measures like ensuring adequate numbers and technical interoperability.

Balancing incentives to invest with benefits of intervention – Prior to implementation measures to enhance effective competition, a regulator has to consider whether such policies damage the incentive to invest. Maxis considers that if the market has not demonstrated evidence of adequate returns, then regulatory intervention to unbundled access can result in the incumbent bearing the risks and without the corresponding supernormal profits commensurate with the risk, as returns are shared with the Access Seekers. In our opinion, the deployment of copper local loop for PSTN services does not fall into the situation above.

When balancing these two criterias, the regulator should also consider whether there is one single player with unmatched market power in the market segment such that the absence of asymmetrical regulation would result in an uneven playing field to the detriment of that market's development.

The level of effective competition varies across different markets in the Malaysian communications and multimedia industry. As such, it becomes necessary to identify the relevant economic market in the industry before assessing the level of competitiveness and deciding on the appropriate measures.

In general, Maxis believes that there is stronger competition in the cellular markets compared to fixed services. In fixed markets, save for STD and IDD segments, little effective competition has occurred. In particular, Fixed Access Network remains uncompetitive with very little alternative Fixed Access Network infrastructure outside Kuala Lumpur and Pulau Pinang. Consistent with our early argument regarding availability of effective competition, Maxis feels that remedial regulatory plans should be focused here to further promote competition.

On balancing incentives to invest with advantages of intervention, Maxis would like to point out that the infrastructure proposed for ANE is rather standard, well established, and includes items like local loop

2.2.5 **TMB** submits some general comments on the PC Paper. Essentially, it brought forward the arguments that, inter-alia,

- i. LLU is a case that has not been truly established for its mandatory introduction

TMB argues that the PC Paper is solely focused on detailing the MCMC's case of LLU (and arguably network unbundling) rather than genuinely exploring the various scenarios which may stimulate competition in the access network and additional rollout of local loop in those areas which are underserved. In other words, the PC Paper does not outline sufficient reason why additional access competition is needed in Malaysia.

From TMB's perspective, first, there is no clear evidence in the PC Paper to suggest that Malaysia is lagging behind its regional peers in Internet uptake or in broadband uptake. Broadband is available nationwide in both Peninsular and East Malaysia and if one were to take account of the fact that many wireless broadband licences have been issued then there should be a choice of broadband platforms.

TMB further argues that mandatory unbundling would undermine the Government's objective of facilities-based competition⁸ and indeed future investment in local access networks.

⁸ A policy which TMB asserted contained in the NTP 1994 and subsequent licensing of network facilities providers such as last mile broadband providers.

Importantly, almost half of those access lines⁹ have been built since the start of fixed network competition in 1993/94 – this is in stark contrast with incumbent operators in foreign countries which built ubiquitous networks prior to the start of competition and the introduction of LLU.¹⁰

ii. LLU is unproven and may undermine dynamic efficiency in the sector

Since the recent changes to the US policy on LLU (and Unbundled Network Elements), it is not yet proven that LLU is successful in promoting market entry and its introduction may well have impeded sustainable investment in competing facilities and alternative access technologies and networks.

Unbundling poses a significant threat to dynamic efficiency. This is because by its very nature it would unavoidably constrain TMB's use of its assets. However, the most efficient use of those assets will change radically as changes in network architecture are made in response to customer demand and changing cost structure induced by new technologies. Specifying how those assets may be used - which is what unbundling would do - threatens the network upgrade, future technical innovation and hence dynamic efficiency.

In fact, unbundling could only worsen real competition in the access market, as it would distort investment in access technology and would tend to result in the industry increasing its dependence on TMB's undifferentiated access assets (i.e. its copper access network). Arguably, that would establish an industry structure supportive of monopolistic or oligopolistic behaviour – the exact opposite of the aim sought by the MCMC.

iii. Premature to mandate LLU in Malaysia given Malaysia's current teledensity

The introduction of LLU would undermine Government policy which is aimed at bridging the digital divide and improving teledensity in rural and remote regions of Malaysia by moving the competitive focus to urban areas of Malaysia.

iv. Potential Conflict to Applicable Laws

Unbundling in any form is potentially in conflict of applicable laws as it involves expropriation of property, particularly if TMB does not receive fair compensation. TMB is unable to find any express authorisation for unbundling in Chapter 3, Part VI of the CMA for an intrusive form of regulatory intervention which would deprive TMB of the use of its network.

In contrast, MCMC should be more interested in assisting the industry in developing a *legal framework* that provides for clear specification and enforcement of property rights over *inter alia* network infrastructure. Without property rights, there is no incentive to invest or own productive assets and this will be abrogated by the introduction of LLU

v. Proposed Timetable for implementation of ANE/LLU

⁹ Approximately 2 million access lines.

¹⁰ The average teledensity for counties surveyed by the MCMC when LLU was introduced is 52.26 telephones per 100 population.

TMB considers that the timetable for the implementation of LLU is unrealistic and not achievable and a minimum period of 18 months – but possibly two years lead-time will be required to implement ANE/LLU in Malaysia.

MCMC's Response

2.3.1 MCMC takes note of the comments made by TMB that ANE is a case that has not been truly established for its mandatory introduction. According to TMB, the PC Paper does not highlight sufficient reasons why additional access competition is needed in Malaysia. In our view, paragraph 2.3 of the PC Paper provides detailed reasons. Further, the argument of TMB that Malaysia is not lacking in broadband uptake is not true as can be seen from the Paragraph 2.4 of PC Paper which provides ITU figures indicating Malaysia's broadband uptake.

TMB also argues that ANE discourages facility-based competition. The PC Paper in paragraph 2.8.8/9 addresses this issue. Further, the Federal Communications Commission (FCC) in its Remand Order issued in November 1999 also establishes the view of the FCC that unbundling of network elements (UNE)¹¹ promotes facility-based competition. Similarly, ITU clarifies that LLU in longer-term increases facility-based competition. In MCMC's view, the right combination of service- and facilities-based competition is needed for Malaysia.

2.3.2 TMB also claims that ANE is unproven and undermine dynamic efficiency in the sector. MCMC is of the view that effective competition acts as catalyst to utilize the resources efficiently by avoiding wasteful duplication of assets resulting in productive efficiency.

Given that there isn't such effective competition in the access network, TMB arguably has no incentive to innovate in terms of service offering that otherwise would have been offered given the existence of competition. From our perspective, ANE will create service differentiation and choices as the competitive forces will compel service providers (incumbent or new entrants) to offer more services at higher quality and at competitive prices.

The argument given by TMB that mandating ANE will have a negative effect on future access network investment is an instantaneous comment as MCMC is of the view that in the short run, OLNOs will need certain period to deploy their own infrastructure and ANE will facilitate in obtaining the access to the network for provisioning their services to the customers and during this period the OLNOs will make investments in upgrading incumbent's network.

In longer run, when the commercial loop market develops, the competition through services will generate competition through networks once network service integration proves advantageous for service providers and then the OLNOs will continue to invest in their own infrastructure.

Hence, MCMC stands by its view that ANE, in fact is complementary to rather than substitute for infrastructure investment.

Specifically, the UNE Remand Order of the FCC states that "the (Feral Communications) Commission agreed with competitive LECs that access to Unbundled Network Elements (UNEs) would lead to initial acceleration of alternative facilities build out because of sufficient and necessary market information would justify new construction"

¹¹ A concept which is similar to ANE

A clarification from the ITU in this regard also suggest that ANE is important for making short term use of existing legacy telecommunications infrastructure or in case of natural monopolies. In the long term though, firms should be able to fund new infrastructure that runs alongside the existing networks, using various technologies until true facilities based competition can evolve.

Presence of economies of scale and scope in the access network also implies that the facilities based competition in the local loop may result in the wasteful duplication of assets resulting in of productive efficiency losses. We believe that the introduction of effective competition should not be at the expense of infrastructure duplication which might lead to inefficient allocation of resources and unnecessary wastage.

It must also encourage and promote optimum utilisation of existing infrastructure which can lower market entry costs by allowing OLNOs to gain access to customers and offer broadband services without having to substantially invest in network facilities. In some areas, we believe that the greatest benefits may be achieved through facility based competition and that the ability of OLNOs to use unbundled network elements is a necessary precondition to the subsequent deployment of self provisioned network facilities.

MCMC believes that over time OLNOs will prefer to deploy their own facilities where it is economically feasible to do so, because it is only through owning and operating their own facilities that competitors have control over the competitive and operational characteristics of their service and have incentives to invest and innovate in new technologies that will distinguish their services from those of the incumbent.

ANE rules that encourage competitors to deploy their own facilities in the long run will provide incentives for both incumbents and competitors to invest and innovate and will allow MCMC to review regulation once effective facility-based competition is established.

In the absence of ANE, limited facility-based competition will emerge and that the access provider' control of the access network may lead to a continuing concentration in broadband services provision. As a result, more extensive regulations at the level of individual services might be required.

MCMC would also like to clarify the point that was raised by TMB about the changes to the US Policy on local loop unbundling (LLU). Copper loops are still subject to unbundling although unbundling with respect to the fiber in the loop is in early stages and does not serve mass market given the strong competition from cable operators.

It is a well-known fact that the US was one of the first countries to mandate requirements on independent local exchange carriers (ILECs) a duty to provide access to unbundled network elements (UNE) at any technically feasible point in their networks as a part of the Telecommunications Act 1996.

The recent order of February 2003 of FCC ruling which culminated in FCC's second triennial review of UNE keeps in place, for the most part, the UNE platform and delegates to state utility commissions the authority to determine whether switching and transport should come off the UNE list on a market-by-market basis.

FCC's decision to refrain from unbundling fiber in local loops for the mass market is not a rollback; there still remains quite an extensive list of UNEs. With regard to loops, in particular, the FCC largely requires local loops to remain unbundled. Copper loops are subject to unbundling without exception. Hybrid loops, consisting of part fiber and part

copper, are subject to significant unbundling. The decision to not require unbundling of fiber for local loops in the mass market reflects a balance between two major FCC goals:

- To continue to apply regulatory unbundling tools to open competition in those markets traditionally dominated by incumbent carriers ; and
- To lighten network sharing requirements for new technologies, to encourage investment in facilities and deployment of advanced telecommunications by competitors and incumbents.

There are several facts about the U.S. market which contributed to the FCC's decision to refrain from unbundling fiber in local loops for the mass market which are as follows:

- There are less than 100,000 homes in the U.S. which have fiber to the home, therefore this service is still in its earliest stages; and
- The majority of U.S. homes with broadband Internet service have access through cable modem.

Therefore, at this point in time it is hard to argue that competitors are impaired in competing in broadband Internet market if they do not have access to fiber mass market local loops.

In addition to above, review of the regulatory process is a constant and healthy requirement to suit the local conditions and in this context it would be worth mentioning that ANE can be considered a short term measure till the time the effective competition is established in the market place and the commercial market for the local loop develops after the requirement for unbundling might be relaxed. Canada and the Netherlands followed this approach and this topic is also covered in the current PC Paper under the Sunset Clause.

MCMC is aware of the fact that the initial take up of the LLU has been slow in many countries partly because of the economic downtrend, the complexity of the process and lack of precedence in the initial stages elsewhere. However, MCMC is of the view that ANE is a potential mechanism for promoting the competition in the Access Network for delivery of broadband services to the consumers.

2.3.3 MCMC notes the assertion of TMB that it will be premature to mandate ANE in Malaysia given its relatively low teledensity. MCMC agrees with TMB that LLU was mandated in countries (in MCMC's survey) which had significantly higher teledensity than Malaysia. However, teledensity is one of the factors (but not the only one) that needs to be taken into consideration when deciding on the introduction of such policies.

The international practise, for example from the EC framework (EC Regulation 2887/2000) does not link a minimum teledensity as a prerequisite to the introduction of LLU. Similarly, LLU was mandated in Chile despite having a teledensity of 23.0%, a figure which is only marginally higher than Malaysia.

The argument given by the TMB, linking the teledensity with the timing of introduction of ANE should be viewed in an overall perspective of addressability to the NPOs. Among others, the NPOs envisage regulating for the long term benefits of the end users, to promote a high level of consumer confidence in service delivery from the industry, to ensure an equitable provision of affordable services over ubiquitous national infrastructure and to create a robust application environment for end users.

The PC Paper quoted a study conducted in the OECD countries with a view to provide an insight into the policy and regulatory initiatives taken by the respective administrations. The decision to introduce ANE is not based entirely on the criterion of teledensity only but

is usually introduced after liberalisation of the access market which was done 10 years back. Given the experience in Malaysia, the access network remains the least competitive segment even after 10 years of liberalisation in fixed services. ANE is about effective competition, choice to customers and promoting broadband services.

Further, it also considers the fact that the other available means of access have limitations in terms of their reach, availability, ubiquity or affordability. ANE serves as an additional mechanism to promote effective competition and enhance broadband services in providing choice to the consumers. It therefore complements the already available means of access.

Further to the argument of TMB that ANE will not increase teledensity, MCMC's view is that the fixed access network is the least competitive even in the liberalised telecommunications market. OLNOs do not have widespread alternative network infrastructure and are unable to match the economies of scale and the coverage enjoyed by TMB as it has more than 97% of share in the fixed market segment.

On the contrary, the fixed service teledensity is declining from 19.7% in 1998 to 18.7% in 2003. In this context, MCMC believes that ANE will provide TMB or any other party an opportunity to offer broadband data services at wholesale level to its seekers in addition to the voice services. The challenge lies in the change of mindset of the incumbent in treating its competitors as its customers and also engaging in healthy competition which will boost innovation in services and choice to the end users.

As far as comparison of fixed with cellular market is concerned, the two segments are entirely different as there is sufficient competition in the latter and this is also evident from the fact that the cellular rates are not regulated. In addition there is already effective competition in the cellular market and the users have the choice of service providers which can be exercised by just changing the SIM card at least in prepaid segment.

2.3.4 MCMC does not agree with TMB's assertion that ANE will affect rural teledensity and further compound the issue of digital divide.

MCMC acknowledges that mechanisms such as Universal Service Provision (USP) and Community Communications Development Program (CCDP) are introduced to increase rural teledensity and funds are available for increasing access in underserved and unserved areas.

Specifically, the teledensity targets can be raised through the Universal Service Provision (USP) and the already existing funding mechanism. ANE will complement the existing provisions in USP and affordable access for all Malaysian citizens by enhancing competition, ensuring economic efficiency and bringing maximum benefits to the end users. MCMC is also of the view that alternative technological platforms are also available to complement and supplement ANE.

2.3.5 MCMC cannot see the argument of TMB that there are potential conflicts to applicable laws thus restricting MCMC to introduce ANE.

To our mind, the Access provisions under Chapter 3 Part VI is wide enough to cover the provision of access to network elements without raising the issue of depriving any parties from utilising its own properties.

2.3.6 MCMC reaffirms its stand that the time table for implementation is reasonable and can be implemented, contrary to TMB's assertion that the time table is unrealistic and not achievable.

The Briefing Session proposed that a new Commission Determination on Access List incorporating ANE to be ready by July 2004 and MCMC stands firm in that proposal.

By the same argument, the Access Reference Document (ARD) needs to be prepared by the Access Providers to affect ANE. The timeline for which will be further discussed in the Public Inquiry on Access List to be conducted in 2004. Similarly, MAFB will be required to prepare Codes within 6 months.

SECTION 3: COMMENTS RECEIVED IN RESPONSE TO CONSULTATION PAPER ISSUED

3.1 COMMENTS ON INTRODUCTION

Questions from Section 1 in the PC Paper

1.1 Has effective competition in the communications and multimedia industry reached the level anticipated by the NPOs?

C&W considers the NPOs in the CMA represent an ambitious target for Malaysia, but also one that is appropriate. Needless to say, much work remains to be done to achieve these objectives. As stated in the PC Paper, teledensity in Malaysia is only 18.8% (as of December 2002), and DSL take-up is only a small proportion of this figure, the data showing 20,000 subscribers.

Celcom considers that even though effective competition in the C&M industry is yet to reach the level anticipated by the NPOs, in certain areas for example, in mobile environment, effective competition already exist through current initiatives by the industry players as well as regulatory framework set by the regulator.

Maxis is of the view that the level of effective competition varies across different markets in the C&M industry. It becomes necessary to identify the relevant economic market in the industry before assessing the level of competitiveness. In essence, Maxis believes that competition levels anticipated by the NPO has flourished across cellular markets, both at infrastructure and service levels. In fixed markets, save for STD and IDD segments, little effective competition has occurred and as such, remedial regulatory plans should be focused here.

TMB does not consider that NPOs as detailed in section 3(2) of the CMA sets or indeed anticipates any level of effective competition in the Malaysian C&M sector. Furthermore, the NPOs do not provide that "a key function of the MCMC is to promote effective competition in the communications industry." While it may be possible to argue that promoting effective competition is consistent with certain NPOs, the NPOs themselves do not seek to promote competition nor do they prescribe any specific level of competition.

Therefore, TMB considers that the NPOs do not endorse competition for competition's sake but rather the NPOs only support effective competition where such competition is in the public interest. In any case, all the initiatives mentioned are telco-centric, more initiatives should be directed at the broadcasting sector.

TMB also argued that competition has accelerated with increase in the number of products offering and also competitive pricing as TMB has implemented rate reductions (e.g. PSTN services, leased lines, VSAT, broadband internet services (Streamyx)) including more frequent promotions and product discounts.

Time argues that it is apparent that there are obstacles to even basic POI capacity even though this is an Access List item. Time would note the anti-competitive strategy used to effectively stifle EA, one of the forerunners to competition. It is noted that the MSA is an

attempt at revival but the environment has changed with the VoIP players i.e. the ASP individual licensees. How can EA compete with a price floor of 20% against discounts of up to 80% by IP telephony service providers? Altruistic competition and consumer focus motives are good but practical issues need to be addressed to prevent “ a good legislation but ineffectual implementation” scenario.

1.2 Are existing competition initiatives sufficient and hence should MCMC allow time for other effective competition policies to produce the results? If yes, how long?

Celcom considers that for the time being, existing competition initiatives seem to be sufficient. As these exercises need some time to really stabilise, MCMC should allow at least 2-3 years for other effective competition policies to produce the result.

Maxis considers that MCMC has been proactive in improving effective competition in the industry. However, given the unique costs economics of the Fixed Access Network, Maxis believes that additional competition policies, such as the ones described in the PC Paper, are relevant and important. This is particularly so when the availability of high-speed and affordable data connections for all are essential to the many government initiatives, e.g. MSC flagship programmes, which are intended to promote Malaysia’s growth. As such, the time is right to introduce some of the measures suggested in the PC Paper.

TMB considers that existing competition initiatives are more than adequate – especially since they are already producing significant consumer benefits in terms of lower prices and improved quality of service. Moreover, YB Minister based on the advice of MCMC has issued many new licences for application services, and last mile providers.¹²

Time notes that the existing competition policies have been difficult to implement. Malaysia has been unable to declare a dominant player since the implementation of CMA, thus rendering ineffective implementation of the relevant provisions and guidelines issued by the MCMC. An example is the Guideline on Substantial Lessening of Competition in a Communications Market and the Guideline on Dominant Position in a Communications Market. However it is noted that the Access List has gone some way to promote competition and future plans to add to the list will build on this.

1.3 Should MCMC introduce more initiatives to promote effective competition?

C&W is of the view that there are fundamental issues that need to be resolved in making customer access available on a competitive neutral basis. These can only be achieved by policy developments such as those anticipated in the PC Paper – in particular, ANE unbundling. These developments will need to go beyond existing initiatives in licensing, spectrum, numbering, dialing parity, etc. Therefore, it is clear that MCMC should not wait for other competition policies to bear fruit. For e.g. licensing of FWA is important, but the technology is not yet sufficiently mature, or capable of achieving the right cost structure, to provide an economic alternative to the incumbent’s Access Network.

Celcom lauds MCMC’s move to introduce more initiatives to promote effective competition. Perhaps, one of the initiatives to be considered is to revise licensees’ contribution to the USP Fund and reduction of statutory fees (license fee) so as to reduce

¹² TMB argued perhaps a review of the performance of such licensees against their licence commitments needs to be undertaken. That way there is proper enforcement of a licensee’s obligations.

the burden of existing licensees. Hence, they are more motivated to invest in the Access Network and these would later on enable competition in more effective way.

Maxis is of the view that MCMC should introduce more initiative to promote effective competition in the markets for Fixed Access Networks, more so to promote availability of broadband connections for advanced services.

TMB considers that MCMC needs to be more involved in ensuring that fixed retail tariffs are supportive of network infrastructure rollout. As indicated the Government took steps in 2002 to review the existing structure of fixed-line communications services. The view was that 'tariff rebalancing' is one of the strategic measures to widen access to communications services through the creation of tariff structure that can provide *incentives to industry players to invest on infrastructure rollout particularly to the rural areas.*¹³ Effective competition is simply not going to occur in the Access network until the economics of investment are right.

Time is of the view that enforcement and dispute resolution will take competition strides ahead. It is noted that the local service providers should be given the chance to strengthen themselves before the WTO initiatives bring in the foreign competitors.

1.4 What are the policies that can be introduced to promote effective competition in the communications and multimedia industry?

C&W considers that the underlying access facilities of the incumbent's network (metallic and fibre lines) represent a source of dominant market position. If these are unbundled and made available to competitors at efficient economic prices, and with SLAs equivalent to those the incumbent enjoys for its own use of these facilities, effective competition can develop in all other services depending on these facilities.

Celcom considers that MCMC should review the existing policies and/or regulatory framework on competition and MAFB shall make recommendations before introducing of any new policies.

Maxis proposes that among the policies that can promote effective competition in the Fixed Access Network market:

1. Introduction of local loop unbundling. This includes necessary items such as;
 - a) Cost based rental of loops (together with necessary support services);
 - b) Availability of co-location at reasonable rates. This should include items like tie cables, access to power, air conditioning, maintenance etc; and
 - c) Availability of backhaul
2. Introduction on peering policies
3. Mandating interconnect for data services at cost based prices and determined by MCMC, e.g. ISDN interconnect for data which at present are commercially negotiated

Given the strong competition in the cellular services market, greater ability to compete amongst existing players can be facilitated via:

¹³ See Tariff Rebalancing section of Ministry website, available at www.ktkm.gov.my.

- a) Introduction of a numbering plan consistent with industry needs
- b) Greater dialogue on technical standardisation in new areas such as MMS etc
- c) Monitoring QoS issues

TMB considers that the key issue which needs to be resolved is the profitability of investment in the access network. The Malaysian C&M sector has been characterised by the ability of cellular operators to secure much higher returns and profitability (in a shorter period) than investments made in the fixed network. This is due to the slowness in aligning fixed retail tariffs with their underlying costs of provisioning. This has prompted most, if not all of the larger new entrants to concentrate their capital, management and human resources on the cellular sector. MCMC needs to undertake a detailed review of the fixed services rates and underlying costs of the fixed Access Network prior to any decision to develop and/or impose new policies as suggested in the PC Paper.

Time reiterates the point made earlier that enforcement and a good speedy dispute resolution process with strict timelines will go a long way to promote effective competition. Expanding the Access List and developing competition regulations and perhaps precedents, will promote effective competition.

1.5 Where should the effective competition initiatives be targeted? Should it be targeted at the Access Network?

C&W argues that the Access Network (or customer access from the point of view of competitive operators) is the critical source of incumbent market power and therefore should be targeted for effective competition.

Celcom argues that effective competition initiatives should be targeted at the Access Network.

Dr Tengku Akbar asserts that based on the present number of penetration in the country coupled with a small number of service providers, there is a lot of potential for growth (for broadband services) in the industry if players can offer high quality services to consumers.

Maxis considers that effective competition should be targeted at the Access Network for fixed, i.e. the local loop, of the incumbent TMB.

TMB emphasizes (earlier in its responses to the *Discussion Paper: Concepts for the Introduction of Digital Terrestrial Television Broadcast in Malaysia* dated 28 April 2003 and *PI Paper on Draft Mandatory Standard on Access* dated 30 April 2003¹⁴) that it continues to be opposed to the monopoly granted to the satellite broadcasting service provider. TMB considers that as part of the migration to the new CMA regime such a monopoly – the only monopoly under the new CMA regime - is inappropriate. Not only is the licence granted to this service provider anti-competitive in its effect it is also technologically specific which is contrary to the underlying principle of the CMA of

¹⁴ In particular, TMB was surprised that the proposed Access Standard did not examine and deal with access issues associated with the set-top boxes owned and operated by the satellite broadcasting service provider and utilised for the reception of satellite digital television. Given its exclusive franchise for the distribution of satellite (pay) television in Malaysia, we consider that the proposed Access Standard should, impose similar access obligations on this service provider as contained in any Mandatory Access Standard (which it has not done).

technologically neutral regulation. TMB therefore considers that this area should be the focus of the MCMC's initiatives to ensure effective competition. A second focus area would be to assess whether effective competition can be facilitated in the cellular mobile sector by the introduction of mobile number portability which would allow consumers to change their network provider.

TMB does not consider that the target should be the Access Network where there is no restriction on any major operator rolling out alternative network infrastructure for both voice and broadband connectivity since 1994 and very importantly, there is considerable unmet demand (in both urban and rural areas).¹⁵ Mandating LLU with draw the industry's focus again to existing customers located in urban areas (especially in the Klang Valley) rather than those members of the public who do not have any type of telecommunications access. Thus, the public interest will not be served by such measures at this time. TMB reiterates that there is a greater scope for new entrants to gain market share in Malaysia compared with OECD markets given the current level of unsatisfied demand which exists.

Time agrees that the Access Network should be targeted for competition as this would help improve competitive offerings to consumers. However there should be emphasis placed on inter carrier issues as well, such as sufficient interconnect capacity at competitive prices etc.

1.6 Do you think that promoting more effective competition may have an impact on investment in alternative infrastructure?

C&W considers that a well-designed incumbent network unbundling requirement will only deter *inefficient* investment in alternative infrastructure. That is, it will deter only that investment where funds could be put to more productive use elsewhere in the telecom sector (such as providing investment in service platforms), or the economy as a whole. Efficient competitive access infrastructure investment, where the investment produces an Access Network with a genuinely lower cost than that of the incumbent, will still take place. However, in practice, investment is only likely to occur in very specific geographic markets. Of more significance will be investment in service platforms and core networks (linking service platforms). This investment can be maximized by eliminating restrictions on FDI in the Malaysian telecommunications market.

C&W further argues that regulated access to local network fibre will reduce the incentive for incumbents to invest in fibre networks are easily refuted if competitors are required to pay genuine cost based prices for fibre they lease (including capital costs of depreciation plus a reasonable rate of return on capital employed). In fact, as competitors develop innovative (incremental) services over the huge bandwidth that dark fibre provides, the incumbent will benefit from the additional revenue stream contributing towards the cost of the fibre network build, providing greater incentives for fibre network investment¹⁶.

If MCMC is concerned about encouraging investment, a more important driver would be the ease with which potential new entrants can acquire licenses, and limits on foreign capital. Easing these restrictions would maximize the level of foreign direct investment into the Malaysian telecommunications infrastructure at both the underlying network level and the service platform level.

¹⁵ In the case of the rural (and other economic areas) this unmet demand is supported by the MCMC's studies of demand related to the Universal Service Provision Fund ('USP Fund').

¹⁶ Available at http://www.opta.nl/download/relationship_accesspricing_infrastructure_260301.pdf

Celcom considers that promoting more effective competition may have an impact on investment in alternative infrastructure.

Dr Tengku Akbar argues that given the high and sunk cost investment in network facilities, not many operators are willing to risk their money investing in these facilities particularly if the payback periods are very long and uncertain, and technology obsolescence is very rapid. It has been noted that telecommunications networks exhibit technical characteristics, which appear to make them natural monopolies. The introduction of such competition in the access networks may be a waste for the society, as several parallel networks of this type compete with each other.

In a discussion related to a local fixed network operation which is considered to have the most widespread natural monopoly cost conditions, the existence of fixed connection costs to both fixed and mobile networks makes it very costly to have more than one telecommunications cable going into a given premises. Only with full network interconnection can consumers enjoy the full benefits of freely communicating with other people in other public networks at a lower cost.

Maxis is of the view that the impact of promoting more effective competition depends on the nature of each market. In the cellular market, where a viable business case exists for network rollout and no one player is dominant, mandating access to capacity such as via large scale domestic roaming can damage incentives to invest. Alternatives such as infrastructure sharing are more suitable, particularly when domestic roaming is fraught with technical problems that result in poor customer experience. In the sector Fixed Access Networks, a key issue is that existing policies have not fully produced the desired results in the availability of alternatives. There is little choice for Fixed Access Networks outside central business districts of Kuala Lumpur and Pulau Pinang at present. In many residential areas, only one PSTN service provider exists. As such, Maxis does not believe that investment in alternative fixed access infrastructure to be seriously hampered with proposals in the PC Paper. The economic costs, coupled with rate regulation for PSTN services, are more important determinants.

TMB considers that promoting effective competition – via the proposed LLU – will have a negative effect on future access network investment. There is simply no economic advantage in spending additional monies on the fixed Access Network. It is more rational for TMB, in particular, to spend its discretionary capital on cellular and other network facilities which are not subject to mandatory network unbundling rules if they were legally enacted. If LLU is not mandated the investments in alternative local Access Networks like WLL and broadband wireless are likely to be higher.

Time argues by virtue of ANE, investment can then be focused on improving consumer offerings at last-mile level, underserved and unserved areas by way of USP. The total rollout would benefit the country as a whole. Time already has a substantial amount of backbone type infrastructure in Semenanjung where last-mile access is the problem. Perhaps for the more rural areas in the country, Sabah and Sarawak may need different treatment.

MCMC's View:

a) The MCMC has carefully considered all the responses submitted by the stakeholders and is of the view that the current initiative launched by the MCMC will provide boost to effective competition in the Access Network by promoting efficient entry into the market of operators and service providers. Access Network is the fundamental input for developing C&M services including high bandwidth services which will create choice and competitive

service offerings to the customers, development of broadband services and applications which will augur economic development, providing optimum utilisation of the existing resources and hence, an appropriate tool for achieving the National Policy Objectives.

b) In addition, the MCMC notes that there are barriers to entry in the fixed services market as 97% of the Access Network (fixed) is owned by TMB, hence the factors such as economies of scale, embedded fixed cost and sunk cost, ubiquity of the Access Network, cost of building new parallel network (economically not viable to replicate the entire fixed network) are of significance, while considering the fact as to why the competition and liberalisation of the market in 1993 have not reached to the level as anticipated.

c) The CMA is based on the principle of technology neutrality which is facilitative for the licensees to deploy alternative technological platforms in the Access Network. The MCMC is of the view that there are limitations of alternative technologies in terms of their reach and affordability hence the Access Network (fixed) still remain one of the most important link between the customer and the core network which is capable of delivering the broadband services to the customers and hence is the target for introducing effective competition.

d) The Commission believes that the application of an appropriate and reasonable cost oriented price for ANE will guarantee that access to offer will be within reach of Access Seekers in cases where the development of alternative infrastructure is not economically viable in cases in which the use of existing infrastructure is more efficient than investment in an alternative infrastructure. The investment aims in alternative infrastructure will be better achieved if ANE is looked upon as a resource complementing the networks that encompass other infrastructure.

3.2 COMMENTS ON EFFECTIVE COMPETITION IN THE ACCESS NETWORK

Questions from Section 2 in the Public Consultation Paper

2.1 Has existing competition in the Access Network reached the level anticipated by the NPO? What are the policies that can be introduced to promote more effective competition in the Access Network? What are the obstacles in development of effective competition in the Access Network?

Celcom considers that existing competition has yet reached the level anticipated by the NPOs. New policies are not necessary. Enforcement of the existing policies should be enhanced to encourage competition in the industry.

Celcom considers that the obstacles in developing effective competition:

1. Lack of market demand - as highlighted in the paper, demand for high-speed services is difficult to predict. Given the uncertainty, service providers are reluctant to provide high-speed services fearing that there will not be enough takers. Knowledge, affordability and awareness are among the critical factors that need to be considered in determining the demand or market size. It is critical that demand be developed quickly and new technologies be adapted by the population to avoid offering new services to poor adapted customers.
2. Lack of enforcement of policies;
3. Customer awareness – new entrants should promote and advertise the new services aggressively to create customer awareness.

Maxis considers that with respect to obstacles in the Fixed Access Network market for new entrants, the incumbent, TMB, has had several advantages in this area

1. High sunk costs in Fixed Access Networks investments: The investments for fixed local loop are very high, approximately several thousand ringgit per home passed. Moreover, the PSTN revenue (local and STD) that can be earned from this investment is controlled by the Rate Rules 2002. In effect, from a PSTN voice perspective, the business case is generally not appealing. Investments in Fixed Access Networks are sunk costs as there is little resale opportunity once funds are spent. This situation deters new entrants from deploying alternatives except in select areas.
2. Fixed Access Network investments largely recovered by TMB: The bulk of TMB's Fixed Access Networks were installed prior to liberalisation of the C&M industry. TMB's investments would have been recouped over the years as a monopoly and the existence of a stable cash flow allows funding for future capex.
3. First mover advantage: TMB was the first company in the fixed services market and has established a strong first mover advantage in the PSTN market. This can be seen in its 97% share of PSTN subscribers in Malaysia. This first mover advantage has extended to the fixed broadband services market as it has already launched its xDSL service, Streamyx more than a year ago.
4. Ownership of PSTN customers and an intricate knowledge of the subscribers: Many potential xDSL subscribers are users of TMB's PSTN and dial-up internet services. TMB has an in-depth knowledge of their usage patterns and should be

able to design pricing that is attractive to different segments. This information is generally not available to new entrants.

5. Scale economies for broadband services: TMB has approximately 4.6m access lines in operation as at 31 Dec 2002¹⁷. There are significant scale economies to deploy broadband to these subscribers using its own loops.

The implementation of LLU for copper wires, together with the supporting features such as co-location and reasonably priced backhaul, will help new entrants penetrate new areas that were previously economically not feasible.

TMB maintains that the NPOs do not and have never set a level for competition in the access network. While the NTP 1994 envisaged Access Network competition, it did so on the basis of operators rolling out alternative competing networks. Examples of this include Maxis' network rollout in Nilai and the HFC network rolled out by Maxis in areas like Bangsar Baru.

For the types of policies, TMB considers policies should be introduced to promote effective competition in the Access Network. At the present time we do not see any obstacles.

For the record, the arguments detailed in section 2.2 (especially 2.2.1 and 2.2.2) of the PC Paper are patently false in Malaysia. TMB argues almost half of the current telephone lines have been commissioned in Malaysia outside the monopoly period (i.e. prior to 1993/94). The major OLNOs which have been licensed for almost 10 years could have chosen to invest in the fixed network over this period but decided not to, in order to concentrate on the cellular market.

The fact that the OLNOs have few fixed lines services is a direct result of the business and commercial choices which they have made – not with their ability to compete with TMB when the market demand for services at that time would have allowed them. If they wished to risk their own capital they would have been able to acquire new customers easily. The new entrant in Malaysia therefore did not and still does not face the same issues of infrastructure duplication and inefficient rollout as in developed countries. This is direct contrast to developed OECD markets where market saturation has made effective competition with the incumbent more difficult and where there would have been infrastructure duplication.

TMB is of the opinion that the dynamics of the Malaysian market needs to be fully appreciated in respect of these issues and the Malaysian policy ought to be customized for the Malaysian environment.

Time submits that except in the mobile services sector, they are of the opinion that competition has not reached sufficient levels anticipated by the NPOs. A good barometer to track this would be the "effective implementation" of MCMC's Framework for Industry Development (FID) targets. Time does concede that sometimes the obstacles placed before the MCMC towards achieving these objectives make it difficult for the regulator to overcome. In the Malaysian context, this is translated into delayed and non-effective implementation.

¹⁷ Source: TMB Annual Report 2002

2.2 Are existing policies and measures sufficient and hence should MCMC allow time for other competition policies in the Access Network to produce the results? If yes, how long? Should MCMC initiate ANE? Is the timing to introduce effective competition in the Access Network by allowing ANE appropriate? Please substantiate your arguments by reasoning.

C&W is of the view that the underlying access facilities of the incumbent's network (metallic and fibre lines) represent a source of dominant market position. If these are unbundled and made available to competitors at efficient economic prices, and with SLAs equivalent to those the incumbent enjoys itself for use of these facilities, effective competition can develop in all other services depending on these facilities. Existing policies are insufficient to address the structural problems of incumbent dominance of access facilities, and so MCMC should not wait for other competition policies to bear fruit.

Celcom considers that the existing policies are sufficient but should allow time to see results (e.g. EA) with time length of 2-3 years.

Celcom submits that MCMC should not initiate ANE. The Access Seekers should initiate by approaching the access provider on the possibility of ANE. Celcom submits the timing for ANE is appropriate because it will result in economic savings on the part of the Access Seeker and increase return on investment for Access Provider, especially with the consolidation of the industry.

Maxis submits that prior to implementation of ANE in a particular market or service, MCMC ought to consider factors including:

1. Availability of effective competition – if the market has several competitors competing both on infrastructure and service, then there essentially little reason for ANE. This however is not the case for Fixed Access Networks, where there is effectively little competition in local access infrastructure and services. The local loop is in a fact a bottleneck facility whereby in most cases, there is a single producer exercising control over the supply of this input required to produce an output.
2. Balancing incentives to invest with benefits of intervention – Prior to implementation of ANE, a regulator has to consider whether such policies damage the incentive to invest. If the market has not demonstrated evidence of adequate returns, then regulatory intervention to unbundled access can result in the incumbent bearing the risks and without the corresponding supernormal profits commensurate with the risk, as returns are shared with the Access Seekers. However, the infrastructure for ANE is rather standard, well established, and includes items like local loop (whether for customer premises access or backhaul), physical space etc used primarily for well-established PSTN services. Except in bitstream access where DSLAMs are involved, the Access Seekers will be mainly accessing the same infrastructure as for PSTN. TMB has had a significant period of monopoly over which it recouped the costs of establishing a significant proportion of its infrastructure. Whilst it is true that TMB does continue to lay new PSTN infrastructure, one also has to consider that TMB has a virtual monopoly over the PSTN service. This position of dominance provides stability in its business case and is not simply removed by a policy on ANE. Consistent with this

argument, as the balance of power is more evenly distributed in the cellular market, there is no reason for intervention.

Maxis notes the regulatory steps taken by MCMC to promote ECAN, such as the issuance of restricted NFP licences for Access Networks and spectrum for fixed wireless broadband. These measures, however, should not delay the introduction of ANE for Fixed Networks Access as such ANE policies will take time to be finalised and implemented.

Maxis would like to clarify that the usage of the term ANE refers to LLU of copper wires. The introduction of ANE (LLU) can be done concurrently with the numerous other initiatives currently underway as Maxis believes that the different alternatives are complementary. Maxis supports the introduction of ANE (LLU) as there are impairment issues in the Fixed Access Network. However, Maxis accepts that an operator requires incentives to invest in new types of technology.

TMB is vehemently opposed to any proposal for LLU whether that be LLU or anything similar. It believes that LLU would significantly undermine the Government's NTP 1994 and could affect national economic growth. Unbundling, particularly where applied to the most basic and fundamental elements of the network such as the local loop which directly connects customers, would remove the incentive for OLNOs to deploy the capital required to build additional and alternative facilities.

Mandatory unbundling would also, depending on the interconnection prices offered and any continued requirement of geographic averaging, result in competitors effectively being able to buy TMB's local loops at below cost and resell them for their own profit. This would do little to enhance sustainable competition and would significantly undermine TMB's ability to meet its QoS at prevailing tariffs and USO. It would also have a significant impact on TMB's business and would effectively transfer considerable value from the company to the OLNOs which has not been the subject of a Government policy decision.

TMB does not support unbundling at any time and under any conditions. Given this, TMB considers that arguments in the PC Paper that LLU would facilitate broadband services to be unacceptable because forcing unbundling (especially in the context of the local loop) in cases where other sources of supply could technically and economically be developed, risks destroying the incentives for others to develop these alternative sources of supply.

Even though TMB considers that LLU should not be reviewed until Malaysia's fixed teledensity is greater than 35 telephone lines per 100 population, if the Government and MCMC were to legally determine LLU for good national policy reasons, TMB may be willing to discuss the possible future introduction of LLU subject to certain preconditions. These would be subject to the registration of certain undertakings in respect of rural and remote network rollout in accordance with section 43 of the CMA and fair monetary compensation to Access Network provider.

In particular, TMB considers that:

- any current or prospective provider of LLU (i.e. OLNOs) should be required to rollout out say between 25,000 – 50,000 access lines in rural and remote areas of the country (as determined by MCMC) prior to being able to offer LLU. In the period of time required to rollout out such services negotiations would commence on the relevant legal, commercial and technical terms to apply to LLU;

- for each and every unbundled loop that the Access Seeker leases above the required minimum lines, it would be required to rollout and equip another one (1) access line in a rural and remote area of the country (as determined by MCMC) within three (3) months; and
- any access lines commissioned after 1 January 2003, would only be unbundled, two (2) years after their commissioning. This is designed to allow the Access Provider some return on its investment.

For NSPs and ASPs who do not have any infrastructure of their own, TMB considers that a fund (similar to USO) should be created to compensate the Access Providers (including TMB) for the access to their unbundled lines. Such fund monies when dispersed to the Access Providers would be used to facilitate network infrastructure development and roll out in underserved or rural areas of Malaysia.

The ability to acquire LLU is therefore being a specified benefit for licensees who have made such an undertaking (in accordance with section 43(2)). TMB also considers that the Minister in accordance with section 43(3) should make regulations in respect of the undertakings and the penalties for non-compliance. In our view, MCMC would not be able waive compliance on such network rollout.

Further, if LLU were to be mandated we would seek an early commitment that the OLNOs are willing (and able) to pay for the considerable costs of implementing LLU which would be done solely for them. This is especially since TMB's technical / engineering resources are scarce and can be better utilised on other more revenue generating projects.

Time argues from the points made earlier, there will have to be a "mindset change" before competition policies can produce results on their own. Regulations must first correct the imbalance, to move to at least a semblance of what was once thought to be a prerequisite to competition i.e. a level playing field. MCMC should initiate competition in ANE as it is overdue. Time notes that the Record Keeping Rules initiative will complement the process of competition in ANE but a clear position stand on enforcement of these policies will be necessary.

Time questioned if there is a need for competition in Malaysia. As decided by the agreement to the WTO, there is a long list of countries requesting national treatment, one of which is Singapore. Do we want the existing local operators to enter this environment from a position of strength? If the answer is yes, then the network and commercial strength needs to be enhanced before foreign competition is here in full force. The banks underwent consolidation for this very purpose. Similarly, the communications and multimedia industry has gone through consolidation recently.

2.3 Do you consider ANE to be an appropriate access mechanism for the communications and multimedia industry?

C&W considers that the incumbents existing Access Network is the most efficient (lowest cost) ubiquitous platform for use by the communications and multimedia industry.

Celcom considers that ANE is an appropriate access mechanism for the C&M industry.

Dr Tengku Akbar agrees with MCMC's assertion the Access Network for fixed services can be considered as the most relevant Access Network that can offer multiple services utilising the existing network components.

Maxis considers ANE (LLU) to be an appropriate mechanism for unbundling of TMB's copper local loop.

TMB does not agree to the recommendation in the PC Paper to support the unbundling of network elements given the profound effect on TMB's ability to compete in the market and the revenue implications. TMB believes that unbundling is "pro-competitive" measure that may be able to be justified in a developed world market but it has not been justified yet in Malaysia. TMB asks the question, where is the justification that this is an essential and necessary part of securing sustainable competition in Malaysia? TMB honestly believes that such an approach is incompatible with and will undermine the Government's objective of rapid network rollout envisaged in the National Telecommunications Policy and Wawasan 2020.

Time considers the answer is affirmative for reasons given in the earlier answers.

2.4 Should MCMC apply a moratorium on ANE to encourage infrastructure investment and rollout of broadband services? If yes, what should be the duration of the moratorium?

C&W considers that such a moratorium would only add a further distortion to the market, risking inefficient duplicative investment, and sucking funds away from investment in truly competitive network components such as service platforms.

Celcom argues that MCMC should apply a moratorium on ANE. This is to ensure that the objective is achieved (i.e. to provide new services to customers and increase growth of the industry) and also to allow the Access Seeker to build up a strong footing in the business. The duration of the Moratorium period should be 5 years.

Maxis argues that a moratorium for ANE (LLU) with respect to TMB's infrastructure is not required given TMB's dominant position in that market. Other operators, by virtue of their weak market power, should not be required to offer ANE (LLU). Mandated access however should not extend to TMB's FTTH or FTTC, given its nature as a new technology for new services. In such cases, a moratorium is appropriate and ought to be decided on a case-by-case basis.

TMB reiterates their argument in their response on the PI on Access List in 2001 that a moratorium on LLU (including DSL access) to encourage infrastructure and rollout of broadband services is warranted. The moratorium should relate to teledensity levels.

In order to promote investment in broadband networks, there must be a sufficient rate of return on such an investment by the facilities provider, as revenues and profitability is only likely to occur when there is sufficient demand, or critical mass, for broadband services.

As a result of the innovative nature of broadband services and the relative immaturity of the ADSL technology – especially in a developing country market such as Malaysia - there is widespread uncertainty – in fact a risk - as to the likely revenues which will be generated by support broadband services (there are currently only approximately 70,000 to 80,000 subscribers for TMNet's Streamyx services). It is also a risk given the fundamentally low charges which apply to dial-up internet access in Malaysia. This means that the pricing of ADSL services will be inexpensive in world terms with a low profit margin.

It would be inequitable, for instance for TMB to have OLNOs access to its broadband ADSL network at cost based charges. This would inevitably undermine the commercial incentive for any licensed facilities provider to take the commercial risk of making an investment in the infrastructure for the broadband services. Further, the grant of the moratorium would enable TMB (and any other operator willing to invest in access network with broadband capabilities) to engage and concentrate on content development and deployment of broadband services that represent and promote Malaysian culture and national identity.

2.5 Do you agree that ANE may at this moment be an appropriate alternative to encourage effective competition in Access Network and to promote innovation? Explain your reasons paying special attention to the alternatives currently available and to the options expected in the short term, as well as to the nature of the services which may be available to the customers.

C&W considers that ANE unbundling will direct investment away from inefficient duplication of the existing Access Network infrastructure at higher cost and towards more productive projects such as service platforms that can best provide innovative competition. Reliance on alternative policy remedies to the incumbent's market power in customer access (e.g. FWA licensing) is insufficient due to the cost and service provision limitations of these alternative technologies.

Celcom submits that for now, ANE may be an appropriate option to encourage ECAN and promote innovation. Currently, options available are through the licensing framework (NFP, NSP, ASP, CASP). However, new players are finding it difficult to replicate the Access Network due to the huge investment involved. Through ANE, the new players can provide new services to the untapped market at a relatively lower cost.

Maxis considers ANE (LLU) to be the appropriate mechanism to encourage competition in the Fixed Access Network due to the unique characteristics highlighted earlier. Other alternatives including licensing new players in the market, issuing frequency for wireless broadband, guidelines for WLAN services etc promote alternative forms of access as well. Whilst these technologies have their roles to play, they complement ANE (LLU) which is intended to stimulate xDSL availability in Malaysia. xDSL is an important technology used widely to enable broadband access. The other major fixed broadband access means, via cable modems from wireline cable television networks is not available in Malaysia. A vibrant broadband market requires deployment of different technologies and availability of different packages.

TMB does not consider that ANE is an appropriate alternative to encourage effective competition in the Access Network. TMB considers that creating the right incentives for all operators to invest capital and rollout extensive local access infrastructure is important. In particular, TMB considers that the MCMC should review the performance of licensees who were meant to focus on the local loop (and in particular broadband services) but seem to be focused on narrowband (voice connectivity) and wireless broadband spectrum licensees. Further, TMB argues that there are many arguments that LLU discourages infrastructure development.

Time considers the introduction of ANE is appropriate. The other wireless alternatives are at very basic level in the country today. International success stories on the wireless

platform are few and far between. It is therefore good that the MCMC has continued to keep open Equal Access and allowed the various wireless last mile access platform Fixed Wireless on licensed bands such as 3.5 Ghz, 2.5 Ghz and WiFi initiatives. These initiatives will generally target the corporate and SME users in the short term and only much later the other consumers. However, the most compelling reason for ANE is to allow consumers the choice of service provider and access to new types of services over existing copper to the home at reasonable prices.

2.6 Do you agree with the definition of ANE given in this chapter? In your opinion what could be the alternative definition?

C&W considers that the definition of the Access Network given in paragraph 2.1.1 of the PC Paper -- “the subscriber network at the last mile connecting the customer to the local switch” -- is appropriate as it identifies that part of the network for which the incumbent is dominant.

Celcom considers that the definition of the Access Network given in paragraph 2.1.1 of the PC Paper is appropriate.

Maxis submits that the Access Network can mean a myriad of technologies and each refers to different markets. Maxis feels that the term ANE is confusing as it is not immediately apparent to the reader which types of access the proposed regulations seek to deal with. As the issues deal with LLU of copper wires, Maxis feels that a term ANE (LLU) gives greater clarity to the discussion and accordingly Maxis has adopted this approach throughout this submission.

TMB asserts that LLU is defined in slightly different ways in different markets as set out below but the common policy threat is the unbundling of local access network by quoting examples from Australia, the EU and the UK. TMB prefers these definitions to the discussion in section 2.7 of the PC Paper, which seems to go further than LLU. TMB also pointed out that Paragraph 2.2 of the WTO Reference Paper does not require and has never required the implementation of LLU. As a developing country, Malaysia requires a higher adjustment period to make provision for such liberalisation provided that it serves the overall trading interests in Malaysia.

Time agrees with MCMC’s definition of ANE.

2.7 What are the expected consequences for development of effective competition in the Access Network using ANE approach (creating new services, forcing incumbents to lower rates, appearance of new, more efficient service providers, impact on existing, competing service providers)?

C&W argues that although the possibility of lower rates should not be discounted, the most significant long-term benefit of ANE unbundling will be in new service innovation from competing service providers. The positive consequences are introduction of various access technological platforms, introduction of new application services, multiplying customer choices, reduced market entry cost and optimizing resources. However, there

will be an oversupply of service providers and customers may be confused given too many choices. Hence, the regulator should limit the number of players.

Celcom considers that the positive consequences are introduction of various access technological platforms, introduction of new application services, multiplying customer choices, reduced market entry cost and optimizing resources. However, there will be an oversupply of service providers and customers may be confused given too many choices. Hence, the regulator should limit the number of players.

Maxis considers that successful implementation of ANE (LLU) can have several positive effects (provided that credible new entrants emerge) as follows,

1. *Increased variety and availability of broadband products*

The means to access TMB loops will enable new entrants to emerge and offer a variety of new xDSL services over and above those currently available. For example, in the UK, Bulldog Plc started offering SDSL services, something that BT on its own did not offer. In an effort to capture more customers and increase revenues, innovation need not be restricted to the types of xDSL services available as new entrants can also introduce new value add services like web hosting, firewall management, IP VPNs, e-commerce billing facilities etc.

2. *Innovative pricing*

Pricing will reflect the needs and requirements of different segments. New entrants will work to tailor different product packages at different prices for each segment that is targeted.

3. *Improved customer services*

Besides price, competition in telecommunications has traditionally led to improved customer service. As a result of many alternative service providers, entrants cannot afford to lag in responsiveness to fault rectification, billing queries and service provisioning.

4. *Stimulate further investment in the local access infrastructure in the long run*

Once new entrants are established and have positive returns, they will be able to make decisions on whether to build infrastructure or rely on the incumbent's loops. There will be areas where the business case is attractive for deployment of alternative infrastructure. For areas where there is no plan to deploy alternative infrastructure, this is not necessarily a negative thing as wasteful infrastructure duplication can be avoided whilst ensuring consumer choice.

TMB argues that there is confusion throughout the PC Paper about what sort of competition and outcomes LLU is likely to encourage – for example, at one point it says that LLU is complementary to infrastructure investment but in another, it says that it stimulates service based competition. TMB was concerned that inappropriate regulation will create significant long-run industry uncertainty and risk, deterring network investment by market participants. This will defeat the whole purpose of market liberalisation.

Further, the PC Paper does not examine sector issues from the perspective of national priorities and desired outcomes. There needs to be a development gap analysis and the need to assess the impact on stakeholders, the policy and commercial outcomes.

Secondly, TMB addressed the issue on the proposition of “forcing incumbents to lower rates”. Its subsidiary TMNet is already offering world competitive rates – even though it does not have the advantage of Government assistance in respect of the international leased lines like in Japan and Korea. TMB considers that artificially low rates for

broadband access will have an adverse effect on broadband offerings – making it only possible for larger providers like TMB to provide those services.

Time argues that what are required in Malaysia are good policing and an effective and speedy dispute resolution process to address issues such as predatory pricing and capacity limitations placed on new operators.

2.8 Is it justified to focus on development of high-speed services? What are the implications for Malaysian society and its economy?

C&W is of the view that the emphasis of competition policy should be on high-speed services (where competition at a service level can be effective). Meanwhile, teledensity can be raised through non-competitive USP on the incumbent, with an appropriate funding scheme if necessary.

Celcom submits that it is justified as it is in line with the government's aspiration to promote an information-based society, to improve the people's knowledge, quality of life, efficiency and productivity.

Maxis considers that it is justified to focus on development of high-speed services as these are key to a nation's development and competitiveness. Our government is cognizant of this fact and is working on many programmes in this area. ANE (LLU) for PSTN services should not be the main focus as these are rate regulated and do not offer attractive returns to new entrants.

TMB is highly supportive of the rollout of high-speed broadband services and hence is spending considerable sums of money to rollout inter alia broadband ADSL services on a nationwide basis. The recent OECD study does suggest a positive impact on the economy and growth from the increased availability of broadband services.

Time considers that if Malaysia intends to achieve developed country status and keep-up with the rest of the world, then there is no question that high-speed services need to be developed. The ICT field is constantly developing and increasing speed is necessary to support the advances. The key issue will be the time frame to reach the desired capacity, which should be matched with consumer and corporate demand over a period of time. Care should be taken in planning those initiatives.

2.9 Do you think the demand for broadband services will be sufficient for encouraging the development of local content and innovative services?

C&W stated that given the size of Malaysia's economy and it's distinctive language mix, demand for broadband services will be sufficient to encourage the development of local content and innovative services in the long term.

Celcom believes that demand for broadband services will not be sufficient until the next 3-5 years, due to the lack of product knowledge and awareness among the population.

Maxis considers that competitive provision of broadband services can stimulate development of local content and innovative services. For example, the competitive

cellular industry in Malaysia has led to the emergence of a host of local content providers. Maxis has also introduced a developer programme called the Maxis Developer Programme to further promote growth in this area. A similar positive cycle can be started with ANE (LLU). In fact, provided that there is a suitable revenue model and not based on distributing free content supported by advertising, many mobile content providers may indeed venture into content provision for the fixed market. There are other important determinants in ensuring the development of local content and innovative services. Availability of adequate funding, whether from the government or private sector, remains an important determinant. In addition, broadband content provision can only take off if there is sustained increase in the PC penetration in Malaysia. At present, this rate remains relatively low and efforts to address this issue ought to be intensified.

TMB considers there will be sufficient demand for broadband services. The challenge will be from both a commercial and cultural perspective i.e to facilitate the development of local Malaysian content (especially in Bahasa Malaysia).

As majority of consumers' access (i.e. "surf") online content, which is hosted outside of Malaysia (mainly located in the US) service providers like TMNet have to make a huge capital investment and incur significant operational costs to install STM-1 connectivity in order to meet the demand for our customers for foreign-hosted online content. To date, TMNet has installed 8 STM-1 links to the Global Internet and expects to install another 4 STM-1 links by the end of 2003 to meet forecast demand.

Time considers that it is difficult to link the development of local content and innovative services. Local content is simply limited and there must be effective demand for local content i.e. demand coupled with the ability to pay. Consumers will pay for what they want. However, good content will demand a better and speedier delivery platform. If broadband is a cost-effective solution then that will be the most preferred means.

2.10 How soon would the service providers wish to start competitive and affordable services based on the existing networks or by implementing ANE?

C&W considers that the timing will depend on service providers' expectations of market demand and prices, and is difficult to predict. However, it is clear that ANE unbundling will provide greater opportunities for service providers, and so will encourage new service provision. This is against the current situation where a competitive service provider mass-market may fail to materialize at all.

Celcom considers six months time from the date of issuance of policy is appropriate.

Maxis believes that a period of up to 6 months by MAFB to work out details is acceptable. In the interim, TM Net can offer a wholesale service for its Streamyx service should there be new entrants who wish to enter early to establish a market presence.

TMB does not have any estimate of time or whether certain technical and other difficulties would delay such commencement. While some technical and operational issues across different countries may be common, local conditions will affect the resolution of many issues which are necessarily an incremental process.

Time considers in some areas it should have been done in conjunction with the implementation of CMA. For others a phased approach should be taken based on the readiness of the service providers and the actual effectiveness of ANE implementation

and any Access List changes. It is imperative for operators to reduce prices of services based on the reduced prices that the operators themselves receive.

Views of MCMC:

a) The MCMC notes the fact that although the CMA provides for a licensing framework on an unbundled basis in the form of network facilities, network services and application /content application services however service providers have not separated themselves according to the operating licenses and appear to retain their vertically integrated structure. The framework and the existing policies are necessary but not sufficient and hence, for promoting effective competition in the Access Network, regulatory intervention is required to give effect to access to network elements.

b) The respondents, by and large, agreed to the definition of the Access Network proposed in the PC Paper.

c) The MCMC notes the concern raised by TMB regarding the impact that ANE will have on facility based competition. The MCMC believes that in short run the OLNOs will need certain period to deploy their own infrastructure and ANE will facilitate in obtaining the access to the network for provisioning their services to the customers and during this period the OLNOs will make investments in upgrading incumbent's network. In longer run, when the commercial loop market develops, the competition through service will generate competition through networks. Once network service integration proves advantageous for service providers, the OLNOs will start to invest in their own infrastructure. Hence MCMC stands by its view that ANE, in fact is complementary to rather than substitutes for infrastructure investment.

Presence of economies of scale and scope in the access network also implies that the facilities based competition in the local loop may result in the wasteful duplication of assets resulting in losses efficiency. We believe that the introduction of effective competition should not be at the expense of infrastructure duplication which might lead to inefficient allocation of resources and unnecessary wastage. It must also encourage and promote optimum utilisation of existing infrastructure which can lower market entry costs by allowing OLNOs to gain access to customers and offer broadband services without having to substantially invest in network facilities.

In some areas, we believe that the greatest benefits may be achieved through facility based competition and that the ability of the OLNOs to use unbundled network elements is a necessary precondition to the subsequent deployment of self provisioned network facilities.

MCMC believes that over time the OLNOs will prefer to deploy their own facilities in making where it is economically feasible to do so, because it is only through owning and operating their own facilities that competitors have control over the competitive and operational characteristics of their service and have incentives to invest and innovate in new technologies that will distinguish their services from those of the incumbent. ANE rules that encourage competitors to deploy their own facilities in the long run will provide incentives for both incumbents and competitors to invest and innovate and will allow the MCMC to reduce regulation once effective facility based competition is established.

In the absence of ANE, limited facility-based competition will emerge and that the access provider' control of the access network may lead to a continuing concentration in broadband services provision. As a result, more extensive regulations at the level of individual services might be required.

d) The MCMC does not support the argument of TMB regarding conditional ANE by TMB based on certain undertakings and monetary compensations as this will further create distortion in the market. As far as rolling out in rural and remote areas is concerned, Universal Service Provisions (USP) and CCDP programmes are already available to provide the necessary coverage. In addition, alternative technologies are open for deployment by OLNOs in such areas.

e) On the issue of Moratorium, the MCMC is of the view that moratorium is generally considered in return of the service provider's undertaking for achieving certain targets like broadband rollout. MCMC is of the view that as TMB has already started rolling out its ADSL services which will make the broadband services available to consumers. The competition in this segment will boost the innovative services and services differentiation.

ANE presents an untapped opportunity for the Access Providers which requires the change of mind set in treating other operators. In fact the combination of unbundled network elements, bit stream and wholesale offers would provide a competitive business opportunity in addition to building their own infrastructure. The incumbents need to view it as a business opportunity and treat the alternative providers as their wholesale customers and not their rivals. This proposition is in mutual business interest and also provides options to the customers in terms of competitive service offerings.

The MCMC is not convinced by the examples quoted by TMB in the context of Moratorium in the countries such as Hong Kong, Singapore as in these countries the moratorium relates to the liberalisation of fixed services market and do not relate to ANE. On the contrary, in Australia, the incumbent Telstra was required to give an undertaking to ACCC for not rolling out its own DSL services unless it offers the wholesale LLU to its competitors. The fact that TMB has already rolled out its ADSL services, provides it with the competitive advantage.

The application of Moratorium is in strict contrast to the basic concept of effective competition whereas the MCMC aims to design a framework which creates incentives for both incumbent and OLNOs to innovate and invest in technologies and services that will benefit consumers through increased choices at competitive price. Hence a regulatory measure such as moratorium, after 10 years of liberalisation, does not really prove a case for further protection of the incumbency.

3.3 COMMENTS ON TOPOLOGY OF ANE

Questions from Section 3 in the PC Paper

3.1 Should all the forms of access (for ANE) be required? Please provide reasons for your arguments.

C&W submits that in the first instance priority should be given to:

1. full access (as defined in the PC Paper) for service providers wishing to invest in their own basic node equipment; and
2. bitstream (as defined in the PC Paper) for service providers not wishing to invest so extensively in their own equipment.

C&W considers that these are technically the simplest ANE to unbundle and will be sufficient to allow competitive service innovation to the business market sector and part of the domestic sector where demand is likely to be highest. Less priority should be given to line sharing and sub loop access, both of which have more complex technical issues to be resolved. In the case of sub loop access, it is likely to be of less value to service providers in the short to medium-term.

Celcom argues that the form of access should be restricted to only two at the most. This is to avoid complex management and negotiation process. It is important to have a simpler approach at the initial stage and study the take up and obstacles over time so that the method could be gradually improved.

Maxis is supportive of all the four forms of ANE mentioned in this section. However, each form of ANE could be implemented at different times to best suit circumstances, starting with Full Access and Line Sharing.

While **TMB** does not support ANE/LLU at this time in any form, if LLU was ever to be deployed in Malaysia then TMB considers that the technical and other issues make it preferable for options (iii) Bitstreaming and (ii) Line Sharing (in that order) to be implemented.

From TMB's perspective, Bitstreaming while not easy to implement would be easier than other forms of interconnect as it is effectively ADSL interconnect (i.e. it moves the interconnect point from the MDF back up the network). TMB considers that end-to-end bitstream access where interconnection is provided after the ATM switch where the OLNO has a POI is the most feasible option.

Time considers that all forms of ANE should be required. The justification is simply because advances in technology would require one or the other modes to become important. As such MCMC should not limit the ways in which access is given, unless the operator is not bound by technological limitations. Security and confidentiality concerns must be tackled in all forms of access.

3.2 Should any of the methods not be implemented for technical, economic, regulatory or other reasons?

C&W maintains its view that line sharing and sub loop access should be given lower priority, but should be considered in due course.

Celcom is of the view that sub-loop should not be implemented because it is a complex process and there is insufficient experience in this area. Full access method should also be avoided since the objective of the ANE is to promote the broadband access instead of traditional PSTN. With the PSTN services, the incumbent will be more obliged to do repair and maintenance work in the Access Network.

Maxis considers that all the four forms of ANE have their applicability respectively. Hence, Maxis is of the view that none of the access forms should be excluded from implementation.

TMB submits a range of reasons why none of the four proposed methods of LLU should be implemented at this time. In addition TMB pointed out that there are additional compatibility issues associated with option (iv) access to the sub-loop (which may take a long time to resolve) such as limitation of space for an Access Seeker's splitter and cable termination block. TMB also argues that there are likely to be considerable limitations in terms of functionality in relation to TMB's OSS which monitors, records and exchanges data with the OLNOs and other licensees. Implementation of unbundling would require the development of new services, new processes to support those services, and new processes to ensure unbundling did not erode the service provided by existing services to existing customers.

TMB's current IT systems environment is somewhat inflexible, with a high cost and long lead-times to effect changes as it was designed for our internal use in a narrowband world. This IT systems environment is not well suited to implementing LLU. The MCMC should be aware that the costs of attempting to implement unbundling using the current IT systems environment would be high, and there would be long lead-times.

Time considers only methods requiring capital intensive and creation of duplicate networks should be avoided. However, if there are constraints on the number of operators that can share existing infrastructure then perhaps some new infrastructure can be laid out in cooperation with all interested parties.

3.3 In your opinion, what management strategies could be employed for each of the above method of access?

C&W considers that the prime objective of the management strategy should be to achieve equal access between the incumbent's own services' access requirements and those of competitive service providers. This is best achieved by having the incumbent's local loop operations in a functionally (and commercially) separate wholesale organisation, providing facilities and loop availability and other technical information to the incumbent and competitive service providers on an equal basis.

Celcom argues that the process can start with bitstreaming until the demand grows to a certain level, after which line sharing can be implemented.

Maxis is of the opinion that the principles to employ for each method of access should be fairness, equity and non-discrimination. The Access Provider must treat a request from an Access Seeker with the same priority and fairness as a request from their internal departments. In addition, Maxis is agreeable with the application of the MSA as a guideline for this arrangement.

TMB is unsure what response MCMC is seeking with the question.

Time submits any reasonable “best practice” strategies deemed fit by MCMC can be considered.

3.4 Is there a need to establish a special working group to resolve the technological and operational issues for provisioning compatible services on each other's network?

C&W considers working groups can be useful, but the experience of other countries (particularly the UK) is that industry working groups cannot substitute for the need for direct regulatory intervention in cases where the incumbent has no incentive to agree to reasonable terms.

Celcom submits that there is a need and the member should include vendors to advise on technological issues.

Maxis considers that MAFB should be the most suitable vehicle to resolve the technological and operational issues for provisioning compatible services on each other's network. Representatives of the Access Providers and the Access Seekers should use MAFB as a channel towards resolving issues in relation to ANE.

TMB argues if LLU were to be implemented then it would require considerable work – probably via special working group (probably better placed under the MAFB) in order to resolve the considerable technical and operational issues. It is highly recommended that the working group comprising of subject-matter experts in the relevant field be formed. Benchmarking using models of different countries to be initiated immediately with the implementation of exhaustive field tests recommended.

TMB's initial thinking is that such a working group would take at least 12-18 months assuming the OLNOs provided it with sufficient resources. This would be consistent with foreign country experience of the introduction of LLU.

Time submits that this should be done by the regulator or at least regulator-driven in order to ensure that disclosure of "confidential" information can be obtained with ease.

3.5 Do you agree that the services above are those that are likely to be provided over the Access Network? If not, please give reasons.

C&W argues that section 3.7.1 of the PC Paper lists likely services to be provided over ANE. In addition, ANEs have the potential to make possible alternative provision of wholesale conditioned access circuits (“partial leased lines” in European terminology).

Celcom agrees with the services listed.

Maxis is of the view that these are the most likely services based on current technology.

TMB considers that broadband ADSL (or some other DSL variant) will be the key service in which any new entrant would be interested.

Time agrees with MCMC’s assertion.

3.6 Do respondents believe that other services could be provided over the Access Network? Please give reasons.

Celcom considers that MAFB and Technical Forum should be given the task to study other services to be provided over the Access Network.

Maxis considers that there are alternative services such as use of local loop for “outdoor extension” or “out of area lines”, tie lines, telemetry and alarm connections, 2nd voice/fax line etc. As for new technology, Maxis is supportive of a regulatory stance of technology neutrality in relation to services to give operators full freedom to offer any services they feel feasible.

TMB submits that it is not aware of any other services – although other applications services running over the network facilities/network services would be possible.

Time considers that there are other services that can be carried over the Access network and over the ANE carriage platforms. This includes video streaming right down to applications like tele-voting, which would be facilitated by security technology etc to support and develop e-commerce.

3.7 What is the order in which respondents consider that services would be brought to market? Please provide information and analysis to support your response.

C&W considers that in relation to the specifics of the Malaysian market, C&W would like to submit information at a later stage.

Celcom considers the following order to be appropriate.

1. Broadband
2. PSTN and
3. ISDN.

Broadband subscribers are expected to grow at CAGR 40% between 2002-2007 from 25,000 to over 500,000 in 2007 (Source: IDC). This is because of wider deployment of broadband technology, more offerings of broadband specific contents and services as the technology becomes more widespread.

Maxis believes that focus could be initially targeted on Full Access and Line Sharing to permit broadband (xDSL) services. There are many varieties of xDSL and it should be left to the Access Seeker to determine which best suits its business case.

TMB considers that the likely order that services would be brought to market is as follows:

1. Internet on ADSL/SDSL;
2. IP VPN; and
3. VoIP

To confirm this view, multi-benchmarking models in other networks/countries would need to be further explored.

Time considers the order to be voice, Internet and value added services video streaming.

3.8 What components of network should be included for the purpose of access?
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C&W proposes the inclusion of unbundled optical fibres in the customer Access Network.

Celcom submits that components of network to be included for the purpose of access are as follows:-

<u>Type of Access</u>	<u>Network Component</u>
Full Access	MDF
Line Sharing & Bitstream	Splitter

Maxis believes that the items listed in the PC Paper in section 10.3.1 (i) to (vi) are the necessary components of network that should be included for the purpose of access. A few major items include:

1. copper local loop or sub loop
2. co-location space and ancillary services (power, security, air-conditioning etc.)
3. facilities to enable Shared Access e.g. Splitter
4. tie cables (internal or external as the case may be)
5. Handover Distribution Frame (HDF)
6. interface to Operational Support System (OSS)

Maxis considers that optical fibre cables and backhaul transmission should be commercially negotiated.

TMB does not consider that any additional network components should be included with the scope of LLU or any other form of unbundling.

Time submits that co-location at towers and buildings, sharing at trunk level and last mile copper are of prime importance.

Views of MCMC:

a) Having considered the submissions, the MCMC is of the view that the regulatory framework should be accommodative of all types of ANE so as to facilitate any type of Access depending upon the commercial negotiations between the Access Providers and the Access Seekers.

b) Further, the MCMC recognizes the importance of the Forums in the process of self regulation, hence would seek MAFB to address the technical and operational issues by developing the relevant codes.

3.4 COMMENTS ON METHOD OF ACCESS

Questions from Section 4 in the PC Paper

4.1 Should the Access Provider be required to offer all forms of access? If not, which one should be required?

C&W argues that it is important that competitors are offered co-mingling in order to achieve equality with the incumbents own operations. The experience of virtually all other countries show that regulatory mandate will be required to ensure that the incumbent provides this on reasonable terms and conditions. Where co-mingling is genuinely not possible, other forms of access should be mandated where possible, in order of:

1. Separated co-location space at the same incumbent site
2. Remote co-location, with the cost of additional transmission shared with the incumbent in proportion to each operator's share of utilized access loops homed on the sum of the original switch site plus remote locations. This ensures that competitors are not disadvantaged on cost grounds.
3. Virtual co-location, with additional operations costs shared with the incumbent in proportion to each operator's share of utilized access loops homed on the sum of the original switch site plus remote locations. This ensures that competitors are not disadvantaged on cost grounds.

Celcom argues that only Physical Co-Location be required.

Maxis considers that it would not be necessary to provide all forms of access:

1. The requirement to provide physical co-location should be on reasonable commercial grounds, where sufficient space exists for such arrangement. In some cases, there are benchmark market prices based on real estate rental as an indicator.
2. Distant co-location should be supported as an option for the Access Seeker or if there is insufficient space available, physical co-location should be an option.
3. Virtual co-location should not be mandated and kept as an option for commercial agreements between providers and seekers. This option has few advantages and many disadvantages, and may be used as a "token" offer for access in lieu of something useful.

TMB does not consider that the Access Provider should be required to offer all forms of access but rather if access was mandated, then it could be that bitstream access is likely to be the "least hard" of the four unbundling options.

Time considers that the Access Provider should be required to offer physical co-location and distant co-location only.

4.2 Which method of access would be preferred and why?

C&W submits that with appropriate commitment from the regulator, incumbent and competitors, all forms of co-location are possible. Japan is a good example.

Celcom proposes that Physical Co-location (co-mingling), where the equipment of the Access Seeker is placed together with the Access Provider's own equipment is preferred because of easy application and convenient.

Maxis would like to point out some of the preferred methods of access with a brief description of the rationale:

1. Physical co-location is preferable for copper access, where transmission quality and data throughput may depend on distance. This is a minimal cost option with lowest barriers to the Access Seekers.
2. Distant co-location may be useful in the case, where physical co-location is not possible and suitable space can be found in near-by premises, but the expense of establishing such sites may discourage access.
3. A hybrid of physical/distant co-location may also be desirable, where the Access Provider provides space on their property for an Access Seeker's hut/shelter to accommodate a HDF and equipment.

Of all the above, Maxis would like to state its preference for physical co-location as the most suitable form of access. Additionally, we would like to suggest that the physical co-location should be implemented with rules of access and availability of security elements i.e. caged and/or locked racks.

TMB prefers distant co-location out of the three methods of access because: Equipment premises & equipment ownership is clearly separated and defined; and It ensures minimal disruption to working customers especially when commissioning new circuits/systems and during any "trouble shooting" or O&M.

TMB would also be prepared to discuss virtual co-location if the designation process does not result in any additional costs (or need to provide free or subsidised backhaul) for TMB.

Time prefers distant co-location to maintain network security, avoid space constraint and maintenance conflict issues. Single point of failure in physical co-location could lead to total service failure as the whole premise would be affected.

4.3 How appropriate are the different types of co-location? What are their advantages and disadvantages? In particular, what impact would each of them have on the QoS?

C&W considers that where co-mingling is genuinely not possible (e.g. because of absolute space limitations), other forms of access need to be mandated where possible, in order of:

1. Separated co-location space at the same incumbent site.

2. Remote co-location, with the cost of additional transmission shared with the incumbent in proportion to each operators' share of utilized access loops homed on the sum of the original switch site plus remote locations.
3. Virtual co-location, with additional operations costs shared with the incumbent in proportion to each operators' share of utilized access loops homed on the sum of the original switch site plus remote locations.

Celcom is of the view that the appropriate co-location should be consistent with the MSA, Determination No. 2 of 2003.

Maxis considers that the advantages of physical co-location include:

1. Close proximity to copper for distant dependant services.
2. Minimises cost of entry for the Access Seeker
3. Faster fault handling and provisioning process

The disadvantages of physical co-location include:

1. Need to establish security systems and procedures i.e. cages or lockable racks, and guidelines for sharing facilities
2. Reliance on Access Provider for suitable power, cooling, and fire protection systems
3. Need to negotiate fair use of Access Provider's space
4. Need to establish detailed SLAs
5. Lack of space availability in some instances

The advantages of distant co-location include:

1. Minimises reliance on Access Provider
2. No security and privacy issues. Ease of access as it is Access Seeker's own space

The disadvantages of distant co-location include:

1. Inability to secure premises sufficiently close to the Access Provider
2. Expense of establishing own premises and support infrastructure (power, cooling, fire protection etc)
3. Need to establish MDF-HDF link
4. Time to acquire locations and permits for trenching

The advantages of virtual co-location:

1. Enables access when physical or distant co-location is blocked
2. No duplication of resource
3. Lower cost of entry

The disadvantages of virtual co-location:

1. Reliance on the Access Provider for operations and maintenance of network elements
2. Expense to the Access Provider of training and difficulty of maintaining interest and expertise in the Access Seeker's systems
3. May be used as a lame alternative to physical or distant co-location
4. No urgency on the Access Provider to innovate and introduce new technology.

TMB would prefer in-span interconnection, which has been successfully implemented with most of the OLNOs in Malaysia. This option avoids security, operational, allocation of scarce space, and legal issues that need to be addressed between any OLNO and us if physical co-location was to be mandated. In the case of LLU, our preference is therefore, to have distant or virtual co-location.

In conclusion, even if there were a scenario, where co-location of another OLNO's equipment was permitted in TMB buildings, this would be for narrow proscribed reasons. It would not permit the OLNO to "do other things" while it is located in their building.

Time considers that the advantage of distant co-location is that it enables the Access Provider and the Access Seeker to isolate problem due to separate location of facility. The disadvantage of distant co-location would be the potential discrimination by the Access Provider. For example, the Access Provider might limit capacity of the link between the co-location room and the Access Provider's premises.

4.4 In the event of insufficient space for physical co-location in the Access Provider's building, what are the alternatives?

C&W considers that these issues are best discussed within the framework of an industry working group, with the regulator prepared to step in and mandate practice when necessary. It is important to remember that security concerns will be a two-way issue, i.e. security of both the incumbent and the competitor networks.

Celcom submits that in the event of insufficient space for physical co-location in the Access Provider's building, the alternative is distance co-location.

Maxis submits that the alternatives where lack of space occurs include:

1. Distant co-location
2. Expand Access Provider's building
3. Build a hut/shelter on the Access Provider's property and establish co-location similar distant co-location
4. Clear space by replacing old and bulky equipment with newer higher density equipment
5. Re-locate some service provider's equipment to another premises

All options may be explored and a cost effective/timely solution identified.

TMB considers that as distant co-location and/or virtual co-location options are considered, this is not an issue.

Time considers that distant co-location to be the alternative.

4.5 Which conditions may be necessary to assure in order to guarantee the security and to preserve the integrity of the network in the event of physical co-location?

Celcom considers that issuance of new electronic passes and providing some segregation between these passes and normal employee, controlling access to different rooms or by adding a CCTV screen in the room that are shared, and putting equipment in cages or different rooms would be necessary to guarantee security and integrity of the network.

Maxis is of the opinion that a particular degree of security assurance and network integrity preservation is paramount for a physical co-location arrangement. Maxis has listed below the conditions that we deem necessary for such arrangements:

1. The Access Seeker's equipment should be installed in a separate room/cage with secure access points and designated "common areas" for transit. At the minimum, should there be no cages, the equipment racks should be lockable.
2. Establish SLAs on power, security and air-conditioning continuity/integrity as applicable
3. A "mutual trust" agreement with clear guidelines and agreed rules for personal conduct and strict commercial penalties or criminal implications for breaking the rules
4. Both parties must take reasonable care to protect their own interests by adequately securing their own systems (lock doors, password protect systems access etc)
5. The Access Provider must have accessibility to the Access Seeker's equipment area to adequately deal with emergency situations like fire.

TMB considers that in order to guarantee the security and to preserve the integrity of the network in the event of physical co-location, it may be necessary to introduce a contract with terms and conditions agreed by both parties. Other mechanisms include chaperoning of OLNOs staff, security pass approval mechanisms etc.

4.6 Do you consider distant and virtual co-location to be viable alternatives to physical co- location? Under what circumstances?

Celcom submits that they are viable alternatives in the event that the space is not feasible for physical co-location.

Maxis considers that distant co-location is a viable alternative should physical co-location be unavailable, provided that strategic premises can be established within reasonable distance of MDF and if a MDF-HDF link can be established. Maxis does not considers virtual co-location to be a viable alternative.

TMB considers distant and virtual co-location to be viable alternatives to physical co-location under all circumstances. It is also likely that the cost for provisioning of the facility is lower with distant co-location and virtual co-location, than physical co-location. This

option will free the Access Seeker from constraints that may be faced by the Access Provider.

Time considers distant co-location would be viable alternative to physical co-location to ensure network security.

4.7 What should be the characteristic of co-location offer in terms of maintenance?

C&W considers that this issue is best discussed within the framework of an industry working group, with the regulator prepared to step in and mandate practice when necessary.

Celcom considers that for routine maintenance it should be limited to certain period of time, while for preventive maintenance it should be given without limitation but to give notice at least 2 days before the action. While for corrective maintenance, the Access Provider should be informed immediately.

Maxis is of the opinion that the characteristic of co-location in terms of maintenance should focus on support infrastructure and any shared network elements as follow:

1. Support Infrastructure: The Access Provider can provide air-conditioning, security and fire fighting. The Access Seeker should be allowed to access the electricity source for its own AC and DC power (backup systems) and earthing.
2. Shared network elements: The Access Provider should be accountable for the maintenance of the copper cable pairs and tie cables.
3. Both the Access Provider and the Access Seeker should maintain the above systems to agreed levels respectively. It is prudent that any planned outages be forecasted and falls within the agreed maintenance windows. As for any unplanned outages, the incident must be reported and explained. Proper escalation procedures should be in place to handle such outages.

Further, the fault reporting processes must be agreed between the Access Provider and the Access Seeker with guaranteed response and restoration times.

TMB argues that if physical co-location was to be provided, it should include assurance that all network equipment/nodes of Access Seeker housed in Access Provider's premises shall be maintained by the Access Provider, at all times, at a commercial arrangement (installation, maintenance, operation and infrastructure etc.).

Time considers that service level agreement and inter-working process between Access Provider and Access Seeker should be established.

4.8 What technical and operational information do service providers need for the above options? Which information is absolutely necessary?

C&W considers that this issue is best discussed within the framework of an industry working group, with the regulator prepared to step in and mandate practice when necessary.

Celcom submits that the technical specification and requirement from the Access Seeker is important.

Maxis is of the view that the information needed for physical co-location, i.e. the normal site-make-ready information is required to host infrastructure, includes:

1. Floor space, floor loading, heat dissipation, number of AC and DC feeds and loads, earthing, antistatic flooring, lighting.
2. Interconnection information: Number of cable pair, line impedance.
3. SLA information: Target availability. Man Time To Repair targets, agreed maintenance windows, communication processes, and fault tracking and reporting processes.

The information needed for distant co-location includes:

1. Interconnection information: Number of cable pair, line impedance.
2. SLA information: Target availability. Man Time To Repair targets, agreed maintenance windows, communication processes, and fault tracking and reporting processes.

The information needed for virtual co-location includes:

1. All information above.
2. Additionally, network element details are necessary including element type, manufacturer, hardware and software version etc.

TMB considers that there is an extensive list of technical and operational information needed for most forms of co-location for LLU to work. Key information would seem to include technical specifications, power and infrastructure, protocols (for compatibility) and inventory database. GH All equipment and protocols should be compliant with international standards, and be SIRIM and ISO9001 certified.

4.9 Should the Access Provider be required to provide leased lines or other links from the premises where the copper cable ends, and to backhaul bitstream services in some form through the network to a central location?

C&W is of the view that in time, backhaul between the incumbent switch sites and competitor points of presence could be competitively provided. Initially, however, in the earlier stages of competition, it is likely to be a segment in which the incumbent is the only economic provider and thus has market power. The correct remedy to this situation is to place an initial requirement on the provider to provide regulated backhaul, but with the guarantee that the regulator will review the continuing necessity of this requirement after a period of time (say four years). This review should include a market analysis of the competitiveness of backhaul provision.

Celcom argues that it is required if it is the case of virtual co-location.

Maxis agrees that the Access Provider should provide the above-mentioned services based on reasonable commercial terms as with other core network facilities, where accessed for this service. It is also essential that the Access Provider must reasonably cooperate with the Access Seeker to facilitate backhaul services. In addition, the Access Provider should be prohibited from using this as an artificial blocker to access.

TMB argues that generally the Access Provider should not be required to provide leased lines or other links from the premises where the copper cable ends, and to back-haul bitstream services in some form through the network to only agreed POI or POP not a central location. It would be the responsibility of Access Seeker to provide the leased lines or other links if a central location was to be utilised.

Time considers that this requirement is imperative, but it should always be linked to a reasonable cost based /or regulated price. As can be seen this element has not been forthcoming in many crucial areas in today's market.

Views of MCMC:

a) Respondents have different views on the methods of access. However, the MCMC is of the view that the availability of all methods would be able to serve varying requirements of the seekers. Without impairing the offer of other types of collocation, it is considered that the physical collocation conditions must be guaranteed. The space destined for physical collocation must not be used for purposes other than those necessary for the use of ANE. Furthermore, the MCMC is of the view that the regulatory framework should be accommodative of all methods of access to ANE so as to facilitate any type of arrangement depending upon the commercial negotiations between the Access Providers and the Access Seekers, hence both distant and virtual collocation must be offered when viable.

b) If many Access Seekers show interest, whenever possible, the space among the Access Seekers must be shared.

c) In order to ensure good functioning of collocation, it is considered necessary to provide associated facilities such as power with or without interruption, internal / external tie cables, air-conditioning etc.

d) The Commission is also of the view that the measures needed to guarantee safety and prevention of the integrity of the network should be adopted provided that they are reasonable.

e) The issues relating to the access rights and security can be best dealt with by industry body such as MAFB which would be required to develop Codes to address these issues.

3.5 COMMENTS ON QUALITY OF SERVICE (QoS)

Questions from Section 5 in the PC Paper

5.1 How can the quality of ANE be defined and guaranteed?

C&W considers that this issue is best discussed within the framework of an industry working group, with the regulator prepared to step in and mandate practice when necessary.

Celcom submits that both the Access Provider and the Access Seeker have to mutually agree on the definition of quality subject to the Access Provider's commercial terms.

Maxis considers that the documented method look reasonable at this stage. MAFB will have to finally sort out all technical, operational and costing issues.

TMB considers that the quality of any ANE/LLU provided at some future point would need to be defined in the SLA, which would include details of key quality parameters. It is also likely that new system would be required to be installed to measure key parameters.

Time considers that the mandated QoS guidelines should be issued by MCMC after receiving input from the service providers on possibility of compliance.

5.2 What QoS parameters and indicators do you consider relevant to define in the scope of ANE?

C&W considers that this issue is best discussed within the framework of an industry working group. However, the regulator should be prepared to step in and mandate practice when necessary.

Celcom submits availability and meantime to repair is relevant.

Maxis considers that the QoS offered can include:

1. Bandwidth Restriction – here, the customer gets only what he is paying
2. UBR - Unspecified Bit Rate on a best effort basis
3. CBR- Constant Bit Rate -guaranteed bandwidth for the customer
4. VBR - Variable Bit Rate - realtime/video streaming.

Among the technical compatibility issues that can arise in using copper include:

1. Implementation of Reverse ADSL to support Internet Service Providers, whereby high bandwidth is in the direction of user to network. This could cause service disruption to other users in the same cable.
2. Significant cross talk can cause Bit error.
3. Special features from PSTN Switch that uses certain frequency may interfere on the ADSL.

The use of screen cable for proper grounding at customer end and also at the raiser can minimise interference issues.

TMB considers that the most relevant QoS parameters and indicators is network availability. This is because the condition of the copper network deteriorates over time and the quality of individual copper circuits cannot be guaranteed, and is offered on as-is basis.

5.3 What levels of QoS would the new service provider need?

C&W considers that this issue is best discussed within the framework of an industry working group. However the regulator should be prepared to step in and mandate practice when necessary.

Celcom submits as per current available benchmarking on QoS. (Determination of Mandatory Standard of QoS).

Maxis is of the view that equitable and non-discriminatory levels of QoS should be applicable. This QoS should be World Best Practice where applicable.

TMB argues that different service providers require different level of QoS depending on the type of services being provided. Obviously the price to be charged to the Access Seeker should take account of the required QoS (i.e. the greater the QoS the higher the price).

5.4 What type of relationship between the Access Provider and the Access Seeker, especially for contracts or in exchanging information, would make it possible to guarantee good QoS?

C&W considers that this issue is best discussed within the framework of an industry working group, with the regulator prepared to step in and mandate practice when necessary.

Celcom argues that the relationship would be that of supplier and client where the supplier are bound to certain liabilities.

Maxis believes that an Access Agreement containing enforceable and measurable SLAs should be established between the Access Provider and the Access Seeker. Additionally, MAFB is the most suitable vehicle to outline the standards on the agreed technical specifications, operational practices and quality of service between the Access Provider and the Access Seeker.

TMB considers that the Access Provider and the Access Seeker may enter into a mutually beneficial SLA to be negotiated on commercial and bilateral basis between the parties. This could form part of or be additional to the terms and conditions of any Access Agreement.

Time submits that both the Access Provider and the Access Seeker should agree to terms in the Access Agreements as well as the Operations and Maintenance manuals and the Technical and Implementation manuals.

5.5 Can the issues of QoS and maintenance be dealt in the SLA? Are there other preferred ways of dealing with this issue? Should the MAFB undertake the development of a model SLA? Please provide details.

C&W is of the view that the SLA must cover the SLA requirements.

Celcom considers that MAFB will undertake the development of a model SLA and Celcom as a member of MAFB will participate in the development process.

Maxis considers that the MAFB should undertake the responsibility to deal with SLAs on issues such as technical specifications (design guidelines and minimum acceptable service levels) and operational practices etc. Both the Access Provider and the Access Seeker must be obliged to meet the standards stated above. The agreed commercial agreements between Access Provider and Access Seeker should incorporate SLAs that reflects the agreed specifications and levels.

TMB considers that the issues of QoS and maintenance could be dealt in the SLA. While the MAFB may undertake to develop multiple models of SLA upon the request of its member to deal with service types etc, at this point of time TMB prefers a customised bilateral agreement between the operators.

Views of MCMC:

a) Based on the comments received, the MCMC is of the view that the Access Provider and the Access Seeker should enter into a mutually beneficial SLA to be negotiated on commercial and bilateral basis between the parties. This should form part of or be additional to the terms and conditions of any Access Agreement.

b) The SLA should be non discriminatory which represents a commitment from the Access Providers to guarantee a given level of quality of service through specifications of conditions aimed at ensuring clear and unequivocal strict compliance with the defined conditions which would prove an important tool for ANE.

c) MAFB should undertake the responsibility to deal with SLAs on issues such as technical specifications (design guidelines and minimum acceptable service levels) and operational practices etc. Further, both the Access Provider and the Access Seeker must be obliged to meet the minimum acceptable standards and levels. The agreed commercial agreements between Access Provider and Access Seeker should incorporate SLAs that reflect the agreed specifications and levels.

3.6 COMMENTS ON TECHNICAL IMPLICATIONS OF ANE

Questions from Section 6 in the PC Paper

6.1 Which eventual impairments must be taken into account with regard to compatibility of equipment and its electromagnetic characteristics?

C&W considers that this issue is best discussed within the framework of an industry working group. However the regulator should be prepared to step in and mandate practice when necessary.

Celcom submits that the major impairments with regard to compatibility of equipment and its electromagnetic characteristic are bandwidth.

Maxis considers that in order to ensure compatibility of equipment, several issues have to be considered;

1. Minimising/avoiding radio frequency interference of network elements with other radio broadcasters.
2. Importance of good grounding to minimise interference.
3. SIRIM certification to conform to local specification.
4. ITU-T specifications conformance.
5. Interoperability test for type approval with customer premises equipment.
6. Compatible clock specifications with the other network elements.

Other operational issues that can arise, some of which are highlighted elsewhere, include:

1. Non co-operation from incumbent operator with regard to implementation, and maintenance.
2. Sharing of AC Power.
3. Access and security issue.
4. Quality of copper.
5. Availability of space for equipment, and cross-connect.
6. Cost of civil work.
7. Customer complaint process to screen PSTN/xDSL service outage.
8. Additional IP pool.
9. Local council approval.
10. Fraud.
11. Interoperability testing.
12. Fault escalation process between the operators.
13. Sharing of customer database.
14. Commissioning and decommissioning of xDSL/PSTN service.
15. Agree on the standard design for xDSL roll out.
16. Cost of lease line.

TMB is of the view that the installed equipment of the Access Seekers must comply and be compatible to technical specification issues by the Access Provider.

Time considers that grounding, lightning protection system, synchronization and installation practice must be taken into account.

6.2 How can risk of interference with other existing services and between different technologies be taken into account? Are there solutions other than test specific to each ANE request?

C&W considers that this issue is best discussed within the framework of an industry working group. However the regulator should be prepared to step in and mandate practice when necessary.

Celcom considers that the element to be integrated should comply with international standard.

Maxis proposes that the solutions must comply with international operational, design and co-existence guidelines and standards. Each technology and equipment type proposed by an Access Seeker must be tested and approved by the Access Provider and that approval should not be unreasonably withheld. New Technical Specifications, operational practices, design guidelines and minimum acceptable service levels must be established by MAFB for any new solutions

TMB submits its view that as interference exist at certain bandwidth speeds, services may be rendered at lower speed or on a best effort basis. However at this point of time, given TMB's internal experience of ADSL rollout, TMB does not see any alternative to test each specific line if it was to be subject to LLU. The actual Test and Service Provisioning will need to be based on case-by-case basis.

6.3 What types of test may be needed to analyse the technical feasibility of the provision of a service on certain copper cable?

C&W considers that this issue is best discussed within the framework of an industry working group. However the regulator should be prepared to step in and mandate practice when necessary.

Celcom proposes technical loop testing.

Maxis submits that the ITU-T has several recommendations on testing local loop for xDSL services as stated in standard G.996.1 ITU-T xDSL. Separately, Maxis lists below several common tests that can be deployed to certify local loop for xDSL services:

1. Longitudinal Conversion Loss (LCL) test – to test resistance against external interference.
2. SNR test – Signal to noise ratio test.
3. 256 tone attenuation test.
4. Bit rate prediction test.

TMB considers that the types of test that may be needed to analyse the technical feasibility of the provision of a service on certain copper cable are as follows;
Complete copper cable test (DCR, IR).

1. Download speed test.

2. Attenuation at less than 60dB; and
3. Longitudinal balance test at 98 percent.

It is best that an automated system or tools are available to perform these tests. All new systems procured/developed by TMB will be chargeable to the Access Seeker.

Time is the view that the Bit Error Rate Test and Protocol Analyser Test may be necessary.

6.4 How can we take into account the fact that the number of lines offering ANE services in the same cable can affect the speed of these lines and the quality of service offered on adjacent pairs?

C&W considers that this issue is best discussed within the framework of an industry working group. However the regulator should be prepared to step in and mandate practice when necessary.

Celcom argues that the monitoring and control the subscription based on utilisation measurement and forecast must be taken into account.

Maxis submits that the issues above can be dealt with via;

1. Mutual agreement on design/co-existence guidelines.
2. Transparent sharing of relevant capacity and usage information.
3. Allocation of available resources on a first-come first-served basis.
4. The Access Provider may treat a request from Access Seeker with the same priority and fairness as a request from their own customer.

TMB considers as the speed rendered is not guaranteed except for premium services due to the said noise interference at certain services, the number of lines offered to the Access Seeker should be on "as is and where is" basis. The lines offered must be returned to the Access Provider if found to be unsatisfactory. If the provisioning of an Access Seeker's service adversely impacts existing lines, the new Access Providers' circuits will be immediately be ceased until a solution is found and will be reoffered when/if capacity is available.

6.5 How efficiently the problems relating to operating and maintaining equipment from different service providers on shared resources be dealt with? Does the Access Provider need to define the type of equipment which can be used, notably for DSL technologies?

C&W considers that this issue is best discussed within the framework of an industry working group. However the regulator should be prepared to step in and mandate practice when necessary.

Celcom argues that to minimize the type of equipment for ease of maintenance and operations, the type of equipment must comply with the industry technical standard.

Maxis believes that the establishment of Technical Specifications by MAFB, which comprise operational practices, design and co-existence guidelines that can deal with this issue efficiently. The Access Provider should support “type approval” as oppose to specifying acceptable technologies. This should also mean that the Access Provider should not refuse reasonable requests for type approval.

TMB is of the view that in order to efficiently deal with the problems relating to operating and maintaining equipment from different service providers on shared network facilities/resources, the following must be done;

- the Access Seeker has to appoint a single point of contact for handling customer complaints/problems;
- Need to properly define roles and responsibilities for both Access Seekers and the Access Providers;
- Access Seekers and Access Providers must both have network management systems to manage their own equipment;
- Need for a unified system for the fault escalation process;
- Need to agree for a single reporting source; and
- Need to develop an automated fault reporting, fault repair and fault management systems.

6.6 Should restrictions for spectrum mask be placed to safeguard compatibility?

C&W considers that this issue is best discussed within the framework of an industry working group. However the regulator should be prepared to step in and mandate practice when necessary.

Celcom considers restrictions should be placed to safeguard compatibility to avoid interference.

Maxis submits that there are ITU-T standards on this.

TMB considers that spectral masks will be required. TMB recommended that the classification of all local loop in Malaysia into three categories (i.e. short, medium and long). Hard Power Spectrum Density (“PSD”) masks control what may be connected to each type of local loop.

Construction of applicable PSD masks need to be:

- Driven by the need to bound the cross talk environment, so that it is no worse than that expected with today’s technologies; and
- Built from the envelope of deployed technologies in each loop category, or technologies with a close PSD match.

Time submits that there is no requirement for spectral masks.

6.7 Should MAFB undertake the development of technical specifications dealing with operations and maintenance issues?

C&W considers that this issue is best discussed within the framework of an industry working group. However the regulator should be prepared to step in and mandate practice when necessary.

Celcom argues that MAFB and Technical Forum should jointly undertake this task.

Maxis considers that MAFB is the most appropriate vehicle to undertake the development of technical specifications dealing with the above-mentioned issues.

TMB considers that the MAFB is the appropriate party to undertake the development of technical specifications dealing with operations and maintenance issues with the cooperation of members of MAFB – which include the Access Seekers and the Access Providers alike. Consideration should be given, however as to whether this technical specification is to be used as a guide only and whether it needs to be strictly followed when the Access Provider and Access Seeker bilaterally agree on a single solution.

Time agrees with the involvement of MAFB but questions MAFB's readiness to do so. Alternatively, it may be the Technical Standards Forum's role to undertake such functions.

Views of MCMC:

a) MCMC is of the view that tests aimed at identifying the technical viability of the service provision on the local loop must ensure compatibility and interoperability requirements. The equipments to be installed in the Access Provider's premises must be compatible with the existing equipments with regard to electromagnetic compatibility. Measures should be taken to minimize the possibility of interference specifically between the services and the technology that use the same cable pair.

b) In order to guarantee the safety and integrity of the network, the Access Provider must supply if necessary, a power spectral mask, which must not be restrictive thus preventing the use of new technologies on the access network.

c) Having considered the responses of the stakeholders, the MCMC is of the view that the technical and operational issues can be resolved by the industry working group. The MCMC would like to seek MAFB for the development of Technical and Operational Codes in respect of ANE.

d) Concerns have been raised regarding the ability of the MAFB to deliver the Codes in time. The MCMC would like to state that the first opportunity will be given to the Forum to develop the Codes in a timely manner and in the case of failure, the MCMC may intervene and prescribe the Codes, which will be binding to all parties.

3.7 COMMENTS ON IMPLEMENTING ANE

Questions from Section 7 in the Public Consultation Paper

7.1 Should there be any obligation on the part of the Access Seeker to provide forecasts to the Access Provider? If yes, what information and timeframes do you think necessary to include in the forecasts?

C&W considers that such an obligation would be efficient. However details are best discussed within the framework of an industry working group, with the regulator prepared to step in and mandate practice when necessary.

Celcom considers that the Access seekers should provide some sort of forecast of its business plan to the Access Provider. This is to enable the Access Provider to plan its network investment based on the forecast made by the Access Seeker. Information required include:

1. Type of products & services
2. Subscriber base forecast (minimum 3 years)
3. Financial projection (minimum 3 years)
4. Network capacity

Maxis considers that the concept of forecast is useful to the Access Seeker, particularly when there is no obligation to supply capacity or co-location space due to constraint in capacity. In such circumstances, the Access Seeker may ask the Access Provider if the forecast capacity can be met. The Access Provider may find forecast information useful to ensure it builds sufficient capacity for its own customer demand and to avoid situations, where the Access Seeker to the detriment of the former, consumes all available capacity. Consistent with the MSA, where Access Seeker has confirmed the forecast and the Access Provider has acted upon it to incur significant costs, the forecast shall be deemed as an order.

A minimum of 18 months lead time on forecasts is necessary to ensure adequate time for budget approvals and implementation should additional capacity be required. 3-year plans are required if physical co-location is required at a site that may exceed available free space. Information required in forecast include;

1. Target areas – sufficiently small granularity to plan cable capacity.
2. Projected customer numbers in each target area.
3. Proposed access type and technology.
4. Required co-existence method.
5. Floor space, power and heat dissipation for physical co-location.
6. Cable capacity of MDF-HDF link for distant co-location.
7. Equipment type and volumes etc for virtual co-location.

TMB considers that it is mandatory for the Access Seeker to provide forecast of its business plan. The information, which TMB considers should be provided includes but is not limited to the following:

- One year Business Plan for short term (for lead time for network roll-out & implementation); and

- Five year plan for long term forecasting.

The types of information required include:

- Coverage area – up to Distribution Point (“DP”) level;
- Customers/ line forecast (business/ residential) up to cabinet level (or some other area definition with a high degree of granularity);
- Type of application or service (i.e. voice or data);
- Speed/bandwidth sought or required; and
- Space and infrastructure requirements.

Time agrees that the Access Seeker should provide forecasts to the Access Provider. The forecast should include necessary information such as capacity requirement, types of services, bandwidth, space, equipment type, specifications, time frames etc.

7.2 In response to pre-ordering information, should there be an obligation on the Access Provider to provide network- and customer-related information? If yes, what are the relevant information required for this information?

C&W argues that such an obligation is essential to allow competitive service providers to plan and construct their service offerings. However, details are best discussed within the framework of an industry working group, with the regulator prepared to step in and mandate practice when necessary.

Celcom is of the view that only network information that is related to the requirement as set out in the pre-ordering information for inter-operation is required. The information includes network availability, terminal type and technology, signalling and technical specifications.

Maxis agrees that an Access Provider ought to provide network related information. The Access Provider must provide transparency on built capacity and utilisation of the requested access type(s) to support statements on ability or otherwise to support forecast requirements in a specific geographical area. Maxis is against any requirements to provide customer-related information that can be traced to a particular person as our individual licences and T&Cs do not allow us to release individual customer information. Information on potential demand (on an aggregated basis and not identifiable to an individual) can be useful to the new entrant but it is for the Access Seeker to conduct its own market study and to establish its own business case.

TMB considers that the Access Provider should provide only necessary network and technical information to the Access Seeker. This should only be done upon confirmation of short term forecast and any information provided is subject to confidentiality and non-disclosure agreements. In the case of customer-related information, TMB is strongly opposed to the release of such information as it considers (a) it would be in breach of contracts we have with customers concerning confidentiality of their information and (b) the provisions of the new Privacy Act.

Time argues that the Access Provider should provide network related information only.

7.3 Should MCMC include Sunset Clause while introducing the ANE? If yes what is the duration for which it should be invoked?

C&W argues that the incumbent is in all probability going to retain its dominant market position on ubiquitous customer access for an uncertain time frame well into the medium term (likely to be at least 5 years). Therefore, it follows that a “Sunset Clause” at a pre-defined time is wholly inappropriate given our current lack of knowledge of future market conditions. Rather, a review of the policy after 5 years would be appropriate, taking into account market conditions existing at the time.

Celcom argues that the Sunset Clause should be included and it should be invoked for the duration of at least 2 years.

Maxis is agreeable to a Sunset Clause of five (5) years for access to the ANE (LLU) during which cost based prices can apply. At the end of the Sunset Clause, operators can attempt to negotiate a commercial deal amongst themselves.

TMB proposes that if ANE/LLU is introduced in the future (in respect of which TMB remain opposed), TMB also considers that the provision of unbundled network should be subject to a Sunset clause. The implementation of sunset clause will ensure and encourage only serious players. The duration of 5 years is appropriate as this is sufficient for the access seekers to become the access providers and they are in a position to able to accumulate sufficient customers and capital for own roll-out of the required infrastructure.

Time agrees that ANE should include Sunset Clause which is subject to MCMC's assessment on the necessity to invoke.

7.4 The cable pairs might need conditioning in some cases, who will bear the cost of such activities, the Access Provider or the Access Seeker or should it be shared between them?

C&W is of the view that in order to ensure competitive neutrality, the costs of cable pairs should be borne equally by the incumbent and competitors, in proportion to usage. This includes the costs of any conditioning required for ANE unbundling in the competitive environment.

Celcom considers that the Access Seeker should pay for conditioning of cable pairs.

Maxis argues that the Access Provider on the basis that its asset has improved should absorb the costs. The cost of conditioning should be considered when ANE (LLU) rates are computed by the MCMC.

TMB considers that the Access Provider shall only offer the existing available infrastructure/facilities based on “as is” basis, thereby eliminating the need for conditioning of cable pairs. Certainly, TMB does not consider that the Access Provider should be in any way obliged to upgrade the cables in areas where the copper cables are not feasible for broadband services (for whatever reason).

Conditioning in regard to copper pairs, is the process of making a copper pair suitable for a specified use.¹⁸ More specifically, conditioning generally applies to removal of elements which preclude the use of a copper pair for use with high speed access technologies. Conditioning may therefore involve removal of loading coils, stubs and multiples, all of which reduce the performance of technologies such as DSL. However, even with conditioning of a particular copper pair, it may still not be possible to employ high speed technologies, due to the presence of interfering legacy technologies such as 2MB/s systems employing for example, HDB3 line coding. Removal of these technologies to enable operation of DSL on a cable clearly has significant implications for the access provider.

Time is of the view that in the case of revenue-sharing, the Access Provider is to bear the cost. Otherwise, it can be on the basis of cost-sharing.

7.5 For fault repair and maintenance purposes the Access Seekers will be required to access the OSS of the Access Providers. Who should pay for the cost?

C&W is of the view that in order to ensure competitive neutrality, all local loop costs should be borne equally by the incumbent and competitors, in proportion to usage. This includes the costs of the OSS, and its access in a multi-operator environment.

Celcom argues that maintenance and repairs should be borne by the Access Provider. The Access seeker should not be allowed to have access to the Access Provider's OSS. Perhaps, it's sufficient to give Service Level Guarantee (SLG) to the Access Seeker. Further studies need to be conducted.

Maxis argues that the Access Seeker should be allowed access to the OSS of Access Providers. One solution would be to provide a dial up facility for them to access these platforms. The Access Seeker should bear the costs of set up and these do not need to be cost oriented. Non-discriminatory access still applies.

TMB considers that the Access Seeker is required to establish its own Fault Reporting Centre and shall not have any access to the OSS so as to protect customer privacy and network security/integrity. The maintenance and fault repair of the cables provided shall be the responsibility of the Access Provider. All faults should be reported by the customers of the Access Seeker to the Access Seeker's Fault Reporting Centre. In this case, the Access Provider will only deal with the Access Seeker's Fault Reporting Centre. However, if the plant cannot be economically repaired, the Access Provider should not be obliged to provide alternative plant, by building a new outside plant etc.

¹⁸ Note the term 'conditioned' copper loop is sometimes used to describe bitstream access, whereby a conditioned loop is one on which equipment has been installed in order to provide a derived circuit. Here the term is used only in the context of providing a copper loop only, but one which may have been modified or 'groomed' to suit the desired use.

7.6 Which eventual impairments must be taken into account with regard to compatibility of equipment and its electromagnetic characteristics? In the event that such impairments exist, what solutions do you propose to minimise them? What types of test may be needed to analyse the technical feasibility of the provision of a service on a certain copper cable?

C&W considers that this issue is best discussed within the framework of an industry working group. However, the regulator should be prepared to step in and mandate practice when necessary.

Celcom considers that the major impairments for the compatibility are bandwidth. The element to be integrated should comply with International standard. Technical Loop Testing may be needed.

TMB considers that the Access Seeker must modify the non-complying equipment to comply with the Access Provider's specification in order to minimise harm to the network in the event that the non-compliance occurs.

Time is of the view that grounding, lightning protection and synchronization must be taken into consideration. Link tests may also be needed to analyse the technical feasibility.

Views of MCMC:

a) The majority of the respondents have advocated the need to include the Sun Set Clause. The MCMC is of the view that a mix of infrastructure and service competition stimulates investment by both incumbents and OLNOs and offers better consumer benefits. The invocation of "Sunset Clauses" not only provides OLNOs with strong incentives to invest but also allows them to enter in service competition and to acquire important knowledge about their new market.

However, the CMA framework already has the inbuilt mechanism for the review of the Access List every three year. Hence, rather than using the Sunset Clause, another possibility would be that the MCMC might review the policy on ANE after three years.

b) In response to the questions relating to the forecasts, pre-ordering, fault repairs and maintenance, the MCMC is of the view that these issues are best resolved by the industry Forum. Hence, the MCMC would like to invite MAFB for the development of Codes in regard to, but not limited to, the following;

- i. Service: Pre –Ordering, Forecast, Ordering, Provisioning and customer transfer;
- ii. Network Deployment Rules;
- iii. Cable management procedures
- iv. Performance requirements;
- v. Spectral Compatibility determination process;
- vi. Codes of practice for Collocation
- vii. Operation, maintenance and fault management

c) In order to properly monitor the development of the implementation of ANE, in a suitably swift and transparent manner, the MCMC is of the view that the industry Forum such as MAFB should take up the task. The Forum should initiate discussions and work out all the desired Codes immediately after the publication of this PC Report, so that the implementation timelines can be met. In this background, it is considered that the aspects that require harmonization and co-operation among the parties must be discussed. The Forum should have adequate representatives from all the stakeholders including the licensees/ service providers, equipment manufacturers, and consumers etc.

3.8 COMMENTS ON COSTS AND BENEFITS FROM ANE

Questions from Section 8 in the PC Paper

8.1 In your opinion, what are the economic benefits of introducing effective competition in the Access Network?

C&W considers that the biggest benefit, although hard to quantify, is that of competitive service innovation with more flexible access options, which will begin to bear fruit in the 2-3 year time frame. Price competition may be an additional short term benefit.

Celcom argues that the economic benefits of effective competition are as follows:

1. Various access technology platforms can be developed e.g.: PSTN, ISDN, fixed wireless, cable TV network, DPL etc;
2. Various new application services can be introduced eg. high speed internet access, interactive video, remote access to corporate LAN, etc;
3. Multiply customers' choices;
4. Reduce market entry cost (replace capital investment with rental);
5. Optimize resources; and
6. Reduce prices of new products & services.

Maxis believes ANE (LLU) will bring increased consumer choice (both in product variety and pricing), increased customer responsiveness and also potentially greater deployment of infrastructure in the long-run. At the macroeconomic level, a significant take up of broadband can bring positive effects, including;

Greater business efficiency – efficient communications, including adoption of fixed broadband services, can lead to increased business efficiency. Enablement of IT literate society – Users have hitherto been mainly using narrowband dial up internet services and this restricts the sophistication of multimedia services that can be launched.

TMB believes that the economic benefits – from a national GDP perspective – will be negative as the introduction of LLU will merely focus competition on existing urban areas at the expense of wider rollout and increased teledensity.

Further, as pointed out in a recent OECD paper: “LLU is not a panacea. LLU cannot address all the issues involved in relation to local market competition. Goals for a broadband society can be attained in many other ways. Primarily, the target technology for LLU would be asymmetric digital subscriber lines (ADSL) via the fixed telephone network. However, deployment of alternative technologies, such as wireless local loops, cable, fibre, satellite and Ethernet, is also important....”¹⁹

Other issues which have not been discussed in the PC Paper but are also important are:

- The issue of unbundling brings to the forefront the requirement to rebalance retail subscriber prices and in particular, fixed subscriber monthly rental charges so that

¹⁹ OECD, *Developments in Local Loop Unbundling*, Working Party on Telecommunication and Information Service Policies, Paris, 7 August 2003, page 5

they reflect costs. In some countries – such as Malaysia – full rebalancing of subscriber fixed charges has not yet been achieved. This has significant implications for proposals for LLU. This is because rebalanced prices are important for new entrants wanting to take advantage of unbundling since without rebalanced prices new entrants with a business model focusing on low-value services can be caught in a price squeeze and may be unable to offer service at competitive prices as unbundled local loops should be priced at cost (the access provider should not be required to cross-subsidise new entrants as well as its own customers!). If the retail subscriber monthly rental charges are set below cost then unbundled loop prices for new entrants may be higher than the retail price charged for residential subscriber lines,²⁰

- Another price implication of LLU has to do with the geographic averaging of subscriber monthly rental charges. Prices for subscriber lines have in most countries – including Malaysia been geographically averaged, (i.e., residential subscribers pay the same monthly rental for a line irrespective of where they live in a country even though the cost of providing these lines does differ, especially between urban and rural areas and indeed between the Peninsular Malaysia and East Malaysia). From TMB's view if LLU is to be mandated then the costs of such unbundled loop should be de-averaged (similar to the situation in Australia and Canada where there are significant costing disparities).

Time considers that effective competition in the Access Network facilitates provision of services by more market players. This provides wider choice of services to consumers i.e. in terms of price, types and QoS. The economic benefits from this include the following;

- With consumers having a wider choice of services by multiple service providers, the service providers will be driven to improve QoS and reduce price.
- Reduced price would increase demand for the services. This attracts investments to promote growth in the telecommunications industry and the rest of the economy.
- In order to minimize costs, service providers would be drawn to be more innovative in offering products which are cost-effective. This in turn, would provide greater choice of cheaper services to the consumers.
- Effective competition avoids duplication of resources and promotes optimum utilisation of existing resources.

8.2 Should the cost-based rate be a pre-requisite for introduction of ANE?

C&W considers that cost-based rates lead to the most economically efficient allocation of resources. In the case of ANE unbundling this is a crucial issue, since the investment required to build alternative access networks is immense, and should only be undertaken if it is economically efficient to do so. Rates set above costs will encourage this

²⁰ The situation is even more complex in Malaysia where TMB offers ADSL (Streamyx) services below cost and is under pressure from Government to offer even lower prices. This is at odds with the MCMC's proposals for LLU.

investment to take place, when funds could be used more efficiently for other purposes (e.g. developing service platforms).

Celcom considers the answer to be affirmative.

Dr Tengku Akbar argues that the opening of access to a network, however, has created the problem of access pricing. When a network operator provides access (to its customers) to other network operators, the level of access charges is a vital issue if the network industries are to support competition. The access to the network charge formed a substantial part of its direct cost and also its total cost. Clearly the current access to network price charged to this particular access seeker is unjust and unreasonable. This does not augur well for the telecommunications and media industry that is trying to encourage new entrants that can spur positive competition. To overcome the pricing problem, M-ECPR methodology can provide a just and equitable pricing to the parties involved.

Maxis supports the utilisation of LRIC based methodology for the introduction of ANE (LLU). Unlike the cellular industry, effective competition has not taken off in that market service or infrastructure wise. Moreover, a significant portion of TMB's network was built at a time it was monopoly. If the case was that the majority of costs were investments for new types of technology for unproven services, then LRIC could penalise the operator by effectively making it bear the risks of investment and allowing entrants to benefit from the potential gains.

LRIC is superior over historical accounting-based costing as it sends the correct signals to new entrants to make build or buy decisions and not tied down to the incumbent's costs and inefficiencies. LRIC can also expose cross subsidies across different business units of the incumbent and the incumbent is compensated a fair economic return based on a competitive market scenario.

The introduction in ANE (LLU) should not be predicated on the introduction of a cost based rate. This is because LRIC costing, as seen from the Malaysian experience with Access Pricing, involves lengthy discussion and consultation.

As an interim measure prior to determination of cost based rates for ANE (LLU), MCMC can impose a wholesale obligation on TMB/TM Net whereby TMB/TM Net is obliged to offer on a retail minus formula its Streamyx service.

TMB is strongly of the view that if ANE/LLU is to be introduced then operators wishing to access such unbundled facilities should pay a real cost-based charge of the facilities they are utilising. If this is not the case, and some averaged price is used then there is even less of an incentive to rollout new network in higher cost (i.e. non-urban) areas.

Time argues that cost-based pricing could cover the costs for service provisioning. It is essential in a competitive environment as compared to demand-based or market-based pricing.

8.3 What are the likely cost estimates for setting up ANE? Please provide information in support of your answers.

C&W is of the view that this issue will require careful review of data provided by both the incumbent and competitive service providers on reasonable costs, once the structure of ANE unbundling has been determined. Since both parties have incentives to either under-estimate or over-estimate costs, the regulator will need to make a determination based on the best available information.

Celcom considers as the information needed is considered private and confidential, we would like to submit the required information separately.

Maxis submits that the cost items for the three categories are listed below:

1. Local set up costs: Given that these costs really vary depending on the situation, it is very difficult to give a standard answer. For e.g. co-location costs depends on type of co-location and locality of the site. These costs must be explored in greater detail during industry wide discussions at the appropriate forum.
2. Line Access costs: Same argument as above.
3. Regulatory costs: The operators all have regulatory teams to handle regulatory issues that arise from time to time and the introduction of ANE is not expected to require dramatic increase of headcount to the extent that it offsets the benefits of this move.

TMB considers that this is a very complex question and does not have such estimates – nor has it seen such estimates in any world market.

Time submits that they are not as yet able to provide this information.

Views of MCMC:

a) Except TMB, all the respondents have agreed about the benefits of introduction of effective competition in the Access Network. This will result in more choices to the consumers, availability of broadband services, enablement of IT literate society, service innovation by alternative service providers and efficient utilisation of the existing resources.

b) The MCMC notes the quote of TMB that ANE is not a panacea and believes that this is an additional mechanism to promote competition in the access network. The other options including the alternative access technologies continue to be available for deployment but the current initiative will unlock the huge potential for development of broadband services as a result of effective competition.

c) The MCMC has considered the issues of tariff rebalancing in the Malaysian context and is of the view that for successful implementation of the ANE, the setting up of right price would be very important parameter. The right price level would determine the most efficient entry into the market. However, unbalanced tariffs are still prevalent in many countries where LLU has been mandated. Scrutiny of the price by the regulator as well as the advancement of the technologies over the past years have resulted in substantial

reduction of the ANE prices. The MCMC would like to encourage the commercial offers/ negotiations as a preferred way and will continue to monitor the price based on basic principles of cost orientation, non-discrimination etc.

3.9 COMMENTS ON COSTS AND PRICING

Questions from Section 9 in the PC Paper

9.1 What are the most important concerns which should be taken into consideration by MCMC while establishing the pricing principles?

C&W considers that in the ultimate interest of the economy as a whole, and telecommunications users in particular, economically efficient pricing should be adopted, in order that investment, and the resulting service provision, is correctly channelled to where it provides the maximum consumer benefit for the resources available.

Celcom submits its concerns regarding the establishment of pricing principles;

1. To ensure that the pricing does not prevent customer from buying or obtaining the services due to high price or uncompetitive price; and
2. To ensure that pricing brings reasonable returns on both access network and access seeker.

Maxis considers that provided that the case for ANE has been established, the most important concerns that a regulator should consider when establishing pricing principles include;

1. Costing to allow a recovery of an appropriate attribution of common costs.
2. Costing to allow recovery of the long-run incremental costs reasonably and necessarily incurred by the Access Provider or as a result of the provision of ANE (LLU) services. Historical accounting costs are not appropriate for estimation. Costs that are non incremental, such as corporate overheads, should be excluded.
3. Include a reasonable ROCE (based in returns in a competitive industry). In the UK, for Metallic Path Access (equivalent to full access) Oftel uses a rate that is commensurate to that applicable on other mechanisms for delivering voice.
4. Charges determined for appropriate network elements and services. This should include not just loop rental but also other ancillaries and also associated costs i.e. setup cost, order handling and costs in dealing with the Access Seeker and maintaining the service. Co-location should be based on the amount of space occupied and related costs to maintain the space. Co-location need not necessarily be cost based if there is a competitive rental market to give valuation guidance.

Where there is no case for intervention in ANE, then access arrangements are best left to commercial negotiations. Operators would then negotiate the best outcome, which would probably be based on retail minus method.

TMB is of the view that the most important considerations in developing any pricing principles are:

- creating incentives for continued network rollout in Malaysia;
- ensuring adequate cost recovery for the actual circuit which is subject to LLU – not some theoretical price which fails to fully compensate the Access Provider.

- Actual costs have the advantages of being observable, auditable and traceable; and
- administratively simple and related to when and how costs are incurred.²¹

Time considers that costs which service providers would incur in the long-run should be factored in. The pricing principles should support efficient investment in the industry, for example, return on investment.

9.2 Which pricing principle should be recommended?

C&W considers that the principle identified in answer to Question 9.1 above, suggests that cost based pricing should be adopted, where cost is defined using an appropriate LRIC standard.

Celcom recommends pricing principles based on:

1. Cost Per Pricing
 - a. Full Cost plus Pricing
 - b. Marginal / Incremental Cost plus Pricing
 - c. Variable Cost plus Incremental Fixed Cost plus Pricing
 - d. Minimum cost Pricing (i.e. to cover only the incremental cost and opportunity cost of resources).
2. Target Pricing – setup price to achieve certain target profit or ROCE.
3. Market Pricing.

Dr Tengku Akbar proposes a way to solve the problem with access pricing is to set 'floors and ceilings' between which prices are allowed to vary. This can be done by the combined use of incremental- cost floors and stand-alone cost ceilings on prices. Incremental cost (IC) means the increase in cost as a result of producing a further output in addition to the existing output while stand-alone cost (SAC) refers to the hypothetical cost of producing each output in isolation from the other outputs. These floors and ceilings may apply not only to individual products but also to groups of products. A major advantage of these IC and SAC tests is that they do not require information on demand, yet allow assessment of whether products are sources or recipients of cross subsidy.

Another method of access pricing is the use of the market determined efficient-component pricing rule (M-ECPR) which prices the inputs by summing the element of direct economic costs and opportunity costs to the incumbent firm. In the context of a telecommunications industry, the opportunity costs of providing an unbundled network element (UNE) equal to the revenues that can be generated by the use of that element given the presence of all market alternatives minus the direct economic costs.

The opportunity cost of an input equals the value of its best alternative use, which varies over time. If an input has a market value, the market price of the input is the best guide to its economic value which results from fundamental supply and demand forces. When an input does not have a ready market value, its value should be imputed by its value in its best alternative use.

²¹ See our response to Question 9.7 where we are proposing the application of four bands to determine the applicable LLU price, if LLU was to be implemented.

The M-ECPR methodology calculates the price of an input that reflects market opportunity cost. This methodology is a public-interest approach to the problem of how a regulated firm should price an input that it sells to a competitor. If a firm produces an input and sells it to another firm, the economic cost of the input is equal to the direct cost of manufacturing the input together with the earnings foregone elsewhere by making the sale. That reasoning underlies the M-ECPR formula, which is access price equals to incumbent's incremental cost of "access" per unit plus the incumbent's opportunity cost of providing the unbundled input.

The M-ECPR methodology imposes a constraint on the magnitude of opportunity costs. In the absence of market alternatives that offer end consumers prices, which are below the incumbent local exchange carrier's (LEC) retail rates, the opportunity costs to the LEC of providing the UNE are equal to the foregone revenues which are based on its retail rate less ICs. When the market alternatives are present, their prices determine the opportunity costs of the UNE.

In the context of the telecommunications industry, the M-ECPR methodology shows that the correct measure of the incumbent LEC's opportunity costs of selling a UNE is the difference between the service market price and its ICs. Correctly calculated, the M-ECPR puts market limits on the contributions of revenues to forward-looking common costs.

Maxis proposes that economic costing based on LRIC methodology be used for ANE (LLU). This is consistent with the stance adopted by regulators of Australia, the US and the UK. A separate full consultation process should be initiated to arrive at the final cost based charges.

TMB supports the use of fully distributed (or allocated) cost ('FDC') for the provision on unbundled local loop. As the MCMC is aware the FDC of a service is the total of all costs which a firm incurs in the provision of that service. The FDC of a service consists of two parts: -

- all cost components which can be directly attributable to the service; and
- an allocation of all other costs incurred by the firm which cannot be directly attributable to any other service (i.e., overhead).

Costs are attributable to a particular service on the basis of causality. That is, the provision of the service necessarily causes the provider of the service to incur a given cost. An alternative perspective is that the cost would not be incurred if the service was not provided. Such costs may be referred to as volume sensitive or variable costs. That is, costs which change when the level of output changes.

Shared overhead costs are those costs which cannot be causally linked to a specific service and in the case of where LLU is implemented shared overhead costs should also be allocated over each unbundled line otherwise consumers without access to unbundling will bear higher costs.

Time submits its view that the pricing principle which facilitate the most efficient entry decision into the market should be recommended.

9.3 Should the price for ANE be based on cost of service provision? If not please provide reasons.

C&W argues that the principle identified in answer to Question 9.1 above, suggests that cost based pricing should be adopted, where cost is defined using an appropriate long-run incremental cost standard.

Celcom argues that the price for ANE should be based on cost of service provision that includes the cost of network elements utilised, co-location charges and additional equipment cost by the Access Seekers.

Maxis considers that the cost based price should not only be restricted to service provisioning (such as loop rental) but extend to include pre-qualification testing of copper, fault rectification processes, access to necessary OSS, connection or disconnection charges etc.

TMB considers that LLU charges should be based on cost at this time. TMB has not seen any other method used for LLU charging and would be pleased to discuss other models if the MCMC was willing to discuss these with us.

Having said that, there are complexities associated with the calculation of the cost-based lease charges for LLU. These arise because lease involves both;

- transfer property rights associated with exclusive use of network elements; and
- transfer risks associated with ownership and use of the network element.

In practice, the allocation of *risk-bearing* between access seeker and access provider depend on the provisions of the Lease Agreement (including the probability of bankruptcy) or matters specific to the asset (such as the expected market price of the asset over time). Thus, the calculation of the efficient cost-based price for any lease of unbundled network elements goes well beyond calculations based simply on cost.

Time considers that cost-based pricing could cover the costs for service provisioning. It is essential in a competitive environment as compared to demand-based or market-based pricing.

9.4 Which are the relevant costs to be included in prices for ANE? Please give reasons supporting your arguments.

C&W considers that the relevant costs are;

1. Capital costs (depreciation & cost of capital) associated with local loop infrastructure (up to and including the MDF);
2. Local loop infrastructure operational expenditure (up to and including the MDF);

3. Appropriate attribution of causally related exchange site costs (sufficient to house the MDF), excluding costs such as air conditioning that are attributable to switching equipment;
4. Local loop network management costs (such as databases), excluding all customer related costs (such as billing and customer services) since these are retail costs.

Celcom submits that the relevant costs to be included in prices for ANE are;

1. Access Network Cost
 - a. Connection Cost
 - b. Installation Cost
 - c. Line Transfer/Disconnect
2. Co-Location Cost
 - a. Site Rental
 - b. Cable Cost
 - c. Additional Equipment Cost
 - d. Site Operational Cost – Power Supply & Utilities
 - e. Interest Charges
 - f. Repair and Maintenance Cost
 - g. Staff related cost and Other Common Operating Cost

Maxis is agreeable to the costs as listed in Section 9.5 (including section 9.5.3i and 9.5.3ii) in calculation of the price of ANE (LLU). Monthly rentals are most appropriate for full access of local loop. However, backhaul is not included at present in the list of items. Commercial negotiations for backhaul lease lines can suffice at present but if there emerge serious impairments to the development of ANE (LLU), MCMC can revisit in future to work out a more equitable solution.

TMB's initial views on the relevant costs to be included in the prices for ANE/LLU are detailed below. TMB considers that such costs are consistent with international practice.

Relevant costs related to unbundling - full and line sharing

COSTS	DETAILED INFORMATION ON RELEVANT COST CATEGORIES
A. The costs of full unbundled access	
A.1 Infrastructure usage costs	<p>Once-Off Costs: These include civil engineering elements (buried or above ground), feeder and distribution cables, and distribution points: main distribution frame (MDF), intermediate distribution frame, and concentration points. The investment costs for the infrastructure elements being considered (digging trenches, installing equipment and laying cable) should be determined by calculating their replacement cost. Such costs should be annualised by calculating depreciation.</p> <p>Recurring Costs: Include operation and maintenance costs for the above network infrastructure including but not limited to replacement of worn cables, maintenance of distribution points, staff training.</p>
A.2 The costs of providing	Once-Off Costs: Include; the costs for order administration excluding adaptation of the information

<i>the copper pair</i>	system; and costs for technical operations for providing and attaching cross connects and, depending on the case, either providing an existing copper pair or building and delivering a copper pair from end to end. They include drop wire costs when appropriate (including, depending on the case, provision of the internal end termination).
<i>A.3 The costs of locating network inference</i>	<i>Once-Off Costs:</i> These are costs for locating network interference (receiving calls, handling calls and diagnostics, re-establishing the line) excluding any adaptation of the IT system. NB: While these costs are once-off, although they may need to be charged on a recurring basis depending on the frequency of any interference.
B. The costs of shared access	
<i>B.1 Infrastructure usage costs</i>	In shared access, this cost, defined in A.1 above is a common cost for access to the local loop and TMB's PSTN service.
<i>B.2 Costs of providing non-voice frequencies</i>	<i>Once-Off Costs:</i> Include: costs for order administration, excluding adaptation of the information system; and costs for technical operations for providing and attaching cross connects and for providing the non-voice frequencies.
<i>B.3 Costs related to locating network interference</i>	<i>Once-Off Costs:</i> These are the costs of locating network interference (call reception, diagnostics and line re-establishment) excluding adaptation of the IT system. NB Again these costs are once-off, although they may be charged on a recurring basis depending on the frequency of any interference.
<i>B.4 Technical costs specific to shared access</i>	These are the costs of providing, installing and maintaining racks, pre-equipped with splitters, between TMB's MDF and the tie cable to the OLNO's distribution frame.

Other relevant costs related to unbundling

COSTS	DETAILED INFORMATION ON RELEVANT COST CATEGORIES
<i>C. Costs related to providing information required to implement local loop access</i>	<i>Once-off Costs:</i> Costs associated with the provision of information Two types of information are needed to implement access to the local loop: information on the local loop network; and information specific to a cable pair.
<i>D. Co-location service costs (if ever implemented)</i>	<i>Once-off Costs:</i> Costs related to the following: setting up premises to host third-party operators (excluding electrical power, air conditioning and telecommunications equipment), including secure access and the provision of ID badges; construction of an appropriate cage;

	<p>installing electrical power, air conditioning and telecommunications equipment; providing and installing the operator's copper distribution frame and the operator's optical distribution frame; providing and laying a tie cable between the TMB's main distribution frame (MDF) and the operator's copper distribution frame, for physical co-location; pulling and connecting tie cables for distant co-location; providing and laying a tie cable between the TMB's optical distribution frame and the operator's optical distribution frame; and providing and installing mounting blocks.</p> <p>Recurring Costs: Costs related to the following: depending on the case, operating and maintaining the element listed above; usage of space occupied by the OLNOs – should be based on benchmark rate of locality where co-location is provided (i.e. in cost per square feet); maintenance of Access Seeker's equipment; 24 hour support services; providing power for OLNOs</p>
E. Costs related to the physical connection²²	These are usage costs for the infrastructure set up by TMB to connect equipment to networks for operators requesting access.
F. Other key relevant system costs	Once-off Costs: The costs of creating OSS/IT applications specific to access to the local loop and the costs of adapting existing OSS/IT systems, as required to provide for LLU. In order to provide an unbundling offer, TMB needs to develop IT applications specific for LLU and/or adapt its existing OSS/IT systems and applications.
G. Costs associated with cost identification etc	The costs incurred by TMB associated cost identification, asset tracking and invoicing/billing system for LLU services.

In all cases above there are typically three types of charges – labour, material and incidental charges. It may also be necessary to establish a staging room for pre-setup and testing – the costs of which should also be borne by the Access Seeker.

Time submits that the incremental costs relating to the provision of the service i.e.

- Cost for access network
- Co-location cost
- Interconnect costs

must be factored in.

²² Excludes cases of distant and virtual co-location.

9.5 Is the methodology based on forward looking costs appropriate?

C&W considers that methodology based on forward looking costs is appropriate in order to set the correct incentives for investment in the current period (which will receive expected payback in future periods).

Celcom considers that for the Access Provider, the methodology based on forward looking cost may not be appropriate as they are unable to recover all the investment cost of providing the existing Access Network. However, from the Access Provider's perspective, the methodology could reduce the service rate, which would enable them to offer more competitive rate to the customer.

Maxis submits that forward looking costs are appropriate. The Access Seekers should not be constrained by the historical costs of the incumbent and any inefficiency that may exist. Forward looking costs are also more accurate predictors of business impacts as it is based on current prices. Entrants will be able to make more accurate build or buy decisions with forward looking cost methodology.

TMB continues to support historical cost being utilised for LLU. After all, DSL technologies are designed to be used with existing local loop and as such it would be unfair to utilise forward looking costs in determining the applicable costs (assuming that the MCMC wishing to intervene in the future and set prices for LLU).

Time is of the view that the methodology based on forward looking costs appropriate.

9.6 Does ANE introduce special circumstances which justify deviation from the LRIC standard for establishing interconnect prices?

C&W is of the view that arguments are sometimes made about the need to incentivise incumbent investment in the local loop. However, these incentives are provided by the correct cost-based pricing (including the appropriate level of return on capital employed, or profit). Any addition to these prices would provide the incumbent with "super-normal" profit.

Celcom argues if the Access Network setup is standardized based on the interconnection setup, such arrangement can be applied. However, if the setup is customized, then detail cost element studies needs to be carried out.

Maxis is of the view that where the case of ANE is demonstrated (i.e. non competitive market with bottlenecks), there is little justification to use historical costs instead of LRIC. LRIC is the most acceptable form of cost computation adopted elsewhere where ANE has been implemented. Whilst it may be true, that for some incumbents historical cost items are lower, these are often difficult to audit and ascertain. Maxis is agreeable to considering higher rates of ROCE where ANE involves new technology elements such as DSLAMs, such as in the case of bitstream access. An operator should not be discouraged from investing in new types of network elements. However, given that the bulk of the costs in Capex in any broadband service is the local loop, the impact on the end rates may not be that significant. A thorough costing exercise will determine whether this case has merits. Given TMB's dominant position in the market for PSTN services and that it can be extended to broadband, no distinction should be made between new

and old copper loops as this is impractical and as stated earlier, its dominance ensures a stable business case.

TMB considers that the LRIC standard²³ should not be utilised with respect to LLU/ANE in order to promote proper ongoing incentives for continued network rollout. This is because, LLU as an intrusive form of regulation, for the most part deprives the Access Provider of the use of its investment and as such the charging standard applied should not be incremental cost. Importantly as TMB has articulated the situation in Malaysia is very different than in countries with ubiquitous networks – some 2 million lines has been recently rolled out so the pricing ought be different as this access network has not yet been depreciated.

Time does not consider any deviation from LRIC justifiable.

9.7 If so, what adjustments are appropriate and why? Please give reasons for your answer and supporting analysis if possible.

C&W considers the question to be not applicable in the light of the answer to question 9.6 above.

Celcom argues that certain level of commitments and proper arrangement needed in order to accommodate both parties in planning the future requirement especially on the traffic volume and the capacity available before the service provisioning.

Maxis reiterates its view as elaborated in 9.6 above.

TMB considers that there should not be geographically averaged prices for LLU unbundling. Similar to Australia and Canada, TMB considers that the MCMC should embrace four bands of pricing of any future LLU pricing to Access Seekers. TMB’s suggested bands – which are broadly representative of the different costs TMB faces in various regions of Malaysia.

TMB’s suggested banding of LLU costs in Malaysia

Band	Suggested Band areas
Band 1:	Klang Valley including Kuala Lumpur, Petaling Jaya, Shah Alam, Cyberjaya
Band 2:	Urban areas of State Capital Cities of Peninsular Malaysia
Band 3:	Other urban and semi-urban areas of Peninsular Malaysia and Kuching and Kota Kinabalu
Band 4:	Rural and remote areas of Peninsular Malaysia and other areas of East Malaysia

Source: TMB analysis

²³ For the record, TMB continues to remain opposed to generally in any case.

9.8 If unbalanced rates continue, is it correct that charges based on retail rates are likely to erode incentives to build/upgrade infrastructure in the Access Network?

C&W is of the view that this is possibly true. That is why C&W recommends cost-based rates, rather than retail based rates. Note, however, that the appropriate cost for an unbundled loop will exclude line cards (and its associated allocation of switch site costs) and retail costs, and so will be considerably less than the cost of a switched exchange line.

Maxis agrees that if rates are unbalanced, then a retail minus rate will be below the cost based price. In effect, if the incumbent is forced to provide lines to new entrants, this will bring about greater losses. Any access pricing should offer reasonable returns to the incumbent and not result in cross subsidy of other players. In a situation where unbalance rates persist and charges are based on retail minus, the Access Seekers will then choose to rely on the incumbent only.

TMB agrees with the proposition and considers the need for the Government to review this issue.

Time submits that this may not be necessary.

9.9 Do you think that the price of ANE may have an impact on investment in alternative infrastructure? What other mechanisms (apart from the regulation of prices) do you deem appropriate to promote investment in an alternative infrastructure in the medium and long term following the implementation of ANE?

C&W submits that investment in alternative infrastructure should only occur when it is an efficient use of investment funds. As stated earlier, correct cost-based pricing will provide the correct level of incentive. If there are other strategic reasons for promoting investment in alternative infrastructure, this is best done through direct government support (such as taxation concessions), since this avoids, amongst other things, distorting incumbent profitability through adjustments to its prices.

Maxis argues that an appropriately priced and well implemented ANE (LLU) can lead to increased investment in alternative infrastructure eventually. New entrants are able to start services with lower capex spent and after developing a stable business can or may actually choose to build loop where economically feasible.

The other mechanisms that can promote investment in alternative infrastructure include;

1. Waiver of rate rules to allow competitive pricing of lines and bundling of services. If there are concerns that selected disadvantaged sectors will be vulnerable, then the rate rules can apply to them only. Commercial pricing freedom can increase attractiveness to rollout local loop.
2. Collective tender of government broadband demand: Government departments can aggregate broadband demand in selected regions and grant via competitive tender to an operator. This creates a viable business case for the operator and ensures its survival.

3. New regulatory measures: Maxis has raised several regulatory measures that need to be implemented previously in their response to Question 1.4.

TMB considers there will be likely adverse impacts on both its investment and that of alternative providers if LLU was to be implemented in Malaysia in the short-term. TMB considers that it should only be implemented when certain pre-conditions have been met.

Time argues that ANE may have an impact only if the price set is too low for the Access Provider to recover investment. The Government can introduce other mechanisms such as special tax incentives and tax relief etc to lessen the impact.

9.10 Should the Access Provider offer wholesale as well as retail rates to the Access Seeker for ANE?

C&W considers as suggested in answer to Question 9.4 above, all unbundled ANE prices should be on a wholesale basis. Retail costs are irrelevant to the provision of unbundled ANE. Indeed competitive service providers will need to bear their own retail costs. If they also have to contribute to the incumbent's retail costs they suffer a clear competitive disadvantage.

Celcom considers the answer to be affirmative.

Maxis considers that TM Net, as wholly owned subsidiary of the dominant PSTN operator TMB, should be required to offer wholesale Streamyx services concurrently with retail prices. The availability of ANE (LLU) and also wholesale allows a variety of access for different entrants.

TMB seeks further clarification from MCMC on this question. TMB sees prices for LLU (when implemented at some future time) to be wholesale rates – TMB does not envisage offering a retail LLU service to its customers. If such wholesale rates are higher than retail rates due to price anomalies this is something TMB just cannot avoid unless TMB is able to materially increase certain fixed line rates.

Time considers both models to be acceptable.

9.11 How do you define Wholesale? Do you agree that the Access Providers need to offer ANE services before introducing its own wholesale services?

C&W considers that wholesale products are simply those provided to another service provider who does not use the product for its own consumption, but rather uses it as an input to a service of its own, which is then sold. In general, the service provider purchasing the wholesale service will need to have its own license or authorization. It is crucially important that the incumbent provides wholesale ANE at a suitable time in advance of providing its own retail services (determined by the expected time for a competitive provider to prepare its service for market based on the unbundled ANE). Otherwise, the incumbent will benefit from a "first to market" advantage.

Celcom considers that the wholesale definition relates to the sale of items or commodities in quantity for resale. The Access Providers needs to offer ANE services first because this will encourage the Access Seeker to enter the market due to more facilities and options available.

Maxis would define wholesale as a situation where the product offered by the Access Provider contains all network related services such that the access seeker is not required to do any significant engineering work. An Access Seeker procures the wholesale product and combines it with its own marketing, billing and customer care before selling the end product to the end user. There can, however, be situations where it is very difficult to differentiate between wholesale and ANE. In general, Maxis holds that ANE involves access elements whereby the Access Seeker has to provide its own network services. In order to avoid confusion, it is better not to apply the term wholesale to ANE, as a clear-cut definition does not exist. Consistent with the answer above, the Access Provider other than TMB or TM Net should have commercial freedom to decide whether they want to offer wholesale or ANE or both. There is little gain in focusing regulatory attention on these small players, given TMB and TM Net's disproportionate market power. As an interim measure prior to finalising an Access Code, TMB/TM Net should be obliged to provide wholesale Streamyx.

TMB argues that operators should be commercially free to offer Wholesale services as they choose. What is the policy rationale of stopping or slowing down the offering of wholesale services if that stimulates additional sector competition or consumer choice?

While wholesaling and unbundling are often treated as if they are the same or similar this notion is wrong. This is because wholesaling is an internal marketing decision. As pointed out by Telecom Corporation of New Zealand:

"The service provider identifies the end service the customer seeks, or may seek if a new service were introduced. The service provider then considers how its existing resources might be used to deliver that output or how new assets may be acquired and used either alone or in combination with existing assets. This is a highly complex process with many parts of the organisation combining to define the service and assess:

1. the degree of differentiation from existing services offered by the organisation and services offered by its competitors;
2. the services which competitors will offer in response to the new service and the price of that competitive service;
3. the inputs required to offer the service;
4. the costs and risks;
5. the price the users will be willing to pay; and
6. the likely lifecycle of the service."²⁴

In contrast, regulated unbundling is an intrusive asset utilisation decision taken by the regulator, in this case, by the MCMC. If it decides to implement LLU, then the MCMC is limited to the existing assets of operators, and thus is confined to a static technological framework which is inconsistent with both the speed of technical innovation in the sector and the dynamic efficiency and convergence focus of the CMA.

Time argues that the Access Provider needs to offer ANE services before introducing its own wholesale services in order to promote competition at wholesale level as well.

²⁴ Telecom Corporation of New Zealand's Response to the New Zealand's Commerce MCMC's Issues Paper - Telecommunications Act 2001: Section 64 Review into Unbundling the Local Loop Network and the Fixed Public Data Network - 30 May 2003 [Public Version], page 7

9.12 What constitutes a 'margin squeeze' between the retail prices and wholesale price of ANE services provided by the Access Provider? What mechanism should be used to counter the possibility of margin squeeze?

C&W argues since the incumbent retains a dominant position in the underlying access infrastructure, it should be subject to a "margin squeeze" test on its downstream services. This will simply involve the regulator checking that the retail price for the incumbent's downstream services is equal or greater than the sum of the relevant ANE component prices, plus the incumbent's retail costs (including a reasonable return on any capital employed in the retail operation).

Celcom argues that margin squeeze happens when an Access Provider offer access to an Access Seeker at a wholesale price that is not competitive enough for the Access Seeker, causing it to suffer from low or no return. To counter margin squeeze, the Access Provider must ensure that the wholesale price is kept at a certain level to enable the Access Seeker to make at least a positive return.

Maxis argues that the margin squeeze occurs when the wholesale prices for ANE (LLU) is close to the retail price of the incumbent. The new entrant effectively does not have sufficient margin to cover sales and marketing and customer care and billing costs. In the absence of effective regulation, the incumbent is able to discount on retail prices as it earns from the wholesale price. This opportunity is not available to the access seekers as they pay the full wholesale price. A margin squeeze can be avoided using LRIC methodology to determine cost based charges for appropriate elements. The Access Seekers should have sufficient margin for reasonable returns with cost based access.

TMB would seek further information from the MCMC on what it considers a 'margin squeeze' between retail prices and wholesale prices for unbundled loop. In more than half of the surveyed OECD countries the price for full LLU was greater than the monthly rental charge to subscribers for residential services. In fact, there is only one full LLU charge²⁵ of those countries who have implemented LLU which is lower than regulated monthly fixed line residential tariff in Malaysia.

Similarly, given the low monthly rental in Malaysia which is cross-subsidised by other revenues, TMB expects that the monthly price for full LLU, if is cost-based, will also be higher than the regulated monthly tariff. This is especially after the recent announcements contained in the 2004 Malaysian budget which will see significant reductions of up to 50 per cent in broadband service costs by TMB.

Unless monthly rentals are going to be allowed to rise in accordance with their underlying costs, TMB can see no way of countering the possibility of a margin squeeze. Furthermore, as TMB has already indicated, the current pricing of ADSL for national policy reasons is below cost and TMB would seek the Government's view if the MCMC is suggesting that TMB merely increase the retail prices for broadband ADSL services to facilitate competitive entry. From TMB's perspective, any Access Seeker should be aware that currently there are pricing anomalies before entering into the market and hence would value-add to its service in order to attract customers, earn additional profits etc.

²⁵ In urban Canada.

Time interpretation of margin squeeze is when there is little differential between retail and wholesale prices possibly brought about by cross subsidising by the access provider. To ensure consistent cost determination in arriving at the wholesale and retail prices e.g. access network cost, the rates must be same for both retail and wholesale prices.

Views of MCMC:

a) All respondents have agreed with the application of the cost oriented principle for ANE. However, TMB has stated that application of cost orientation principle may result in higher prices for ANE than the retail rates for the lines as a result of possible incomplete rate re-balancing in Malaysia. The preferred costing methodology for several operators is based on LRIC whereas TMB stressed on using Fully Allocated Cost based on historical cost model as appropriate methodology for ANE price setting.

Further TMB does not rule out the possibility of margin squeeze if the current price anomalies with respect to the retail rates continue to exist.

b) The MCMC does not agree to the proposal of TMB for categorizing the country in four bands based on the analogy of Australia and Canada as the size of the countries and the relevant conditions are not comparable in the current context. The setting of national average price for access to ANE in promoting greater use of existing infrastructure and consequent alternative services in unserved areas. The proposed bands by TMB for Malaysia as compared to the countries such as US, Canada and Australia are not relevant as the countries quoted by TMB are geographically not similarly placed vis-a-vis Malaysia and also steps taken by the Commission while considering the de-averaged price for ANE has to be consistent with the existing retail rate regime.

c) The MCMC is of the view that taking into account the need to preserve the intrinsic coherence of the cost orientation principle, the costing methodology must be applied in a consistent, integrated and global manner for the network elements. This will minimize possible distortions in the C&M market with implications for the price fixing mechanisms and possible repercussions with regard to competition.

If different costing methodologies are used for the subscriber lines and for ANE, the resulting rate for ANE may be higher than the retail rate, leading to reduced profit margins. This means, theoretically, it would be possible to argue that the ONLOs may not be able to have, under certain circumstances, a profit margin that enables the commercial operation of the service. However, it is not certain that the services provided by the OLNOs will be a perfect substitute for the subscription line services hence the price comparison may not be direct. On the other hand the profit margin for provision of broadband services will be, in general, higher than the profit margin for the provision of fixed telephony services. As such, it is believed that it is economically viable to provide broadband services through ANE.

d) The cost of collocation area could be as per the market price of the region under consideration.

e) In the above context, the MCMC would like to examine the price proposed by the Access Providers based on the following principles;

1. The principle of cost orientation should be taken into account while establishing the ANE price, given that this contributes to the promotion of competition and the

development of offers from OLNOs and simultaneously efficient investments on the access network both on the part of Access Seekers and Access Providers.

2. The Access Provider must propose duly justified price in the Access Reference Document (ARD), taking into account the cost orientation principle, clearly identifying the cost allocation method. In this offer, price for various functionalities and resources associated with ANE must be established.

3. The MCMC would like to adopt a model based on LRIC which allows a complementary perspective that may be appropriate for efficient and sustainable market entry with efficient use of the infrastructure.

4. The MCMC may undertake a study on costing methodology which could be used as guidelines while determining the price for the relevant components of ANE.

3.10 COMMENTS ON NEXT STEPS

Questions from Section 10 in the PC Paper

10.1 Which service providers to be regulated?

C&W argues that only service providers who are shown to have a dominant market position should be regulated. If the underlying infrastructure is correctly regulated, a competitive market should exist in service provision, removing the need for regulation of any service provider, other than margin squeeze tests applied to downstream services of the incumbent local access provider and the usual competition law.

Celcom considers that the incumbent should be regulated.

Maxis considers that only dominant service providers should be regulated and obliged to provide ANE (LLU) at cost based prices. The other smaller service providers can offer ANE (LLU) at commercially negotiated prices.

TMB does not consider that any licensed operator should be regulated in respect of LLU. In particular, application and content service providers should not be regulated. The service offering should be based on commercial agreement between both parties and be market driven.

10.2 Should the requirement to provide ANE be reciprocal or apply to dominant or to all service providers having control of Access Network?

C&W considers that regulation should apply only to dominant providers.

Celcom argues it should be applicable to all service providers having control of Access Network.

Maxis considers that reciprocity is not required in ANE (LLU) because of the imbalance of market power both at infrastructure and service levels between TMB/TM Net and the other players. The requirement for ANE (LLU) should be only applicable to the dominant player TMB/TM Net.

TMB considers that any proposal for LLU should be reciprocal on all licensed network operators. Similar to TMB's arguments on the proposed Mandatory Standard on Access, any proposals for LLU to apply only "dominant providers" is *ultra vires*. TMB considers that as section 149(2) provides for reciprocal, equitable and non-discriminatory access, all licensees of the same class must provide each other with the similar access.

Time considers that in order to be fair, it should be reciprocal if the facilities are available. But if the service provider does not have facilities to reciprocate this should not impede the granting of access.

10.3 Should there be a standard ARD? If yes, what should be the information content of the ARD in addition to the information mentioned in Chapter 10?

C&W maintains that a standard ARD would be helpful. Its contents are best discussed within the framework of an industry working group, with the regulator prepared to step in and mandate practice when necessary.

Celcom argues that there should be a standard ARD. However the information content of the ARD would vary from one provider to another depending on the sensitivity and confidentiality of the information. In addition, access to certain sensitive area e.g. OSS shall be negotiated upon confirmation of the service provisioning.

Maxis considers that for transparency and ease of implementation, there should be an ARD for ANE (LLU).

TMB notes that in accordance paragraph 5.3.2 of the Mandatory Standard on Access (MSA), the requirement is that:

“No later than 30 November 2003, each Access Provider shall prepare and maintain an ARD in relation to network facilities or network services on the Access List which that Access Provider provides to itself or third parties and which:

- a) contains terms and conditions which are consistent with the rights and obligations set out in the Standard; and
- b) does not include terms and conditions which are inconsistent with the rights and obligations set out in the Standard.” [our emphasis]

Further, paragraph 5.3.4 of the MSA states that:

“Each Access Provider shall ensure that an ARD prepared by it shall:

- a) be in writing (which includes legible electronic format);
- b) contain all information required to be included under this subsection 5.3;
- c) be accurate;
- d) be modular, so that details about the terms and conditions of access to individual network services and network facilities is available separately from the terms and conditions of access to other network services and network facilities under an ARD;
- e) be consistent with:
 - i. the CMA;
 - ii. this Standard; and
 - iii. any applicable decision or Determination of the Commission; and
- f) be made be made available to an Access Seeker on request in paper form at the Operator’s principal place of business in Malaysia and on a publicly accessible website.” [our emphasis]

TMB considers as it is a decision of the Access Provider as to what terms and conditions to include in its ARD, there is no question as to whether there is a “standard ARD”. There will not be a standard ARD as Access Providers are free to choose how to develop their own ARDs.²⁶

As it is a decision of the Access Provider as to what terms and conditions to include in ARD, there is no question as to whether there is a standard ARD. There will not be a standard ARD as providers are free to choose how to develop their own ARDs.

10.4 What is the list of services that should be included in the Access List as a part of ANE, in addition to the services contained in Chapter 10?

C&W proposes the inclusion of unbundled optical fibre customer access loops, as earlier described in our response. This has been a major source of competitive service provision in Japan.

Celcom submits that the services contained in Chapter 10 are comprehensive enough.

Maxis considers that the list of items in Section 10.5 of the PC Paper is comprehensive with respect to ANE (LLU).

TMB considers that list of facilities and services that could be included in the Access List in order to provide for ANE/LLU is a decision for the Access Forum.²⁷ In particular, Section 147(2) provides that the MCMC shall determine that the recommended network facilities or class of network facilities, services etc if it is satisfied that the access forum has consulted with persons who have an interest in the recommendation and that the access forum was unanimous in supporting the recommendation.

As designation of MAFB as the Access Forum by the MCMC in terms of section 152 of the CMA was announced on 31 March 2003 it is well-placed to undertake such a review. Certainly, the need for the MCMC to act on this issue pre-emptively and/or because there has been a failure of the MAFB to act would, in our view not be justified.

TMB is of the opinion that the MAFB should develop any list of facilities and/or services for inclusion on the Access List. Following such a recommendation from the Access Forum, the MCMC in accordance with section 146 may determine that a network facility or service should be included in or removed from the Access List.

Section 3 of the PI Report on Access List Determination dated 12 March 2001 [PIR/AL/1/01]) details at some length the process the MCMC would follow in considering

²⁶ It is important to note that there is no approval process for the ARD (i.e. by the MCMC). The requirement in paragraph 5.3.2 is merely that the ARD contains terms and conditions which are consistent with the rights and obligations set out in the MSA.

²⁷ TMB continues to hold the view that there is considerable doubt about the legal ability of the MCMC to issue a determination pursuant to section 146 on its own accord without firstly, satisfying section 147(2). While the MCMC rejected this view (see page 7 of *Report on a Public Inquiry under Section 55 of the Communications and Multimedia Act 1998 on Access List Determination dated 12 March 2001 [PIR/AL/1/01]*). TMB at that time decided not to contest the issue as the determined Access List was similar to the facilities and services provided in accordance with TRD006/98 and that the Access Forum had not been designated. This stance may need to be re-evaluated if such an intrusive policy such as LLU was attempted to be mandated.

whether to exercise its discretionary power under section 146 following such a recommendation from the Access Forum. In particular, the MCMC proposes to undertake a cost-benefit analysis of the relevant issues to assess the economic case for a section 146 determination. Broadly, this would involve an assessment of the benefits of making the proposed determination, and comparing it with the costs associated with the proposed determination. Wherever practicable, the MCMC has stated that would seek to quantify the expected costs and benefits.²⁸

Time submits that they have no further additions to make at this point.

10.5 What information need to be contained in ARD to enable the Access Seeker to develop their plans for using ANE and why?

C&W submits that at this stage, they are not aware of any additional information.

Celcom considers that service area, capacity, type of network element offered and pricing methodology should be contained as these information are crucial to enable the Access Seeker to develop their plans.

Maxis argues that the list in Section 10.5 is comprehensive. Of course, other standard items such as billing and settlement, boilerplate sections etc need to be added. These are available from the MSA.

TMB submits that they are unsure what information would be needed by the Access Seeker in order to develop its plans for ANE/LLU. TMB does not intend to include LLU in its ARD for the foreseeable future.

Time argues for the inclusion of the availability of network elements location, delivery timelines and cost which are the principal items. A slight delay can cause an operator to lose a customer and requiring the operator to obtain access. Waiting for customers can be costly.

10.6 Are any other initiatives needed to ensure adequate provision of information?

C&W submits at this stage, they are not aware of any additional initiatives.

Celcom considers other initiatives are needed and one of the initiatives is joint initial survey between the Access Provider and the Access Seeker and subsequent to the survey, the Access Seeker is to provide their requirement proposal to the Access Provider.

Maxis is of the view that the existing initiatives, as proposed in Section 10.5 of the PC Paper, should be given time to work, failing which additional initiatives can be started.

TMB submits that there are none, which they are aware of.

²⁸ See paragraph 3.2.2 of PI Report under Section 55 of the Communications and Multimedia Act 1998 on Access List Determination dated 12 March 2001 [PIR/AL/1/01].

Time considers that the record keeping rules will complement ANE well. This should be implemented together with a speedy dispute resolution process.

10.7 How far reaching must regulations be and how much room should be left to commercial negotiations? This question can include several aspects of relations between service providers:

- a. Pricing
- b. Service quality
- c. Implementation lead times
- d. Technical information on line qualification
- e. Specifications of the transmission equipment used by either of the service providers

C&W considers that there should always be scope for commercial negotiations between the Access Provider and the Access Seeker, provided of course, that the outcome is consistent with any non-discrimination requirements on the Access Provider. These negotiations can help to determine the most practical solution for some issues where a “win-win” situation is possible (e.g. when costs can be reduced for all parties concerned). However, C&W’s experience from Europe, the US and Japan is that, for all the issues listed in Question 10.7, it should be anticipated that regulatory determination will be required because of the lack of incentive on the incumbent to agree to reasonable terms.

Celcom considers (b) and (e) should be regulated and the rest to be left to commercial negotiation.

Maxis considers that pricing is crucial to the success of ANE (LLU) and Maxis believes that MCMC should take a role in determining LRIC prices for the items requested. The issues of items b – e can be discussed and determined by MAFB. The timing of both streams of activities above have to be co-ordinated to ensure that a timely solution is found. If MAFB does not complete its tasks in time, MCMC will have to intervene and take over.

TMB is of the view that commercial negotiations on access issues are preferred and provide for more sustainable outcomes. If the regulations dealt with the issues listed in (a) through (e) then, TMB would consider them overly detailed and prescriptive when they ought not need be. They would leave no scope for negotiation between operators. Given the self-regulatory nature of the CMA, TMB is continually surprised at the level of regulatory intrusion by the MCMC and its keenness to control all sector activity. TMB considers that this is stifling and likely to result in adverse effects to the sector.

Specifically on the above, TMB considers;

- Prices – should be market driven;

- Service quality - Specific service indicators are required as per SLA between Access Provider and Access Seeker;
- Implementation Lead Times - Access Provider should decide based on market demand and supply and upon negotiation; and
- Technical information – should be available upon negotiation and request.

Time argues that pricing and service quality are essential as mentioned above and will have to be regulated. Others may just need to be contained in the ARD as information items to be exchanged within specified timelines.

10.8 What is the additional information required for the purpose of ANE before the Access Seeker develop their plans for utilising the Access Network of the Access Provider? (with reference to the information need as contained in Chapter 10).

C&W submits at this stage, they are not aware of any additional information.

Celcom refers to its answer in Question 10.5.

Maxis argues that the list in Section 10.5 is comprehensive.

TMB submits that they are unsure what information would be needed by the Access Seeker in order to develop its plans for ANE/LLU. TMB does not intend to include LLU in its ARD for the foreseeable future.

10.9 In order to fulfil the obligations by the Access Provider to maintain a database of information as contained in 10.3 (vi) and (vii) with regards to the interface with OSS and provision of information, the Access Provider will incur a cost. What mechanism should be established for payment of such costs incurred by the Access Provider? Should the cost be shared amongst the Access Seeker?

C&W argues that the cost incurred by the incumbent Access Provider is the cost of providing its wholesale unbundled ANE services and so can legitimately be recovered in the costs of all local loops, whether provided to competitive service providers or used by the incumbent itself in its own retail PSTN and data services.

Celcom submits that it is unnecessary for the Access Provider to grant OSS access to the Access Seeker because SLA has been made available. In the event, that it is necessary for the Access Seeker to access the OSS, the access shall be provided by or through the Access Provider itself.

Maxis considers that the Access Seeker should share the costs of establishing such a database. There should be transparency however, in the computation of these costs and a fair distribution method is necessary.

TMB considers that the cost should be borne by the Access Seeker/s, consistent with global practice.

Time is of the view that building and maintaining a database is required in any business and treated as a cost of doing business. The Access Provider can take on the wholesale role and bear these costs. Time also notes that many Access Seekers may be Access Providers to others. If costs need to be shared among the Access Seekers this should be minimal. The Access Seeker is in no position to see if the costs are reasonable and Time has seen vast differences in costs for USP contributions and the so-called network provisioning fees for Equal Access Pre-selection going into several millions. If the Access Seeker shared cost is deemed the way forward by the regulator then they should be reasonable. Time questions whether they are necessary because the Access Provider is in effect doing a wholesale business and the ARD and Database are its product catalogues and the payments for the access will have a profit element inbuilt.

10.10 Do you think that the Mandatory Standard or Access Code should be in place before the ANE services are opened to competition?

C&W considers that the MSA or Access Code should be in place to ensure the best possible competitive environment. However, it would be disappointing if ANE unbundling needed to be delayed. The best possible efforts should be made by the regulator to ensure that the MSA or Access Code are in place when the market is opened for competition.

Maxis is of the view that there is a need to set out rules to guide conduct of all parties concerned before ANE (LLU) is open to competition. TMB/TM Net of course can start to offer wholesale of Streamyx prior to determination of an MSA or Access Code.

TMB considers that as the MSA was already promulgated on 14 August 2003, this question is arguably irrelevant.

Time submits that the ANE services should be coordinated with the revision of the new interconnect agreements if not they may warrant an additional round of revisions to give effect to the ANE. Since the MSA is already in place, the ANE can follow in a separate document to fill in gaps in the MSA.

10.11 How much time should the Access Forum take to develop these Codes?

C&W considers that given the experience that already exists on ANE unbundling in many other countries around the world, Codes should be developed quickly. C&W would propose a maximum of 6 months.

The time frame to develop Access Code should be discussed in the Access Forum platform.

Maxis considers that a time frame of about 6 months would seem appropriate.

TMB considers the ranges of issues associated with any possible future introduction of LLU are non-trivial and that they would take at least 12-24 months to resolve – given the experience in other countries, after LLU was legally promulgated²⁹. TMB recommends that the MAFB should benchmark the proposed codes with multiple models from various countries.

Time is of the view that 6 months is sufficient.

10.12 Should the Access Forum be assigned the responsibility to develop the Access Code in a time-bound manner?

C&W argues that after taking account of a possible incentive for the incumbent to seek to delay the introduction of the Access Code, a “time target” should be set, after which the regulator should intervene.

Celcom considers the answer to be affirmative.

Maxis considers that a time target should be set, failing which MCMC can intervene to assume responsibility for the Code.

TMB is of the view that it is inappropriate to develop the Access Code in a time bound manner as TMB considers that the technical and operational issues are not going to be easy to resolve.

Time considers that the Access Forum be handed the responsibility in a time-bound manner. This is necessary to ensure the competitive initiatives are not obstructed by bargaining strength in the Access Forum

10.13 Should the price for ANE and co-location be determined by the Access Provider in the ARD or should it be determined by MCMC?

Celcom argues it should be determined by the Access Provider.

Maxis submits that the price of ANE (LLU) for the dominant player should be determined by MCMC based on LRIC pricing methodology. A separate industry consultation process is necessary to formulate costing principles for the final pricing by MCMC.

TMB considers that the Access Provider should compute the relevant prices for inclusion in its ARD if ANE/LLE and co-location were to be legally mandated. TMB does not support the MCMC determining such issues.

Time is of the view that it should be determined by MCMC.

²⁹ For example, in the UK, in June 2000 the product definitions (including spectrum management, user guides, rules etc) were developed. Trials then commenced with a number of operators in the period to Jun 2001 prior to the full launch on 1 July 2001.

10.14 Are any other initiatives needed to ensure adequate provision of information?

Celcom considers the answer to be negative.

Maxis refers to their answer to Question 10.6.

TMB submitted that there are none, which they are aware of.

Time is of the view that the current proposed record keeping rules are adequate for the immediate term.

10.15 Should the Access Provider be obliged to upgrade an existing line or to provide the required line even if it means building all or part of it?

Celcom submits that the Access Provider to be obliged subject to the mutually agreed cost and benefit of the upgrading.

Maxis argues that the dominant Access Provider should be obliged to upgrade an existing line or to provide the required line even if it means building all or part of it. The costing process should take such situations into consideration and ensure a fair cost based price that enables access and compensates the incumbent.

TMB considers that the Access Provider should not be obliged to upgrade an existing line or to provide the required line even if it means building all or part of it. TMB understands that this is not required in most if not all markets. The Access Provider should be free to upgrade an existing line, at its discretion, subject to business viability, commercial arrangement and project priority of the access provider.

Time notes that, this is a difficult issue and the answer would depend on whether the Access Seeker is prepared to pay for the upgrade. Time also questioned the need for contribution given that the Access Seeker may be paying for an upgrade that the Access Seeker may not utilise in full.

Views of MCMC:

a) The MCMC takes note of the comments of TMB that “ANE should be reciprocal on all licensed operators and proposal to apply ANE only to dominant providers is *ultra-vires*” According to international best practices, including EC, Australia, and USA, only the dominant players are subject to unbundling obligations. However, in Malaysian context, the MCMC had already considered this issue in the Public Inquiry on Mandatory Standards on Access and the proposal for asymmetric regulations was removed subsequently. We believe that the reciprocal arrangements can still work subject to the usual clause of availability of the facilities and services with the Access Providers. The position of MCMC for reciprocal arrangements is consistent with the existing Mandatory Standards on Access.

b) In order to offer Access to the Network Elements (ANE), the Access Providers shall prepare and maintain an Access Reference Document (ARD) in relation to the network facilities and network services on the access list which the access provider provides to

itself and to third parties. The ARD should include specific costs, terms and conditions to be published by the Access Providers. TMB emphasized the need to accord due importance to the commercial negotiations and flexibility in the process to minimize the possibility of overly detailed and prescriptive regulations.

c) The majority of the respondents have agreed to the list of facilities and services proposed to be included in the Access List. However, TMB reiterated the need to involve MAFB in this process.

d) Most of the respondents have agreed that a time frame of 6 months would be sufficient for the MAFB to develop the relevant Codes for the purpose of ANE. However, TMB considers that a period of 12-24 months would be required. The MCMC would like to invite MAFB to initiate the process so that timely development of Code be a reality before finalization of the Determination

SECTION 4 – CONCLUSIONS

The MCMC believes that Malaysia needs to develop the greatest variety of feasible means of enhancing effective competition in the Access Network and with this initiative C&M industry will get additional impetus for provision and delivery of broadband applications and services, hence providing more choices to the end users in the form of competitive service offerings.

ANE presents an untapped opportunity for the Access Providers which requires the change of mind set in treating other operators. In fact the combination of unbundled network elements, bit stream and wholesale offers would provide a competitive business opportunity in addition to building their own infrastructure. The incumbents need to view it as a business opportunity and treat the alternative providers as their wholesale customers and not their rivals. This proposition is in mutual business interest and also provides options to the customers.

The MCMC will carry out the study of the actual requirement for the expansion of the Access List. This will be followed by the Public Inquiry on the expansion of the Access List which will be launched in 2004.

The MCMC is mindful of the fact that the determination will actually be in force in 2004 but in order to understand and discuss the issues relating to ANE, the MCMC would like to invite MAFB to start the process of discussions and engage in development of the relevant Codes for facilitating the smooth introduction of the ANE.

The MCMC may also publish Guidelines on implementation of the Effective Competition in the Access Network in due course. It will also consider carrying out a study on the costing methodology and principles which could be used as guidelines by the industry.

The MCMC once again thank the interest shown by the various stakeholders, organizations and users in this Public Consultation and the Briefing Session and also in sending their contributions and comments.