PUBLIC INQUIRY REPORT

Review of Access List and Mandatory Standard on Access

21 December 2008

This Public Inquiry Report was prepared in fulfilment of Sections 55(2), 55(4), 59, 61 and 65 of the Communications and Multimedia Act 1998.

CONTENTS

ABBREVIATIONS AND GLOSSARY

ACCC	Australian Competition and Consumer Commission
Access Agreement	An agreement entered into between licensees whereby the Access Provider provides access to an Access Seeker in accordance with the terms contained in such an agreement and which is to be registered with the SKMM in accordance with the CMA.
Access List	The list of facilities and services determined by the SKMM under Chapter 3 of Part VI of the CMA, in respect of which the Standard Access Obligations apply.
Access Provider	In relation to the Access List is: (a) a network facilities provider who owns or operates facilities on the Access List; and/or (b) a network service provider who provides services on the Access List; and (c) includes a holder of a registered licence under section 278 of the CMA; and in relation to the MS (Access) is: (a) a network facilities provider who owns or operates facilities on the Access List; or (b) a network service provider who provides services on the Access List; and (c) who is a licensee as defined in the CMA.
Access Seeker	A network facilities provider, a network service provider, an applications service provider, or a content applications service provider who is a licensee as defined in the CMA and who makes a written request for access to network facilities or network services on the Access List.
ADSL	Asymmetric Digital Subscriber Line
ANE	Access to Network Elements
APCN2	Asia Pacific Cable Network 2 submarine cable system
ARD	Access Reference Document, which is a document of the terms and conditions required to be formulated by an Access Provider under the MS (Access).
ARPU	Average Revenue Per User
ASP	Applications Service Provider
BBGP	Broadband for General Population
BRI	Basic Rate Interface
CAS	Common Antenna System
CASP	Content Applications Service Provider
Celcom	Celcom (Malaysia) Berhad
CIIP	Common Integrated Infrastructure Provider
CMA	*Communications and Multimedia Act 1998*

Commission Act	*Malaysian Communications and Multimedia Commission Act 1998*
CSU	Cost Sharing Units
DBP	Detailed Business Plan
DEL	Direct Exchange Line
DiGi	DiGi Telecommunications Sdn. Bhd.
DSLAM	Digital Subscriber Line Access Multiplexer
DTT	Digital Terrestrial Television
DTTB	Digital Terrestrial Television Broadcasting
DVB-T	Digital Video Broadcasting – Terrestrial
DWDM	Dense Wavelength Division Multiplexing
EC	European Commission
EU	European Union
ERG	European Regulators Group
EDGE	Enhanced Data-Rates for GSM Evolution
EDTV	Enhanced Digital Television
ETSI	European Telecommunication Standards Institute
FCC	Federal Communications Commission of the United States of America
Fiberail	Fiberail Sdn. Bhd.
Fibrecomm	Fibrecomm Network (M) Sdn. Bhd.
GPON	Gigabit Ethernet PON
HDTV	Higher Definition Television
HSBB network	High Speed Broadband network to be deployed by TM pursuant to the agreement with the Government of Malaysia dated 16 September 2008
HSDPA	High Speed Downlink Packet Access
IP	Internet Protocol
IPTV	Internet Protocol Television
IP-VPN	Internet Protocol – Virtual Private Network
IRU	Indefeasible Right of Use
ISDN	Integrated Services Digital Network
ISP	Internet Service Provider
Jaring	Jaring Communications Sdn. Bhd.
Licensing Regulations	*Communications and Multimedia (Licensing) Regulations 2000*
LLU	Local Loop Unbundling
LTBE	Long-term benefit of end users
MAFB	Malaysian Access Forum Berhad (the Access Forum, designated by the SKMM as such under section 152 of the CMA)

Maxis	Maxis Communications Berhad
MDF	Main Distribution Frame
Ministerial Direction on HSBB and Access List	*Ministerial Direction on High-Speed Broadband and Access List, Direction No. 1 of 2008*
Ministerial Direction on MS (Access)	*Ministerial Direction to Determine a Mandatory Standard on Access, Direction No. 2 of 2003*
Ministerial Direction on Number Portability	*Ministerial Direction on Number Portability, Direction No. 2 of 2004*
MNP	Mobile Number Portability
MSAN	Multi-service access node
MS (Access)	*Commission Determination on the Mandatory Standard on Access, Determination No. 2 of 2005*
MS (Pricing)	*Commission Determination on the Mandatory Standard on Access Pricing, Determination No. 1 of 2006*
MVNO	Mobile Virtual Network Operator
MyICMS 886	Malaysia's strategy for Information, Communications and Multimedia services from 2006 to 2010
MyIX	Malaysian Internet Exchange
NEAP	Numbering and Electronic Addressing Plan
NGA	Next Generation Access
NGN	Next Generation Network
NFP	Network Facilities Provider
NPOs	The National Policy Objectives for Malaysia's communications and multimedia industry, as set out in section 3(2) of the CMA
NSP	Network Service Provider
OECD	Organisation for Economic Co-operation and Development
OSA	One Stop Agencies
PI Paper	The Public Inquiry Paper entitled *Review of Access List and Mandatory Standard on Access* issued by SKMM, dated 25 September 2008
PI on Access List in 2005	The Public Inquiry held on the Access List from February to June 2005. See PI Paper on Access List, PI Report on Access List, Access List, MS (Access) and Guidelines on Implementation of ANE.
PI on Dominance in 2004	The Public Inquiry held on Dominance held from August to December 2004. See PI Paper on Dominance, PI Report on Dominance and *Commission Determination on Dominant Position in a Communications Market, Determination No. 2 of 2004.*
PI on MNP in 2005	The Public Inquiry held on MNP from September to December 2005. See PI Paper on MNP and PI Report on MNP.
PI Paper on Access List	*Public Inquiry Paper: Review and Expansion of Access List Determination* (8 February 2005)

PI Paper on Dominance	*Public Inquiry Paper: Assessment of Dominance in Communications Markets* (August 2004)
PI Paper on MNP	Public Inquiry Paper: Implementation of MNP in Malaysia (1 September 2005)
PI Report	This Public Inquiry Report
PI Report on Access List in 2005	*A Report on a Public Inquiry: Review and Expansion of Access List Determination* (27 May 2005)
POA	Point of Access
POI	Point of Interconnection
PON	Passive Optical Network
PPP	Purchasing Power Parity
pre-PI process	SKMM's initial consultations with stakeholders which have contributed to this Public Inquiry Paper
PRI-ISDN	Primary Rate Interface ISDN
PSTN	Public Switched Telephone Network
QoS	Quality of Service
SBC	State-backed Company
SDSL	Symmetric Digital Subscriber Line
SDTV	Standard Digital Television
SEA-ME-WE3	South East Asia Middle East Western Europe 3 submarine cable system
SKMM	Malaysian Communications and Multimedia Commission
SLA	Service Level Agreement
SMP	Significant Market Power
SMS	Short Messaging Service
SS7	Signalling System Number 7
TIME	TT dotCom Sdn. Bhd.
TM	Telekom Malaysia Berhad
TM Net	TM Net Sdn. Bhd.
TsoIP	Telephony Service over Internet Protocol
U Mobile	U Mobile Sdn. Bhd.
UMTS	Universal Mobile Telecommunications System
UMTS (M)	UMTS (M) Sdn. Bhd.
UNI	User Network Interface
USP	Universal Service Provision
VoIP	Voice Over Internet Protocol
WiFi	Wireless Fidelity
WiMAX	Worldwide Interoperability for Microwave Access
WLL	Wireless Local Loop

WLR	Wholesale Line Rental
3GPP	Third Generation Partnership Project

SUMMARY OF SKMM FINAL VIEWS ON VARIATIONS TO THE ACCESS LIST

In this Public Inquiry, the SKMM has undertaken a detailed examination of over 25 facilities and services for inclusion in the Access List. The Public Inquiry also examined a range of new and emerging technologies that may be relevant to existing or new Access List facilities and services.

The PI Paper set out the SKMM's preliminary views on the above issues and invited comments in response to specific and general questions. Having considered the submissions received in response to the PI Paper, the following table summarises the SKMM's reasoning for reaching the final views set out in this PI Report:

Facility / Service	SKMM's final view
Fixed Network Origination Service	Retain the service on the Access List, with some amendments to the description for clarity. Not to include in a rationalised Network Origination Service.
Fixed Network Termination Service	Retain the service on the Access List, with some amendments to the description for clarity. Not to include in a rationalised Network Termination Service.
Equal Access (PSTN) Service	Remove the service from the Access List.
Internet Access Call Origination Service	Remove the service from the Access List.
VoIP PRI-ISDN Service	Not to include on the Access List.
Wholesale Line Rental Service	To include the service on the Access List.
Mobile Network Origination Service	Retain the service on the Access List, with some amendments to include WiMAX. Not to include in a rationalised Network Origination Service.
Mobile Network Termination Service	Retain the service on the Access List, with some amendments to include WiMAX. Not to include in a rationalised Network

Facility / Service	SKMM's final view
	Termination Service.
3G-2G Domestic Inter-Operator Roaming Service	To retain the service on the Access List, but with a sunset period of 1 January 2011.
Inter-Operator Mobile Number Portability Support Services	Remove the service from the Access List.
Infrastructure Sharing	Retain on the Access List, with amendments to the service description to include the provision of in-building access to Common Antennae Systems (**CAS**)
2G-2G Domestic Inter-Operator Roaming Service	Not to include on the Access List.
3G-3G Roaming Service	Not to include on the Access List.
Mobile Virtual Network Operator Service	Not to include on the Access List.
Domestic Connectivity to International Capacity	Retain on the Access List: (i) Backhaul for transition period; (ii)Connection services with some amendments for clarity. To include the backhaul component in a new technology neutral Transmission Service.
Interconnect Link Service	Retain on the Access List, with some amendments to clarify on Network Signalling Service.
Network Co-Location Service	Retain on the Access List.
Network Signalling Service	Remove the service from the Access List.
Private Circuit Completion Service	Retain on the Access List for transition period. The service is now renamed to Wholesale Local Leased Circuit Service with amendments to include NGN.
Domestic Network Transmission	Retain on the Access List for transition period.

Facility / Service	SKMM's final view
Service	To rationalise this service in a new technology neutral Transmission Service.
Broadcasting Transmission Service	Retain on the Access List for transition period. To include in a new technology neutral Transmission Service.
Digital Terrestrial Broadcasting Multiplexing Service	Retain on the Access List.
Internet Interconnection Service	Retain on the Access List, with a sunset date of 1 January 2011.
Full Access Service	Retain on the Access List: (i) To be implemented outside the HSBB network. (ii)Deferred implementation within the HSBB network subject to the Ministerial Direction on HSBB and Access List.
Line Sharing Service	Retain on the Access List: (i) To be implemented outside the HSBB network. (ii)Deferred implementation within the HSBB network subject to the Ministerial Direction on HSBB and Access List.
Bitstream Service (with and without Network Service)	Retain on the Access List: (i) Service available outside the HSBB network. (ii) Within HSBB network, this service is available only for the transition period.
Sub-loop Service	Retain on the Access List: (i) To be implemented outside the HSBB network. (ii)Deferred implementation within the HSBB network subject to the Ministerial Direction on HSBB and Access List.

Facility / Service	SKMM's final view
Digital Subscriber Line Resale Service	Retain on the Access List: (i) Service available outside the HSBB network. (ii) Within HSBB network, this service is available only for the transition period.
HSBB Network Service with QoS	Include in the Access List.
HSBB Network Service without QoS	Include in the Access List.
Network Origination Service	Not to include in the Access List.
Network Termination Service	Not to include in the Access List.
Transmission Service	Include in the Access List.

Table 1: Summary of SKMM final views

1. INTRODUCTION

1.1 Public Inquiry process

In its Public Inquiry Paper on Review of Access List and Mandatory Standard on Access (**PI Paper**) released on 25 September 2008, the SKMM detailed the approach and methodology it proposed to adopt in this Public Inquiry to:

(a) determine whether certain additional facilities and services should be included in the Access List; and

(b) assess whether existing facilities and services on the Access List should be retained, either in their current or amended form.

The SKMM noted that under section 55(1) of the *Communications and Multimedia Act 1998* (**CMA**), the SKMM may, from time to time, make a determination on any matter specified in the CMA. The relevant matter in this Public Inquiry is the question of access under Part VI, Chapter 3 of the CMA.

In consideration of the long-term consequences of access regulation, the SKMM adopted for this Public Inquiry the widest possible consultative approach under the legislation in order to obtain maximum industry and public impact. This approach was also designed to promote certainty and transparency in the exercise of the SKMM's powers.

In most cases, the PI Paper set out the SKMM's preliminary views, inviting comments as to whether an Access List determination should be made consistent with those views. In some cases, the SKMM noted that, at the time of publication of the PI Paper, it did not possess sufficient information to reach a preliminary view. Accordingly, the SKMM asked stakeholders for more information before finalising its views on an Access List determination.

The PI Paper explained:

(a) the legislative context and purpose of conducting the Public Inquiry;

(b) the scope of the Public Inquiry;

(c) the outputs of the Public Inquiry;

(d) the process of the Public Inquiry; and

(e) the relevance of the Public Inquiry to the high speed broadband services.

1.2 SKMM's legislative obligations

Under section 146 of the CMA, subject to 147(2) the SKMM may determine that:

(a) a network facility;

(b) a network service; or

(c) any other facilities and/or services which facilitate the provision of network services or applications services, including content application services,

shall be included in or removed from the Access List.

As explained in the PI Paper, the SKMM views that it is required to undertake a Public Inquiry under section 55 of the CMA in order to include facilities or services in, or remove facilities or services from, the Access List because determination as to what facilities and services are to be included in or removed from the Access List are very likely to be of significant interest to all sectors of the economy, including end-users of communications services, and providers and potential providers of these services.

The SKMM is now required to make any determinations arising out of the inquiry no later than 5 January 2009, which is 45 days after the close of public comments on the PI Paper. The SKMM proposes to make the following instruments arising from this Public Inquiry:

(a) a Commission determination that varies the existing *Commission Determination on Access List, Determination No. 1 of 2005*. This Determination will reflect the SKMM's final views expressed in this PI Report in respect of amendments, deletions and additions to the existing list of facilities and services contained in the Access List. This Determination will be issued pursuant to the SKMM's powers and functions under sections 55 and 56 of the CMA, which deal with the making, modification, variation or revocation of the Commission determinations; and

(b) a Commission determination that varies the existing *Commission Determination on the Mandatory Standard on Access, Determination No. 2 of 2005*. This Determination will reflect the SKMM's final views in relation to the Access List and other changes to the MS (Access) consulted in this Public Inquiry. This is because section 105 of the CMA requires a mandatory standard determined by the SKMM

(which includes the MS (Access)) to be consistent with the objects of the CMA, provisions in the CMA and its subsidiary legislation and instruments issued under the CMA. This Determination will be issued pursuant to the SKMM's powers and functions under sections 105 and 106 of the CMA, which deal with the making, modification, variation and revocation of mandatory standards.

1.3 Consultation process

The SKMM has consulted widely and openly with all interested stakeholders during this Public Inquiry, including:

(a) consultations with a broad range of licensees prior to the release of the PI Paper, as set out in Annexure 1 to the PI Paper;

(b) publication of the PI Paper on 25 September 2008 and a request for comment, including publicity in relation to the same in the media and on the SKMM website;

(c) clarifications in response to stakeholders in relation to specific items raised in the PI Paper during the consultation period; and

(d) conducting two public hearings on the overall Public Inquiry and specific items contained in the PI Paper. The details of those public hearings were held at the SKMM in Cyberjaya as follows:

- 2 pm, Monday 20 October 2008, on non-broadband services; and
- 9 am, Tuesday 21 October 2008, on broadband services.

1.4 Submissions Received

At the close of the public consultation period at 12.00 noon on 21 November 2008, the SKMM received written submissions from the following parties:

No.	Submitting party	Documents
1.	ASP Association	1 Submission (7 pages)
2.	ASTRO	1 Submission (26 pages)
3.	Celcom	1 Submission (65 pages)

No.	Submitting party	Documents
4.	DiGi	1 Submission (55 pages)
5.	Ericsson	1 Submission (18 pages) and 7 Annexes Annex 1 (15 pages) Annex 2 (14 pages) Annex 3 (18 pages) Annex 4 (23 pages) Annex 5 (18 pages) Annex 6 (28 pages) Annex 7 (129 pages)
6.	Fiberail	1 Submission (11 pages) and 1 Exhibit (1 page)
7.	Fibrecomm	1 Submission (5 pages)
8.	Jaring	1 Submission (25 pages)
9.	Maxis	1 Submission (122 pages)
10.	Media Prima	1 Submission (13 pages)
11.	MyIX	1 Submission (4 pages) and 1 Annex (1 page)
12.	Packet One	1 Submission (122 pages)
13.	Paycomm	1 Submission (13 pages)
14.	REDtone	1 Submission (28 pages)
15.	Telco Consultants	1 Submission (2 pages)
16.	TIME	1 Submission (62 pages)
17.	TM	1 confidential and non-confidential version of submission (114 pages) and appendices Appendix B (21 pages) Appendix C (14 pages)
18.	U Television	1 Submission (12 pages)
19.	U Mobile	1 confidential Submission (10 pages) 1 non-confidential Submission (26 pages)
20.	Xintel	1 Submission (1 page)

Having thoroughly reviewed and assessed the submissions received on the PI Paper against its own preliminary views, the SKMM now presents this PI Report within the 30 day requirement of the closing date of submissions, as stipulated under section 65 of the CMA.

The SKMM would also note that some issues raised in the submissions are outside the purview of this Public Inquiry. These issues include funding requests for payphones and high-speed broadband network, fixed number portability, numbering issues, licensing issues, approvals from other authorities, anti-competitive complaints and pricing matters.

1.5 Structure of this PI Report

The remainder of this PI Report is structured to broadly follow the PI Paper to provide a consistent context for the SKMM's specific questions for comment. The 89 numbered questions in the PI Paper are duplicated in each section with a summary of the comments received (in alphabetical order according by the submitting parties). The SKMM then sets out the rationale of its final views on each issue:

Section 2: Legislative context

Section 3: Access regulation and the SKMM's methodology

Section 4: Relevant markets and state of competition

Section 5: Fixed Telephony

Section 6: Mobile Telephony

Section 7: Upstream Network Elements

Section 8: Interconnection

Section 9: Leased Lines

Section 10: Broadcasting Transmission

Section 11: Existing Broadband Services

Section 12: Regulation of High Speed Broadband Services

Section 13: Regulation of Wireless Broadband Services

Section 14: Access List Rationalisation

Section 15 Mandatory Standard on Access

2. LEGISLATIVE CONTEXT

2.1 Overview

Section 2 of the PI Paper addressed the following issues as part of the legislative and policy context for the Public Inquiry:

(a) current Access List Determination;

(b) legislative powers and requirements;

(c) amendment to Mandatory Standard on Access (**MS (Access)**);

(d) Public Inquiry process and Determination;

(e) objects of the CMA and National Policy Objectives (**NPOs**); and

(f) overall regulatory approach.

Section 2 of the PI Paper was structured as a factual overview of the above issues. In particular, the SKMM noted that it would be guided by its statutory functions under the Commission Act and its overall regulatory approach would be consistent with the principles of best regulatory practice. The SKMM considers that the Long-term Benefit of End Users (**LTBE**), as expanded in Section 3 of the PI Paper, will be promoted by effective competition.

For this reason, the starting point in the SKMM's analysis and the initial question to stakeholders for each of the Access List facilities and services was to most accurately identify the state of competition in each market. If a market can be demonstrated to be one where effective competition exists in the provision of both wholesale and retail services, the relevant facility or service would be an unlikely candidate for new or continuing regulation. This would be the SKMM's premise in the absence of any other compelling reasons to the contrary.

The SKMM highlighted several other matters that arose as a result of the pre-PI process, which were expressed as concerns and issues by stakeholders. The SKMM included those other issues in the PI Paper and has considered the comments received.

2.2 Comments received

Although the PI Paper did not include specific questions on the issue of legislative context of this Public Inquiry, the SKMM notes that some respondents have referred to the overall context of the inquiry, particularly current developments in Malaysia's communications and multimedia policy.

TM provided a series of general comments in relation this Public Inquiry, which it requested to be considered in conjunction with its specific responses to the individual questions in the PI Paper. Below is a summary of those key themes, which are presented here to enable a thematic response to be set out following this section.

TM submits that the Government's policy objectives will only be realised through investment. These policies include MyICMS 886 and the National Broadband Plan. TM also argues that there is a preference to invest in mobile services, in terms of both voice and broadband, and submits that a near 8-fold return on investment can realised in comparison to fixed line operations. TM highlights its view that fixed to wireless substitution has occurred, to the detriment of fixed network investment as an attractive proposition.

TM also considers that access regulation risks negatively impacting on the benefits and efficiencies of the HSBB project. It considers that regulation of HSBB in advance of what it considers to be a proven positive LTBE analysis and market failure is unwarranted. It favours a light handed approach, considering the recognised uncertainty of demand in the face of a network that has not yet been constructed, and NGN services that are not yet offered.

In addition, TM considers that global best practice necessitates a cost-benefit analysis to be undertaken for key new proposals. It cautioned against what it considers to be "premature" regulatory intervention in other areas. TM cites the OECD principles of regulatory impact analysis (RIA) which have been employed in the UK. The OECD position, TM argues, enables decision makers to base regulatory measures on empirical data, within a framework to enable options and their consequences to be assessed. Similarly, TM notes that Australia uses a cost-benefit analysis structure for regulatory proposals, in order to monetise the gains and losses of regulatory proposals. TM's view is that the SKMM's approach lacks this rigour and has insufficient detail to support the preliminary views in the PI Paper.

Finally, TM submits that access regulation should be technology neutral and a light handed approach to be adopted. TM considered that a technology neutral approach

ensures that competing services are subject to the same requirements and hence, minimises the distorting effects of any inclusion in terms of technological and innovative developments. In addition, it was asserted that any market power that TM enjoyed prior to the demerger of the TM Group in 2008 is reduced, and is now only a pure fixed network operator. Thus, TM views that the PI on Dominance in 2004 is no longer relevant. TM also viewed that there is a skew of regulation towards fixed-network, with 17 services applicable to the fixed-network in the proposed Access List, vis-à-vis 5 services applicable to the wireless-network.

Further, a consideration of access regulation also requires at least a preliminary assessment of pricing issues. TM therefore provided some of its initial thinking on pricing issues, primarily in relation to the transition to an NGN environment and mobile termination. The outcome of TM's analysis is that international trends demonstrate new thinking in terms of the relevant cost structures to be considered in an assessment of wholesale and interconnection charging. These international examples, such as the French regulator, show recent thinking on the issues of the maturity of certain markets, such as mobile, and the need to consider ways in which the costs structures of industries can be more accurately reflected.

2.3 SKMM's response to comments

As an overall comment in relation to the views on the SKMM's approach to access regulation, this Public Inquiry is being conducted in accordance with both the applicable legislative context – indeed, exceeding the minimum statutory requirements for consultation in both time and scope – and in accordance with international best practice regulation. The SKMM was mindful that the PI Paper, and the pre-PI process which preceded it, would need to be thorough in its consideration of potential new access arrangements, as well as de-regulating those facilities and services where regulation would no longer be warranted. At all times, the SKMM has adopted a proportionate view of regulation, which is reflected in both its consideration of the state of competition in each market, as well as a detailed rationale for each of its preliminary views in the PI Paper.

The SKMM has closely considered the arguments raised by TM in relation to fixed and mobile substitution, as well as fixed and wireless broadband substitution. The SKMM acknowledges that there may be a degree of substitution occurring between fixed and mobile services in Malaysia. Certainly, there is a significant degree of complementarity between the 2 services, however the critical question is whether the 2 services are sufficiently substitutable to be in a single market, and not simply complements. The SKMM provides the following thematic responses.

Firstly in relation to fixed and mobile substitution, the SKMM does not agree with TM's assertion that substitution can be assumed to have occurred in Malaysia.

However, by way of overview, the SKMM does not believe that the evidence advanced by TM to support fixed and mobile substitution is sufficient in an economic sense. The SKMM notes that the analysis undertaken by various regulators and economists around the world has failed to conclude that these voice services should form part of the same market.

The first limb of TM's analysis is an argument that investment has skewed towards mobile and greater returns can be enjoyed in the latter. This does not demonstrate substitution. In the SKMM's view, the appropriate test is the "SSNIP test": a small but significant non-transitory increase in price, which a hypothetical monopolist could impose in a market. It is used to examine a small market and asks the question: can the hypothetical monopolist profitably increase its prices by 5%? If the answer is "no", the next closest substitute is added to the relevant market and the test is repeated until the point is reached where the hypothetical monopolist could profitably impose a 5% price increase. This then defines the relevant market. The relevant SSNIP test question in the context of fixed and mobile substitution is whether an end user would move from a fixed to mobile service if there was a small but significant non-transitory increase in the price of the fixed service.

The SKMM views that a practical approach to employ the SSNIP test is by examining the price differential between fixed and mobile services. While this issue would require further study, the SKMM notes that there would appear to be a pricing differential between fixed and mobile services which would not appear to justify a finding of fixed and mobile substitution, based on the SSNIP test.

The SKMM also notes that rather than examining margins and revenues of mobile versus fixed investment, it would have been more beneficial for TM to have focused on these price differentials, perhaps even by region and availability, to make a case for fixed and mobile substitution. As it stands, TM's analysis does not provide the SKMM with anything more than anecdotal and consumer survey evidence. If TM wishes to make the case for a single fixed and mobile voice services market, it will be necessary for TM to provide evidence which satisfies the SSNIP test to establish fixed to mobile substitution. Even if TM could provide a theoretical analysis to the application of the SSNIP test, this would assist the SKMM in examining the fixed and mobile substitution issue, although if TM provides data which has real world application then this would be preferable.

The SKMM also notes that the outcome of the SSNIP test, it must also be considered in the context of any conclusion that there is one single market. The ultimate outcome of a substitution test: namely, whether market power is likely to exist. From this perspective, it can be seen that market definition is not a purely theoretical argument. For example, if there is indeed a national voice market (i.e. fixed and mobile services in the same market, as suggested by TM) then this would mean that TM is constrained by the mobile operators in the price it can charge for its fixed services. This would need to be subjected to further study by the SKMM, but to establish this substitution effect TM would need to provide pricing evidence to the SKMM to make this case. The submission by Maxis provides evidence to show that there has been no constraining effect on Malaysia's fixed prices by reference to similar countries.

TM has submitted that under the proposed 2008 Access List, there are 17 fixed network-centric services and only 5 wireless-centric services. However, the SKMM notes that this significantly overstates the number of services relevant to fixed and mobile voice substitution. In reality, there are origination and termination services applicable to both fixed and mobile voice services. The only other service relevant to voice is Wholesale Line Rental Service. Many of the other fixed services identified by TM relate to other markets, such as interconnection, leased lines and broadband, which have nothing to do with voice substitution. Hence, even if TM could satisfy the SKMM that there is a strong case for fixed and mobile substitution, in reality the implications for the Access List are likely to be nowhere near as significant as TM suggests.

Further, the SKMM is aware that fixed to mobile substitution is less likely to be apparent for business customers. Many business customers still utilise fixed telephony (including VoIP) from their offices. Mobiles have a more limited application to convenience calling or calling when outside the office. Hence, there could also be differences in the substitution effect between different segments of the market such as residential and business.

The SKMM has nevertheless undertaken its own review of the literature and international analysis. One very recent example is a study of various effect of fixed and mobile substitution in developed and developing countries.[1] This study also looked at the premise that once substitution occurs, traditional universal service obligations need to be revisited, which was incidentally a point also raised by TM. The key findings of the study which examined shifts and traffic as well as subscribers include by reference to Malaysia:

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[1] Chun-Mei Chen, Hsiang-Chih Tsai, Chi-Kuo Mao, "Income, affordable and threshold effects on FMS in the developed and developing countries", *Telecommunications Policy* 32 (2008) 626-641.

- in the study period 1997-2005, Malaysia's fixed line penetration rate experienced stagnation. The mobile penetration rate made it the highest among ASEAN countries and fulfilled the authors' hypothesis that penetration has an "income effect". When the ratio of fixed line and mobile expenditure to personal income is high, then fixed line or mobile penetration is not easily increased;

- however, only when mobile ARPU is close to or lower than fixed line ARPU will mobile penetration experience rapid growth with other effects become apparent. This occurred in Malaysia in 2000, when the growth of mobile penetration accelerated from 21.8% to 30.8% in 2001. The authors call this the "affordable effect"; and

- mobile penetration crossed a threshold in 2002 when it increased to 36.9%, causing fixed line penetration to significantly decline. This conforms to the authors' further hypothesis that when mobile penetration crosses a certain threshold, the growth of fixed line penetration will decline or even stop.

Importantly, the findings of this study provide some evidence both for and against a finding that fixed and mobile substitution has occurred in Malaysia. However it also highlights the important point of such a study, namely to establish that TM's pricing is constrained by mobile operators. The study referred to above showed that fixed ARPU has been on a rising trajectory of US$550 by 2004, compared to US$222 for mobile services.

The SKMM concludes that TM's analysis on this point is incomplete. Indeed, TM has presented its submission on the assumption that substitution has already occurred. Whilst TM may hold the view that this is the case, and a popular view may be to assume the same in light of the high uptake of mobile services in Malaysia, substitution is an economic tool used as part of the market definition process. Insufficient evidence has been provided to establish the case and there is evidence to suggest that fixed and mobile substitution has not yet occurred to the extent of finding a single market.

The SKMM will continue to monitor fixed to mobile substitution and consider the implications for regulation, not only for the Access List but also the implications for other regulatory issues.

Secondly, TM raises the issue of fixed and wireless broadband substitution. The evidence provided by TM demonstrates complementarity exists today, rather than substitution. Of course, this may change over time as Long Term Evolution (LTE) is realised, however wireless broadband technology today is such that it is unlikely to have

any constraining impact, or even technically not be substitutable. The technical differences between wireless and DSL technologies today do not support a finding of substitution, and TM has not offered any evidence to the contrary.

Thirdly, the SKMM notes the cost-benefit references made by TM and the assertions that the SKMM's analysis is inconsistent with best practice. The SKMM makes 3 points in relation to this issue:

- the tests referred to by TM range from a statutory requirement to identify the costs of compliance, as in the case of Australia, to an actual measurement of the costs and benefits of a proposal. These are primarily used to ensure that consultation is undertaken to inform any cost-benefit analysis, and the alternatives to regulation are considered in cases where there is an expectation of compliance. Indeed, the Australian *Best Practice Regulation Handbook* referred to by TM needs to be distinguished on several grounds:

    - those guidelines were devised in the context of alleviating regulatory burdens on business ("red tape"), rather than designed for access regulation inquiries and assessments. This arose out of Commonwealth-State initiatives to address the overlap between rules imposed by various levels of government and to ensure that the incidence of Federal and State legislation did not overburden the process of doing business. Most States have their own version of a "better regulation" office, usually within the portfolio of the Minister for Small Business, which liaises with its Federal counterpart. Access regulation of communications in the nature of the SKMM's functions is undertaken by the ACCC in accordance with its own statutory framework, quite separate from that of the Small Business portfolio;

    - since their best practice regulation requirements are concerned with compliance costs, regulatory proposals that affect business can be quantified. Items that can be quantified include educating businesses on new compliance requirements, keeping of records, and other administrative costs; and

    - a discussion of these compliance costs are included as part of the regulatory impact assessments that form part of relevant explanatory memoranda or other extrinsic material for legislation and subordinate regulation.

- the processes undertaken by the SKMM in this Public Inquiry are consistent with the best practice regulatory impact statements referred to by TM in the case of the OECD and the UK. Even then, the SKMM again notes that the UK sources it has referenced are also concerned with business administration, not access regulation. Yet, the SKMM is aware of the consultative principles in both the UK model and Australia, which have both been influenced by the OECD, and adopts the same principles of transparency and maximum consultation in its regulatory decision-making. The SKMM again highlights the lengths it has gone to in this public consultation process, both in terms of gaining input to provide the most meaningful consultation document in the form of the PI Paper, as well as briefings and other information sessions which are strictly not required by the Malaysian legislative scheme. In this respect, the SKMM has exceeded its statutory requirements through adopting best regulatory practice; and

- the SKMM has continuously emphasised its desire to rely on both qualitative and quantitative analysis in its decision-making, consistent with its approach to its previous review of the Access List. It relies on the data made available to it through its consultation process, as well as putting forward its own data gathered to be tested and answered by stakeholders. As an example of the SKMM's qualitative and quantitative analysis respectively in this Public Inquiry process:

    - the detailed cost-benefit analysis in the PI Paper regarding the inclusion of the Full Access Service on the Access List where the HSBB network will not be located, as discussed also in section 12.6 of this PI Report; and

    - a structure in the PI Paper which examined, for every service in each of the relevant markets, the indicia of the state of competition. This included the number of competitors, retail as well as wholesale pricing, and specific components of the LTBE criteria including the economically efficient use of infrastructure and investment;

- The focus on empirical data in the OECD's processes is a matter that the SKMM would have preferred, however this approach is dependent on stakeholders, such as TM, providing that empirical data to conduct a sound economic cost-benefit analysis. The absence of this data does not detract from the highly relevant quantitative and qualitative information and analysis which has been carried out in this Public Inquiry process.

The SKMM emphasises that when undertaking a cost-benefit analysis, the social costs and benefits must be considered in addition to the cost of compliance. TM's submission

focuses on the cost of compliance, and therefore adopts an overly narrow approach to this analysis. As noted above, the SKMM has considered a cost-benefit analysis in the PI Paper on the broader basis of assessing social costs and benefits associated with regulation. This is consistent with the focus on consumers in the CMA. Thus, TM's own analysis lacks the detail and rigour needed to satisfy its own requirements of a cost-benefit analysis. The SKMM would have preferred if TM had conducted a cost-benefit analysis based on the best practice from OECD and Australia to substantiate its allegations that the SKMM's analysis lack rigour and details, however, no such evidence to support its case has been provided.

The SKMM has been guided by the overarching principle that operators are in the best position to provide a view on the state of competition and how it may have changed over time, as well as its direction. The SKMM knows of no other regulator who has submitted such a thorough yet open consultation process on its access regime. Finally on this point, all regulators responsible for access issues in both communications and other essential facilities must, first and foremost, be guided by their own statutory criteria for determining questions of access. The SKMM has considered all its obligations and functions and consistently arrives at a focus on consumers as the linkage between all those (sometimes competing) elements. The costs and benefits of regulation is a constant issue considered by the SKMM in its analysis, ultimately in terms of the impact on consumers.

In relation to TM's submission that the access regime should consider technology-neutral and light-handed regulation of fixed networks, the SKMM notes TM's argument that any market power which it may have enjoyed prior to the demerger has been substantially reduced by the separation of its former mobile arm. The SKMM also notes TM's submission that it should no longer be considered dominant based on the PI on Dominance in 2004. Again, changes in the state of competition and the SKMM's openness to evidence-based regulation remain at the core of its practice. The mere fact that the dominance review was undertaken several years ago is not evidence in and of itself that it is redundant. For this reason, the views of operators have been sought to ensure that the SKMM reflects those views in its decision-making.

Finally, it is clear that TM considers it is too early to regulate broadband services in a HSBB environment. TM's argument is based on regulation of a service whose network has not yet been built. Forbearance, however, is not considered by the SKMM to be an option. By its own admission, TM submits that they will be Malaysia's only HSBB provider. Further, the SKMM would be concerned that a "wait and see" approach could also lead to a significant first mover advantage by TM. TM alone holds the information, about the deployment of its network and this will provide TM with a significant advantage

in the provision of services to customers. This information asymmetry, left unregulated, is likely to constitute a significant barrier to entry.

TM's approach also assumes that a market failure could be easily predicted or even identified in sufficient time for remedies to be put in place before competitors are significantly affected. As TM is aware, market failures are difficult to identify and rarely take the form of, for example, absolute refusals to supply. Refusals to supply usually inferred from all of the circumstances (for example, the price of supply that is exorbitant or the unreasonable terms and conditions attached to the supply). For this reason, it is unacceptable to the SKMM to wait for a market failure to manifest itself before providing a rationale for regulation.

The counter-factual faced by the SKMM is that in the event of market failure at a later time, the absence of appropriate regulation of HSBB is a situation that will be impossible to remedy. Indeed, a market failure at this point would likely require far more significant remedies than access regulation and may include measures such as structural or functional separation or even tremendous Government effort and resources to restore the industry. This would result in high costs to society and is counter-productive to the Government's aspirations and the national policy objectives. The SKMM therefore believes that a forward-looking approach needs to be undertaken when considering regulation of services over the HSBB network.

The SKMM does, however, recognise TM's point that pricing needs to be considered in the context of regulation, including of HSBB regulatory proposals. Although this is within the purview of the MS (Pricing) review, the SKMM notes TM's points and will consider these along with those raised by other respondents when that review is undertaken.

3. ACCESS REGULATION AND THE SKMM'S METHODOLOGY

3.1 Overview

In this section of the PI Paper, the SKMM set out the concept of access and the rationale for access regulation. This included the SKMM's proposition to adopt the principle of regulation in the long-term benefit of the end user (**LTBE**) as its guiding point of assessment. The following elements of the LTBE were specifically considered and offered for comment for each service in each of the relevant markets set out in the PI Paper:

- the objective of promoting competition in relevant markets;
- the objective of achieving any-to-any connectivity in relation to communications services; and
- the objective of encouraging the economically efficient use of and investment in communications infrastructure.

The SKMM also considered other criteria in the NPOs that are relevant to access regulation, including national development, equitable consumer interest, and the promotion of a civil society.

Finally, the relationship between the LTBE and the recognised bottleneck analysis in access regulation was explained. There would be a presumption that the inclusion of bottleneck facilities and services on the Access List would be in the LTBE. However, the other considerations above, specifically applying the Malaysian context in practice rather than in theory, would be considered prior to recommending access regulation even if the bottleneck test was satisfied.

Question 1: The SKMM seeks views on the methodology applied in determining whether a facility or service should be included in the Access List. Are there any other tests that could be considered by the SKMM?

3.2 Comments received

DiGi and Jaring state that the LTBE model is difficult to implement. Both TM and TIME suggested conducting a cost-benefit analysis while other licensees have varied views

with regards to the methodology applied in determining whether a facility or service should be included in the Access List.

Celcom sought clarification on the difference between the LTBE test mentioned in this Public Inquiry and the LTIE test used in the PI on Access List in 2005. Celcom does not see substantive reason for changing the LTIE test to the LTBE test if they are similar.

Whilst Celcom agrees with the SKMM's methodology which focuses on LTBE, Celcom believes that the primary indicator whether any regulatory action provides any benefit to the end users is whether the service exhibits bottleneck characteristics. If not, there should be a presumption that the interests of end users are best served by competition and commercial negotiation.

DiGi believes that LTBE is quite difficult to implement. Therefore, DiGi suggested the LTBE criteria be implemented via an "economic efficiency criterion". Also, DiGi stated the importance of analysing the demand and supply substitutes in the relevant markets. Without this, the SKMM does not have a methodology to determine which services are to be included at the retail level. Once the market is defined, the next step is to analyse the state of competition i.e., any market failure. DiGi urged the SKMM to clarify what it considers as the correct methodology and DiGi strongly recommended following the steps in Figure 4 in the PI Paper.

Although Fiberail supports the methodology of bottleneck and the LTBE test, Fiberail is of the view that the SKMM should not limit the methodology to only these two methods. In specific cases and whenever necessary, other methodology should be considered.

Jaring is of the opinion that the current access model is too complex for effective implementation due to extensive resources required. Jaring believes that a simpler access framework is necessary and eventually the Access List should not be necessary at all. It should be compulsory for any licensed service to be made available to any other licensed service providers. Regulation should be required only for wholesale and retail pricing to manage anti-competitive behaviour. Jaring proposed that a review to be carried out in the near future on this issue.

In general, Maxis is in agreement with the approach taken by the SKMM. However, since the regulation is not focused on dominance anymore, this may result in an inherent inefficiency as non dominant providers of services (who are unlikely to have Access Seekers) have to create a wholesale offering. Such a process will incur more costs than benefits, hence would not be in the LTBE. Since the CMA does not rule out asymmetry, Maxis believes that there are good reasons and in the national interest to have

asymmetric regulations in fixed markets, given the immense incumbent's strength and also the added fact that significant Government funds will be used in the HSBB initiative.

Packet One highlighted that although the current access regime has existed in Malaysia for some time, dominant providers still impose what it considers to be monopoly prices, and uncontrolled anti-competitive exercises are still widely practised. Packet One proposed that the SKMM should consider the implementation of a significant market power (**SMP**) test. Packet One also claimed that the bottleneck test does not fit operators who operate in both upstream and downstream market.

According to Paycomm, the global reality is that monopolies feel threatened by innovation. Hence in situations where bottlenecks and/or monopolies are dominant, the SKMM should consider the benefit of an end user's ability to enjoy unimpeded access to local inventions and services, as well as developing and encouraging building of reference sites for local innovations. Paycomm recommended tests which are able to encourage the proliferation of locally developed innovations.

REDtone suggested that the SKMM should always consider the effects on competition on a short-term and long-term basis when making decisions with regards to the Access List. REDtone considers that whatever decision is made, it should not result in the early exit of fringe players i.e. ASPs. This is because consumers may benefit in the short term from lower pricing by certain big player but once the competition has exited from the market, the price can be raised again and by then consumers will not have other alternative service providers to choose from.

TM is of the view that LTBEU test should be more appropriate test for Malaysia because it includes potential end users. TM highlighted that the LTBE test proposed by the SKMM is based on Australian legislation which is inappropriate for the Malaysian environment. Furthermore, the LTBE in the CMA is just one of the 10 NPOs, while in the Australian telecommunications access regime the LTIE is the sole objective. Thus, the test to be adopted by Malaysia should be customized and differentiated from the foreign practice and suited to Malaysian realities, while consistent with the CMA.

The access review should also take into consideration the inherent costs associated with any form of regulation. Hence, TM considers that the LTBEU test on key issues must be based on a comprehensive cost-benefit analysis that takes into account factors of investment, efficient competition, affordability and end user welfare.

As for bottleneck test, TM's perspective is that only well established services utilising bottleneck facilities should be included in the Access List.

In general, TIME supports the proposed methodologies by the SKMM on the LTBE and bottleneck tests. In addition, TIME suggested SKMM should consider cost-benefit analysis in support of section 146 of the CMA. TIME also highlighted that the "with and without" test should consider the increase and decrease in prices more than the expansion of input and output. It considers that the SKMM should also consider the "Consumer Welfare Test" adopted by the Commerce Commission in New Zealand. TIME also states that the SKMM did not consult the MAFB in support with section 146 of the CMA, as opposed to the claim in the PI Paper that the SKMM had so engaged with the MAFB.

3.3 SKMM final view

The SKMM remains convinced that the focus on end users through the LTBE test is the most appropriate for fulfilling its access regulation functions. This is because it is the consistent linkage in the various statutory requirements which the SKMM must consider in its analysis, and administer in its role as regulator.

The SKMM also highlights that its preliminary views in the PI Paper, and its final views in this PI Report, have been made by employing a variety of methods to determine whether the LTBE has been satisfied. These include the "with or without" test, which poses the question of whether it is more desirable (that is, in the LTBE) to impose regulation rather than exercise forbearance. The SKMM has also employed a qualitative cost-benefit analysis of access regulation, based on the submissions received.

The SKMM appreciates the consideration that the respondents have given to alternative or potentially complementary analyses. Over time as markets change and develop, the application of these other tests in other jurisdictions may provide useful guidance for the SKMM in its ongoing objective of being a best practice regulator. The SKMM has also addressed in section 2 its views on the submissions which have called for specific cost-benefit analyses to be undertaken. TM has again argued its case for an LTBEU test which takes into account the factors noted above in its summary comments. Each of the elements of the LTBE test could have been used by TM to make those submissions, which the SKMM notes it hasn't done in detail in several parts of its response.

The SKMM views that Jaring is misguided, and reiterates that access regulation has an important role to play to ensure that the provision of facilities and services on a wholesale basis are on reasonable and non-discriminatory prices and terms and conditions. Access regulation is intended to address the issues highlighted by Jaring.

The SKMM notes Maxis and Packet One's submission. The SKMM highlights that the obligation to provide facilities and services listed on the Access List is provided for in section 149 of the CMA. The obligation in section 149 of the CMA is on a NFP and NSP. Hence, the SKMM considers that applying the test of a general application and not of a targeted nature will be consistent with the scheme of the access regime in the CMA.

Further, in response to Packet One's suggestion to apply the SMP test, the SKMM would also like to reiterate that there is a distinction between SMP and dominance. The CMA clearly provides that the test of "dominant position" is applied.

Finally, the SKMM assures stakeholders that the MAFB was consulted as part of this Public Inquiry process on several occasions. The SKMM reiterated its desire to encourage and promote self-regulation as envisaged in the CMA. In this regard, the SKMM notes that the MAFB has initiated some work on roaming, as submitted by some respondents, and encourages the MAFB to actively perform its role as envisaged by the CMA.

4. RELEVANT MARKETS AND STATE OF COMPETITION

4.1 Overview

The SKMM adopted a market-based approach to its review, using the 7 markets it has analysed for several years such as in the PI on Dominance in 2004 and the PI on Access List in 2005.

Importantly, the SKMM sought to engage stakeholders in providing an assessment of the state of competition in each of those markets, particularly any developments which may demonstrate that, for example, regulation in those markets is no longer needed. The state of competition was informed by the following indicia:

- the number of competitors;
- price competition;
- barriers to entry; and
- innovation.

Question 2:

The SKMM seeks views on the proposed market based approach in considering facilities and services for inclusion/removal from the Access List.

4.2 Comments received

In general, most submissions agreed with the market based approach in considering facilities and services for inclusion or removal from the Access List.

Celcom believes that the market based approach by the SKMM is acceptable. However, it considers that the SKMM should adopt international best practice and determine whether there is clear evidence of market failure (or lack of effective competition) and if the market is functioning well, whether ex-ante regulation is required.

DiGi submitted that the market based approach does not contain an analysis of the demand side substitution. It considers that the methodology chapters in the PI Paper should have reflected this important part of market analysis. Also, DiGi is of the view that with the impending convergence issues in the industry, the proposed market based

approach may need to be further examined in light of the rollout of the HSBB network which may provide further impetus for the convergence of the market and services.

Maxis is of the view that the market based approach is appropriate and is agreeable to the 7 markets examined. Maxis noted that this approach is adopted by several benchmark regulators around the world. In particular, Maxis noted that the EC's guidelines to NRAs sets out a market based approach to telecommunications based on demand side substitution and supply side substitution.

Packet One supports the proposed market based approach. However, they proposed that the indicators be read together and not individually. Packet One believes that an NGN in Malaysia will slowly erase the distinction between mobile and fixed as fixed mobile convergence occurs. With the introduction of HSBB and WiMAX services, Packet One believes that it may be appropriate to take fixed and mobile substitution into consideration in developing the Access List.

REDtone supports the SKMM's approach in adopting the market based approach. However, REDtone cautioned that any removal of service from the Access List should be done with the consent of the Access Seekers who are presently acquiring the services.

TIME agrees with the market based approach and believes that this approach is consistent with Part VI of the CMA and takes into consideration the state of competition in the relevant market segments. For the foreseeable future, TIME proposed that the SKMM safeguards basic communications services and encourage new entrants who in turn will promote competition.

TM's view is that the 7 market approach adopted by the SKMM is outdated and should be reviewed to consider possible new markets and the merging of markets. TM considers that there is unified market for voice telephony services in Malaysia. In addition, TM holds the view that the current single market approach under market definitions does not recognise the existence of highly contested geographical markets, such as major metropolitan areas in Malaysia. In these metropolitan markets, existing competition has removed bottlenecks associated with key growth services and therefore, additional mandated access in these areas cannot be justified, and, if introduced, runs the risk of distorting a healthy competitive market.

TM believes that the single market model proposed by the access review is leading to subsidised competition, which is likely to:

- be focused on areas which are already highly competitive;

- reduce incentives for Access Providers to invest in infrastructure;

- encourage Access Providers to reposition themselves as Access Seekers; and

- provide very limited additional entry into less competitive areas as Access Seeker costs are high and there will be no benefit to end users.

TM also proposed inclusion of satellite broadcasting as an additional market.

U Mobile was neutral on the approach adopted by the SKMM. It noted that of the seven broad markets that formed the basis for the Public Inquiry, three, i.e. fixed, mobile and broadband are significantly retail markets whereas the rest are wholesale markets. U Mobile also believes that ex-ante regulation is appropriate in markets where there is apparently little opportunity for new entrants to compete on fair basis.

4.3 SKMM final view

As an alternative to a licence-based approach, the SKMM remains of the view that a focus on markets is consistent with international best practice, and facilitates the most robust analysis of the state of competition and access issues. The SKMM has sought to focus on market failure, which is understandably uncertain in the case of nascent markets. However the SKMM has also sought to be a best practice regulatory leader in its deep analysis of markets undergoing dynamic change, particularly broadband.

It is plausible that the forward-thinking views of some submissions will be realised, such as fixed and mobile convergence. Equally, it is also plausible that a full review of the 7 markets may determine that, for example, separate markets exist within the broadband services market for fixed and broadband.

In relation to TM's comments of an outdated approach, the SKMM would have welcomed its views and evidence on how those markets have changed and the current state of competition. As previously indicated, it would have been open to TM to have provided evidence to support its assertions of substitution having taken place. The SKMM also highlights that it specifically recognised the potential for highly contested geographic markets. The PI Paper specifically called for comments to consider de-regulation of competitive markets. Examples of these were a route-by-route analysis of Domestic Network Transmission Services and potentially competitive backhaul routes for Domestic Connectivity to International Services.

The SKMM also notes that TM has again raised the issue of ASTRO and TM's advocacy for satellite broadcasting to be considered as an additional market. As previously indicated, the SKMM intends to consider this issue as part of a future dominance review.

Finally, the SKMM notes that market definition only provides the starting point for this analysis and that strictly concluded views about market definition are not necessary for access regulation. Rather, market definition provide a useful guide to the field of rivalry between competitors.

The SKMM acknowledges that there may be differences at the boundaries of markets and geographic variations within a market. The SKMM has taken these issues into account when conducting its analysis in this review.

5. FIXED TELEPHONY

5.1 Overview

The SKMM proposed a definition of the fixed line telephony market which is national in scope and includes direct exchange lines, fixed wireless exchange lines, ISDN and VoIP services.

5.2 Summary of submissions received

Many respondents provided submissions on the growth of mobile services and its impact on the state of competition in the fixed services market. At both the retail and wholesale levels of the market, competition does not appear to have developed in Malaysia since the PI on Access List in 2005. Several submissions drew comparisons between developments in competition in Malaysia and other jurisdictions. The issue of potential substitutability of VoIP services in the market raised a large number of comments, as well as wholesale line rental and Naked DSL.

5.3 State of competition

Question 3: The SKMM seeks comments on the state of competition in the fixed telephony service, particularly with respect to retail.

The general view of most licensees apart from Celcom and TM is that the fixed telephony service market is not competitive.

The ASPs believe that competition has been diminishing over the past two years due to the monopolistic nature of business and unfair pricing structure to the VoIP players. The ASPs strongly seek the SKMM to regulate retail and wholesale pricing to enhance competition in the fixed telephony market.

Celcom commented that retail pricing for fixed telephony pricing remains competitive as a result of competition from VoIP based services. Celcom pointed out that there have been complaints that TM is offering excessively low call rates via its various plans. Such complaints indicate that there is a degree of competition between PSTN services and VoIP service providers.

DiGi surmised that TM is dominant in the fixed telephony market due to its 98% market share and as a result, there is no pressure for TM to reduce retail prices in the market. According to them, other competitors are unable to match the prices offered by TM as they do not have the economies of scale enjoyed by TM. TM is also using its dominant position in the market to bundle fixed telephony and ADSL, further removing any possibilities of competition in this market. DiGi is also of the view that there is a lack of innovation in the provision of fixed telephony services.

Jaring believes that there is no competition in the fixed telephony services market since it is monopolised by TM.

Maxis maintains that in countries with relatively high levels of competition, the fixed market can grow over time. Maxis has analysed countries such as Poland, Romania, Chile and Argentina and their results indicate that in countries with monopolistic fixed markets, the fixed penetration decreases as mobile penetration increases. However, in Romania, Chile and Argentina, where fixed voice markets are more competitive (and very similar GDP per capita as Malaysia), fixed penetration has either increased or remained constant as mobile penetration increases.

Maxis is also of the view that the fixed line services market in Malaysia is highly uncompetitive and is characterised by high barriers to entry and high pricing by world standards. Malaysia was benchmarked against two groups of countries; countries with similar level of development and income to Malaysia such as Chile, Romania, Mexico and Poland and countries known for established and successful regulatory regime such as Australia, Hong Kong, Singapore and UK. Incumbent market share of access lines in many countries shows a clear declining trend, often through the emergence of cable operators, alternative infrastructure players or local loop unbundlers. However, Maxis pointed out that TM's market share in Malaysia remained above 97%, indicating that alternative Access Providers are finding it difficult to enter the market.

Maxis also benchmarked the fixed voice pricing in Malaysia and found the prices of fixed voice services in Malaysia to be very high. In analysing the prices, Maxis has taken into consideration various charging schemes and accounted for differences in cost of living, income and costs of businesses by adjusting prices according to purchasing power parity (**PPP**). Also the benchmarked countries were selected based on gross domestic product, PPP and population density. The results indicated that besides Poland and Mexico, Malaysia has the most expensive fixed voice services amongst benchmarked countries for all usage categories. Maxis pointed out that if line rental services in Malaysia are below cost as indicated in section 5.5.3 of the PI Paper, this could be due TM's network

being significantly less efficient and higher cost than that of incumbent operators in other markets.

Maxis also proposed remedies for the monopolistic fixed line market in order to encourage the development of competition, and reducing cost for end users. The remedies proposed include fixed number portability, wholesale line rental and carrier pre-select, local loop unbundling, structural or operational separation and carrier selection.

At the very least, Maxis proposed that accounting separation be implemented for TM. Maxis highlighted that in Singapore; different degrees of disclosure were implemented for different facilities based operators and proposed that a similar approach be adopted in Malaysia.

Based on the above analysis, Maxis holds the view that the market for fixed telephony is not competitive, with TM holding significant market power.

Packet One is of the view that fixed voice telephony is dominated by TM as the incumbent operator and attempts by new entrants have failed as result of unhealthy competition, abuse of dominant position and absence of regulatory controls to boost competition. The high barriers to entry identified by the SKMM in the PI on Dominance in 2004 for the communications market still remain. Packet One also carried out comparisons between the pricing and incumbent market shares in Malaysia to those in a number of other countries. According to their study, Malaysia is significantly more expensive than the remaining markets for most of the baskets, suggesting that consumers in Malaysia are paying more for PSTN services than other markets. In relation to market share, their study indicates that while incumbent market shares of access lines in many benchmarking countries show a declining trend, in Malaysia TM's market share remained above 95%, indicating that alternative Access Providers are finding it difficult to enter the market. Therefore, Packet One deduced that fixed line telephony market in Malaysia does not show signs of being highly competitive. The high prices and lack of competition could be due to a number of factors, including:

- lack of competition in the market resulting in TM not being under competitive pressure to lower prices;

- lack of suitable wholesale products for alternative providers to compete with TM;

- potential abuse of dominance by TM; and

- high calculated cost of PSTN network in Malaysia.

Packet One considers it is particularly important to introduce fixed number portability in order to lower barriers to consumers seeking to switch voice service providers. In addition, Packet One also proposed that the SKMM undertake a comprehensive assessment of the pros and cons of carrier pre-selection and Wholesale Line Rental Service.

Paycomm is of the view that cost of access and cost to access should be made mandatory to ensure that there is level playing field.

REDtone believes that there is still room to improve pricing of fixed telephony services. Currently, the benefits of discounted calls are limited to the corporate sector.

TIME is of the view that competition in the last mile is yet to take root as TM still commands 97.7% of direct exchange lines, indicating that the policy of managed competition for fixed line services is not effective. In order to enhance competition, TIME proposed legislating local loop unbundling, co-location and interconnection. Also, in order to address the decreasing number of DEL connections each year, TIME proposed that the government carries out tariff rebalancing.

TM submitted that the state of competition in the fixed telephony service is intense as a result of competition from the wireless providers and VoIP services, as evidenced by declining retail prices and fixed telephony revenue. According to TM, the VoIP service providers are not constrained by rate regulation and are flexible and competitive in their service offerings. In addition, competition from wireless services and the resulting fixed to cellular migration is widely acknowledged by most industry analysts. TM provided extract of studies carried out by the EU, Italy, Sweden and United States which supports their case of fixed to wireless substitution. Therefore, TM feels that the relationship between the wireless and fixed telecommunications markets has changed from complementary to substitution. To counter this trend, TM has developed some call plans and packages but they do not have ability to raise prices as a result of the Communications and Multimedia (Rates) Rules 2002.

TM contends that there is no longer a separate fixed telephony market in Malaysia. Instead, they are of the view that the SKMM's analysis should acknowledge the existence of a national voice market.

U Mobile agrees with the SKMM's conclusion that the fixed telephony service has remained competitively unchanged since 2005 and has largely been relegated as an

"enabler" for services such as fixed broadband Internet, VoIP national and international calls.

5.3.1 SKMM final view

The SKMM notes the views of most respondents that the state of competition in the fixed telephony service is not competitive. The SKMM notes the submission from Maxis and the proposed remedies to address the state of competition in this market, and reiterates that the SKMM would be considering the implementation of accounting separation.

Question 4:
Do you consider that there is evidence that VoIP services have become substitutes for more traditional fixed line telephony services?

5.3.2 Comments received

The ASPs, ASTRO, Celcom, Packet One and TM believe that there is some degree of substitution between fixed and VoIP services. DiGi and Maxis on the other hand do not consider VoIP services to be substitutes, while Jaring, Paycomm, TIME and U Mobile are of the view that in future, VoIP services could become substitutes for fixed services. REDtone is the only service provider that holds the view that VoIP services are substitutes to fixed line telephony services.

The ASPs submitted that VoIP players have been actively promoting VoIP services as the alternative to fixed services. However, VoIP services cannot be direct substitutes to fixed line provider due to their inability to compete on equal footing as a result of unfair and inequitable regulatory framework. This has resulted in a situation where the ASPs cannot survive and the value of infrastructure that they had built had declined.

ASTRO is of the view that there is some evidence that VoIP services are substitutes for fixed services as the services are increasingly popular.

Celcom thinks that while there is some degree of substitution between VoIP and fixed services, VoIP cannot be considered a direct substitute because they are dependent on fixed line infrastructure and the voice quality is not the same as fixed services. However, Celcom is of the view that there is some evidence of substitution between VoIP services and the Equal Access Service.

DiGi agrees with the SKMM's views that VoIP services are not considered as substitutes to fixed line telephony services. VoIP services could be substitutes to voice services over broadband as this form of VoIP services are bundled together with broadband service offerings. DiGi also believes that a large proportion of the customer base will continue to subscribe to traditional fixed line telephony services for two reasons: to subscribe to broadband services and security concerns associated with VoIP services.

Jaring considers VoIP to be a future substitute to traditional fixed telephony services once national broadband infrastructure is complete. Currently the full potential of VoIP is yet to be realised as quality of service is still best efforts. VoIP services have only captured the IDD/STD outstation calls market.

Maxis does not consider VoIP services to be substitutes to fixed line telephony services. VoIP services provided over the broadband connection are not a substitute for fixed services, because broadband penetration in Malaysia is significantly lower than fixed. This means that the majority of fixed line customers do not have access to VoIP services offered over broadband. As for VoIP services offered over PSTN, these services cannot be considered as substitutes for fixed services because a PSTN line is used to provide these services. In addition, VoIP services provided over PSTN have lower quality of service and required access services (such as emergency and directory assistance) are not available.

Packet One is of the opinion that VoIP services will not be a total replacement to fixed line services. Packet One believes that there are 4 groups of VoIP services, namely multistage dialling mode, IP to IP without any network, IP to IP with network and IP to IP with extensive network being built. Packet One thinks the use of VoIP in the PI Paper is mainly to denote multistage dialling and IP to IP without any network. Packet One also expressed concern that VoIP is being used currently to describe cheap and sub standard voice service. This has caused confusion and some major operators are using this as an opportunity and are only willing to pay TSoIP termination rates to WiMAX providers. Packet One urged strong regulatory action to ensure the development of WiMAX based services.

Paycomm considers that until Naked DSL services are made available to ASPs and ASPs are allowed to purchase broadband at wholesale level and sell broadband with innovative VoIP/VOB services, VoIP cannot be considered as substitutes to fixed line services.

REDtone believes that market acceptance of both corporate and consumers to VoIP services indicate that VoIP services are substitute for voice communications services over traditional fixed line and vice versa. Also, REDtone believes that the present state

of competition between TM and other service providers indicates that VoIP is already a substitute for traditional fixed line services. Since VoIP service providers are dependent on access to incumbent's network, REDtone believes that vigilant and prudent regulation of access is necessary to ensure competition in the industry.

TIME views that VoIP services could be a potential substitute for traditional PSTN fixed-voice services. However, VoIP services are generally cheaper with enhanced functionality and can benefit both suppliers and users of the service. TIME also pointed out Ovum forecasts that overall fixed voice revenue will decline, while the percentage generated by VoIP will increase. Similarly, Market Clarity research forecasts that Internet based VoIP subscribers will increase from 1.4 million in June 2007 to 4.8 million by June 2011.

TIME considers that in the Malaysian context, the usage of VoIP is comparatively low as the VoIP services are dependent on connection to the PSTN. In addition, VoIP should not be considered merely as a replacement for fixed line services as it is as much a wireless service as a fixed telephony service. In comparison with fixed line services, VoIP cannot offer the same reliability and fundamental services such as emergency services. TIME also highlighted that the same regulatory regime that is applied to fixed network service providers such as universal services contribution should be applied to VoIP providers as well.

TIME further believes that the introduction of Naked DSL will positively affect the growth of VoIP services in Malaysia.

TM asserted that it has lost significant revenues to VoIP, indicating that there is a substitution effect. In addition, TM also quoted a forecast that predicts VoIP revenue to increase from RM905 million in 2008 to RM1.5 billion in 2012, and this revenue is expected to be secured mainly from business and corporate segment. However, TM predicts that in the near future, VoIP revenue will be attacked by mobile operators.

U Mobile believes that VoIP services in Malaysia are still in an early stage in comparison with developed markets such as the United States. In Malaysia, consumers use VoIP primarily as a competitive alternative to IDD services, rather than substitute fixed line telephony services.

Xintel disputes the premise that VoIP is a growing technology and argues that it has undergone rapid decline in take-up due to the TM Smart Calls product. These arguments are specifically made in relation to the proposed Wholesale Line Rental Service in section 5.5.4 below.

5.3.3 SKMM final view

The SKMM's view is that VoIP services in Malaysia are complementary in nature for fixed services, rather than demand side substitutes. This is because the technical characteristics of VoIP remain distinguishable from fixed voice telephony, including service quality. However the dynamic nature of developments in VoIP growth and accessibility means that this position is unlikely to remain static.

Further, VoIP is only a calling technology and not an access technology. In order to provide VoIP, an access line is still required into the premises and TM dominates the provision of access lines.

In any event, it appears that the state of competition in the fixed line services market appears largely unchanged, and TM continues to have strong market share at the wholesale level, although some retail pricing pressures have been evident with the increasing uptake of VoIP.

5.4 Existing Access List Services

5.4.1 Fixed Network Origination and Termination Services

(a) Transit services

Question 5:

(a) The SKMM seeks views on whether there is a distortion in the current service description, and whether the fixed network termination service should be amended to restrict its applicability to termination to end users only and exclude transit.

(b) What would be the likely implications of such a limitation?

DiGi, Maxis, TIME, TM and U Mobile are supportive of the view to limit the application of termination services to end users only. Celcom is of the view that current definition only applies to end users and therefore, does not include transit services. The ASPs, Packet One, Paycomm and REDtone are of the view that transit services should be included in the Access List.

The ASPs believe that by restricting fixed network termination to end users only and excluding transit the result will be a monopoly in the service, which will eventually lead to higher termination costs.

Celcom pointed out that the SKMM should not link the term "customer equipment" to the definition of "Customer" (with capital "C") as the term is used in other service descriptions. Instead, the SKMM should refer to the CMA for the definition of customer equipment. As such they are of the view that customer in this context refers to end users. Nevertheless, Celcom is agreeable to the proposed amendment by the SKMM to the term "B party".

DiGi asserts that the transit arrangements do not satisfy the bottleneck test as it is offered by various providers. Hence, they are of the view that commercial arrangements are sufficient.

Jaring proposes to retain the current service description of Fixed Network Terminations service, which covers transit service. The description of the service should not be limited to end users, as this will mean that transit services are excluded.

Maxis believes that exclusion of transit is an appropriate response, given the potential for arbitrage by pure transit access seekers. In addition, Maxis agrees with the SKMM that transit is not a bottleneck service and that the exclusion of this service is unlikely to adversely affect competition in Malaysia and would not be against the LTBE.

Packet One thinks that regulation of transit arrangements will assist new entrants to offer their customers a full range of services, and help to optimise the network which has been built but not fully utilised. Therefore, Packet One proposes that transit services be included on the Access List as it will simplify the application process and obviate the need to obtain consent from each individual interconnected operator to agree to such arrangement.

Paycomm believes that since transit allows for arbitrage and encourages better value offerings to end users, no limitations should be imposed on this service.

REDtone does not see any reason to restrict Fixed Network Termination Service to apply only to termination to end users. Such a move will only serve to reverse the present trend and enable the incumbent operator to further capitalise on its virtual monopoly in the fixed line services market.

TIME agrees that the Fixed Network Termination Service is a bottleneck, while transit is not. TIME supports the exclusion of transit in the service description. As for transit services in the form of conveyance, most major providers have established interconnection with one another and produce transit services within their own. However, for smaller players with relatively low traffic volumes it will not be profitable to do the same. With regards to transit services in the form of conveyance from a second to third operator, the underlying infrastructure is the same. However, direct conveyance will entail significant cost. Also the traffic base between providers between most cases may be too small for there to be a financial basis for establishing such direct connections. On this basis, TIME's view is that there is little basis for establishing infrastructure-based competition in the transit market.

TM considers that there is a distortion in the service description of the Fixed Network Termination Service. Based on the definition, customer equipment can reside in any network hence; this service has been interpreted to include transit. To overcome this, TM proposed as follows:

> "Fixed Network Termination Service is an Interconnection service provided by means of a Fixed Network for the carriage of Call Communications from ***POI to customer equipment within the network where the Access Seeker seeks to terminate its call communication".***

TM does not support the inclusion of transit services on the Access List and believes that commercial negotiation should be the approach to be adopted. TM pointed out that if transit services are included, it will be difficult to determine costing for fixed or mobile termination service and dimensioning of interconnect capacity. Also, there will be impact on quality of service and risk of exposure.

TM also believes that the impact of this limitation is minimal because there is little requirement for transit. TM highlighted that if there is such a requirement, it could be provided through commercial negotiations.

U Mobile interprets the service description to include the termination of call communications not only originated from Access Seeker's network but also from another licensed network operator's network. Such termination should be included as new entrants may not be able to obtain access in a timely manner from a fixed operator. However, a transit service provided by the Access Seeker need not be regulated as there are multiple suppliers for this service. A limitation imposed on termination of transit would enable the Access Provider to deny access by giving reasons of technical difficulty and insufficient capacity.

Question 6:

Do you agree with the SKMM's preliminary view that freephone 1800, tollfree 1300 and other similar services should be available from public payphones?

(b) Access to public payphone

The ASPs, Celcom, DiGi, Jaring, Packet One, Paycomm and TM agree with the SKMM that freephone, tollfree 1300 and other similar services should be made available from public payphones. On the other hand, Maxis and TIME are of the view that the Fixed Network Origination Service should not be made available from public payphones.

The ASPs believe that public payphone services should offer affordable communication services to low income groups who cannot afford telephony services and international tourists. If freephone 1800 and tollfree 1300 are not available from public payphones, these groups of users are discriminated against.

DiGi thinks that to support any-to-any connectivity, access to 1800 and 1300 should be open from the public payphones. However, DiGi cautioned that commercial issues such as retail and wholesale charges for these services must be resolved. DiGi also believes that there could be potential fraudulent action if customers are able to make free calls to these services.

Maxis does not think that the Fixed Network Origination Service should be applicable to public payphones. Maxis believes that with the continued growth of mobile phones, payphones are becoming less relevant and submitted statistics compiled by the SKMM to support its claim. Also, Maxis cited the example of ACCC in Australia, where origination over public payphones is not a declared service.

Packet One is supportive of the move to provide customers to dial free phone 1800 or toll free 1300 from payphones. However, Packet One explained that this has been disabled due to concerns of fraudulent activities. In addition, since payphone operators do not have their own numbers, they cannot gain revenue from customers for such calls.

Paycomm is of the opinion that it would be in the LTBE for freephone and tollfree services to be made available from public payphones, provided that the infrastructure can seamlessly manage this. In the event that the existing infrastructure is unable to manage this, it submits that the network needs to be upgraded and some cost of this upgrade must be borne by the SKMM. Paycomm also believes that public payphone

need be subsidised and there is continuous decline in revenues from payphone. Alternatively, payphones should be under the USP.

REDtone is of the opinion that the availability of freephone 1800 and tollfree 1300 and other similar services should be made available from public payphones as this will benefit end users, especially those on lower incomes. In addition, REDtone proposes that the SKMM should regulate pricing of these services.

TM supports the proposal that freephone 1800, tollfree 1300 and other similar services should be available from payphones, provided that issues pertaining to access pricing are successfully resolved. TM pointed out that there could be benefits in making tollfree services accessible nationwide such as increased convenience for foreign tourists, cheaper access charges compared to mobile service, and alternative access for mobile roaming users.

However, based on following legal issues, TM is of the view that the Access List cannot be used to achieve the SKMM's stated objective:

- Under section 145 of the CMA, the obligation to provide access only applies to network facilities, network services and other facilities and services that facilitate the provision of network services or application services, including content applications services. In addition, the definition of network facilities under the CMA provides that "….it does not include customer equipment". TM is of the view that payphones may be defined as "customer equipment" even if owned and operated under applications service provider class licence.

- Providers of public payphones are ASPs and the access obligations do not apply to them.

- The definition of "public payphone services" under regulation 2 of the Communications and Multimedia (Licensing) Regulations 2000 excludes these types of calls from the scope of the public payphone services, because the payment is made by the called party.

TIME believes that payphones should not be subject to fixed network origination service. TIME quoted REG-T-004 which states that any caller shall be able to access and use freephone or tollfree of any licensed network operator which that caller is directly connected to and any other operator. Since payphone companies do not have direct point of interconnection or any numbers assigned, they should be exempted. TIME pointed out that the current payphones do not have features to accommodate free calls.

In addition, payphones are highly exposed to fraud activities. If the SKMM sustains its preliminary views, TIME proposed that REG-T-004 be amended to allow payphone operators to charge a surcharge to customers for each call and to allow the phone operator to recover its cost of upgrading the payphone.

Question 7:
The SKMM seeks views on whether the Fixed Network Origination Service and Fixed Network Termination Service, as amended should be retained on the Access List.

There was general agreement from all submissions to retain Fixed Network Origination and Termination services in the Access List. The ASPs, Jaring, Paycomm and U Mobile are of the view that this is due to the monopolistic nature of the services, which are dominated by TM.

Celcom thinks retaining Fixed Network Origination and Fixed Network Termination services would continue to be in the LTBE as these services exhibit bottleneck characteristics. Celcom also agrees with the amendment on the interpretation of Call Communication.

DiGi is of the view that Fixed Network Origination and Termination services meet the LTBE and bottleneck test. DiGi also thinks that the amendment to the definition to include NGN is timely. However, DiGi is concerned about the voice calls of customers who subscribe to HSBB services who may be using PSTN numbers. DiGi urged the SKMM to consider number portability between PSTN and VoIP.

Maxis believes that the Fixed Network Origination and Fixed Network Termination Services should be retained in the Access List, but disagrees with the amendment proposed by the SKMM to include calls originated from 7 or 8 digit access. Maxis explained that the VoIP operators have currently migrated to 1800 numbers and allowing 7 or 8 digit access would result in significant operational and billing issues. Maxis also proposed inclusion of directory and emergency services in the scope of fixed network termination services as they consider these services to be bottleneck.

Packet One expressed strong support to retain Fixed Network Origination and Termination services in the Access List as these services are being provided by a monopoly incumbent. However, Packet One expressed concern with the charging of the Fixed Network Origination Service using 7 or 8 digit access for provisioning of multistage dialling VoIP services, because the service provider is collecting retail charges from customers as well as origination charges.

Paycomm considers that ASPs should not be required to pay any additional charges for call termination. This is on the basis that local call costs for ASPs should be reflected in nothing more than a token E1 line rental charge.

REDtone agrees to the amendment to ensure clarity and consistency, its future application in VoIP services and NGN networks.

TM considers both services should be retained on Access List as they are vital elements in supporting any-to-any connectivity.

TIME proposed that Fixed Network Origination Service, Fixed Network Termination Service, Mobile Network Origination Service and Mobile Network Termination Service should be collapsed into the generic categories proposed by the SKMM.

5.4.2 SKMM final view

The SKMM's final view is to retain the Fixed Network Origination and Termination Services on the Access List, based on the application of the LTBE test. These remain bottleneck services which have not been sufficiently exposed to competitive pressures by VoIP in a manner that would justify its deregulation.

Having considered the submissions on the issues of transit, the SKMM notes that there is a general consensus that the transit segment is competitive. The SKMM does not consider that refraining from regulation would compromise the LTBE.

In addition, the SKMM notes that the mandate of the Fixed Network Origination Service to payphones involves other issues such as the need to revisit the B-party charging model and potential fraud issues, as well as the anticipated cost of upgrading every payphone to enable Fixed Network Origination to be available. However as a fixed line service that falls within the scope of the Access List service, and in the absence of an exemption, there appears to be no sound rationale in a purely literal sense for payphones to be excluded from the ambit of the access obligation.

In relation to TIME's submission on REG-T-004, the SKMM clarifies that the relevant paragraphs referred to by TIME have been revoked by the Numbering and Electronic Addressing Plan (**NEAP**) under Table 4.3 in paragraph 4.3.1.

The SKMM has also considered TM's views on whether the Access List can be used to provide Fixed Network Origination Service from payphones. The SKMM concludes that standard access obligations set out in section 149 of the CMA can facilitate the provision

of calls from payphones to freephone 1800 numbers and the definition of "public payphone service" in the Licensing Regulations does not prohibit an ASP from enabling calls to be made to freephone 1800 numbers.

The access arrangement for the access service would be between the NSPs enabling interconnectivity. The obligation to provide the Fixed Network Origination Service would apply to the NSP enabling interconnectivity for the public payphone services. The issue raised by TM is that an operator of a "public payphone service" is an ASP, not an NFP or an NSP (and hence not an Access Provider under section 145 of the CMA) should therefore not arise with respect to the access arrangement for this service.

TM's concern appears to be that because of the definition of "public payphone service" in regulation 2 of the Licensing Regulations, ASPs are precluded or prohibited from allowing/enabling calls to be made from their payphones to freephone 1800 numbers. The SKMM's view is that an ASP providing public payphone service is not precluded or prohibited by the definition in the Licensing Regulations from allowing/enabling calls to be made from their payphones to freephone 1800 numbers.

In simple terms, the service description explains the service which is licensable - i.e. a service that the general public has access to and for which payment has to be made.

Despite having considered all these factors, the SKMM has weighed up the costs and benefits of specifying that the Fixed Network Origination Service must be provided from payphones, and concludes that the costs involved could not be justified, particularly considering that there are alternatives to the retail service that could be chosen by end users. The SKMM concludes that the LTBE will not be compromised by refraining from regulatory intervention on this issue.

5.4.3 Equal Access (PSTN) Service

Question 8: What will be the likely impact, including to the end users, in the event that Equal Access (PSTN) Service is removed from the Access List?

5.4.4 Comments received

Celcom, TIME, TM and U Mobile support the removal of Equal Access Service from the Access List. On the other hand, DiGi, Maxis and Paycomm proposed to retain Equal

Access on the Access List. Jaring and Packet One proposed that a study be carried out to identify the root cause for failure of Equal Access in Malaysia.

Celcom believes that there will have no significant impact as the objective of regulating Equal Access has been achieved by VoIP services.

DiGi believes that Equal Access could provide an important complement to the proposed Wholesale Line Rental Service, as this would allow Access Seekers to route their own traffic instead of relying on TM and reselling TM's traffic. Therefore, they believe that Equal Access will be an important method of access if services such as Wholesale Line Rental Service are implemented.

Jaring and Packet One proposed that a study be carried out to identify the root cause for failure of Equal Access in Malaysia.

In addition, Packet One also stated disagreement with the SKMM's statement that finite costs and other resources would be better utilised by implementing other competitive initiatives such as mobile number portability. Packet One strongly advocated the implementation of Fixed Number Portability (FNP) and this proposal was supported by their study on implementation of FNP in other countries such as United Kingdom, the EU, Australia, Mexico, Brazil and Singapore. Their study indicates that FNP is generally beneficial to competition.

According to Maxis, it is inappropriate to remove access regulation in this market as this will exacerbate the monopolistic characteristics. Maxis also pointed out that there are a small number of subscribers who rely on this service. In addition, Maxis also believes that carrier pre-selection should be implemented in Malaysia, particularly in light of the SKMM's proposal to include wholesale line rental service in the Access List.

Paycomm believes that all end users must have the freedom to choose service providers for any calls. Up to now, the means to do so have been inconvenient and this has limited the adoption of equal access. It points to its own product which enables end users to make their choice of service provider by a mechanism which works by inserting their choice of card.

TIME believes that the market is competitive and the presence of VoIP players have driven long distance and international call rates down for the benefit of end users. As a result, Equal Access does not appear to promote LTBE and hence, we recommend that Equal Access be removed from the Access List.

TM thinks the impact of removing Equal Access from the Access List will be negligible. TM submitted that there has been little activity in this market and this service has been superseded by VoIP technology. Also, the removal of this service would result in increased network utilisation which is currently between 0 to 1.5 percent depending on the operator.

U Mobile supports the removal of Equal Access as the service is currently not in use.

5.4.5 SKMM final view

Having considered the conflicting views on this service, the SKMM firstly notes that the PI Report on Access List in 2005 concluded that it was premature to remove Equal Access from the Access List. The SKMM noted then that TM's willingness to offer the service on a non-regulated basis was not conclusive. One of the main respondents in support of its retention in that case was TIME, which now considers that a regulated Equal Access service is no longer necessary.

The SKMM was also influenced by the desire to maintain end user choice through the availability of Equal Access. However it is now apparent that the level of end user reliance on this service is negligible. The SKMM's final view is that Equal Access be removed from the Access List, consistent with proportionate regulatory reasoning. Whilst this service could have served a useful purpose to facilitate choice of operator in the early stages of liberalisation, its declining use and the take up of VoIP (even if not a perfect substitute) provide alternative end user options.

Further, submissions have included reference to alternatives that have been developed to provide choice of provider. It is therefore evident that innovative mechanisms have emerged that preserve the end user option to choose their provider for calls.

The SKMM notes the views expressed that the provision of Equal Access will be necessary to ensure that Wholesale Line Rental Service occurs. The SKMM's understanding of this concern is that in the absence of carrier pre-selection or other carrier code access such as through the Equal Access service, the effectiveness of Wholesale Line Rental Service may be compromised if long distance calls are not as easily able to be bundled into the service offering. The SKMM raised this very point in the PI Paper. However, the removal of Equal Access could be immaterial because a Wholesale Line Rental Service retail offering is also likely to include a voice over broadband service. The SKMM therefore does not consider the removal of Equal Access to be fatal to the potential success of Wholesale Line Rental Service.

5.4.6 Internet Access Call Origination Service

Question 9:

(a) What will be the likely impact of removal of the Internet Access Call Origination Service from the Access List?

(b) Specifically, what will be the impact on marginal subscribers in Malaysia?

5.4.7 Comments received

Celcom, DiGi, Maxis, TIME and TM supported the removal of Internet Access Call Origination, while Jaring, Paycomm, REDtone and U Mobile proposed to retain this service. Packet One noted that the removal of this service may affect dial up users but pointed out that there are other options available such as WiMAX.

Celcom agrees that this service is redundant and should be removed from the Access List. With the increase of broadband penetration, access to dial-up Internet traffic is likely to decline. Celcom believes that there will be no significant impact of removing this service as the focus of Internet users has shifted towards broadband. It considers that even marginal subscribers are unlikely to be affected by its removal.

DiGi supports removal of this service as the dial-up technology is becoming obsolete and consumers opt for faster speed methods in accessing Internet. In addition, DiGi noted that even now, terms and conditions and prices are being implemented on a commercial basis.

Jaring does not recommend the removal of this service from the Access List because there are still dial-up customers who use retail services for which this service is an input. If the service is removed from the Access List, Jaring is concerned that marginal subscribers will not have any other option for Internet access.

Maxis supports the proposal to remove Internet Access Call Origination from the Access List as this service is effectively redundant. Maxis also believes that there would not be a major impact of removing this service as dial-up users use alternative techniques to access dial up traffic. Besides, Maxis believes that new investments by WiMAX operators will result in competitive offerings of wireless Internet services that are targeted to replace dial-up services. In addition, most operators using this service such as Jaring have been negotiating on a commercial basis.

Packet One foresee that the removal of this service will affect dial-up users. However, with introduction of new technologies such as WiMAX, customers have options to migrate their dial-up facility to broadband services.

Paycomm believes that this is a bottleneck service and the impact of removing it from the Access List could result in increase of prices or imposition of other barriers to entry.

REDtone is concerned that removal of Internet Access Call Origination Service will limit their options in future as the ASPs are looking into offering a viable competitive value added product to end users. In addition, REDtone believes that this service could be used in tandem with Wholesale Line Rental.

TM supports removing this service from the Access List as the service is not widely used. In addition, traffic minutes for dial-up has been declining and being replaced by broadband services. TM also believes that the impact of removing this service will be minimal as Jaring is the only Access Seeker for this service.

TIME noted that although dial up Internet is on a declining trend, there are still some subscribers to this service, particularly in the rural and underserved areas. Therefore, TIME believes that this service should be regulated. Otherwise, the negotiated price between operators could be higher.

U Mobile believes that this service should be retained, considering the dominant position of TM in the PSTN market.

5.4.8 SKMM final view

The SKMM's overarching concern when considering removal of the Internet Access Call Origination Service from the Access List was the potential impact on marginal subscribers. The question for the SKMM was whether in the absence of regulation, this service would continue to be offered as an input to a dial-up Internet access service for end users.

The SKMM has considered 3 issues in its decision now to remove the Internet Access Call Origination Service from the Access List. Firstly, it appears that the service is available on a commercial basis; hence one of the SKMM's primary concerns now appears unwarranted.

Secondly, the alternatives to dial-up Internet access are becoming more prevalent as new technologies such as WiMAX gain greater acceptance now that commercial launches

are occurring. The SKMM is also mindful that the interests of Malaysians with respect to Internet connectivity are the subject of heavy investment by the Government of Malaysia and operators. As a regulator, the SKMM considers that it has a role to play in the development of innovation, even if it is through a relatively minor decision to cease regulation of what appears to be a redundant service. The alternative, to continue regulation, is more likely to be inconsistent with the broad policy initiatives now being realised with respect to broadband.

Thirdly, the SKMM did not receive any compelling evidence of the detrimental impact that deregulation of this service would cause to end users. Although some respondents expressed concern, the degree of predicted harm was not persuasive or supported by evidence.

5.5 Potential Access List amendments

5.5.1 VoIP PRI-ISDN Service

Question 10: The SKMM seeks comments on the precise nature of any difficulties currently experienced in acquiring PRI ISDN service, and any proposed solution to resolve the difficulties.

The ASPs highlighted that the VoIP operators are facing difficulties in 2 areas. The first issue is the lack of capacity and long delivery timeframe and the second issue is about QoS and pricing. The ASPs proposed that the SKMM mandates availability of PRI ISDN and QoS within a certain timeframe. They also urged the SKMM to ensure that the pricing of the PRI ISDN line is similar to fixed line retail pricing offerings such as Smart Call.

ASTRO submitted that ISDN, PRI or BRI is not being maintained well by TM. However, ASTRO admitted that ISDN services are not easy to maintain as the software used tends to be unstable, causing it not to respond to commands especially when dial request is initiated. Hence, there is a reason to migrate ISDN services to DSL/SDSL, enabling easier maintenance for the future.

From the perspective of Access Providers, Maxis highlighted the difficulties faced in providing customers with PRI ISDN services in the last mile such as cabling the development, installing equipment and accessing the site to individual tenant/offices for installation and subsequent maintenance and upgrade work. In addition, Maxis has to

negotiate with large number of organisations in order to reach the customers premises. As a result, it is expensive for customers to obtain service.

Packet One supports the inclusion of PRI ISDN service in the Access List as this will create a competitive environment and all ASPs will be able compete on the same level playing field with TM retail. In addition, the complaints of high prices for these services will be minimised as the Commission will be able to regulate the price of this service in the MS (Pricing).

Paycomm highlighted that the biggest problem in acquiring this service is high cost and proposed that the call origination cost be mandated.

TIME believes that the problem faced by VoIP providers is not about acquiring PRI ISDN service, but rather about QoS and pricing. Service providers have provided SLAs to the VoIP providers to overcome the issue pertaining to QoS, and the only remaining issue is the pricing of the Fixed Network Origination Service. In addition, TIME pointed out that PRI ISDN will become obsolete when the NGN is fully rolled out.

TM stated that while there is still some remaining demand for this service, it faces difficulties in supply of the service due the fact that the technology is obsolete. TM has already made available alternative product offerings, in the form of leased line services to meet the needs of these customers. TM submits that since ISDN PRI is a legacy technology, access regulation is not warranted because the current 1800 arrangements are adequate. TM cited IDC forecasting which states that the total market value of ISDN was expected to decline. This decline wis due to the migration of enterprise demand to greater bandwidth for IP-enabled data services.

REDtone declared that acquiring PRI ISDN services is a major problem, both technically and commercially. REDtone believes that PRI ISDN will continue to play an important role in provisioning alternative services by VoIP operators. They urged the SKMM to ensure fair and reliable access to end users for VoIP until such time when alternative technology is made available. REDtone also stated that the basic QoS SLA published by the SKMM is the bare minimum service level on PRI ISDN and to provide the basic QoS, TM has raised its rental and charges to VoIP operators, which forced most VoIP operators to remain on non QoS PRI ISDN. TM had explained that the QoS set by the SKMM will entail a significant cost increase. The VoIP operators also continue to face issues on availability of PRI ISDN services, which takes about 2 to 6 months. Based on these issues, REDtone proposed that the SKMM issue a clear direction that there should be no increase in cost for providing basic level SLA. REDtone also proposed that the SKMM determine the price of PRI ISDN.

Question 11:

(a) The SKMM seeks comments on including a PRI ISDN service via freephone 1800 and 7 or 8 digit numbers on the Access List?

(b) The SKMM seeks comments on whether regulation via the Access List will resolve the problems arising from the operation of this service in its current form?

5.5.2 Comments received

The ASPs are of the view that freephone or 7 or 8 digit local access should be included in the Access List and it should be up to customers to decide on the local access number. From experience, they believe that the 7 or 8 digit access is more reliable compared to freephone. In addition, the ASPs believe that the Access List will help VoIP operators to gain access to PRI ISDN with defined QoS and within a specified timeframe. They reiterated that the pricing of the PRI line should be based on fixed line retail pricing offers such as Smart Call.

Celcom strongly opposes the inclusion of VoIP PRI ISDN service via freephone 1800 and 7 or 8 digit access as there is no strong justification for the SKMM to do so. Celcom is of the view that the ASPs grievances over the price of Smart Call can be resolved under the anti-competitive provisions. On the QoS issues, TM and other operators have submitted draft SLAs and the SKMM agreed with the proposed terms and conditions. Also, the ASPs complaint regarding delay of service was an isolated case.

Celcom is of the view that the description proposed by the SKMM is confusing. The description suggests that the ASPs need to obtain access for origination service. However, this should not be the case as the freephone service is on another network not owned by the ASPs. Celcom believes that currently, there is no access issue and ASPs are able to acquire this service from different operators. Therefore, there is no issue of bottleneck.

DiGi believes that including this service in the Access List will assist the ASPs. While DiGi believes that the regulation will resolve some problems, but the detailed terms and conditions, including the pricing will still be the key factors that facilitate the ASPs in their business.

Maxis thinks it is unnecessary to include PRI ISDN Service via freephone 1800 and 7 or 8 digit in the Access List as there is no problem in offering this service on a commercial basis. In addition, with the development of NGN this service will become redundant.

Packet One is concerned about charging of Fixed Network Origination Service for the use of 7 or 8 digit access to VoIP services. They pointed out that it is difficult to ensure that the service provider is not charging both the retail customer the local access charge and the Access Seeker for using 7 or 8 digit numbers. They cautioned the SKMM to control this charging mechanism as retail customers may not realise that they are being charged local call charges.

Paycomm pointed out that freephone 1800 and 7 or 8 digit access are fundamentally different. End users use freephone for customer support numbers and need not pay for the services. On the other hand, end users exercise choice when they use 7 or 8 digit access and pay for the service.

REDtone believes that the bundled freephone 1800 and its associated PRI ISDN must be considered as a single service and this method of access will remain the sole means of access for VoIP operators for the foreseeable future. In addition, REDtone also proposed that TSoIP service (015) be permitted to be tagged onto a PRI ISDN service as an access method as this will mitigate the lack of availability of freephone 1800 services from TM and other service providers. In addition, REDtone submitted that the regulation must seek to resolve pricing, availability and QoS issues of PRI ISDN services and must serve to provide VoIP operators a fair and equal access to the voice market.

TIME is of the opinion that it is not necessary for PRI ISDN service via Freephone 1800 and 7 or 8 digit numbers to be on the Access List. TIME believes that the main issue is still access pricing for the Fixed Network Origination Service, whether by freephone 1800 or 7 or 8 digit access. Further TIME believes that fixed network operator will benefit by usage of 7 or 8 digit numbers as they will be charging their customers retail rates for local call charges and also collecting termination charges from the Access Seeker. Also, use of 7 or 8 digit numbers may lead to disputes because the billing system recognises 7 or 8 digit numbers as termination services. They proposed that if the fixed network operator charges their customers' local retail charges, then the Access Seeker should be allowed to charge the Access Provider fixed termination charges.

TM is of the view that if VoIP services via 7 or 8 digit PSTN numbers are regulated, it will continue to be difficult for TM to differentiate between normal calls and VoIP calls. As a result, the QoS of both normal calls and VoIP calls may be affected. For this reason, TM prefers the use of 1800 numbers. However, TM believes that the real issue is a charging principle and not a numbering issue.

TM believes that regulation via Access List will only partially resolve the issues complained about by ASPs, particularly if the SKMM proposes the option of using 7 or 8 digit access as part of the regulated service description.

TM also disagrees with the proposed definition as they do not consider this to be an interconnect service. TM pointed out that ISDN differs significantly from interconnect: there are retail prices available for line rentals and calls, and TM does not pay to terminate calls on the private networks typically connected to its network using ISDN. Also, there is no international precedent for determining such a service. TM is of the view that current Fixed or Mobile Network Origination should be sufficient to address VoIP needs.

5.5.3 SKMM final view

It is clear to the SKMM that some form of regulatory intervention is necessary to resolve a serious issue being faced by a particular segment of the industry. However, the SKMM has been engaging the ASPs on these issues including the use of 7/8 digit numbers, QoS, SLAs and pricing. Those developments are occurring outside the access regime.

Considering the comments raised in response to the PI Paper, the SKMM notes that the technology that would be used to provide the service is effectively obsolete. The SKMM notes TM's comments that ISDN is a legacy technology which is declining in use in favour of IP-enabled data services, with current users migrating to such new technologies. The service continues to be used by a very limited group.

Instead of multi-stage dialling VoIP services that is currently utilised by the VoIP operators based on legacy technology, the SKMM encourages the operators to move up the ladder of investment. In this, the operators should consider providing Voice over broadband services utilising other inputs such as Bitstream Service, Digital Subscriber Line Resale Service or HSBB Network Service with QoS or without QoS. These services are currently regulated and are capable of providing more value-added services for the benefit of the end users. Alternatively, the VoIP operators can also acquire Wholesale Line Rental Service in addition to those services mentioned above and provide value for the end users.

The SKMM also takes a forward-looking approach to access regulation. It considers that imposing regulation on this service does not represent a long term view in addressing access issues. The SKMM has therefore decided not to include the service on the Access List, on the basis that other initiatives are addressing the issues relevant to the use of freephone 1800 and 7/8 digit numbers.

Finally, the SKMM notes the submission from REDtone suggesting that 015 numbering range be used for the PRI ISDN service as an access method. The SKMM clarifies that the Fixed Network Origination Service and Mobile Network Origination Service is related to freephone 1800 and tollfree 1300 services. It does not include the 0154 numbering range.

5.5.4 Wholesale Line Rental Service

Question 12:

(a) The SKMM seeks comments on whether wholesale line rental should be regulated in Malaysia.

(b) If so, would you acquire it and for what purpose?

(c) Have you attempted to commercially negotiate access to a wholesale line rental service?

(d) What are the factors that are considered a prerequisite in acquiring a wholesale line rental service?

5.5.5 Comments received

The ASPs strongly support regulation of Wholesale Line Rental Service as they consider this will encourage competition, lead to a more dynamic fixed market, enable maximum usage of unused copper lines and will increase employment opportunities or entrepreneurship. With Wholesale Line Rental Service, the ASPs state they will offer complementary services and innovative services and possibly bundle Wholesale Line Rental Service with other services. In short, they believe that it will broaden the infrastructure market.

The ASPs have negotiated with a service provider for this service and the main challenges that they have faced are limited coverage, cost structure and agreement on service levels. According to the ASPs, the prerequisite in acquiring this service is pricing based on retail minus and tied to current competitive retail rate such as TM Smart Call plan, defined SLA and scope of responsibilities in the Access List.

ASTRO thinks Wholesale Line Rental Service should be regulated as it will encourage competition and create opportunities for creative bundling.

Celcom believes that Wholesale Line Rental Service can potentially increase retail competition in the fixed market, but cautioned that regulation should only be put in place if commercial negotiation from Access Seekers does not result in a WLR product. Celcom also stated that it not a norm for mobile operators to seek access to Wholesale Line Rental Service, but nevertheless, the service should be made available. A prerequisite for acquiring the service should include the price of the product, which is generally based on retail minus and single billing.

DiGi thinks that Wholesale Line Rental Service will provide an opportunity to open up the fixed telephony market and encourage competition. Therefore, they proposed regulation of the service. DiGi believes that Access Seekers may find it attractive to enter the market and compete with TM. In addition, Access Seekers will also be able to bundle the service with existing services, including mobile and broadband services such as WiFi access. However, they believe that the success of the service will depend on availability of detailed terms and conditions and prices. DiGi has not entered into commercial negotiation for this service. According to DiGi, the prerequisites for this service are sufficient regulation to ensure non-discriminatory access, which includes the following:

- Number portability –end users should be able to transfer their PSTN number to the Access Seeker;

- Restoration times and service levels – the end user should be treated equally to TM's own customers in terms of service restoration and installation; and

- Value added services – TM must enable the Access Seeker to offer services such as Caller Line Identification and other value added services.

Jaring proposed that Wholesale Line Rental Service be regulated to give ISPs the opportunity to leverage on the fixed telephone line. According to Jaring, there have been attempts on their part to negotiate on pricing. Factors that are considered prerequisites are transparent pricing, committed availability, delivery and maintenance of lines and unrestricted usage of the line.

Due to the lack of competition in the fixed line services market, Maxis supports the introduction of Wholesale Line Rental Service in Malaysia. Otherwise, it believes that it will entrench TM's near complete monopoly in this market. In addition to Wholesale Line Rental Service, Maxis also proposed the introduction of carrier pre-selection. Maxis submitted evidence from international jurisdictions, particularly in the EU where a combination of Wholesale Line Rental Service and carrier pre-selection is available.

Maxis submitted that there are also international benchmarks on cost recovery for Wholesale Line Rental Service and carrier pre-selection.

Maxis stated that Wholesale Line Rental Service can be used to offer fixed voice access and call services to end users. In particular, it could be used to provide a full suite of corporate telephony and communication services without the use of cumbersome auto diallers. For residential customers, the service can be used to provide a full telephone service without the need for customers to pay two bills, one for line rental to TM and another for calls to Maxis.

Maxis has not attempted to commercially negotiate access to a Wholesale Line Rental Service as they believe that it is highly unlikely that TM will offer this service under reasonable terms.

Maxis thinks that carrier pre selection is a prerequisite to the introduction of Wholesale Line Rental Service. Without carrier pre selection, Maxis does not think that it will be possible to offer a competitive, high fixed voice service that can compete with that of the incumbent operator. Maxis pointed out that pricing is also crucial.

Packet One is of the view that Wholesale Line Rental Service is one way to open up the fixed services market that is currently monopolized and will promote innovative retail service offerings. Packet One agrees with the SKMM that pricing is the key in ensuring the take up of the service and that retail minus basis is the appropriate method. Packet One also believes that standard conditions should be set out in the description of the service to ensure a competitive offering.

Paycomm is of the opinion that it is mandatory to have transparent wholesale line rental. Paycomm stated that they were unsuccessful in negotiating for this service commercially. Paycomm also submitted that the prerequisite for acquiring wholesale line rental is fair pricing and guaranteed service levels.

REDtone proposes that Wholesale Line Rental Service be regulated as this will encourage innovation and will optimise the use of existing infrastructure. In addition, regulation on access and pricing should ensure that the retail pricing is not below the wholesale pricing as this will negate any gains from regulation of Wholesale Line Rental Service. They proposed that the pricing be based on retail-minus and include analogue PSTN, ISDN 30 and Digital Access. REDtone believes that they will acquire this service for provision of value added services, with or without ADSL and content services. REDtone is yet to negotiate this service on a commercial basis as the service is not being offered by TM.

TIME is of the view that while Wholesale Line Rental Service will bring development of competition in the retail fixed market, in the absence of carrier pre-selection and local call resale service, they propose that the service is not regulated. Besides, when fixed networks are migrated to NGN, the service will become obsolete.

TIME believes that they could acquire the service from TM at wholesale prices and offer these services to their clients at a reduced cost under their own brand name. In addition, TIME could also provide first line customer service and a single bill, while TM will continue to provide maintenance backup. To date, TIME has commercially negotiated Wholesale Line Rental Service with a service provider. According to TIME, the prerequisite for acquiring the service is carrier pre-selection.

TM disagreed with the SKMM's proposal to regulate Wholesale Line Rental Service for the following reasons:

- Wholesale Line Rental Service has been superseded by HSBB initiatives. Since Wholesale Line Rental Service is only confined to the non-HSBB network, this may result in competitors to invest in stranded assets. Although they agree that Wholesale Line Rental Service may encourage competition in PSTN market, it is only for a finite period and in a shrinking market where call volume and revenues are falling.

- Regulating Wholesale Line Rental Service would significantly reduce incentives for investment in the infrastructure for both TM and new entrants. Wholesale Line Rental Service will discourage infrastructure based entry models, while for TM it will reduce incentives to invest in fixed line infrastructure.

- Pure resale is unlike to generate a viable long term business and it is going to be a challenge to get access pricing right.

- High implementation cost could outweigh the competition benefits of implementing Wholesale Line Rental Service. Based on studies carried out in other countries, it is estimated that the cost of implementing Wholesale Line Rental Service could be as high €23 (RM109) per line.

- Fixed line services are already subject to retail price control and are arguably below the full cost. Regulating Wholesale Line Rental Service will make fixed line services even more uneconomic.

TM is also of the view that the definition proposed by the SKMM is ambiguous and uncertain, as many Access Seekers could inadvertently fall within the scope of the definition.

Xintel believes that Wholesale Line Rental Service would be a good alternative for VoIP providers and will enable them to compete on retail pricing with TM's Smart Call product. Xintel considers that Wholesale Line Rental Service would not be made available in the absence of the service being regulated and stated that if the service was made available, it would be interested in using it as an input to provide retail services in a similar manner to its utilisation in the UK and Australia.

5.5.6 SKMM final view

Most of the submissions in favour of a regulated Wholesale Line Rental Service conclude that in order to be viable, it must be offered on a regulated basis. The SKMM's view is that regulation needs to be forward-looking. Wholesale Line Rental Service has been a critical driver in other countries. The SKMM also supports the approach of regulatory intervention being on an unbundled basis, as in the case of Wholesale Line Rental Service. The question for the SKMM is whether regulation will stimulate additional competition, or dampen investment in Malaysia.

The impact of regulating Wholesale Line Rental Service on infrastructure investment ultimately requires a decision to be made between:

- the potential benefits of stimulating investment in infrastructure through the use of Wholesale Line Rental Service as a means of entering the market (followed by infrastructure investment at a later time);and

- the potential reduction of investment which may occur due to a potential reluctance to invest in fixed infrastructure where regulation is present.

Applying the "with or without" test, the "without" regulation aspect of this service has clearly not led to competition in the fixed line competition. There is currently no equivalent wholesale service made available and competition in the fixed line services market is stagnant. In other words, "without Wholesale Line Rental Service" is not working. Hence, on balance, the SKMM considers that it is more likely to be a benefit to alternative investment in infrastructure through regulating Wholesale Line Rental Service than not.

Further, the SKMM is not convinced that TM has the incentive to offer this service on reasonable terms and conditions in the absence of regulation. The SKMM also notes that Access Seekers appear keen to use Wholesale Line Rental Service as an input to provide competitive services to end users, with the prospect of innovation and therefore serving as an important enabling service for innovative product offerings. Although the SKMM notes the pattern is to refrain from regulation of Wholesale Line Rental Service in other countries with similar fixed penetration rates, it is imperative to consider the potential positive impact in Malaysia's case.

From a technical perspective, the SKMM also does not consider it a prerequisite to mandate pre-selection for Wholesale Line Rental Service to be offered. This is because one of the innovative offerings likely to be provided using Wholesale Line Rental Service is a voice over broadband service, as distinct from a VoIP dial up service.

In the past, Wholesale Line Rental Service and pre-selection have been the subject of concurrent regulatory intervention. The rationale for this is that in the provision of voice services in a circuit switched world, Wholesale Line Rental Service and pre-selection were both required for the provision of competitive voice services. In the retail market for the supply of Naked DSL services, an Access Seeker needs access to both Wholesale Line Rental Service and some form of Bitstream service. Preselection is not required to enable a retailer to offer Naked DSL services. As a result, the SKMM is of the view that regulatory intervention by including Wholesale Line Rental Service on the Access List will be in the LTBE, despite the fact that the SKMM does not propose to intervene in respect of preselection.

6. MOBILE TELEPHONY

6.1 Overview

The SKMM defined the relevant market for mobile telephony as being a national market using a variety of technologies, providing a range of services and functionalities. The continuing dynamic development of the mobile services market is evidenced in mobile penetration rates, which continue to grow.

At the retail level, it was noted that a variety of offerings are also available to end users and prices appear competitive. A new 3G operator has emerged in U Mobile and MVNO arrangements are also occurring, providing additional retail choice to end users.

6.2 Summary of submissions received

A key theme in many submissions, although not pivotal to the views expressed on the specific facilities and services in the mobile market, was fixed and mobile substitutability. There was some contention between submissions as to whether WiMAX services should be viewed as fixed or mobile.

The high degree of retail competition was also noted; however there was particular emphasis on infrastructure sharing as possibly the most significant problematic area raised in this section.

6.3 State of competition

Question 13:

(a) What is your view of the state of competition at the retail level for mobile services in Malaysia?

(b) Has it become more or less competitive over time?

Most of the respondents including Celcom, DiGi, Jaring, Maxis, Packet One, REDtone, TM and TIME commented that the state of competition at the retail level for mobile services in Malaysia had become highly competitive and will likely grow more competitive.

Most of the above mentioned respondents commented that the recent introduction of MNP, the entry of U Mobile, and also new MVNOs in the mobile market have increased the competition in the market.

Celcom considers that several factors have contributed to the competitiveness of the mobile market. These include the recent introduction of MNP, the entry of new operators and several MVNOs. In the recent years, the 3 established mobile operators have implemented various strategies including competitive retail prices and a constant stream of innovative offerings. Therefore, Celcom believes that the retail market is already functioning well and there is no further requirement for regulatory intervention.

DiGi's view is similar to Celcom which points out that the recent new entrants such as U Mobile and several MVNOs have increased the competition in the mobile market. Due to this high degree of competition, existing mobile operators have raised their efforts to sustain their positions and market shares.

DiGi highlighted that the growth of the market has also slowed down, which has further contributed to increased competitiveness. DiGi foresees operators will shift their focus in the near future towards winning customers from competitors rather than seeking new customers. With the recent launch of MNP, it is apparent that there is a large rotation of subscribers looking for more attractive services with other operators. DiGi also expects more MVNOs to compete directly with the existing players in the mobile market.

Maxis cited that the advent of falling tariffs, growth in data service, MNP and new entrants will further intensify the competitive landscape. Competition has not only been in terms of price, but also in terms of offering the best value to the customer. Maxis argues that the mobile telephony market is in a state of sustainable competition, with operators competing hard to retain existing customers or churn subscribers from other operators via improved and innovative services, competitive prices and improved customer experience.

Competition has evolved from voice several years ago to data services. Various tariffs for voice and SMS are formulated to suit the needs of market segments as the number of prepaid and postpaid packages have proliferated. The addition of new infrastructure players such as U Mobile and existing players (i.e. Merchantrade and REDtone) will add another dimension to the competitive landscape of the cellular industry.

TM is also of the view that with the advent of MNP and the entry of several new players, the mobile retail market will grow more competitive.

TIME foresees that with the addition of the new 3G players, WIMAX players and MVNOs, price competition will be intense. TIME believes the introduction of MNP will enhance competition.

However, U Mobile's view is different from the above respondents as U Mobile believes that the competition at the retail market has not achieved full competition that can contribute towards the highest LTBE-gain. U Mobile also cited that barriers to entry should not be limited to the scarcity of spectrum and sunken cost and that barrier to entry factors should be extended to include wide geographic coverage and late-starter's market disadvantage.

U Mobile's view is that by separately analysing 3G-2G, 3G-3G and 2G-2G domestic roaming services, the SKMM has implicitly defined 3G and 2G networks as 2 distinct wholesale markets. U Mobile further considers that the SKMM should consider what it terms as the collective dominance of the 3 mobile operators who together hold a 99% market share.

6.4 Existing Access List Facilities and Services

6.4.1 Mobile Network Origination and Termination Services

Question 14:

(a) Do you agree with that Mobile Network Termination Service should be retained on the Access List with amendments?

(b) Do you consider that there are any developments since 2005 including the implementation of MNP that may warrant the removal of the Mobile Network Origination Service from the Access List?

(c) What are the negative impacts that may arise, taking into consideration that Mobile Network Origination Service would still be available on a commercial basis?

(a) Comments received

All the respondents which include Celcom, DiGi, Jaring, Maxis, Packet One, Paycomm, REDtone, TIME, TM and U Mobile are agreeable or have no objections to retaining the Mobile Network Termination Service in the Access List.

Maxis strongly disagrees with the inclusion of WiMAX as part of Mobile Network Termination Service. Maxis is of the view that wireless broadband is unsuitable for very heavy usage subscribers who will depend more on a fixed broadband connection. The capabilities of fixed and wireless broadband are different and hence end users are

unlikely to consider wireless broadband services as a substitute to fixed broadband services and vice versa (refer to Question 73).

TM has an opposing view to Maxis. According to TM, WiMAX should be included in the Network Origination and/or Network Termination Service to eliminate the potential for denial of access on the basis of technology and promotion of competition and innovation in the market (refer to Question 77). On the other hand, Celcom's view is that WiMAX should be categorized under fixed telephony.

Celcom, DiGi and Maxis support or tend to support the removal of the Mobile Network Origination Service from the Access List while Packet One, TIME, Paycomm, TM and U Mobile object to its removal.

Celcom's view is that MNP does not seem to allow end users to have significant countervailing power to prevent mobile operators from raising prices for the Mobile Origination Service. This is because the mobile operators were already in fierce competition prior to the introduction of MNP. Celcom believes the removal of the Mobile Network Origination Service does not mean that the service will not be made available on a commercial basis, nor will its removal necessarily result in access issues.

DiGi believes that the implementation of MNP seems to suggest that the Mobile Network Origination Service may be removed from the Access List. Furthermore, many customers are currently using 1800 and 1300 services. Therefore, mobile operators will still be required to offer these services even if it is on a commercial basis as their end users expect the services to be available.

Maxis does not see the need to include the Mobile Network Origination Service on the Access List. It argues that MNP will increase the countervailing power of subscribers, hence obviating the need for access regulation in this area.

Packet One highlighted that customers today are being charged for calling 1800 or 1300 numbers which are supposed to be freephone service numbers as operators choose to adopt Single Tandem Termination charges. Packet One suggests the SKMM examine this issue as customer benefits and interests may be compromised. There may be a need to change the retail treatment to allow mobile customers to enjoy free calls to these numbers and Packet One thinks that this is why the regulation of the Mobile Number Origination Service is required.

Packet One strongly calls for the Mobile Network Origination Service to be retained on the Access List, based on past experience on unsuccessful commercial negotiation. In

the interest of maintaining fair interconnection rates, both the Mobile Origination and Termination Services should be maintained in the Access List.

From TM's observation, the introduction of MNP is a minor development in the provision of the Mobile Network Origination Service. The provision of VoIP by way of 1800 access numbers necessitates the use of the Mobile Network Origination Service. TM is concerned that there will be a denial of access by the mobile operators if the Mobile Network Origination Service is only available on a commercial basis. This is because the mobile operators will have greater bargaining power when the service is to be negotiated on a commercial basis.

TM suggested SKMM should review the current arrangement which permits mobile operators to levy an exorbitant airtime charge for calls by their subscribers to TM's and other fixed operators' 1800 freephone service. TM's suggestion is for the Mobile Network Origination Service to be retained on the Access List.

TIME is concerned with the monopolistic behaviour of the mobile network operators who provide originating access to calls made by their subscribers to 1800 numbers. It would appear that the mobile network operators have control over access to all subscribers making such calls from their network. Furthermore, mobile operators could either deny access or set unreasonable terms and conditions for access. Hence, TIME disagrees with the removal of the Mobile Network Origination Service from the Access List.

U Mobile is concerned that the removal of the mobile network termination service from the Access List would cause access providers to deny access when sought by competitors. It is also a concern that incumbent mobile operators may discriminate against new entrants when it comes to prices set for termination. Hence U Mobile proposes that Mobile Network Termination Service is retained in the Access List with an amendment excluding a licensee whose market share is less than 10%.

(b) SKMM final view

It is apparent that the Mobile Network Termination Service is a bottleneck, and all other factors such as its unlikely availability on reasonable price and non-price terms in the absence of regulation support its retention.

The SKMM formed a view in the PI Report on Access List in 2005 to remove the Mobile Network Origination Service from the Access List. However, there is insufficient compelling evidence arising from this PI process to conclude that it should be withdrawn, even though international practice is to withdraw the service from access regulation.

Although it is not widely used, TM, TIME and Packet One have expressed a concern that they will not be able to obtain commercially reasonable access in the absence of regulation. The PI Report on Access List in 2005 considered that the implementation of MNP might alleviate this concern. MNP has only been in operation for a short time; hence the SKMM considers it is too early to tell whether MNP has had a competitive offset against the access concerns raised by TM.

The SKMM has therefore decided on this occasion to retain the Mobile Network Origination Service on the Access List.

6.4.2 3G-2G Domestic Inter-Operator Roaming Service

Question 15:

(a) Do you consider that 3G-2G Domestic Inter-Operator Roaming should continue to be retained on the Access List?

(b) Should the scope of the service be expanded to include initiation and reception of data services and connectivity?

(a) Comments received

DiGi, Jaring, Packet One, TM, TIME and U Mobile are of the view that the 3G-2G Domestic Inter-Operator Roaming Service should be retained on the Access List.

DiGi itself does not foresee a need to utilize the 3G-2G domestic roaming service since it has its own 2G network. However, DiGi suggested to include a sunset clause for domestic roaming arrangements in order to provide incentives for the new players to provide widespread coverage on 3G. DiGi considers that the amount of penalty may be much lower than the cost of rollout in rural areas thus foreseeing a situation whereby the new entrant refuses to meet 3G rollout commitments, pays the penalty but continues to demand the 3G-2G domestic roaming service.

DiGi believes that the scope of the service should be limited to the basic 2G services, namely voice and SMS in order to provide incentive for the 3G operator to rollout its own network. DiGi is unable to see how data services and connectivity can be implemented.

Packet One proposed for this services to be left open for any technology such as Digital Trunk Radio Service, WiDEN (pager) and WiMAX and not limit it to 3G-2G.

TIME recommends that additional price and non-price terms and conditions of the service should be specified in the MS (Pricing) and MS (Access) respectively.

TIME also believes that the scope of the service should be confined to voice services only as data services (including SMS) are still relatively immature at the moment.

TM is strongly in favour of the regulation of this service, with the scope expanded to include data services.

On the contrary, Celcom and Maxis are of the opinion that 3G-2G domestic roaming is redundant since U Mobile's existing domestic roaming arrangements with Celcom have been successful. Both licensees highlighted the positive experience of the existing domestic roaming arrangement between Celcom and U Mobile. This is taken as evidence that there is no market failure and regulation should be removed accordingly.

Celcom also highlighted that retaining roaming as a regulated service on the Access List creates a disincentive for the operators to continue rolling out nationwide mobile networks.

Maxis further elaborated that there will come a time when U Mobile is approached by the other existing mobile operators to become a 3G-2G roaming provider, especially when U Mobile's subscriber base starts increasing. This phenomenon has occurred in the UK.

Maxis does not believe that the removal of the service will result in any operators terminating the roaming arrangements with U Mobile because there are other competitive provisions in the CMA to protect the long-term interests of U Mobile's existing subscribers. Since there is no market failure or potential market failure foreseen, Maxis submits that the existing arrangements and developments prove that such fears are unfounded and domestic roaming need not be regulated. Maxis also does not believe that there is a need to expand the service definition in any form.

U Mobile considers that the service should continue to be regulated and highlighted its difficulties with some operators to reach commercial arrangements for the service. U Mobile attributes this to what it considered to be an absence of detailed mandated price and non-price terms. U Mobile also supports the inclusion of data initiation and reception services in the service definition.

(b) SKMM final view

It appears that the regulation of the 3G-2G Domestic Inter-Operator Roaming Service has had a successful impact. However the SKMM also notes the concerns raised by U Mobile in particular, as a new entrant, that it encountered some difficulties concluding those arrangements. The SKMM therefore considers it was appropriate to include 3G-2G domestic roaming as a regulated Access List service.

U Mobile submits that the SKMM should have used its information-gathering powers in the CMA to assess whether its commercial arrangements for 3G-2G roaming are fair. To the contrary, the SKMM points out that it is a matter for licensees to lodge complaints, with necessary evidence, if they consider there has been a breach of the access obligations. It is not the SKMM's role to interfere in commercial arrangements and initiate investigation or enforcement action in this regard.

However the question also arises as to the length of time which may be further required to regulate this service. The SKMM is concerned to ensure that 3G spectrum holders should retain the incentive to invest in infrastructure rather than rely on 2G roaming.

Considering that spectrum holders are required to construct national networks and the fact that U Mobile has concluded its roaming arrangements, the case for the long-term retention of this as a regulated service appears less convincing. The SKMM therefore proposes a sunset date of 1 January 2011 after which time the service will cease to have effect.

The SKMM is also not convinced of the technical feasibility and that it fulfils the LTBE test to expand the scope of the service to include data. This is particularly the case considering the national roll out obligations, as noted above, as well as the untested level of consumer demand for this roaming functionality.

In relation to U Mobile's general comment that the SKMM has separately defined mobile markets by technology according to different roaming arrangements (3G-2G, 3G-3G and 2G-2G), this is not the case. These are 3 separate services within a single national mobile market and each has been analysed accordingly in the respective sections.

6.4.3 Inter-Operator Mobile Number Portability Support Services

Question 16:

(a) Do you consider that there are any issues that have yet to be addressed during the implementation of MNP and that could be addressed via access regulation?

(b) If you are of the view that the service should be retained on the Access List, what aspects of the service should be regulated by the Access List?

(a) Comments received

U Mobile believes that MNP need to be retained as a service in the Access List until MNP is placed within the framework of a Numbering Regulation which U Mobile cited as the most appropriate instrument. According to U Mobile, the NEAP is not an appropriate regulatory vehicle as its purpose is for planning and as a guideline for the utilization of the numbering resource.

However, Celcom, DiGi, Maxis and TM are of the view that it is redundant to regulate MNP in the Access List because the amended NEAP has covered most obligations for MNP. Therefore, these licensees support the removal of the MNP inter-operator service from the Access List.

Besides the above reason for removal of MNP from the Access List, Celcom highlighted that the Ministerial Direction on Number Portability suggests that MNP is imposed on all mobile operators. Therefore, MNP should not be subjected to a regulatory instrument based on "seeking access", because the regime under Section 149 of the CMA applies to providing access to a facility or a service on the Access List only when it is requested by an Access Seeker. Celcom supports a set of independent and specific regulations targeting only MNP. The reason Celcom proposed having MNP regulations and not relying solely on NEAP is because NEAP is a numbering plan and should not be used as a regulatory instrument for MNP.

DiGi has similar view to Celcom in the sense that DiGi also believes that although MNP is governed by the NEAP and so the service need not be on the Access List, a better solution would be to have a separate regulation. This is because MNP is not specifically an access issue and MNP processes are already available in the MNO Business Rules developed by the industry.

TM is of the view that the Ministerial Direction on Number Portability was neither properly customized to the Malaysian environment nor consistent with the CMA. It is TM's view that section 180(2) of the CMA which deals with the NEAP should deal with MNP, and it is not open to the SKMM to include MNP on the Access List.

Jaring, Packet One and REDtone called for the MNP to be retained on the Access List.

REDtone is of the view that access to services in support of MNP which are offered by the clearing house should be addressed via access regulation.

Packet One strongly believes that MNP should be retained on the Access List in order to ensure all new mobile service providers will not be denied access to MNP.

(b) SKMM final view

There continues to be some confusion regarding the SKMM's role in MNP as an Access List issue and the precise service that is currently regulated. Firstly, the SKMM acknowledges that the Ministerial Direction on Number Portability was made, but this is not relevant to the consideration of whether Inter-Operator Mobile Number Portability Support Services should remain on the Access List. Secondly, in respect of the view that it is not open to SKMM to include MNP within the Access List given section 180(2) of the CMA provides for the NEAP to deal with portability of assigned numbers, the SKMM reiterates its position as explained in the PI Report on Access List in 2005. In particular, the provisions on Access to Services in Chapter 3 of Part VI of the CMA and section 180(2) are not mutually exclusive and where appropriate, the role of access regulation can complement the initiatives undertaken pursuant to section 180(2).

The more relevant question in this review is whether the inter-operator processes required to support MNP have been sufficiently catered for in other instruments or processes. It is apparent from the submissions received that now that MNP has been launched (in October 2008); any actual or perceived need for access regulation in this area has significantly dissipated. The SKMM has therefore decided to remove this service from the Access List.

6.4.4 Infrastructure Sharing

Question 17:

(a) What has been the impact of access regulation on infrastructure sharing in Malaysia?

(b) What are the issues faced when sharing the infrastructure of SBCs and can these issues be addressed through access regulation?

(a) Comments received

DiGi, Jaring, Media Prima, Packet One, TM and U Mobile highlighted several issues pertaining to sharing the infrastructure of the SBCs. Most of these licensees raised the issue of exorbitant and/or differential pricing/rental costs when acquiring infrastructure sharing from the SBCs.

DiGi mentioned that the access regulation has resulted in significant implementation of infrastructure sharing between industry players. DiGi also highlighted that the price of accessing towers built under the USP must be different, as they were in effect paid for by the industry out of the USP fund.

According to Media Prima, there seem to be no improvements in infrastructure sharing, hence no impact of access regulation in Malaysia. It submits that there are exorbitant rates marketed by Access Providers to Access Seekers such as themselves, in addition to leaving all preliminary works to the Access Seeker. Media Prima also highlighted the denial of access to the Access Provider's sites to build transmission facilities. Due to this, Media Prima has no choice but to succumb to what it considers to be the Access Provider's unfair practices.

As a broadcaster, Media Prima states that it is unable to deal with any of the SBCs because SBCs concentrate on building infrastructure for telecommunications companies rather than the broadcasting facilities. In addition, the SBCs only provide towers and no other services thereafter.

Due to the above, Media Prima requested the SKMM to regulate the free flow of technical information, more equitable pricing mechanism and access to the respective sites.

Packet One finds that access regulation of infrastructure sharing has improved the speed of deployment. However, in general Packet One considers the impact of access

regulation overall to be minimal. There are still foreseeable issues in seeking access to facilities under tri-party agreements which do not allow new Access Seekers to request access, unless agreed by consensus from all parties. This process takes a long time.

Packet One also highlighted that MS (Access) does not cover SBCs who offer infrastructure sharing. This causes negotiation to be very difficult and potential discriminatory issues arise because the agreements with SBCs are not registered. Therefore, Packet One strongly recommends that all licensees including SBCs must be subjected to the requirements of the CMA. Requirements imposed on other licensees should be imposed on SBCs as well.

The issues with SBCs further extends to operational matters, whereby SBCs are able to dictate that the Access Seeker uses its existing towers even though the operator may plan to construct a rooftop site. There is also the issue of aesthetic value when installing multiple antennae on a tower via infrastructure sharing arrangements. Furthermore, since the agreements signed are not subjected to review by the SKMM, the SBCs have the liberty to increase the rental rates especially when it comes to new entrants i.e. WiMAX operators.

Due to all the issues highlighted above, Packet One emphasizes that the SBCs need to register the access agreements with Access Seekers, so that the SKMM can monitor and compare the rental rates offered to the operators.

Based on its limited experience with TM, REDtone finds that the regulation of infrastructure sharing in Malaysia has encouraged more efficient use of infrastructure of the Access Provider and significantly reduces the cost and complexity for it as an Access Seeker in its expansion process in terms of services and network.

Issues faced by REDtone regarding infrastructure sharing with SBCs are related to cost. Thus, REDtone suggests the SKMM regulate the pricing for infrastructure sharing with SBCs to ensure fairness, as commercial negotiations do not guarantee fair and equal access by licensed and qualified Access Seekers.

TM considers the impact of the access regulation on infrastructure sharing to be positive due to reduction in total costs to end users, reduction in the operator's total costs and set up cycle time, promotion of competition, accelerated diffusion of new technologies to customers and encourages economically efficient infrastructure use.

However, TM has serious concerns about the regulation of SBCs which are not limited to access issues. TM highlighted the issue of exorbitant rental charges especially when the

facilities are shared with only two or less operators. TM is of the view that the SBCs should market their infrastructure to multiple users.

U Mobile emphasized the utmost importance for access regulation of infrastructure sharing as a critical regulatory instrument, especially for new entrants such as itself. As a new entrant, U Mobile does not benefit from the cost advantage in any existing network infrastructure that can be leveraged for its 3G network roll out and the investment costs are higher that the existing operators.

Celcom and Maxis have opposing views regarding to the positive impact of access regulation on infrastructure sharing in Malaysia.

Celcom's opinion is that it has not made an impact on the industry and that the situation now is largely the same as prior to access regulation. The example given is that commercially negotiated infrastructure sharing arrangements were already in place and working well prior to the inclusion onto the Access List. Furthermore, broadcast licensees are still facing unreasonable terms and conditions (such as bundling infrastructure sharing with maintenance services) for access to infrastructure, which is the same situation prior to access regulation.

Celcom considers there seems to be no evidence of denial of access and/or any forms of market failure to require mandating the service (except in the broadcasting services market). Therefore, Celcom proposes the definition of infrastructure sharing in the Access List be amended to specify that it applies only to the broadcasting service market since there is market failure in that sector; and then to remove this obligation from the mobile operators. Celcom argues that the intervention by the SKMM via the Access List unnecessarily imposes costs and obligations on mobile operators.

Maxis believes that the light handed intervention adopted by the SKMM is working well and should continue. Maxis stressed that operators must be allowed to retain full commercial freedom to negotiate access on price and non-price terms. Further regulations would be costly for all parties in terms of resource requirements, limitations on network and market development, and reduced mobile network rollout.

Maxis also highlighted that each infrastructure sharing arrangement is unique (i.e. different site, unique set of problems, different parameters) thus will be most effectively addressed through mutual agreement between the Access Provider and Access Seeker rather than through any regulatory instruments.

Having said the above, there are issues which Maxis suggested should be examined by the SKMM. These issues include the lengthy time and processes involved in obtaining site approvals from relevant government authorities.

Maxis stated that it had not faced any problems in gaining access to SBC towers. Maxis had no objections to the pricing and other commercial terms offered by the SBCs. However, there are circumstances whereby some SBCs in certain states had tried to exert monopolistic powers on certain issues, such as forcing mobile operators to sell towers to these SBCs, failing which the operators risked not securing approvals for the towers.

Question 18:
Has the inclusion of a technology-neutral infrastructure sharing service assisted in respect of access for broadcasting services?

TM and TIME believe that technology-neutral infrastructure sharing service does assist in respect of access for broadcasting services.

TIME commented that this service could assist broadcasting licensees to have access to more strategic locations. TIME believes that the service will enable it to provide backhaul service for broadcasters to connect to more strategic transmission centres, which are mainly provided by TM, and this will promote competition.

ASTRO, Celcom, Maxis and Media Prima have several different views which are directly or indirectly related to the service in respect of access to broadcasting services and/or the mobile services market.

ASTRO's view is that access to sites and towers should not be bundled with the provision of equipment facilities and maintenance services.

As noted previously, Celcom believes that this service has not assisted in respect of access for broadcasting services. Celcom recommends that SKMM analyse the detailed access issues in the broadcasting services market so that it can decide whether infrastructure sharing requires regulation limited to broadcasting services. Regarding the mobile market, Celcom believes that market forces are already sufficient to fulfil the LTBE.

Maxis believes that all Access Seekers have no problems in accessing the infrastructure sharing facilities on the Access List as long as they are qualified.

Media Prima commented that it had not encountered such a service being offered by any Access Providers and continued to stress that broadcasting issues as stated in the PI Paper at page 108 remain unresolved. Media Prima suggested that SKMM impose ruling on all Access Providers to at least allow third party access to their sites so that Access Seekers would be able to procure services from a third party. This would reduce an Access Seeker's costs and ensure a more competitive environment.

Question 19:

(a) The SKMM seeks comments on the commercial difficulties, if any, faced by new operators in relation to in-building coverage that warrants it to be addressed under access.

(b) Do you have any views on whether access regulation can be used to address the in-building coverage issues noted above? Is it technically feasible? In particular, the SKMM invites comments about appropriate access arrangements that could apply to CAS.

Most of the licensees commented that there are issues in relation to in-building coverage and that some form of guidelines and/or regulation should be implemented. The licensees who are of this view include DiGi, Maxis, Packet One, REDtone, TM and U Mobile. Several common issues highlighted include exorbitant rental rates and exclusive arrangements.

DiGi is concerned with the lengthy processes in identifying the sites requested as well as the implementation times of the agreed sites, which can extend beyond the agreed timelines. Pursuant to this, DiGi believes that in-building sharing needs to be regulated. DiGi also foresees the future of in-building connectivity lies in establishing mobile telephony requirements into the prevalent building codes. By making it mandatory that future building projects that fall within certain classifications must incorporate full fixed and mobile connectivity as part of the certification process. This could also promote competition when project developers invite service providers to equip such buildings with fixed and/or mobile connectivity.

Maxis had not been facing difficulties in the commercial arrangements among the mobile operators in relation to CAS in-building coverage. However, Maxis highlighted that there is issue whereby certain building owners prefer one operator over the other and this has caused access to become difficult and sometimes impossible or unprofitable. This issue according to Maxis is more prevalent to fixed services and not CAS. Maxis suggested to include in-building facilities as class licensable so that building owners are compelled to

act in a non-discriminatory and fair manner. This had been done in Hong Kong. Maxis suggest that the SKMM add these items on the Access List.

Although the MS (Access) does not allow a licensee to enter into arrangements which deny another licensee, there is possibility whereby the building owner may deny some licensees explicitly without the knowledge of the authorities. Hence, it is important for the SKMM to find ways to regulate building owners so that there is more transparency.

In Maxis' opinion, expanding the infrastructure sharing definition to include CAS is not necessary as there are sufficient commercial arrangements in this area.

Packet One highlighted that building owners do not see the added value that new services could bring to a premise, hence the exorbitant rental charges. Packet One suggested for in-building to be included under infrastructure sharing and be listed as an item in the Access List.

REDtone commented that in-building access is a huge challenge to all new operators. Roll out of services are delayed and hampered by lengthy commercial negotiation; yearly upward cost revisions which challenge cost controlling; and exclusive contracts which it considers to be anti-competitive, yet the SKMM is unable to interfere. Hence, REDtone is of the opinion that the SKMM should address these issues under the Access List.

To mitigate these challenges of gaining in-building access, REDtone believes that the use and access of CAS is the way forward and this should be regulated (both access and pricing). This will promote quick deployment of emerging technologies from new operators.

TM faced issues with WiFi Hotspot deployment. TM highlighted a need to reassess the exclusivity arrangements between the building owner and the first operator. One suggestion TM made is to formulate common guidelines for infrastructure sharing dealing with technical and commercial matters.

U Mobile highlighted that most building management allow and appoint only one operator to build an in-building CAS for a building. Other mobile operators wishing to access the said in-building CAS can only do so by means of sharing. As a result, the operators have created a barter-swapping system where the Cost Sharing Units (**CSU**) are accumulated and swapped.

This system cannot accommodate new entrants who have no CSUs to barter with and also caused barriers to entry for operators with the fewest CSUs to have lesser

bargaining power. This system does not allow for a monetary value system of access besides CSUs swapping and poses a long process for new entrants to secure the desired buildings since they have to secure other buildings first for barter trade. Sometimes, there are no immediate new buildings for the new operators to secure which poses more problems.

Then there is the high rental fees charged for use of a room to house the equipment. In some instances, placements of indoor in-building transmitters are also charged. Hence, U Mobile suggested for the SKMM to explore the possibility of working with the relevant Ministries and Agencies to amend the Building By-Laws so as to designate such facilities as essential and mandatory.

U Mobile proposed for the SKMM to mandate co-location of mobile communications base station and infrastructure sharing of Common Antenna System (**CAS**). CAS in a multifloor/multi-tenanted building to protect the legitimate competitive interests of the new mobile/PCS carriers for LTBE.

U mobile also suggested for the Network Co-Location service and infrastructure sharing in the Access List to be amended to include in-building CAS. Also, U Mobile urged the SKMM to consider the inclusion of in-building CAS in the Access Pricing as well in order to avoid potential difficulties in its implementation. If the SKMM is unable to do so, U Mobile requested the SKMM to at least publish the pricing principles for the provisioning of in-building CAS.

Celcom is the only licensee of the opinion that access regulation will not provide incentives for new operators (i.e. U Mobile) to tap into new buildings in order to widen in-building coverage in Malaysia. Celcom considers that the current barter mechanism has proved beneficial to mobile operators. Celcom suggests U Mobile should invest in in-building CAS and offer barter trade to other operators. All the mobile operators could swap locations and pass on the reduced costs for end users' benefit. Since infrastructure sharing is already working well, access regulation is not required.

Paycomm suggested that all ASPs should have free access to in-building coverage for implementation of services while Jaring proposed to have more in-building Common Antenna System (CAS). Jaring also commented that CAS should be made compulsory to be provided by the building owners and made accessible by all licensed service providers.

Question 20:

(a) Do you agree that Infrastructure Sharing should be retained on the Access List?

(b) What further improvements can you propose to ensure that Infrastructure Sharing operates more effectively?

Most of the licensees which include Celcom, DiGi, Jaring, Packet One, Paycomm, REDtone, TIME, TM and U Mobile agree that infrastructure sharing should be retained on the Access List. Maxis, however has a different view regarding this matter.

Celcom agrees to the retention of Infrastructure Sharing on the Access List, and made two recommendations. Firstly, Celcom proposed to remove reference to the provision of access to in-building CAS from the service description. Secondly, Celcom suggested specifically changing the description to include broadcasting facilities.

Since the Government advocates aggressive expansion of mobile coverage into rural areas, DiGi believes that excluding infrastructure sharing from the Access List may potentially cause some tower owners to terminate tower sharing deals.

The fact that SBCs control the supply of infrastructure sharing service in their respective states, DiGi believes that there is a need for SBCs to be subjected to the access regime. Regulation of Access Provider for this service should ensure fairness and equitable offerings in terms of physical access and standardized pricing. In addition, DiGi feels that there is a need to resolve issues related to this service in order to provide better coverage and service quality to customers.

Packet One is of the view that infrastructure sharing is a bottleneck service and hence there is a need to maintain the service on the Access List. Packet One believes that the availability of regulated infrastructure products is critical for the timely establishment of the business case of alternative network operators in the Malaysian market where there are numerous restrictions on the ability of a new entrant to build its own infrastructure. By supplying alternative operators with more options for building infrastructure, the business case for these operators will improve and ultimately lead to more competition in the provision of leased lines.

Packet One also highlighted that the availability of towers is critical for WiMAX operators to successfully implement their commitments in the business plan. Packet One cited

that Asiaspace who is also a WiMAX operator, is currently enjoying monopolistic position in the supply of these towers with prices set based on commercial negotiation and availability of space. Packet One believes that these towers should be offered on a non-discriminatory basis to all parties and this can be done by setting out prices and conditions of access in the MS (Access) and MS (Pricing).

Therefore, Packet One suggests that the SKMM should consider providing guidelines, if not mandating the calculation of rental charges imposed.

Paycomm commented that infrastructure sharing encourages efficiency.

REDtone commented that by retaining infrastructure sharing on the Access List, fair and equal access for all license and qualified Access Seekers can be ensured.

TIME proposed for Access Providers to publish the locations of sites available for infrastructure sharing on their websites. TIME also proposed that the SKMM should conduct its review of the MS (Pricing) in relation to this service, as currently the costs of facilities and services for infrastructure sharing are benchmarked against TM's, which TIME considers to be high.

U Mobile suggested for SKMM to assess the benefits associated with RAN sharing where the positive impact on coverage, quality of service and cost savings, may lead to long-term benefits to the consumers. U Mobile also strongly recommends the separation of functions for SBCs and OSAs due to the conflict of interest in exercising the competitive behaviour. In addition to that, as NFP(I), SBCs should be subjected to access regulations and obligations, thus need to adhere to the provisions of the MSA. Since there is a concern for the inconsistency of SBCs pricing offering as a result of exemption from the access regime's obligations, U Mobile is of the view that SKMM should at least request for the SBCs to publish their rates.

Maxis is the only licensee which does not agree that infrastructure sharing should be retained on the Access List. The reason cited is that the market has demonstrated that the service is commercially viable. In addition, it considers that section 228 of the CMA has the necessary provisions to deal with this matter.

If the SKMM decides to retain the service on the Access List, Maxis recommends the current light-handed regulatory whereby regulatory intervention should only be applicable in the event of market failure. Maxis also believes that commercial negotiation, as in the past, is still the best tool to conclude items like pricing and this is

especially true for CAS where pricing depends on the design of the building and the cabling that goes with the design.

6.4.5 SKMM final view

Considering the importance of infrastructure sharing to the mobile and broadcasting markets, and the limited likelihood of reasonable price and non-price terms and conditions of access in the event of its removal, the SKMM strongly views it essential to maintain a technology neutral service description on the Access List. To limit the description to only broadcasting services would be inconsistent with the technology-neutral objectives of the CMA.

The SKMM continues to reject the argument that given the CMA already contains infrastructure sharing provisions access regulation is unnecessary. Access Seekers under section 149 of the CMA includes NFP, NSP, ASP and CASP. The SKMM has taken the view that the provisions of the CMA in themselves do not cover the field in terms of mandated infrastructure sharing arrangements.

However, the SKMM is alarmed and frustrated by the inability of broadcasting providers to obtain reasonable access to infrastructure – particularly the comment that there is no difference between the pre-regulated and post-regulated environment. The SKMM notes that Media Prima has repeatedly raised complaints that access to towers and sites are being bundled with the provision of equipment and maintenance services. Whilst the Infrastructure Sharing definition in the Access List includes reference to the provision of "physical access" (which non-exhaustively includes power and site maintenance) the contentious issue appears to be price. The bundling of these ancillary services appears to be resulting in prices that are undermining the benefits of regulating this facility/service. The SKMM also highlights that Infrastructure Sharing is defined as, "the provision of physical access, which refers to the provision of space…to enable an Access Seeker *to install and maintain its own equipment*" (emphasis added).

Therefore having regard to the above, it appears to the SKMM that the matter raised by Media Prima that they are denied access to Access Provider's sites to build transmission facilities is outside the purview of access regulation.

The SKMM notes the complaints raised in relation to infrastructure sharing, the SKMM reiterates that all licensees including SBCs are subjected to similar access obligations. Further, the SKMM puts all providers of infrastructure sharing in their capacity as Access Providers on notice that it would view unfavourably any failure to provide access in accordance with the requirements of the Access List or the MS (Access).

The SKMM also foreshadows that the pricing of infrastructure sharing arrangements will be considered in the MS (Pricing) review that will follow this PI Report and revised Access List.

In respect of in building coverage issues, it is apparent that in-building sharing arrangements have failed and regulatory intervention is required to ensure access on reasonable and timely terms and conditions. The SKMM therefore proposes that access regulation be extended to shared infrastructure between mobile operators for in-building CAS. The SKMM has jurisdiction to facilitate access through this means. The SKMM takes this decision acknowledging that other in-building infrastructure issues are not readily available for access measures to be imposed. Building owners and developers are, largely, beyond the scope of the Access List. Nevertheless, CAS sharing is within scope and will be mandated.

6.5 Potential Access List amendments

6.5.1 2G-2G Domestic Inter-Operator Roaming Service

Question 21:

(a) Do you have in place, or have you attempted to reach commercial arrangements for 2G inter-operator domestic roaming nationwide, other than East West Highway?

(b) Do you consider that the benefits of regulating domestic roaming in Zone 3 underserved areas of Malaysia would outweigh the costs, including technical costs?

(a) Comments received

Jaring is of the view that domestic roaming should be made compulsory in all areas.

Packet One states that roaming will in fact ensure optimum use of capital investment of an operator to build its network instead of resulting in reliance of the Access Seeker on the Access Provider network. Hence, roaming does not prevent Access Seekers from investing in the future, as there will also come a time when competition is not only in terms of coverage but also quality of service.

Packet One also proposed that domestic inter operator roaming should be left open for any technology such as Digital Trunk Radio Service, WiDEN (pager) and WiMAX and not limited to 3G-2G. Access should not be denied for other technologies.

Celcom, DiGi and Maxis are of the view that it is unnecessary to regulate domestic roaming. Both Celcom and Maxis highlighted that the MAFB has recently finalised the voluntary guidelines to facilitate 2G-2G domestic roaming. This is an opportunity for self-regulation and regulatory intervention by the SKMM can render such efforts meaningless.

Celcom further commented that infrastructure sharing is already in place and the SKMM has affirmed that the service covers USP towers. Thus, there should not be a need for regulation.

DiGi has established a domestic roaming arrangement with Maxis at Bukit Tinggi and Frasers Hill. DiGi believes that domestic roaming service has lower QoS as it is not seamless. Hence, it should be of commercial interest for the operators to build coverage in these areas.

If the service is included on the Access List, the domestic roaming service should apply to parts of Time 3 only and not to any parts of Time 2 areas. However, if the SKMM required the service in Time 3 or USP areas, then the commercial charges for access should be lower than the typical cost based charges for a full service as the CAPEX costs for Time 3 sites are already funded by the USAP fund. In addition to that, DiGi also proposes that the number of sites hosting the service should be equally divided amongst the mobile operators in order to ensure fairness and equality.

Maxis has established domestic roaming with DiGi in Bukit Fraser and Bukit Tinggi, as mentioned above. With the current population coverage which exceeds 90%, much of the urban, suburban and rural areas have already been covered by the mobile operators. The coverage shall further be strengthened with the implementation of Time 3 Phase 1, whereby the population coverage should reach 94% while phase 2 will be 97%.

There has not been active solicitation for any commercial domestic roaming arrangements so far due to the strong coverage by individual operators and the existence of infrastructure sharing. However, with Time 3 coming up, Maxis foresees such arrangements being sought.

Maxis believes that there is no need for regulatory intervention for 2G-2G domestic roaming even in underserved areas and that the service should be only through bilateral

commercial negotiation. Maxis believes that by mandating the service, incentives for mobile infrastructure investment will be compromised. Every operator will wait for the other operators to provide the coverage and then apply for domestic roaming or even stop building new sites.

Maxis also raised a concern with the description of the 2G-2G domestic roaming service in the draft Access List included in the PI Paper. According to Maxis, the description of the service in the draft Access List does not reflect the SKMM's view that such domestic roaming arrangements are suitable for underserved areas. Instead, it gives the impression that the service can be generally available. This defeats the purpose of implementing the service.

Therefore, if the SKMM decides to regulate the service, Maxis suggests that the description needs to be amended accordingly in order to restrict it to underserved areas only.

(b) SKMM final view

The rationale for considering mandating 2G-2G domestic inter-operator roaming was based on seeking to advance a social objective. Considering the submissions received, the SKMM's view is that this would be the case if regulation were limited to recognised underserved areas.

The SKMM's criteria was to establish firstly whether any commercial arrangements are in place that include these underserved areas. None of the submissions indicated commercial impediments in reaching those arrangements, nor any limitations on roaming in those areas.

Importantly, the SKMM notes that the MAFB has produced a guideline for the industry to facilitate 2G-2G roaming. This has been drafted with industry input and therefore is consistent with industry views. The SKMM encourages and welcomes this self-regulatory contribution from the MAFB and in light of these developments, considers that this is an acceptable alternative to access regulation of this service.

6.5.2 3G-3G Roaming Service

Question 22:

(a) Do you have any views on whether a 3G-3G roaming service should be included on the Access List?

(b) Do you have any views on the technical feasibility of such regulation?

(a) Comments received

Celcom, DiGi and Maxis are of the view that 3G-3G roaming service should not be included on the Access List.

Celcom argued that this service can be covered under infrastructure sharing. Furthermore, there has not been and unlikely to be any access issues with regards to 3G-3G roaming.

DiGi also supports refraining from 3G-3G roaming regulation. DiGi commented that such regulatory intervention is likely to distort investment incentives and thus work against the objective of LTBE. Since in Malaysia, all the 3G operators are required to fulfil their rollout obligations in their Detailed Business Plan (**DBP**), arrangements for 3G-3G roaming can be left to commercial arrangements between the operators.

3G-3G roaming has been implemented on a commercial basis elsewhere, hence, there should not be any technical feasibility of such implementation.

Maxis also finds it unnecessary to regulate 3G-3G roaming service as regulating will probably result in lethargic infrastructure rollout by the 3G spectrum assignment holders as they will rely on roaming arrangements to expand their service.

Maxis further highlighted that even in markets overseas where national roaming for 3G exists, these arrangements are on a commercial basis. Maxis stressed that it has not encountered any instances where regulation has occurred in this area.

On the other hand, TM, Jaring and U Mobile believe that it is important for the service to be included on the Access List.

Jaring is of the view that the service should be included on the Access List because inter-operator roaming features may benefit consumers if there is roaming capability among different operators.

TM is strongly in favour for the scope of service to be expanded to data services and does not believe that there will be any technical difficulties to implement a 3G-3G roaming service.

U Mobile strongly support mandating 3G-3G domestic inter-operator roaming as U Mobile believes that regulatory intervention is critical to clear interconnection roadblocks. U Mobile also suggested for the SKMM to concurrently establish the initial pricing principle for the 3G-3G domestic inter-operator roaming taking into consideration the benchmarking approach against a range of appropriate cost proxies overseas if necessary.

Packet One proposed that domestic inter operator roaming service to be left open for any technology such as Digital Trunk Radio Service, WiDEN (pager) and WiMAX and not limited to 3G-2G roaming. Packet One also believes that technical feasibility will definitely be an issue especially for new technologies. However, Packet One stressed that roaming should not be a service seen as a threat to the Access Provider, as a competitive advantage on this basis should no longer be significant.

(b) SKMM final view

The SKMM considers that as 3G-3G roaming is part of the 3G spectrum assignment, obligations, it obviates the need for regulatory intervention for 3G-3G roaming. In addition, the SKMM notes that there have not been concerns raised by 3G operators of a need for, or a refusal to be provided with roaming on a commercial basis. The SKMM notes U Mobile's submission, however, the SKMM has not been presented with strong evidence of the need to regulate this service.

Further, the SKMM would be concerned if by mandating 3G-3G roaming, it would obviate the need for the 3G spectrum assignment holders to comply with their roll-out obligations. Therefore, over the long term, there is no need for 3G-3G roaming and hence this service will not be included on the Access List.

6.5.3 Mobile Virtual Network Operator Service

Question 23:

What do you consider will be the impact on the mobile services market if MVNO regulation is not imposed through the Access List?

(a) Comments received

Paycomm and REDtone are of the view that MVNO regulation should be imposed through the Access List. According to Paycomm, at present UMTS/Maxis does not entertain any discussions on MVNO and Celcom has similarly disregarded such discussions. Paycomm cannot assess the likely approach of DiGi at this stage, since DiGi just received its 3G spectrum. Paycomm is of the opinion that without regulation, there is no justification for existing dominant incumbents to entertain new players.

REDtone commented that it had faced severe commercial and technical roadblocks regarding MVNO. The commercial negotiation itself was concluded after almost a year of negotiation. Subsequently, the commercial roll out of the MVNO service was plagued with technical issues, ranging from SIM compatibility to billing and CDR issues.

Furthermore, it considers that only Celcom is open to MVNO concepts and negotiations. Therefore, REDtone believes that access regulation should be the way forward if the MVNO concept is to succeed.

REDtone urged the SKMM to thoroughly study and evaluate all aspects of MVNO for regulation with the ultimate result for fair access to an operator's network and baseline quality of service for technical, billing and quality issues.

Packet One is of the view that at this juncture, it is difficult to ascertain whether MVNO were successfully negotiated between the mobile network operators and the virtual network operators as the customers to date have yet to see the product and the impact of MVNO on price competition or product packages.

Packet One believes that if the MVNO is a criteria in the 3G spectrum assignment, then it is the SKMM's role to ensure the successful implementation by the mobile network operators.

TM advocated a level playing field between fixed and wireless operators. Given that Bitstream access is mandated on the fixed network, TM believes an equivalent product is

required on the wireless network for Broadband Wireless Access provisioning which is a subset of MVNO.

Celcom, DiGi, Maxis, TIME and U Mobile have opposing views to the above licensees as they are of the opinion that MVNO should not be regulated. Some of the reasons given are that there is no evidence of access issue or market failure with regards to MVNO access; that the 3G operators already have MVNO commitments in their 3G detailed business plans; and that the level of competition is already high in the mobile market. These licensees also believe that MVNO is not a bottleneck service.

DiGi adds that without regulation, the market will continue to see high levels of innovation and competition between mobile operators with the MVNOs further stimulating market by their focus on particular segments or service types. DiGi believes that regulating an already competitive market will not add value or may even work against the LTBE criterion. This is because the regulated price may be non-binding as the actual market price is below the regulated maximum price. Another issue may be the losses incurred by mobile network operators as the regulated price may be below the optimal price without creating sufficient value for the consumers.

Such market inefficiencies will reduce the incentives to invest in coverage and service innovation. DiGi believes that the mobile market will be healthier, more innovative and more sustainable in the long term if MVNOs are not regulated. DiGi foresees that without regulation, the number of MVNOs will increase during the next 12 months.

Maxis pointed out that the recent influx of MVNOs in Malaysia over the past year, speaks volumes on the potential competitiveness of the market. The entry of MVNOs is encouraging considering the absence of any specific MVNO regulations.

Maxis commented that it will be a challenging task to provide explicit regulation for MVNO services provided by the mobile network operators and that this is evident since very few regulators internationally have taken such step. The challenge is due to the unpredictable forms of successful MVNOs. Furthermore, what works in one jurisdiction may not be appropriate in Malaysia. Maxis believes that only commercially negotiated MVNOs agreements are likely to be successful and beneficial for the market as a whole.

If the SKMM were to attempt to specify MVNO regulation, this will constrain the forms of MVNO that could emerge. The SKMM will have to specify the forms of relationships between the mobile network operators and virtual network operators and this will impede the development of the MVNO market.

Maxis is of the opinion that MVNOs are often most successful when the host operator has a commercial interest in negotiating and agreeing to a business model which has the greatest chance to succeed by.

Due to the above coupled with the DBP commitments for 3G spectrum assignment holders, it clearly obviates the need for additional regulations in this area. Doing the opposite could potentially hamper the growth of MVNOs in the market.

TIME commented that currently only Celcom is proactive in entering into collaboration with the MVNOs. TIME foresees that if MVNO regulation is not imposed through the Access List, there may be reluctance from the mobile operators to allow access. However, given the competitiveness of the mobile market, the prices for MVNO services do not need to be regulated. In the competitive mobile market, MVNOs are able to commercially negotiate appropriate arrangements with the mobile operators. Hence, there is no need for MVNO to be included in the Access List.

(b) SKMM final view

Whilst the SKMM notes that there have been some issues associated with operators seeking to negotiate commercial MVNO terms, others have been successful on the basis of an offering which was attractive to the MNO concerned. MVNOs have been forming in what is a competitive wholesale and retail market.

The issue to be considered in regulating MVNO is to firstly determine precisely what is being regulated. It is particularly difficult to regulate what is essentially a resale service, the depth of which is also dependent on the business model chosen. International precedent shows that regulation of MVNOs has been unsuccessful in a market where wholesale and retail levels are already competitive. The SKMM has therefore decided to affirm its view that regulation of MVNO is not warranted.

7. UPSTREAM NETWORK ELEMENTS

7.1 Overview

In the infrastructure chain of upstream network elements, the SKMM has identified Domestic Connectivity to International Services as the relevant service for consideration. The SKMM sought in this review to identify any competitive backhaul services as potential candidates for regulation to be eased in a manner consistent with proportionate regulation.

7.2 Summary of submissions received

The submissions overall evinced strong views regarding ongoing problems in price and non-price terms and conditions when attempting to obtain Domestic Connectivity to International Services.

7.3 State of competition

Question 24: What is your view on the state of competition in the domestic segment of the international service, including the backhaul element?

(a) Comments received

DiGi comments that all the international cable landing stations are owned and operated by TM, and all operators would need to obtain Domestic Connectivity to International Services from TM in order to connect to the international submarine cable systems. In relation to backhaul, the operators have to either use their own capacity or lease the capacity from TM.

Fiberail views the state of competition in the domestic segment of the international service as differing according to the type of connection (terrestrial or sea) and the geographic location. It considers that competition in the terrestrial border connection is vibrant especially at the border of Padang Besar-Thailand and Johor-Singapore middle causeway. Global service providers' point of presence such as AIMS and VADS, including the backhaul component, is also competitive. Most of the major service providers are also present at these areas.

Fibrecomm is of the view that there are certain routes or states where there are multiple facilities providers offering competitive prices. On the other hand, Fibrecomm views that the level of competition at the Thai and Singapore border is different. Many providers such as Fibrecomm, TM, Maxis, TIME and Fiberail have established their POIs with global service providers at Padang Besar or Bukit Kayu Hitam (in the north) and at the Johor-Singapore Causeway (in the south).

Jaring views that the main issue is the lack of cable landing points which creates a monopolistic environment to interconnect with the domestic network.

Maxis is of the view that the state of competition in the domestic market can be significantly improved. Maxis has infrastructure on certain domestic fibre backhaul routes, however, access to the cable landing station is solely provided by TM and is a bottleneck service. The cross-connect between the Access Seeker's equipment and international capacity is a monopoly. As a result, the prices offered by TM are significantly higher than international benchmarks, such as SingTel. In addition, there is a lack of pricing for higher bandwidth such as for STM4 and STM16. There are also problems with quality of service and service delivery and timeliness should be improved.

Packet One views that the domestic segment of the international service including backhaul is dominated by TM and has not changed since the last PI in 2005. As such, Packet One suggests that licences be issued to other NFPs for cable landing centre to allow connectivity to different submarine cable systems. Further, Packet One is of the opinion that the calling card service providers which offers competitive prices for international calls at the retail market is also affected by the incumbent operator.

REDtone believes that TM has a virtual monopoly in West Malaysia and a full monopoly in East Malaysia. As a result, there is a high cost of access to backhaul. The backhaul prices in Malaysia are the highest in the region, second only to Indonesia. In East Malaysia, where backhaul is only available from TM, the cost is at least five times higher than in West Malaysia.

TIME is of the view that there are many providers such as Maxis, TM, Fibrecomm, Fiberail and TIME for the backhaul element. The main issue that TIME faces is in relation to co-location at the cable landing station. The reason provided was space constraints. Though this is clearly provided in the MS (Access), TIME proposes that further guidance or detail be provided on its application.

TM views that the current domestic segment of international service such as through submarine cable landing station, border station, global service provider's point of

presence such as AIMS as well as the backhaul element is very competitive, as compared to 2005. TM comments that that it competes with TIME, Maxis, Fiberail and Fibrecomm on the competitive routes such as to the Cherating, Kuala Muda and Mersing cable landing stations. These providers are present outside the cable landing station, and TM only provides the backhaul from their cabin to the cable landing station itself, a distance of less than 200 metres. These are provided through Point of Access arrangements, governed in part by the submarine cable arrangements. In addition, TM comments that operators also have the option to route their traffic by transiting through border station to Singapore, Thailand and Brunei, which places competitive pressure on the backhaul portion.

7.4 Existing Access List Facilities and Services

7.4.1 Domestic Connectivity to International Services

(a) Comments received

Most of the comments above in response to Question 24 concerned an assessment of this service.

Further, Celcom states that it faces no issues in relation to access to TM's equipment in the cable landing station, and is the only component of the Domestic Connectivity to International Services that is acquired from TM. Access seekers are not required to acquire backhaul service from TM, and Celcom uses its own backhaul transmission. In addition, Celcom views that backhaul appears to be competitive as it is provided by a number of operators.

(b) SKMM final view

The SKMM remains convinced that the state of competition in this segment is minimal. However, the SKMM has not been provided with strong evidence to suggest competition on specific backhaul routes for which access regulation may no longer be necessary. Consistent with the SKMM's rationale of proportionate regulation, it is recommended that a separate review be undertaken to more closely study the competitive nature of specific routes.

7.5 Potential Access List amendments

7.5.1 Point of access (POA) issues

Question 25: The SKMM would like to seek feedback on the pervasiveness of the POA arrangements, and whether the issues raised under POA arrangements can be addressed through Domestic Connectivity to International Services.

(a) Comments received

Celcom comments that it faces no issues with the POA arrangements.

Fibrecomm suggests that the POA arrangements between the owner of the cable and the consortium members with the Access Seekers be done in a fair and reasonable manner to promote the growth of the industry. Further, Fibrecomm views that more service providers should be encouraged to offer backhaul services to the cable landing station to promote competition and on a commercial basis.

Maxis have commercial arrangements with TM to access the cable landing station on a POA basis. The major reason is due to the pricing flexibility at the higher bandwidths for the POA as compared to Domestic Connectivity to International Services. The prices for the bandwidth offered in the POA arrangement scales with bandwidth, making it uneconomical to buy large bandwidth volumes.

Maxis can migrate to Domestic Connectivity to International Services if the bandwidth and pricing is adjusted. Currently, as the bandwidth is not offered at the higher bandwidths, and hence is offered at multiples of STM1 charges. The distance would also be increased, and as a result, the charges would be higher than the POA. The option of co-locating equipment in the cable landing station is preferred, however, it is dependent on whether there is space available.

TIME opines that POA arrangements and Domestic Connectivity to International Services should be treated differently, primarily as POA arrangements are not regulated and may be provided cheaper. In addition, TIME highlights that as a member of the APCN, APCN2 and SEA-ME-WE3 consortiums, it should be given priority in terms of providing access. Finally, as a consortium member, it believes that ownership of IRU should not be a prerequisite for it to seek access. Hence, TIME proposes amendments to the MS (Access).

TM views that there are no major issue on the POA arrangement, and is currently in place in all the cable landing stations except Malacca. Maxis, TIME, DiGi and Celcom have POA arrangements with a take-up of 9.2 Gbps capacity. TM views that the commercial arrangements are likely to meet the requirements of individual operators and address security issues at the cable landing stations. Since the arrangement existed prior to the regulation of Domestic Connectivity to International Services, it should continue to exist.

(b) SKMM final view

The SKMM is frustrated by access regulation in this segment not having the desired impact of promoting competition. In particular, the argument of access to cable landing stations being denied due to "security issues" will no longer be tolerated by the SKMM. Security issues at the landing station are important, however it is ludicrous to impose this as an access barrier when many other countries require such access. The current position is compromising Malaysia's objective to establish and maintain itself as a global hub and it is apparent that reasons of security are being used as a guise to avoid providing timely access. This is inconsistent with best practice as well as comparable practice in the immediate region.

The SKMM puts Access Providers in this market on notice that it would view unfavourably any failure to provide access in accordance with the Access List.

7.5.2 Route-by-route analysis

Question 26:

(a) Do you agree that Domestic Connectivity to International Services should continue to be retained on the Access List?

(b) Do you consider that any specific backhaul routes to the cable landing station are competitive, and why?

(a) Comments received

Celcom, DiGi, Fibrecomm, Jaring, Maxis, Packet One, REDtone, TIME and TM agree with the SKMM's view that the Domestic Connectivity to International Services should continue to be retained on the Access List. Further, DiGi and REDtone believe that there are no competitive backhaul routes. TIME and Fibrecomm proposed some possible competitive routes, whilst TIME and Maxis highlighted some uncompetitive routes.

Celcom supports the retention of Domestic Connectivity to International Services as it is a bottleneck facility. However in relation to backhaul services, TM has not placed an obligation on the Access Seeker to acquire backhaul from it, and Access Seekers could acquire from other service providers, and therefore there is no bottleneck characteristic.

Further, Celcom stated that in order to determine whether a specific backhaul route should be deregulated, an analysis should be undertaken on the number of available service providers and their capacity to provide the services as well as whether the services are offered on reasonable terms and conditions.

DiGi views Domestic Connectivity to International Services as a bottleneck service that is offered by a single provider, and is an important requirement for any-to-any connectivity with the Access Seeker's international partners. Therefore, DiGi supports that the Domestic Connectivity to International Services continue to be retained on the Access List. The cost of Domestic Connectivity to International Services is an important contributing element that impacts retail rates of international calls, and proposes that the prices be regulated. Further, DiGi believes that there is no competition on the backhaul service for any of the cable landing station in Mersing, Kuala Muda, Cherating or Melaka. The operators have to use their own capacity or lease capacity from TM.

Fibrecomm supports that Domestic Connectivity to International Services be retained on the Access List to promote demand and the aspirations of Malaysia as a telecommunications hub in the region. However, it views that not all the components of Domestic Connectivity to International Services are a bottleneck service. Fibrecomm also views that the competitive backhaul routes exist in the cross border network due to the availability of multiple providers such as TM, Fibrecomm, Maxis, Fiberail and TIME.

Maxis agrees that Domestic Connectivity to International Services should be retained on the Access List as it is a bottleneck service and monopolised by TM. However, to ensure the effectiveness of this service, Maxis proposes that the higher bandwidth such as STM-4 and STM-64 should be priced. Further, Maxis proposes that the service should allow the Access Seekers and alternative operators to bring their own fibre all the way to the cable landing station. Currently, TM does not allow operators to bring their fibre close to the cable landing station, hence there is a bottleneck within the last hundred metres and the resulting high prices. Maxis also submits that the backhaul to two landing stations, Cherating and Pengkalan Balak are only provided by TM and TM affiliates, Fibrecomm and Fiberail, and are uncompetitive.

Packet One agrees that Domestic Connectivity to International Services should be retained on the Access List, and suggests that the three components be unbundled.

Packet One comments that service providers face difficulty in obtaining co-location at the cable landing station, giving them no choice but to acquire backhaul from the incumbent.

REDtone views that there are no existing competitive backhaul routes as access to these services are not commercially viable.

TIME strongly agrees to the retention of the service, and comments that the prices should be regulated and made transparent to the operators. Further, TIME notes that the most popular backhaul route is from the Thai border to Singapore, where Fiberail and Fibrecomm offers the most attractive price. Mersing and Cherating routes are highly utilised and therefore there are capacity constraints. Hence, these two routes are unattractive to competition due to lack of supply.

TM supports the retention of Domestic Connectivity to International Services, however, it highlighted that due to security reasons and it proposes to have some flexibility in terms of co-location in the cable landing stations. Further, TM views that that there is sufficient availability of network capacity particularly in Peninsula Malaysia, and therefore does not see the need to regulate any route.

U Mobile makes the general comment that substantial analysis is needed in the product and geographic segments of markets to identify where effective competition exists.

(b) SKMM final view

Based on the numerous issues identified above and that the service is a bottleneck, the SKMM retains the Domestic Connectivity to International Services on the Access List.

The SKMM also notes concerns raised that connection services is interpreted to require equipment to be co-located at the submarine cable landing centre. The reference to "equipment" as a prerequisite appears unnecessary and the SKMM has decided to amend service description of Domestic Connectivity to International Services accordingly.

The SKMM has sought to engage stakeholders in a process to determine an evidentiary basis for removal of regulation on competitive routes. The SKMM appreciates the thoughtfulness that is evident in some of the submissions on this point, particularly those which have nominated criteria and routes for examination and application.

Unfortunately the SKMM does not consider that it has available to it evidence and analysis which is sufficiently robust to determine that particular routes are competitive at this stage. However, the SKMM considers that consistent with best practice, it should

undertake a separate review to thoroughly examine the degree of competition and the impact of deregulation on particular routes. The suggested criteria and routes identified will be useful in conducting this analysis.

7.5.3 Rationalisation of backhaul portion

This is discussed in chapter 14 in relation to the rationalised Transmission Service.

8. INTERCONNECTION

8.1 Overview

Interconnection refers to the process for connection and maintenance of "networks of networks" and the linkages between specific networks to facilitate any-to-any connectivity. As such, interconnection is fundamental to competition and the SKMM did not seek specific views on the state of competition because it is apparent there has been no change – interconnection remains a bottleneck in respect of each operator for origination and termination on their own networks.

8.2 Existing Access List Facilities and Services

8.2.1 Interconnect Link Service

Question 27:

(a) The SKMM seeks comments on issues of QoS of the Interconnect Link Service.

(b) The SKMM seeks comments on the implementation of Interconnect Link Service with Network Co-Location Service, and the prevalence of one-way charging by Access Providers.

(a) Comments received

Celcom, Jaring, Maxis, TIME and TM have not identified any QoS issues, whilst U Mobile identified some issues. In addition, Celcom, DiGi, Fiberail, Fibrecomm, Maxis, TIME and TM do not view the one-way charging arrangement as an issue, whilst Packet One and U Mobile have different opinions.

Celcom considers there are no issues in relation to QoS for the Interconnect Link Service and operators apply the QoS for voice services in accordance with subsection 5.16.9 of MS (Access).

DiGi considers that the QoS as covered in subsection 5.16.9 of MS (Access) is sufficient and it faces no significant issues. However, DiGi views that the Interconnect Link Service provided over the IP network may require different QoS parameters, as the IP network has different characteristics and functionalities as compared to PSTN or mobile network. This could impact the ability of the IP operators to meet the current QoS requirements and hence impact other operators. DiGi raised concerns in relation to

times taken by the Access Provider to remedy faults, particularly for full-span, and proposes additional measures.

In addition, DiGi explains that the Interconnect Link Service that requires Network Co-Location is full span service. In this case, the end-to-end infrastructure and equipment is provided by the Access Provider, and would need to utilise space in the Access Seeker's premises to install transmission equipment to ensure it is complete end-to-end. The Access Seeker would then lease the required capacity from the Access Provider for its own use. Therefore, there should be no need for the Access Seeker to charge for co-location as it would increase the cost for the Access Provider to provide the full span service. However, in the event that an operator installs equipment and infrastructure for its own use, then the other operator may apply network co-location charges. Celcom concurs with DiGi.

Fiberail agrees that any QoS issues in relation to Interconnect Link Service would affect the service to end users. The relevant QoS parameters include service availability, fault management and restoration time, the latter two are contained in the MS (Access). Fiberail proposes that the service availability parameter may be considered in a Mandatory Standard for QoS. However, operators must be given the flexibility to charge different rates based on the service availability performance requirements.

Fiberail views that Network Co-Location Service should be provided in conjunction with Interconnect Link Service. Fiberail disagrees that there is unfair one-way charging. This is because Network Co-Location charges are applicable when the Access Seeker locates its equipment at the Access Provider's premises to access network service. However, when the Access Provider locates its equipment at the Access Seeker's premises, it is for the sole purpose of providing the network service to the Access Seeker and should not be charged by the Access Seeker. Fibrecomm concurs with Fiberail.

Fibrecomm views that both the Access Seekers and Access Providers should agree to the standard on a mutual basis.

Maxis did not identify any QoS issues in relation to Interconnect Link Service. However, there are operational issues regarding delays for service provisioning. Further, Maxis uses in-span links mostly and as such, are not used with Network Co-Location Service.

Packet One views that for the full span interconnect, the Access Provider places its equipment at the Access Seeker's premises. Normally, the Access Provider will charge the Access Seeker for the Interconnect Link Service and the Access Seeker does not charge for Network Co-Location Service, even though the same equipment is used to

terminate calls to the Access Seeker. Packet One proposes that the Access Seeker should also be able to charge the Access Provider for Network Co-Location Service for full span as the Access Provider also has an interest in the equipment to provide services to the Access Seeker. As an alternative, the charges should be waived as it is an obligation on both operators to ensure that interconnection occurs.

TIME comments that there are no issues with the implementation of Interconnect Link Service with Network Co-Location Service particularly for provision of full span. In this case, the Access Provider will allow the co-location of Access Seeker's equipment at its premises.

TM did not identify major quality issues with the Interconnect Link Service, and any issues that arise are addressed at monthly operations meetings with Access Seekers. The relevant QoS parameters include service availability, fault management and restoration time which are provided under MS (Access).

TM also reiterates that Network Co-Location should be retained as part of the Interconnect Link Service, as the requirements for co-location are dependent on the type of link service provided. In relation to one-way charging, TM views that it does not occur. This is because no charges are applicable in relation to in-span interconnection. TM further notes that if the Access Seeker requests an Access Provider to enter its premises for the purposes of Interconnect Link Service, then the Access Seeker should not charge the Access Provider for Network Co-Location.

U Mobile notes that generally QoS is managed and addressed in the Technical & Implementation and Operation & Maintenance documents, which are part of the access agreements. However, some issues arise due to congestion and limited capacity on existing interconnection links resulting in unsuccessful calls. Network upgrading is required to resolve the issues, and U Mobile views that the delivery timeframes under subsection 5.7.14 of MS (Access) are too long.

Further, U Mobile opines that the charging mechanism should be reciprocal. Co-location charges should not be levied by the Access Provider, whether incumbent or new entrant as it views that full-span interconnection charges are all-inclusive.

Question 28:

Do you agree that Interconnect Link Service should be retained on the Access List?

(b) Comments received

Celcom, DiGi, Fiberail, Fibrecomm, Maxis, Paycomm, Packet One, REDtone, TIME, TM and U Mobile agree with the SKMM's view that Interconnect Link Service should be retained on the Access List.

Celcom supports the retention of Interconnect Link Service on the Access List to ensure that the service is provided on reasonable terms and conditions.

DiGi supports that the Interconnect Link Service should be retained as it continues to be a bottleneck service and to achieve LTBE.

Fiberail supports the retention of the Interconnect Link Service on the Access List as the industry is not mature for physical connection to be freely accessible between operators. However, they view that Interconnect Link Service should be together with Network Co-Location as one service and not as two independent services.

Fibrecomm agrees to retain the Interconnect Link Service on the Access List to enable interconnection between operators with minimum investment by the Access Seeker. However, it views that the Interconnect Link Service should be provided together with Network Co-Location Service as one service and not as two independent services.

Maxis agrees that Interconnect Link Service is a vital component to the interconnect market, and should be retained on the Access List.

Packet One supports retaining Interconnect Link Service on the Access List. In addition, it proposes that the Access Seeker be given the option to procure Interconnect Link Service from other Access Provider apart from the provider that the Access Seeker is requiring network origination or termination service from. In this case, that provider should also be allowed to install the equipment in the Access Provider's premises for the purpose of providing services on the Access List.

TIME supports the retention of the Interconnect Link Service on the Access List as it is crucial to the interconnection market. In addition, TIME highlights that IP to IP

interconnection is at an infancy stage and should be regulated to prevent any unreasonable denial of access to the service.

TM agrees to the retention of the Interconnect Link Service together with Network Co-Location as one service and not as two independent services.

U Mobile agrees that Interconnect Link Service should be retained on the Access List. As a new entrant, it experienced considerable difficulty in procuring interconnect links.

(c) SKMM final view

It is apparent from the submissions received that the Interconnect Link Service should be maintained as a separate service from Network Co-Location. Therefore, the Interconnect Link Service is retained on the Access List.

The SKMM highlights that there are QoS parameters in the MS (Access) that are relevant to Interconnect Link Service.

8.2.2 Network Co-Location Service

Question 29:

(a) The SKMM seeks comments on the prevalence of access issues to co-location services within buildings and the resulting effect on operators.

(b) The SKMM is also interested in comments on whether the access regime is the appropriate place to address this issue.

(a) Comments received

Celcom, DiGi and U Mobile have not experienced any issues yet with co-location within buildings, whilst TIME faced several issues. Celcom, Fiberail, TIME and TM consider that the access regime is appropriate to address the issue.

Celcom views that as the access regime covers the licensees, therefore access to commercial and residential buildings are beyond the scope of access under the CMA.

DiGi believes that co-location within buildings should be implemented in accordance with the Access List and MS (Access). As Network Co-location Service is on the Access List, the access regime is the appropriate place to address the issue. It proposed improving

the processes to ensure that Access Providers provide fair and equitable treatment to all Access Seekers. Further, building codes or certification processes to include fixed and mobile connectivity would also be useful.

Fiberail explains that issues arise when building owners enter into an exclusive arrangement with a single operator resulting in barriers to entry for other operators at the premises. Even if access to the building is granted through interconnect with the single monopoly operator, it affects operators in the following manner – high cost to provisioning services to end customers, maintenance and operational issues, demarcation of network issues and service availability to end users. Fiberail also agrees that the access regime does not apply to building owners and developers as they are not licensees under CMA. However, it views that the issue could be addressed through licensed operators as Network Co-Location Service whether it is in the building or outside the building is essential.

Packet One also has a similar view as Fiberail and this slows down the acquisition process for a new entrant. Packet One also disagrees that this issue is beyond the scope of access under the CMA. It views that telecommunications is important for inbound investment and therefore, it is the responsibility of the all Ministries to ensure its success.

REDtone views that in addition to the access regime, prompt enforcement is necessary.

TIME faces difficulty in accessing the MDF room based on space constraints, and proposes further guidance on its applicability. Further, when TIME is allowed access by TM, TM charges for co-location, when TM does not incur any cost for owning the space as it is provided by the building operators without any charge. Building owners also charge operators to enter the building, and at the same time, TIME has to pay for the escort services to enter the co-located space. Finally, TIME faces constraints and can only access the co-located space during business operational hours.

TIME agrees that access to commercial or residential buildings are beyond the scope of access under the CMA. It proposes that there be discussion with the Kementerian Perumahan dan Kerajaan Tempatan responsible for building by-laws, and for regular review of the building by-laws to take into consideration current and future technological developments such as fibre and hub.

TM views that the Access Provider is only required to provide Network Co-Location Service at its own premises subject to availability of space and technical feasibility. In instances where the Access Provider does not own the premises but is present at a

particular site, it is the responsibility of the Access Seeker to obtain permission from the owner of the space. This is because the tenancy agreement between the Access Provider and building owner may not allow sub-letting or co-sharing of the premises.

TM views that the access regime is not the appropriate place to address the issues given that the building owners and developers are not licensees under the CMA. It adds that it is unfair to force licensees to ensure that they allow access to premises that they do not own without any prerequisites or condition.

U Mobile currently only seeks co-location services from Access Providers who provide dark fibre. In addition, U Mobile considers that co-location needs to be retained in the Access List.

Question 30: The SKMM seeks comments on the use of the Network Co-location service for purposes not related to facilities or services on the Access List. The SKMM would like to understand the prevalence of this activity currently and the views of operators on this issue.

(b) Comments received

DiGi, TIME and U Mobile support extending the Network Co-Location Service for purposes not related to facilities or services on the Access List, whilst Fiberail, Packet One and TM assert that Network Co-Location Service is limited to facilities and services on the Access List.

DiGi supports extending Network Co-Location Service to purposes not related to the facilities and services on the Access List provided that the terms and conditions are commercially viable to both parties.

Fiberail views that Network Co-Location Service should be related to facilities and services on the Access List, as Network Co-Location Service cannot generate reasonable revenue by itself and is available to enable Access Seekers to access the Access Provider's network. Request for Network Co-Location Service for purposes not related to the facilities and services on the Access List is currently not prevalent and would be charged on a different basis.

Maxis has not identified any major reason or demand for the use of Network Co-Location Service for purposes not related to facilities or services on the Access List.

Packet One submits that the service applies for the purpose of access to facilities or services.

TIME proposes to expand the Network Co-Location Service to include services not related to facilities and services on the Access List, such as MPLS interconnection.

TM views that Network Co-Location Service be limited to the provision of facilities and services on the Access List which is consistent with section 149 of the CMA which requires an Access Provider to provide access to their network facilities or services on the Access List. Any other arrangement should be commercially negotiated and agreed by the parties. TM further views that any extension of Network Co-Location Service should be consistent with section 145 of the CMA, and it does not believe that the section encompasses facility management.

U Mobile proposes that the definition of Network Co-Location Service to include purposes not related to facilities or services on the Access List. Currently, U Mobile subscribes to co-location on a commercial basis for leased dark fibre.

Question 31: Do you agree that Network Co-Location Service be retained on the Access List?

(c) Comments received

DiGi, Fiberail, Jaring, Maxis, Packet One, Paycomm, REDtone, TIME, TM and U Mobile agrees with the SKMM's view to retain Network Co-Location Service on the Access List.

DiGi supports the retention of Network Co-Location Service as it provides the Access Seeker with an avenue to expand the network and provide services that benefit the end users.

Fiberail supports the retention of Network Co-Location Service on the Access List. However, it should be limited to the provision of facilities or services in the Access List.

Packet One supports that Network Co-Location Service be retained on the Access List. The industry has seen a lot of improvement since the service was regulated.

U Mobile agrees that Network Co-Location is important especially to new entrants, and supports retention of the service with their proposed amendments.

(d) SKMM final view

In consideration of the above submissions, the SKMM concludes that Network Co-Location Service should be retained on the Access List.

In relation to access to buildings, the SKMM notes the views of operators. While this issue is not one that can be dealt with directly through the Access List because building owners are not licensees under the CMA, the SKMM will consider these views under other processes. The SKMM agrees with comments that the Network Co-location Service should not be extended to include other non-interconnection related equipment. Network co-location is on the Access List for the purpose of facilitating access to other services on the Access List and not for the purposes of providing access to exchange space for commercial purposes. Therefore, the SKMM will not amend Network Co-location Service in this regard.

Consistent with the amendments with Domestic Connectivity to International Services, the SKMM also amends the service description of Network Co-Location Service to provide clarity on "equipment".

8.2.3 Network Signalling Service

Question 32:

(a) The SKMM seeks comments on whether the Network Signalling Service should remain as a separate service on the Access List.

(b) The SKMM also seeks comments on whether the current Interconnect Link Service is sufficient to address any access issues associated with Network Signalling.

(a) Comments received

Celcom, DiGi, Maxis, TIME and TM view that Network Signalling is not required to be retained on the Access List as a separate service. However, REDtone and U Mobile views that Network Signalling Service should remain as a separate service from Interconnect Link Service.

Celcom, DiGi and Maxis view that Network Signalling Service is not required to be retained on the Access List. It is redundant as the network signalling is already embedded in the fixed and mobile networks. Further, there is no demand for the service from any Access Seeker. The current Interconnect Link Service is sufficient to address

any access issues associated with Network Signalling, as in practice the Interconnect Link Service includes signalling. TM and TIME concur with the view.

Packet One views that Network Signalling Service could be considered part of Interconnect Link Service. However, it is inappropriate to limit Network Signalling Service to only SS7 and the description should cater for technology neutrality, evolving in line with the development of the industry.

REDtone views that Network Signalling Service should continue to remain as a separate service on the Access List to ensure availability of such a service to provide compatibility between the Access Seeker and Access Provider networks.

U Mobile views that though Network Signalling Service is currently effectively provided together with Interconnect Link Service, new demands placed on signalling by Domestic Roaming arrangements provides support that Network Signalling Service should remain as a separate service. Based on U Mobile's experience with 3G-2G domestic roaming, additional signalling capacity is required to be provisioned separately apart from interconnection capacity to cope with the increased signalling demands. The increased volume of signalling is required when end-users enter and exits the domestic roaming mode.

(b) SKMM final view

In consideration of the relevant access issues appearing to be addressed under the Interconnect Link Service, the SKMM has decided to remove this service from the Access List.

The SKMM notes U Mobile's submission, and clarifies that Interconnect Link Service does not limit the signalling capacity that is required to be provisioned. Hence U Mobile's concern will be addressed in the amended service description for the Interconnect Link Service.

9. LEASED LINES

9.1 Overview

The SKMM identified 5 issues to consider in its assessment of the leased line market:

(a) whether some leased line services should be removed from the Access List;

(b) whether higher bandwidths of leased lines should be made available to Access Seekers on a regular basis;

(c) whether IP based services, are reasonable substitutes for leased lines and should be included within the definition of the leased line market;

(d) whether there is scope to remove regulation in some competitive areas or routes for the Domestic Network Transmission Service; and

(e) whether any confusion in the types of leased line services on the Access List could be addressed by providing some clarification, or rationalising the services into a generic category of Transmission Service.

9.2 Summary of submissions received

There were 13 submissions made on leased lines. In general, most of the submissions agreed with the SKMM regarding the state of competition in the leased line market and considered that it varied at the retail and wholesale level on a geographic basis. TM was the main respondent that disagreed with this view.

The vast majority of respondents agreed that the Private Circuit Completion Service should remain on the Access List. However, TM did note that there was no take-up of the service and TIME considered it to be an irrelevant service. The SKMM considers that it would be worthwhile to rename it as a "Wholesale Local Leased Circuit Service" to be in line with international precedents.

In relation to the Domestic Network Transmission Service, most of the respondents agreed that the Service should be retained on the Access List. Some respondents provided criteria to assess the state of competition in the service and amongst the criteria considered there was (1) number of providers, (2) route details, (3) price, (4) absence of bottlenecks, and (5) barriers to entry.

9.3 State of competition

Question 33:

How would you describe the state of competition in leased lines at the retail and wholesale level?

The PI Paper concluded that whilst there have been some improvements in the state of competition since 2005, it appears that TM continues to face few constraints in the provision of leased line service over a number of routes and enjoys a number of competitive advantages over other providers of leased lines.

The SKMM considered that TM remains the major provider of analogue leased line services and the barriers to entry in analogue leased lines remain high.

For digital leased lines, the SKMM concluded that the state of competition varies depending on the levels of competition in different geographic areas / routes and the product offering.

9.3.1 Comments received

ASTRO submitted that retail access is generally available if sufficient lead time for access is provided. However, ASTRO did consider that the state of competition is poor. As a result there is often a requirement to provide a guarantee of long lease periods even in some highly developed routes.

Celcom agreed with the SKMM and submitted that TM is dominant at the retail and wholesale level. While Celcom has seen limited competition from cheaper technologies such as ADSL and SDSL they are not adequate substitutes for traditional leased lines. Celcom has submitted that the definition of leased lines may need to be reviewed and expanded in the near future and that the SKMM should address QoS issues in the MS (Access).

DiGi has agreed with Celcom and submitted that TM (and its subsidiaries) has a near monopoly at both the retail and wholesale level. DiGi states that whilst there is technically some competition on key routes, there is a bottleneck as the service is controlled by two companies. DiGi has concerns about the role of TM's subsidiaries in the lease line market.

Fiberail also agreed with the SKMM's initial conclusion that competition in the leased line market differs geographically. Fiberail stated that in certain geographical areas such as metropolitan areas and major data centres there is vigorous competition between TM, Fibrecomm, TIME, Fiberail, NTT, DiGi, Maxis, Jaring and SACOFA. In Fiberail's view the competition in these areas has lead to significant improvements in price and non-price terms. However, in other geographical areas there is less competition and as a result the prices are relatively high (such as in Ipoh, Melaka, and Kuala Terengganu).

Fibrecomm is of the view that in certain geographic routes there are a number of facilities providers competing in the market and that this is generating competitive pricing in the market.

Jaring submitted that Malaysia needs Competition Laws to address the issues within the market and is concerned that there is no standard price regulation to ensure wholesale and retail prices remain at appropriate levels.

In general, Maxis does not view the leased line market as competitive (with the exception of the buildings where Maxis has last mile connectivity). Maxis conclude that the market is not competitive as it depends on the monopoly owned fixed copper access network. Maxis agreed with the SKMM in that the competitive routes are generally the main, high traffic trunk routes.

Packet One agrees with the SKMM's conclusion that leased line rental price remains too high. Packet One opposes the statement that it is the high cost of constructing the leased line infrastructure that is the reason for barrier to entry. Packet One submits that the barriers to entry are in the costs of laying the cable, the local authority cost, the rental costs and the other side costs. Packet One also considers that IP based services can be considered substitutes for leased lines.

Paycomm submitted that there is little competition in this market as there is a bottleneck to access and market dominance.

REDtone agreed with Paycomm and views that TM is the monopoly provider in retail and wholesale leased lines.

TIME considers that the leased line retail market is highly competitive due to areas served by TM, Fiberail, Fibrecomm, TIME, Maxis and IP-VPN providers. In contrast, TIME does not consider the wholesale market to be competitive across all of Malaysia due to the monopoly of TM and strongly recommends the retention of leased lines on the Access List.

TM considers that the market for leased lines is very competitive and submits that the SKMM's conclusions in relation to leased lines are superficial and not valid. TM states that there is vigorous competition in the market from TIME, NTT, DiGi, Maxis, Jaring, SACOFA, Fiberail and Fibrecomm. TM states that there has been 3 or more competing transmission networks in many parts of Malaysia for 10 years.

TM also submits that the introduction of IP VPN will lead to a significant reduction in the attractiveness of leased lines.

U Mobile also agrees with the SKMM's view that there is little competition in some geographic areas and this is creating high end-to-end leased line rental prices. U Mobile agrees that IP and Metro Ethernet would be suitable substitutes for leased lines.

9.4 Existing Access List Facilities and Services

9.4.1 Private Circuit Completion Service

Question 34:

(a) Do you consider that the Private Circuit Completion Service as amended should be retained on the Access List?

(b) Are there any other outstanding issues that could be addressed by amending the current service description?

(a) Comments received

ASTRO, Celcom, DiGi, Jaring, Maxis and REDtone all consider that the Private Circuit Completion Service should remain on the Access List.

ASTRO submitted that if the retention of the service on the Access List is detrimental to the development of competitive infrastructure then some consideration should be given to limiting its use, by long term proportionate regulation.

Maxis raised several outstanding issues in relation to the delivery of leased lines by TM including problems with delivery commitment, prices of non-regulated leased line services and the lack of service level agreements.

Packet One has proposed that the elements that prevent an Access Seeker from seeking the Private Circuit Completion Service should be analysed.

In contrast, TIME has submitted that the Private Circuit Completion Service is irrelevant and should be replaced with the Wholesale Leased Line service. TIME submits that there should not be a distinction between the Private Circuit Completion Service and wholesale bandwidth and that the Private Circuit Completion Service should be categorized as a managed service where a QoS Standard should be assigned.

TM states that there has been no take up of the Private Circuit Completion Service. In relation to the current service description, TM requests that the SKMM consider imposing light handed regulation and allow commercial negotiations to prevail. TM also notes that the new amended Private Circuit Completion Service may fall within TM's HSBB commitments.

(b) SKMM final view

The SKMM has decided that the Private Circuit Completion Service continues to promote the LTBE. The SKMM also concludes that TM continues to have strong market share in the provision of leased lines in Malaysia, hence regulation of this service remains justified.

In relation to comments received stating that there are alternative providers, the SKMM notes that while there are certain buildings served by multiple infrastructure providers, these buildings are limited in number and coverage does not extend ubiquitously in a particular geographic area. Therefore, the SKMM concludes that the service should remain on the Access List.

The SKMM is aware that the name of this service is confusing and means that the scope of the service is not well understood. Therefore the SKMM proposes to rename the service to "Wholesale Local Leased Circuit Service" which the SKMM believes more appropriately reflects the well-understood meaning of this service. The amended service description proposed in the PI Paper will be included on the Access List.

9.4.2 Domestic Network Transmission Service

Question 35: The SKMM seeks detailed proposals on the criteria to be applied to specific routes that may be competitive in the Domestic Network Transmission Services, and evidence to demonstrate that competitiveness.

Question 36:

(a) Do you agree that Domestic Network Transmission Service should be retained on the Access List?

(b) The SKMM seeks views on whether the service description, as amended, for Domestic Network Transmission Service is appropriate in an NGN environment where Ethernet services are critical.

The Domestic Network Transmission Service is a building block for many telecommunications services. The SKMM considered that it is critical that the Service be provided on reasonable terms and conditions on routes where there is only one provider of this service.

The SKMM preliminary view was the Domestic Network Transmission Service should remain on the Access List as it would continue to be in the LTBE. The SKMM also amended the service description so it is applicable to an IP environment.

(a) Comments received

Celcom agrees that the Domestic Network Transmission Service should be retained on the Access List. However, they consider that the SKMM should conduct a thorough study on the Malaysian market before considering whether to de-regulate certain routes.

DiGi agrees that the Domestic Network Transmission Service should remain on the list and has identified the following criteria to establish the level of competition on specific routes:

(a) number of service providers (at least 3 un-affiliated companies); and

(b) details of the route.

Fiberail submits that the Domestic Network Transmission Service should be retained on the Access List but that highly competitive routes should be removed from the Access List.

Fibrecomm agrees that the Domestic Network Transmission Service should be retained on the Access List.

Jaring has proposed that one of the criteria to assess competition on routes should be price. In relation to Question 36, Jaring considers that the Domestic Network Transmission Service should be reviewed.

Maxis agrees that the Domestic Network Transmission Service should be retained on the Access List and has submitted the following criteria to apply to competitive routes on the Domestic Network Transmission Service:

(a) 3 or more unaffiliated operators on the route;

(b) the absence of any bottleneck infrastructure controlled by one operator;

(c) barriers to entry;

(d) evidence of price competition;

(e) evidence of service innovation; and

(f) attractive non-price terms.

In contrast, Packet One submits that the regulation of the Domestic Network Transmission Service is not geographically dependent. However, it does agree that the Domestic Network Transmission Service should be retained on the Access List. Packet One consider that the definition of the Domestic Network Transmission Service may need to be expanded to include dark fibre. Given the restrictions on new build in some areas of Malaysia and the small number of independent networks across Malaysia, Packet One are of the view that access to dark fibre is essential.

REDtone agrees with the SKMM's preliminary view on question 35 and in relation to question 36, REDtone has agreed with Fiberail and others and stated that the Domestic Network Transmission Service should be retained on the Access List.

TIME agrees that the Domestic Network Transmission Service should be retained on the Access List. TIME also considers that the proposed amendments to the Service is appropriate in an NGN environment.

TM does not consider that any route should continue to be regulated as there is sufficient availability and accessibility of network capacity within Peninsular Malaysia. In assessing the level of competition, TM suggests the following criteria:

(a) number of providers (2 or more);

(b) proximity of alternative networks; and

(c) capability of providers.

In relation to Question 36, TM also agrees that the Domestic Network Transmission Service should be retained on the Access List. However, TM consider that the provision of transmission capacity ought to be limited to connections for node-to-node or backbone. TM does not necessarily consider that the current service description is appropriate in an NGN environment.

U Mobile agrees with Celcom and submitted that any geographical or route-by-route regulation is premature and may unnecessarily distort competition in the market. U Mobile has requested that the SKMM study the "ripple effects" of geographic differentiation before imposing any geographical regulation.

U Mobile agrees with the SKMM's view that the Domestic Network Transmission Service should remain on the Access List. However, they have recommended that the description provided in Annexure 2 paragraph 6(8) be amended so that it explicitly describes the applicability of Metro Ethernet as a technology for the Service.

To summarise some of the specific comments received on the competitiveness of certain routes, as contained in the submissions:

Submitting party	**Route / geographic area**	**Assessment of competition**
Celcom	East Malaysia	Limited competition
Fiberail	AIMS-JB Causeway	Competitive
Fiberail	Cyberjaya-JB Causeway	Competitive
Fiberail	Padang Besar (Malaysia border)-JB Mid Causeway	Competitive
Maxis	Undersea cable linking East	Not competitive

Submitting party	Route / geographic area	Assessment of competition
	and Peninsula Malaysia	
TM	Peninsula Malaysia	Competitive
TM	Wilayah Persekutuan Kuala Lumpur	Competitive
TM	Cyberjaya-Kuala Lumpur	Competitive
TM	Menara VADS-Menara Aik Hua	Competitive
TM	SKDL Mersing-SKDL Kuching	Competitive

(b) SKMM final view

The SKMM concurs with the submissions that a thorough route-by-route analysis is necessary outside this access review to determine whether certain routes are competitive, and as such could be candidates for regulation to be withdrawn on a geographic basis – consistent with international best practice.

Based on the different information received to date, it is difficult for the SKMM to reach a concluded view about the exact level of competition on each route. A competitive analysis on each route would also include an assessment of the available capacity on that route, the technology used, the viability of the competitor, and the relationship of that competitor with other providers. Due to this lack of information, the SKMM does not propose to exclude any routes from the scope of the service at this point, however the SKMM is aware that deregulation is probably possible on certain routes and encourages parties to provide information to establish the appropriate scope of deregulation.

10. BROADCASTING TRANSMISSION

10.1 Overview

The market for broadcasting transmission comprises the analogue and digital, television and radio sectors. There are 3 existing Access List items for this market:

(a) Broadcasting Transmission Service;

(b) Infrastructure Sharing; and

(c) Digital Terrestrial Broadcasting Multiplexing Service.

In the PI Paper the SKMM did not propose any new items to the Access List.

10.2 Summary of submissions received

The SKMM received 9 submissions on this market.

Most of the respondents submitted that there was no competition in the market and that since 2005 competition may have decreased. The respondents also considered that the regulation of the Broadcasting Transmission Service has had no effect on price, quality and other terms of service. In particular, pricing is too high.

All the respondents except for TM considered that the Broadcasting Transmission Service should be retained on the Access List. Several respondents made comments on the effectiveness of the current CIIP process.

Some of the respondents, including U Television and Media Prima, considered that the Digital Terrestrial Broadcasting Multiplexing Service should remain on the Access List. However, 3 of the respondents considered that it should be removed. TM sought for the removal of the Service as well as Telecommunications Consultants and DiGi who submitted that it might not satisfy the LTBE test.

10.3 State of competition

Question 37:

(a) What is your view of the state of competition at the retail level for broadcasting services in Malaysia?

(b) Has it become more or less competitive over time?

The SKMM stated that TM is the main supplier to radio and television broadcasters in the broadcasting transmission market. There is only a limited number of competitors in the provision of inputs to facilitate the provision of broadcasting services and the degree of competition in this area directly affects the downstream competition for broadcasting services.

The SKMM's preliminary conclusion was that the state of competition in this market has not changed since 2005.

(a) Comments received

ASTRO submitted that there is no competition in the retail level for broadcasting services because there are no alternatives to TM for broadcasting transmission.

DiGi submits that the broadcast market is controlled by ASTRO as they hold an exclusive license for the operation of DTTH distribution until 2017. Additionally, DiGi considers that the competition for pay-tv has decreased since 2005.

Maxis did not submit comments on the conventional terrestrial broadcast market. However, it did state that it does not consider Mobile TV to be a broadcast service but a value added service. As such, Maxis considers it unnecessary to extend conventional broadcast access requirements to Mobile TV. Maxis concluded that the competitive forces in the mobile sector will ensure competition in Mobile TV.

Media Prima considers that TM is the dominant Access Provider of broadcasting transmission and that the state of competition is almost non-existent. Media Prima did not think that the state of competition has improved since 2005. They submitted that TM has good locations/sites that other providers are not allowed to enter and they are of the view that TM has unnecessarily imposed many barriers which are hindering competition in the market. Media Prima urged the SKMM to take action so that

broadcasters are not subject to further artificially inflated prices which frustrate the LTBE objective.

TM consider that the broadcasting services sector has become less competitive over time and submit that it would be beneficial for the SKMM to promote competition by facilitating the growth of DTTB.

U Television is of the view that it is difficult to effectively measure the level of competition at the retail level for broadcasting services in Malaysia as there are a considerable variety of retail broadcasters offering services via different technologies. However, as TM is the only provider of the Broadcasting Transmission Service, U Television is concerned on the effect this might have on their planned infrastructure roll-out.

U Television agrees with the SKMM that the state of competition has not changed since 2005. U Television has suggested that the SKMM consider mandating broadcasting content as a separate item.

(b) SKMM final view

The SKMM's view is that there has been no significant change in the market for digital broadcasting services since the PI on Access List in 2005. This view influences the approach that the SKMM will take to both the Broadcast Transmission Service and Digital Terrestrial Broadcasting Multiplexing Service.

The SKMM notes that ASTRO and Media Prima appear to have misinterpreted the question, and the comments made on the state of competition of broadcasting services at the retail level are not directly relevant.

In relation to the comment by U Television regarding broadcasting content, content is not a network facility or service that is capable of being subjected to access regulation pursuant to the CMA.

10.4 Existing Access List Facilities and Services

10.4.1 Broadcasting Transmission Service

The SKMM added the Broadcasting Transmission Service to the Access List in 2005 because it views the Broadcasting Transmission Service as a critical input into the provision of television and broadcasting services within Malaysia. As TM is the main

provider, the SKMM made a preliminary conclusion in the PI Paper that there was insufficient competition in this market to remove it from the Access List.

The PI Paper posed the following questions and the comments received are noted below.

Question 38:

What effect has the regulation of the Broadcasting Transmission Service had on price, quality and other terms of the service?

Question 39:

What effect has the regulation of the Broadcasting Transmission Service had on infrastructure investment by broadcasters?

Question 40:

(a) Do you agree that Broadcasting Transmission Service should be retained on the Access List?

(b) Do you have any comments on whether any particular trunk routes used in respect of the Broadcasting Transmission Service are sufficiently competitive to warrant a relaxation of regulation on those specific routes?

(a) Comments received

Celcom considers that the current regulation of the Broadcasting Transmission Service may not be effective without enforcement by the SKMM. Celcom suggests that CASPs lodge report to the SKMM should there be any non-compliance with the regulations by the Access Providers so that the SKMM could investigate whether there are unreasonable pricing terms in the Broadcasting Transmission Service.

DiGi believes that the Broadcasting Transmission Service should be retained on the Access List because it is essential to the cost effective distribution of broadcasting services.

Maxis submitted its views that mobile TV transmission should not be subject to access regulation. Maxis considered that mobile operators will be interested in deploying their own competing networks given the intense competition already existing in the mobile market.

Media Prima commented that there has been no positive effect on price, quality or any other terms of service. The current pricing is too high and does not reflect the pricing of the broadcast industry. Media Prima is strongly of the view that the current rules regarding pricing do not take into account the calculation of asset depreciation of certain Access Provider sites and have suggested that the SKMM review access pricing.

Further, Media Prima alleged that broadcasters are being charged very high fees by the Access Providers as there are not many players in the market. This makes it difficult for broadcasters to invest in infrastructure.

Finally, Media Prima supported the retention of the Broadcasting Transmission Service on the Access List. Media Prima commented on TM's practice whereby they offer an "end to end" solution through its network and if any Access Seeker seeks less than the whole solution, TM will not provide the service. Media Prima considered this to be anti-competitive conduct and suggest that the SKMM regulate to ensure a level playing field.

TIME agrees with the SKMM in its preliminary view to retain the Broadcasting Transmission Service on the Access List.

TM does not consider that there are many barriers to entry to the provision of elements of the Broadcasting Transmission Service. TM notes that they started to provide this service to broadcasters before it was mandated by the SKMM and that the price offered is lower than the MS (Pricing) ceiling.

TM also submits that the regulation of the Broadcasting Transmission Service does not pose significant effects on a broadcaster's decision to invest in infrastructure. TM consider that other factors will have a greater effect on the broadcaster's investment decisions.

In contrast to other respondents, TM does not consider that the Broadcasting Transmission Service should be retained on the Access List as there are not many barriers to entry to many elements of the broadcasting distribution business.

U Television supported that there is a need for greater regulation to provide consistent services to all Access Seekers, especially in regards to pricing. Ultimately, Access

Seekers have no leverage for negotiation as all broadcast sites are owned by a single Access Provider.

Secondly, U Television viewed that by mandating Broadcasting Transmission Service would encourage infrastructure investment, however, the total charge by Access Providers to deliver content to their customers remains uncompetitive and prohibitive. If access to content was regulated it may avoid monopolistic behaviour and promote greater competition. Therefore, U Television supported retaining the service on the Access List and it should be extended to include all relevant components required for the operation of the transmitter station facilities. U Television agrees with the SKMM's option of rationalising Broadcasting Transmission Service under the generic description of Transmission Service but is of the view that there should be different mandated pricing.

(b) SKMM final view

TM remains a major supplier in the provision of broadcasting transmission services. The SKMM notes that there have been no significant changes to competition in respect of this service since 2005. The reasons for its retention remain largely the same.

The SKMM remains concerned about certain conduct in this market, eg bundling of the Broadcasting Transmission Service with tower access and operations and maintenance. The SKMM considers that tying operations and maintenance services of the Access Provider to the service which the Access Seeker is compelled to acquire is contrary to the SKMM's overall rationale to regulate on an unbundled basis.

However, the SKMM has closely examined the existing provisions in the MS (Access) against the specific complaints about bundling. If the concerns of the respondents are about whether third parties can be engaged to carry out operations and maintenance, the SKMM views that subsection 5.15.1 of the MS (Access) does not preclude third parties from being so engaged. If the concerns are about co-location and maintenance of equipment, there is a specific prohibition against conditional supply in subsection 5.13.22 of the MS (Access). Therefore, these concerns may be addressed under the MS (Access).

The SKMM also notes that unless an access agreement has been entered into, the MS (Access) will not apply in any event. This does not preclude a party from seeking remedies outside the access regime, including from a competition perspective.

The SKMM is also of the view that the Broadcasting Transmission Service should form part of the technology neutral Transmission Service which the SKMM intends to add to the Access List.

In terms of the comments made in relation to pricing, the SKMM will examine these issues in the review of the MS (Pricing).

10.4.2 Infrastructure Sharing

Consideration of this issue is dealt with in Chapter 6.

10.4.3 Digital Terrestrial Television Broadcasting (DTTB) Service

Since the PI on the Access List in 2005, there have been significant developments in the progress to implement DTTB. Whilst trials for DTTB have been carried out in Malaysia, the rollout for commercial digital television will not commence until the end of 2008 with a digital switchover planned for 2015. As a result, the SKMM's preliminary conclusion was that this service should be retained on the Access List.

Question 41:

The SKMM seeks comments on whether any access issues may be addressed through Digital Terrestrial Broadcasting Multiplexing Service and Broadcasting Transmission Service.

Question 42:

The SKMM seeks comments on its preliminary view to retain the Digital Terrestrial Broadcasting Multiplexing Service on the Access List and its proposed service description.

(a) Comments received

ASTRO submitted that a minimum of two CIIPs should be awarded spectrum equally to provide broadcasting services. Any additional spectrum awards to those two CIIPs should be made on their ability to attract and retain broadcaster customers.

DiGi considers that detailed regulation of services and quality in MS (Access) for the Digital Terrestrial Broadcasting Multiplexing Service may not be in-line with the LTBE for DTT. They submit that setting minimum requirements removes the incentives for the

Access Provider to implement more efficient encoding technologies which would increase the number of channels available in each multiplexer.

DiGi submits that the retention of the Service on the Access List may not satisfy the LTBE test.

Maxis commented that their preference is for alternative network provision which would extend to multiplexing services for Mobile TV.

Media Prima considers that the SKMM needs to be more transparent in the appointment of a CIIP. They have proposed a list of criteria that the SKMM should apply to ensure the CIIP meets a certain level of performance standard. The criteria includes: (i) the price to access the infrastructure is clearly established; (ii) the CIIP shall have to establish a SLA; and (iii) there should be more than one CIIP operator appointed.

Media Prima also agrees that that the Digital Terrestrial Broadcasting Multiplexing Service should remain on the Access List.

In contrast, TM would like the SKMM to remove the Service from the Access List. TM considers that as the service has not been launched, access regulation is premature. However TM did suggest any regulatory intervention should be considered when the CIIP licence is awarded.

Telco Consultants also argues that ongoing access regulation of the service is likely to have a negative impact on investment digital television in Malaysia. They contend that retention on the Access List in advance of decisions on the CIIP expected in Quarter 1 of 2009 would complicate commercial negotiations and compromise Malaysia's digital migration process. Further, Telco Consultants consider that services other than the CIIP (such as satellite digital television) need to be treated similarly. Telco Consultants concludes that access and competition issues should be addressed during negotiations on the CIIP licence in early 2009.

U Television submits that access should be extended to the following additional areas: (i) access to multiplexers; (ii) access to transmission sites and towers; (iii) access to reception equipment; and (iv) access to conditional access systems and electronic program guides.

U Television agrees that the Service should be retained on the Access List. U Television also requests that the SKMM provide the definitions and technical specifications for SDTV and HDTV.

(b) SKMM final view

The SKMM is of the view that regulatory intervention associated with access to broadcast multiplexing services is regarded as good regulatory practice on a global basis. The SKMM has not been provided with evidence which is convincing in demonstrating that the Digital Multiplexing Service should not be on the Access List. The SKMM, therefore, views that the Digital Multiplexing Service should remain on the Access List.

The SKMM does not agree with the view of TM and Telco Consultants that it is premature to regulate this service. The SKMM instead proposes to take a forward-looking approach to this service. Whilst licensing of the CIIP is yet to commence, the SKMM considers that access issues can be dealt with now as part of this inquiry.

In relation to the comments by U Television, the SKMM disagrees that it needs to prescribe the definitions and technical specifications for SDTV and HDTV. The SKMM does not consider it is appropriate to be prescriptive on this issue, although the SKMM does recognise the rationale for the issues raised by U Television. The SKMM instead proposes, as a practical matter, that it will not be prescriptive on the basis that different operators make variations that are entirely appropriate and do not have the effect of limiting deployment. However the SKMM would be more inclined towards a prescriptive approach if different standards were proposed that could adversely impact on end users.

11. EXISTING BROADBAND SERVICES

11.1 Overview

Broadband services involve the provision of sufficient bandwidth to facilitate the transfer of data at high speeds. ADSL and wireless LAN are the main technologies which provide broadband services.

There are currently 6 facilities and services relevant to the Broadband Services Market: Full Access Service, Line Sharing Service, Bitstream Services, Sub-loop Service, Digital Subscriber Line Resale Service and Internet Interconnection Service.

In its preliminary view, the SKMM considered the following issues in the broadband services market:

(a) whether the Internet Interconnection Service should remain on the Access List;

(b) whether MyIX is providing an effective method of domestic interconnection between ISPs in Malaysia;

(c) whether regulation required to ensure that Naked DSL is available in Malaysia; and

(d) whether the SKMM should regulate the provision of wholesale services over WiMAX, WiFi and HSDPA services.

The existing ANE services are considered in section 12 of this PI Report.

11.2 Summary of submissions received

The SKMM received 13 submissions on existing broadband services.

The vast majority of respondents do not believe that the retail broadband services market in Malaysia is competitive. DiGi and U Mobile distinguish between the retail market for fixed and wireless broadband and state that whilst the fixed market is not competitive, the wireless market is competitive. In contrast to all the other respondents, TM submits that the retail broadband services market is aggressively competitive.

Celcom, DiGi, Jaring, Maxis, REDtone, TIME and U Mobile all consider that the wholesale broadband services market is not competitive. In contrast, TM considers that the market

is competitive. There appears to be some demand from operators for the SKMM to regulate wholesale broadband services. In particular, several operators state that Bitstream should be regulated and that there would be strong demand for Naked DSL if it is a regulated service.

Most respondents are of the view that the problems experienced with MyIX are operational and administrative. However, the respondents are mixed on whether Internet Interconnection should remain on the Access List. Five respondents including Celcom, Jaring, Maxis, MyIX and Packet One think the service should be retained on the Access List. In contrast, 3 respondent including DiGi, TIME and TM think it should be removed.

The respondent had differing views on how Naked DSL could be regulated under the Access List.

Four of the respondents indicated that Wholesale Broadband Services should not be regulated. However, Jaring and TM disagree and state that regulation of this service is very important.

11.3 State of competition

Question 43: The SKMM invites comments on the competitiveness of the retail broadband services market.

The SKMM concluded on its preliminary analysis that although there has been some competition in the provision of broadband services since 2005, TM maintains its markets share and the market is not competitive.

(a) Comments received

Celcom does not consider that the retail broadband market is competitive due to TM. They consider that the primary lever for introducing more competition in broadband is at the wholesale level by ensuring appropriate broadband products are available at reasonable conditions.

DiGi categorises the retail broadband market into the fixed and mobile broadband market. It considers that the fixed broadband market is not competitive, but that the mobile broadband market is competitive in contrast.

In regards to the retail broadband market Ericsson states that there is still space for growth in the wireless broadband business.

Jaring agrees with the majority of respondents who state that there is not much competition in the retail broadband market as TM holds a monopoly in retail and wholesale. Jaring considers that the retail market is dominated by TM retail and even though the market was partly liberalised in 2005 with the introduction of wholesale DSL, Bitstream Services and Digital Subscriber Line Resale Service, the conditions are still favourable to TM.

Maxis considers that the market for retail broadband services in Malaysia is uncompetitive as TM has significant market power.

Packet One concludes that there is no effective competition in the provision of broadband over DEL. Packet One are of the view that the introduction of Bitstream Services, and Digital Subscriber Line Resale Service in 2005 have failed to achieve its objectives of providing consumer alternatives to the broadband service provider.

Additionally, Packet One considers that TMNet's Streamyx Combo is a potential abuse of TM's dominance in the market for broadband services. As a wholesale line rental product is not available in Malaysia the only option to compete is to offer broadband at a price which accounts for a line rental charge. As such, Packet One has urged the SKMM to consider additional remedies to promote competition in this market. Packet One has presented extensive evidence to show that the Malaysian broadband market is not competitive with other international markets.

Packet One considers that the lack of competition also suggests that the bitstream product is deficient in some way. Packet One submits it could be that the pricing of the bitstream service is too high compared to TM's retail offering, leaving little margin for competitors.

Paycomm submits that open competition to provide HDTV services must be encouraged.

REDtone submits that as retail pricing for both corporate and consumer broadband services in Malaysia is high then broadband in Malaysia remains uncompetitive.

TIME considers that although the retail broadband services market has improved, it is still not competitive. Alternatives to TM's Streamyx do exist but they are not available in all areas. TIME has urged the SKMM to liberalise the market to ensure a truly competitive market for broadband services in Malaysia.

In contrast, TM submits that there is aggressive competition in the retail broadband services market. As evidence, TM has submitted a table demonstrating the number of players in each of the varying broadband technologies. TM would like the SKMM to consider that mobile broadband is part of the retail broadband market and in which case TM's market share is considerably lower (approximately 20%). In contrast to DiGi and U Mobile, TM submits that the competitive differentiators of mobile broadband make it a real substitute to fixed broadband services.

U Mobile agreed with DiGi and details the distinctions between two categories of retail broadband services: fixed broadband and mobile/wireless broadband. The lack of substitutability between the two services leads U Mobile to conclude they are two distinct markets. As such, U Mobile submits that different regulatory approaches are required.

U Mobile considers that the fixed broadband market is uncompetitive as it is dominated by TM. In contrast, U Mobile views mobile/wireless broadband as moderately competitive.

(b) SKMM final view

The SKMM is of the view that there is likely to be 2 broadband markets in Malaysia and that this position will continue for at least the next three years. The SKMM does not need to reach a final view about whether there are 2 broadband markets, however the SKMM will undertake its analysis of access based on this assumption. The SKMM also notes that this is consistent with its view that the competitive provision of wireless broadband services is unlikely to constrain a major fixed broadband services provider.

The mobile broadband market is more competitive. Wireless broadband services are not substitutes for fixed broadband services because of technological differences:

- wireless broadband services suffer higher latency than fixed broadband services;

- there is no certainty that a service will be available at any specific geographic location. Instead, in wireless broadband services the probability of coverage at a geographic point is expressed as a probability. This contrasts with fixed broadband services where the knowledge of the location of wire line infrastructure and the distance from an active device such as a DSLAM, gives a virtual certainty as to the type and availability of fixed broadband service;

- wireless broadband services cannot currently accomplish the speeds offered over fixed broadband networks; and

- as noted in the PI Paper, reasonable QoS parameters are less able to be achieved over wireless networks than fixed networks, largely for the reasons specified above.

The SKMM concludes that the fixed broadband market is dominated by TM although there are some other providers reselling TM services. It may be that over time, other wireless technologies present a competitive constraint to fixed broadband, such as LTE. However, the emergence of a real competitive constraint provided by this technology will not, in the SKMM's view, be present over the next few years.

In relation to the competitiveness of the wireless broadband services market, the SKMM notes the views expressed in the PI Paper that there are, and likely to be further, competitors supplying wireless broadband services. These include the 4 WiMAX licensed operators, the 4 mobile operators supplying HSPA-type services, and future wireless technology providers, as well as resellers and MVNOs of these services. For the same reasons that the SKMM considers that the mobile services market is competitive, the SKMM considers that the wireless broadband services market is likely to be similarly (if not more) competitive.

11.4 Existing Access List Facilities and Services

11.4.1 Wholesale provision of broadband services

Question 44:

(a) The SKMM invites comments on the competitiveness of the wholesale broadband services market.

(b) The SKMM seeks comments on the issues pertaining to the wholesale digital subscriber line service, and whether some of the terms and conditions for the wholesale digital subscriber line product could be considered for the Bitstream Services.

(c) The SKMM seeks comments on the demand for Naked DSL service with justifications, and whether parties are able to commercially negotiate for the service.

(a) Comments received

Celcom strongly considers that the wholesale broadband services market requires regulatory intervention as Celcom expects TM to retain a position of dominance in the foreseeable future. Celcom considers that the SKMM should consider whether the terms and conditions for the wholesale digital subscriber line product can be considered for the bitstream service.

Celcom considers that there would be demand for a Naked DSL service and submits that there will be a large possibility that TM and Access Seekers will not be able to commercially negotiate the service.

DiGi considers that the wholesale broadband services market is not competitive as it is dominated by TM. DiGi submits that currently it is not pragmatic to market a wholesale digital subscriber line service due to delays in implementation of the wholesale DSL and the upfront take-up commitments imposed by TM. As a result, DiGi proposes that the terms and conditions for Bitstream services provided by TM are regulated. DiGi shares a similar view about the unattractive nature of the current Naked DSL proposition.

DiGi also proposed that TM's pricing structure should fulfil a set of margin tests to prevent price squeezes so as to ensure a level playing field.

Jaring does not consider that the wholesale broadband services market is competitive as ISPs must offer it at a very minimal margin for profit. With the broadband service ceiling price fixed and the cost of the last mile from wholesale DSL being high, ISPs have difficulty capturing new market share. Additionally, Jaring strongly recommend that Naked DSL be introduced.

Maxis submits that the wholesale broadband market is uncompetitive. They consider this is due to a lack of broadband infrastructure providers and due to anti-competitive pricing by TM. Maxis has presented pricing of TMNet's Streamyx Combo offer as evidence that the TM prices are so low that it is likely they cannot be matched by other competitors.

Maxis submits that since both fixed voice and broadband markets in Malaysia are uncompetitive, Naked DSL should be included as a remedy on the Access List.

Packet One considers that the terms of the Digital Subscriber Line Resale and Bitstream service are not feasible to be an incentive to take up the service. In particular, the price leaves no room for operators to compete with TM.

REDtone submits that at the wholesale level, both pricing and quality of service from TM's DSL service remains uncompetitive. They are of the view that the SKMM should consider any terms and conditions for the wholesale digital subscriber line service that ensure consistency of service. Going forward, REDtone suggests that the SKMM must consider mandatory pricing.

Additionally, REDtone are of the view that there is demand for Naked DSL.

TIME submits that the wholesale broadband services market is not competitive. Although there are 3 other operators providing some DEL connection the market is still monopolized by TM. TIME considers that the current Access List does not allow for new broadband service providers to provide innovative DSL services without going through TM's DSL network which limits the bandwidth and deployment time. As a result, TIME submits that the wholesale broadband service should be regulated.

In contrast, TM submits that the Malaysian wholesale broadband services market is competitive and TM does not agree with the SKMM's proposal to include an offering of a wholesale DSL Service on the Access List as it is likely to have a negative effect on TM. Additionally, TM does not consider that this product is similar to Bitstream.

TM would like to correct an assertion made in the report that TM only offers one bandwidth for the wholesale DSL product. TM states that it offers 4 levels: 1 Mbps, 2 Mbps, 5 Mbps and 8 Mbps.

U Mobile does not consider that there is any competition in the fixed broadband wholesale market.

(b) SKMM final view

The SKMM is of the view that there is insufficient evidence that the wholesale broadband sector is competitive. TM is the only wholesale provider and is not offering a wholesale product which enables competitive suppliers to enter the market. Further, the SKMM is concerned that the retail demands for a Naked DSL service are not being met through current wholesale arrangements. In fact, no other provider is able to provide a Naked DSL service of a type similar to Streamyx Combo.

There is some confusion as to the appropriate mechanism for the provision of Naked DSL retail services.

In addition, although the SKMM notes that some respondents have requested a "resale" Naked DSL service, this is not the regulatory approach which has been adopted on a global basis. Rather, regulatory intervention to facilitate Naked DSL services consists of the regulator ensuring that the unbundled components of Naked DSL are available on a wholesale basis. For this reason, the SKMM proposes to add Wholesale Line Rental to the Access List. The SKMM envisages that a potential provider of Naked DSL retail services will acquire both Wholesale Line Rental Service and a Bitstream Service or Digital Subscriber Line Resale Service which the Access Seeker will package as a Naked DSL retail offering.

Further information about Naked DSL is provided in response to Question 47 below.

11.4.2Internet Interconnection Service

Question 45:

(a) The SKMM invites views on the membership process and on ways that delays to join MyIX can be addressed.

(b) The SKMM invites views on whether other than those noted, there are issues faced by new ISPs which prohibit them from benefiting from the services of MyIX, which is the ability to exchange domestic Internet traffic efficiently.

Question 46:

The SKMM invites comments on whether the Internet Interconnection Service should continue to remain on the Access List given that the MyIX now provides ISPs the ability to exchange domestic Internet traffic.

(a) Comments received

Celcom considers that the membership process to MyIX has taken longer than expected due to lack of information and lack of clear criteria for approval. Further, Celcom considers that the Internet Interconnection Service should remain on the Access List.

DiGi is a member of MyIX and states that it has not experienced many issues with the membership process. DiGi submits that the issues currently being faced are purely

administrative and considers that that the Internet Interconnection Service should be removed from the Access List.

Jaring does not consider that the membership process should be changed as the current process is adequate. Additionally, Jaring would like the Internet Interconnection Service remain on the Access List until MyIX is fully operational.

Maxis submits that it has had no issues with the peering set up at MyIX and that their connectivity there has greatly improved the speed of linkage to the largest ISP in Malaysia. Maxis agrees with the SKMM's proposal to retain the Internet Interconnection Service on the Access List as an interim measure until MyIX is fully operational and robust.

MyIX submitted the rules of MyIX membership. MyIX noted that all members enjoy the same Internet interconnection rights in terms of quality and price. MyIX submits that they strongly support open peering. MyIX also submitted some of the common problems ISPs experience during the application process which can delay approval. For instance, via provision of the correct NSP (I) licence.

MyIX also agrees with the SKMM's proposal to retain Internet Interconnection Service as long as it is an interim measure pending the full set up of their operations. It suggests that MyIX could maintain the service on the Access List without specifying an effective date.

Packet One submits that since MyIX's incorporation there is still room for improvement especially regarding the registration of new members. They strongly suggest that the SKMM should continue to play a major role in the operational matters of the MyIX. Additionally, Packet One strongly supports the retention of the Internet Interconnection Service on the Access List.

REDtone submits that the membership requirements for MyIX that are already incorporated into the MyIX constitution are sufficient to prevent an abusive use of MyIX services.

TIME is of the view that there are some key issues with regards to membership process of MyIX. In particular, the time taken to admit new members. However, TIME is of the view that the Internet Interconnection Service should be removed from the Access List.

TM considers that there are only minor issues with MyIX membership process which can be easily resolved. Additionally, TM submits that the Internet Interconnection Service can be removed from the Access List.

(b) SKMM final view

The SKMM notes that MyIX is proceeding reasonably well. However, a number of respondents remain concerned about the administrative processing of applications to MyIX and provisioning timelines. While these processes appear to be readily rectifiable, they remain of concern.

Further, the SKMM has not been provided with a body of evidence which would justify the removal of regulatory intervention in respect of the Internet Interconnection Service. As a result, SKMM proposes to leave the Internet Interconnection Service on the Access List. The SKMM particularly notes that its inclusion on the Access List in the PI on Access List in 2005 was driven by the intense problems with Internet interconnection. These included the highly inefficient routing arrangements which effectively forced domestic Internet traffic out of Malaysia.

Although there has been negligible take-up of the service, in light of the access issues its regulation was intended to resolve and the absence of strong submissions against its removal, the SKMM has decided that the service will be retained on the Access List until a sunset date of 1 January 2011. The SKMM notes the suggestion by MyIX for the service to remain on the Access List without specifying an effective date. The SKMM considers that a sunset date would be the more proportionate response, which recognises the ongoing positive collaboration between MyIX, the industry in general and the SKMM to fix what was once a serious problem in the industry.

The SKMM urges MyIX to rectify these administrative issues prior to the sunset date. The SKMM proposes to allow the inclusion of the service on the Access List to lapse at that time, except if these issues remain largely unremedied.

11.4.3 ANE services and Digital Subscriber Line Resale Service

Question 47:

(a) The SKMM invites comments on the means by which regulation could be applied under the Access List to ensure the provision of a Naked DSL service.

(b)	Is it reasonable that an Access Seeker can only offer a Naked DSL service through acquisition of the Line Sharing Service on the condition that the customer pays line rental to TM?

(a) Comments received

ASTRO submitted a comment on part (b) of the question and stated TM should be required to provide Naked DSL to any broadcaster requesting it at regulated wholesale rates for the line connectivity. ASTRO consider that the provision of DSLAMs at TM nodes by third parties should also be permitted.

Celcom considers that the Australian model to provide Naked DSL is the most preferable.

DiGi considers that the consumer demand for Naked DSL could be very high and propose that TM should have to offer 3 alternative ways to provide Naked DSL: (1) Naked DSL through Line Sharing Service; (2) Naked DSL through Bitstream; and (3) Full Access Service. In relation to part (b) of the question, DiGi do not consider that it is reasonable.

Ericsson submits that it is important that the price of a naked DSL service plus additional mobile and VoIP services are significantly lower than the price of conventional DSL and PSTN line rental.

In relation to part (b) of the question, Jaring propose that the current line rental charge be split into 2 portions: Physical line rental and PSTN voice service.

Maxis notes that the most effective way to enable an Access Seeker to offer Naked DSL is to include wholesale Naked DSL Service on the Access List. Additionally, Maxis does not consider that it is reasonable that an Access Seeker can only offer a Naked DSL service through the acquisition of the Line Sharing Service on the condition that the customer pays line rental to TM. Maxis consider that the purpose of the Naked DSL service is to enable the customer to break the relationship with TM and this is not possible with a line sharing service.

Packet One considers that Naked DSL should not be discussed in the context of the Access List. Additionally, Packet One considers that it is too early to regulate wholesale broadband services provided over WiMAX.

Paycomm considers that ASPs should be able to offer the full suite of services to end users as a "one-stop shop".

REDtone considers that both pricing and availability should be regulated to promote Naked DSL to end users.

TIME remains concerned that TM will seek to unreasonably influence the pricing of Naked DSL. In relation to part (b), TIME considers it to be unreasonable.

TM considers that the discussion about regulating Naked DSL service is misguided, on the basis that access regulation should be more relevant to wholesale access as opposed to the provision of a retail services. TM also asserts that Streamyx Combo is not a Naked DSL service and as such the pricing that other operators are able to offer for Naked DSL is not relevant as TM is not offering itself such a service.

In addition, TM states that in 2005 the FCC determined not to regulate Naked DSL, the rationale being that regulation would undermine the deployment of advanced telecommunications services by increasing barriers to infrastructure investment. TM considers that if the LTBE test is not satisfied for unbundling where the HSBB network will not be located, there would be no corresponding case for Naked DSL to be mandated in these areas as well.

Finally, TM considers that it may be reasonable for Access Seekers to offer a retail Naked DSL service through line sharing but that it may place an onerous obligation on the Access Provider.

(b) SKMM final view

The SKMM is of the view that a wholesale DSL service which does not restrict Access Seekers from providing a Naked DSL service and one where the end user only has a relationship with Access Seeker is in the LTBE.

The SKMM acknowledges even with Naked DSL, the cost of the line has to be recovered. However, the cost of the line does not have to be recovered explicitly by TM through a line rental charge payable by the end user. It is recoverable through other access services such as Wholesale Line Rental Service, Full Access Service or Bitstream Service. Therefore, Access Seekers are able to build a retail Naked DSL product by acquiring these wholesale services, offering broadband (DSL) connectivity, and billing the customer in such a way that provides a Naked DSL service. In this way, TM recovers the cost of the line.

As detailed below, the SKMM proposes to intervene to facilitate the delivery of Naked DSL services on a retail level through acquiring the provision of relevant wholesale

offerings. It will then be up to Access Seekers to determine which services they wish to acquire, and how they wish to build their Naked DSL product. However, through the SKMM's actions, the provision of competitive Naked DSL products is now a possibility.

The SKMM also makes the following observations in relation to TM's comments. TM states that its Streamyx Combo promotes broadband usage and the package does not require standard TM Homeline rental. This is a Naked DSL product, contrary to TM's assertion that it does not itself offer such a service. The SKMM notes that TM has attempted to distinguish itself from the vertically-integrated operators in the US which now offer Naked DSL, stating that "..TM's power to influence the market is significantly below these [AT&T, Verizon] vertically integrated industry giants". To the contrary, the fixed broadband market in Malaysia is dominated by TM.

Secondly, Naked DSL is actually offered in the US. Despite the March 2005 FCC decision referred to by TM, the FCC subsequently mandated the availability of Naked DSL as a condition of the Verizon/MCI and AT&T/SBC merger approvals. This point is footnoted by TM, but is highly relevant in terms of the benefits envisaged from making a Naked DSL product available.

Finally, the SKMM will make it clear in the MS (Access) that TM will be prohibited from seeking to charge the end user a line rental fee as a condition of acquiring a DSL service from a competitive supplier, when that competitive supplier is acquiring one of the relevant wholesale services (i.e. Wholesale Line Rental Service, Full Access Service, Bitstream Services or Sub-loop Service).

11.5 Potential facilities and services on the Access List

11.5.1 Regulation of wholesale services over the WiMAX, WiFi and HSDPA services

Question 48: The SKMM seeks comments on whether wholesale broadband services provided over WiMAX and mobile networks are likely to be competitively provided and whether regulation is required of these wholesale broadband services.

(a) Comments received

Celcom and DiGi agree with the SKMM that there is no need to regulate these wholesale broadband services, on the basis that they are already competitive.

Ericsson considers that Mobile Broadband using HSPA evolution roadmap is competitive. They have suggested that Ericsson play a role to ensure Customer Segmentation is implemented so the operator is able to offer QoS assurance within their network with a guaranteed bit rate.

Jaring believes that wholesale regulation is important in Malaysia and critical when there is a dominant player. Jaring submit that current wholesale regulation has failed.

Maxis submits that there is no demand or requirement for wholesale broadband services over mobile networks to be regulated, as the mobile market is competitive.

Paycomm considers that if the wholesale broadband services are a bottleneck, then they should be regulated.

REDtone considers that the comments regarding WiMAX are premature as WiMAX is still in its infancy in Malaysia. However, they note that the regulation to ensure the availability of access to broadband services over mobile networks will encourage value added services from service providers.

TM submits that the SKMM should consider including a new Broadband Wireless Access Service onto the Access List to allow operators to have a mandated ability to obtain a wholesale broadband wireless access service. TM also submits that substitutable services should be subject to similar access rules.

U Mobile considers that given the competition in the market, wholesale broadband services should not be regulated but provided on a commercial basis.

(b) SKMM final view

For the reasons expressed above, the SKMM is of the view that the market for wireless broadband services is competitive and, as a result, there is no requirement for intervention in this segment. The mobile broadband services market is distinct from the fixed broadband services market as set out above.

12. REGULATION OF HIGH SPEED BROADBAND SERVICES

12.1 Overview

The SKMM would like to clarify that the areas where TM intends to deploy the high-speed broadband network, i.e. inner Klang Valley, the identified greenfield areas of Iskandar Malaysia (previously known as Iskandar Development Region) and key industry areas, are not exclusive to TM; any other licensees or parties holding the appropriate licences may deploy a similar high speed broadband network or other broadband network such as wireless network. In fact, the SKMM encourages more service providers to offer high-speed broadband services. Where there is a concentration on a particular service provider such as TM, the systemic risk is higher.

In this section of the PI Paper, the SKMM considered the regulation of high speed services over high speed broadband networks. This analysis was done in the context that there may be different regulatory environments where the HSBB network exists and outside the HSBB network.

In addition to the 3 HSBB services to be offered by TM on a commercial basis and specified in the Ministerial Direction on HSBB and Access List, the SKMM has considered several other services for regulation over the HSBB network. In particular the SKMM examined whether Full Access Service, Sub-loop Service, the Line Sharing Service, the Bitstream Service and the Digital Subscriber Line Resale Service should remain on the Access List.

According to the SKMM's understanding of the Ministerial Direction on HSBB and Access List, the scope of the 7 year deferment only relates to the Full Access Service, Sub-loop Service and Line Sharing Service where those facilities and services are provided over the HSSB network to be deployed by TM. It is otherwise open for the SKMM to mandate access to the HSSB network to the extent consistent with the objects of the CMA. In addition, the SKMM also reiterates that the other regulatory provisions in the CMA continues to apply to the HSBB network, and that the SKMM will continue to monitor the compliance with the regulatory provisions.

The SKMM reiterates that the SAOs under the CMA apply to all Access Providers who own high speed broadband networks, including niche or smaller broadband networks (for example, those serving business customers). Therefore, any services considered for regulation are equally applicable to all owners of high speed broadband networks.

12.2 Summary of submissions received

The SKMM received 13 submissions in relation to the regulation of high speed broadband services.

The respondents detailed many advantages that are likely to arise from NGNs. Several of the respondents agreed with the advantages detailed by the SKMM whilst others detailed additional advantages including:

- savings to be made from business and government efficiencies;
- lower operating costs for operators and the ability to carry high loads of traffic;
- introduction/modernisation through efficient soft-switching from classical circuit switching; and
- end users will benefit lower costs and one standardised rate nationwide.

TM submitted that the migration to NGN will break the historic linkage between services and networks and is set to re-define the business strategy, cost structures and regulatory arrangements across the communications sector.

All respondents agreed on the importance of broadband and most agreed that SKMM should regulate in order to optimise the competitive supply of the broadband service. There was also a strong feeling that it is important to set the appropriate regulatory incentives.

Most of the respondents agreed that it was unlikely that another wireline based broadband network as extensive as TM's HSBB network will be deployed. As such, the majority of the respondents agreed when discussing particular services on the Access List and submitted that amongst other things:

- the access network component of the HSBB network is likely to constitute a bottleneck;
- the transmission component of the high speed broadband network is also likely to constitute a bottleneck;
- regulatory forbearance is not an appropriate regulatory response to the HSBB network;

- the imposition of a non-discrimination and openness requirement is a proportionate regulatory response;

- regulation should be applied to a Layer 2 network service;

- the Access Seekers should control speeds offered to customers of high speed broadband services;

- a HSBB Network Service with QoS and a HSBB Network Service without QoS should be added to the Access List;

- the copper Full Access Service should be available on a transitional basis until the HSBB network is available to a customer;

- the Full Access Service should be regulated where the HSBB network will not be located;

- the Line Sharing Service should be regulated where the HSBB network is not located and also on a transitional basis;

- the Sub-loop Service should be regulated where the HSBB network is not located and also on a transitional basis;

- the Bitstream Services should be retained on the Access List where the HSBB network is not located and also should continue to be offered on an ongoing basis, even where HSBB services are not available;

- the Digital Subscriber Line Resale Service should not be removed from the Access List where the HSBB network is located; and

- the Digital Subscriber Line Resale Service should be retained on the Access List where the HSBB network is not located.

DiGi also had significant concerns regarding the use of the term "HSBB areas". DiGi was concerned that the HSBB network will not be rolled out on a ubiquitous basis in an area, and any differences in regulation based on the "HSBB area" may result in customers receiving neither an HSBB service nor an alternative fixed broadband service.

12.2.1 SKMM final view

The SKMM comments below on its conclusions in relation to each of the HSBB and ANE services. However, the SKMM does wish to acknowledge DiGi's concerns regarding the use of the term "HSBB areas". The SKMM agrees with DiGi's concerns and proposes to refrain from the use of the term "HSBB areas". It is, and always has been, the SKMM's intention to limit the regulation of other wholesale broadband services where the HSBB network is located, to those premises connected to the HSBB network.

12.3 NGN technology and importance for Malaysia

12.3.1 Comments received

Question 49:

The SKMM invites comments on NGNs generally and, in particular, the advantages likely to accrue to suppliers and end users from NGN.

ASTRO submitted that Malaysia has seen a weak competitive market in the development of broadband services and infrastructure and lessons need to be learned from this in an NGN environment. They considered that any licence for NGN infrastructure development must commit to a minimum set of conditions for rollout in low density areas. In addition, high speed broadband must be able to deliver a reliable SDTV service plus 2 Mbps best efforts Internet connection simultaneously to a single connected dwelling. This definition should then increase over time to reach 2 HDTV and an 8 Mbps Internet connection. ASTRO considered that the current HSBB proposal falls short of this.

Celcom agreed with the advantages of broadband as detailed by the SKMM. Additionally, they considered that the benefits of next generation, high speed broadband are also evident in the savings to be made from business and government efficiencies. Celcom submitted that a key issue to be addressed is the competitive supply of broadband infrastructure and the investment incentives required to promote the investment.

DiGi detailed that the benefits of NGNs are two-fold with lower operating costs for operators and the ability to carry high loads of traffic. DiGi submitted that this should result in lower operating costs.

Ericsson stated that the core benefit of NGN is the introduction/modernisation through efficient soft-switching from circuit switching nodes and thus reducing operating expenditure.

Jaring considered that the question is not relevant as NGN is a natural process for the benefit of users and service providers.

Maxis detailed that there are significant advantages to end users and suppliers from NGNs. They considered the main benefits to be related to the kinds of services and traffic types. The behaviour of users in accessing Internet content is evolving to require more symmetric services which traditional copper based ADSL networks are not suited to (for instance peer to peer). Maxis considered that consumer demand for IPTV is strong.

Packet One submitted that NGN is a leading multi service network for audio, voice and new plans and investment in NGA have set the communication sector on the verge of a new era. They considered that one of the most important aspects of NGN is the deliberate separation of the Access Provider from the 'service' provider. Packet One also submitted that as TM's information about HSBB is not public it is premature to seek feedback on HSBB.

Paycomm considered that a main advantage of broadband is end users will finally get lower costs and one standardised rate nationwide.

TIME proposed that the SKMM should examine the market and the services rather than the technology behind the services.

TM submitted that the increasing deployment of NGN infrastructure can be considered as the most significant change to the telecommunications market since competition was introduced. Additionally, they considered that the migration to NGN breaks the historic linkage between services and networks and is set to re-define the business strategy, cost structures and regulatory arrangements across the sector.

In relation to vendor independence, U Mobile submitted that not all vendors are using open interfaces in network elements. They detailed that not all vendors even support open interface and as such the statement that NGNs allow vendor independence is misleading.

In relation to equipment for network control and management, U Mobile submitted that software upgrades in an NGN are not easy due to the many software versions embedded in the network elements.

Question 50:

The SKMM invites comments on the importance of broadband and the competitive supply of broadband services in Malaysia.

ASTRO submitted that the SKMM must regulate HSBB to optimise the competitive supply of broadband in areas where competition is possible.

Celcom submitted that broadband has been given priority in Malaysia, however, they considered that there is a need to ensure that there are the correct regulatory incentives to promote investment in next generation broadband. Celcom concluded that intervention is warranted.

Additionally, Celcom is concerned about the inconsistent application of the Access List to different technologies. They considered that the imposition of access obligations on one platform distorts competition and the incentives to invest in regulated platforms. Celcom accordingly argued for a level playing field with open access available across all platforms.

DiGi considered that broadband is a fundamental enabler for the growth and the development of the economy and the nation and that it is essential for it to be competitively supplied (especially in the fixed broadband market). DiGi submitted that TM's Streamyx service is giving customers a negative experience of broadband which is limiting up-take. DiGi also considered that TM is proposing an approach for HSBB that is 'radically different' from that proposed in the PI Paper.

Ericsson submitted that consumers want a full range of services from broadband. They considered that broadband is important as IPTV is becoming attractive, consumers will be prepared to spend more money for high quality services, mobile operators are entering the broadband business and operators need to keep up with competitors.

Fibrecomm submitted that broadband services (together with mobile services) will change the lifestyle of Malaysian consumers. They concluded that the success of broadband services will be very much subjected to customer demand and awareness of the products and services offered. Competitive supply will be important to address these issues.

Maxis detailed that a well developed and competitive broadband market is important to the economic development of Malaysia and should be regulated. Maxis detailed several of the economic benefits of broadband including that access to competitive broadband services (i) enables higher innovation; (ii) enables export of services; (iii) enables the development and sale of new, innovative content services.

Packet One submitted that the importance of broadband is well recognised by the Malaysian government. Broadband connectivity is a key component in ICT development, adoption and use. Packet One considered that broadband has the following benefits (i) it is a key enabler of e-business and new market opportunities; (ii) it can improve efficient, availability and reach of public sectors; (iii) it can increase productivity and competitiveness and (iv) can provide consumers with the technical capability to access a wide range of resources, services and products. However, Packet One does not consider that the state of competitive supply of broadband in Malaysia is very encouraging and further action is required to encourage development.

Paycomm considered that competitive supply of broadband can only arise if ASPs are allowed to purchase Naked DSL at competitive wholesale rates.

REDtone did not consider that there is a competitive supply of broadband access in Malaysia.

TIME was in full support of the Government's effort to emphasise the importance of broadband. However, they believed that the supply of broadband services is still not competitive with TM commanding the largest market share.

TM submitted that the implementation of nationwide broadband services will significantly contribute to the development of the country's social-economic development which will in turn increase productivity, improve the ability of enterprises to access better quality of information and improve efficiencies. TM also acknowledged the important role of broadband in addressing the increasing demand for the transmission of large volumes of information at high speeds and at real time.

U Mobile agreed with TIME and was in full support of the Government's initiatives to promote broadband and agreed that it is important for the SKMM to get the regulation right.

12.3.2 SKMM final view

The SKMM acknowledges and thanks the respondents who provided meaningful comments in relation to the importance of high speed broadband services and their competitive delivery in Malaysia. It is apparent that the benefits of high-speed broadband services are widely appreciated. Malaysia is one of the few countries in the world in the process of constructing a high-speed broadband network and the regulatory measures being explored are largely unprecedented in terms of the appropriateness of regulation, its form and impact on investment and competition. However, in comparison to countries such as the UK, Singapore, Australia that are also embarking on similar high-speed broadband deployments, they have a more developed telecommunications infrastructure as well as higher penetration rates. In considering the regulatory measures, the SKMM would also need to take into consideration measures to develop the infrastructure in Malaysia.

As stated in the PI Paper, the SKMM is guided by the statutory functions pursuant to the *Malaysian Communications and Multimedia Commission Act 1998* (**the Commission Act)** such as to encourage and promote the development of the communications and multimedia industry.

In addition, the SKMM is cognisant of national policy objectives as set out in subsection 3(2) of the CMA such as:

- to establish Malaysia as a major global centre and hub for communications and multimedia information and content services;
- to promote a civil society where information-based services will provide the basis of continuing enhancements to quality of work and life;
- to regulate for the long-term benefit of the end user;
- 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;
- to create a robust applications environment for end users; and

- to facilitate the efficient allocation of resources such as skilled labour, capital, knowledge and national assets.

In addition, these regulatory measures take into account policy imperatives and Government's developmental objectives that are external to this Public Inquiry process. The competing interests which the SKMM must take into account are evidenced by a strong understanding by the industry of the role high-speed broadband will play in Malaysian society, particularly the implications for the country in fulfilling its national ambitions as a global communications hub. As such, the SKMM considers a proactive role on a forward-looking basis is necessary as part of the regulatory measures.

12.4 Regulation of high speed broadband services

12.4.1 Comments received

Question 51: Do you think another high speed wireline-based broadband network as extensive as TM's HSBB network is likely to be deployed in Malaysia?

ASTRO considered that the optimum approach is to allow one or 2 further infrastructure providers to commercially compete with TM in NGN last mile access in urban areas and to place obligations on all providers to cooperate in a combined rollout in rural areas with regulated open access. ASTRO submitted that enforceable rural targets and deadlines must be set which, if breached, would mean the provider was obliged to contribute to the USP fund.

DiGi does not expect to see a full alternate HSBB deployment nationwide, but did consider that an alternate HSBB networks would be deployed in some areas.

Ericsson believes that healthy competition is good for broadband industries and that wireline-based GPON should play an important role in this context.

Jaring submitted that the question should not be about whether it is likely to be deployed but whether it is necessary for it to be deployed. If TM's HSBB is not truly open and competitive then Jaring submitted that there will be pressure to create an alternative network.

Maxis and Packet One submitted that it was highly unlikely that another wireline based broadband network as extensive as TM's HSBB network would be deployed due to several significant difficulties.

Paycomm considers that there will be another network and it will be at a much lower cost than TM's network. It considers that broadband over powerline remains an untapped alternative opportunity.

REDtone submitted that TM's HSBB does not offer fair and equal access to all Access Seekers and as such an alternative to TM's HSBB must be made available to ensure fair and equal participation from all services providers in Malaysia. REDtone detailed that the alternative high speed, nationwide, service-neutral, IP based, common backbone infrastructure could be managed by MyIX.

TIME agreed with DiGi and Maxis and stated that they did not foresee another high speed wireline based broadband network in Malaysia as long as TM receives significant assistance from the government. In agreement with U Mobile and ASTRO, TIME submitted that the SKMM should provide the necessary catalyst to establish another HSBB provider in Malaysia. TIME urged the SKMM to make government funding available to all players to expedite HSBB deployment in Malaysia.

TM considered that where its HSBB network will be located there is unlikely to be another high-speed broadband network duplicating TM's but that its HSBB network will be subject to open access and it is possible for other high speed broadband networks to be deployed.

U Mobile agreed with ASTRO and submitted that public funding should be made available on an equitable and fair basis to other providers of HSBB networks, especially those that have a degree of open access.

12.4.2SKMM final view

It is clear to the SKMM that it is highly unlikely that an alternative fixed high speed broadband network will be built by an alternative provider other than on a highly niche basis. TM is likely to be the only supplier of such a network for the considerable future. Based on the SKMM's view that fixed broadband services are likely to be in a separate market from the wireless broadband services market, TM is likely to continue to have a high market share in the fixed broadband services market for a considerable period of time. This, prima facie, suggests that regulation will be necessary in order to provide fair and equitable access to the HSBB network.

In response to ASTRO, the SKMM reiterates that the areas where TM intends to deploy the high-speed broadband network are not exclusive to TM, therefore, other service providers may deploy similar networks or wireless networks.

In relation to the comments made on broadband over powerline, the SKMM conducted a public consultation and released the Guidelines on Broadband over Power Line Communications (26 September 2005).

Question 52:

(a) The SKMM invites comments on its proposal that the access network component of the HSBB network is likely to constitute a bottleneck and that there are grounds for regulating the provision of services over the access network.

(b) The SKMM also invites comments on the level of likely competitive constraint that wireless broadband providers will place on the HSBB network, particularly for advanced services such as IPTV.

12.4.3 Comments received

ASTRO, Celcom, DiGi, Ericsson, Jaring, Maxis, Paycomm, TIME and U Mobile submitted that there is a bottleneck and that the case for regulating open access is strong. ASTRO also argued that wireless broadband is not considered a realistic alternative for the delivery of live streamed IPTV content to the home, due to the fact that its bandwidth contention is relatively high.

Celcom also submitted that until TM releases its detailed technical and implementation plans for the HSBB network it is difficult to determine the extent of the bottleneck.

Packet One considered that there is too little information publicly available about the HSBB to answer question 52 and that an industry group should be formed to handle the issue.

DiGi additionally submitted that in contrast to the TM approach, HSBB services should be offered on a naked level.

ASTRO, DiGi, Jaring, Maxis, TIME and U Mobile did not consider that wireless broadband is a realistic alternative and would not offer competitive constraint.

Ericsson submitted that wireless broadband is not a bottleneck in regards to the delivery of content or information.

REDtone is aware of the opinion that without regulation, fair and equal access to the access network component of HSBB will not be available. Additionally, they considered that access to HSBB backhaul will have to be regulated.

TIME submitted that TM should allow access for operators to lease its fibre capacity so that other operators can pull fibre from the node to the customer's premises. They considered that this would reduce the cost of connectivity.

TM considered that from its view of regulation of HSBB it is premature to state that it is a bottleneck and as such it should not be regulated until a market failure has been proven. TM submitted that wireless broadband is a competitive contender to wireline broadband. Additionally, TM considered the possible effects of a large chunk of spectrum being freed up by the migration to digital television.

U Mobile considered that it would be difficult for Access Seekers to obtain access on an equitable, basis as commercial terms allow for preferential treatment for those Access Seekers willing to offer more.

12.4.4 SKMM final view

Again, it is clear from the comments received and from the SKMM's analysis provided in the PI Paper that the access component of the HSBB network is likely to constitute a bottleneck, and that there are strong grounds for regulating the provision of services over the HSBB access network. For the same reasons as expressed above, the SKMM concludes that wireless broadband providers are unlikely to place a competitive constraint on TM.

Also for the same reasons expressed above, the SKMM does not consider that it should wait for a market failure to have been identified prior to considering regulation. The counter-factual faced by the SKMM is that in the event of market failure at a later time, the absence of appropriate regulation of HSBB is a situation that will be impossible to remedy. Indeed, a market failure at this point would likely require far more significant remedies than access regulation and may include measures such as structural or functional separation or even tremendous Government effort and resources to restore the industry. This would result in high costs to society and is counter-productive to the Government's aspirations and the national policy objectives.

The SKMM will consider regulation on a forward-looking basis if the market characteristics warrant regulation. The SKMM considers that such market characteristics are present in relation to the HSBB network.

Question 53: The SKMM invites comments on whether the transmission component of the high speed broadband network is also likely to constitute a bottleneck

12.4.5 Comments received

ASTRO did not consider that the transmission component of the HSBB network will be a significant bottleneck.

Celcom and Packet One considered that question 53 was best addressed in an industry working group comprising representatives from all licensees.

Ericsson submitted that operators have already initiated efforts to migrate towards DWDM and as such the core transmission will be sustainable.

DiGi, Jaring, Maxis, Paycomm and TIME did consider that the transmission component was a bottleneck. Maxis also submitted that there were some exceptions in certain geographic areas but ultimately submitted that the transmission component should be regulated as a wholesale service.

TM submitted that whilst the transmission component HSBB network may be perceived as a bottleneck, it is not a well established service. TM also stated that they have committed to the Government to address any bottleneck issues if they arise. TM detailed the difference between a traffic bottleneck and the economic concept of bottleneck assets.

12.4.6 SKMM final view

The SKMM remains concerned that contention from the access network onto the transmission network creates a technology bottleneck and that, in the absence of regulation, there is the potential for access issues to arise at this point. For the same reasons expressed in the PI Paper, the SKMM is of the view that transmission over the HSBB network is also likely to constitute a bottleneck and should be regulated.

The SKMM also considered Celcom and Packet One's suggestion that a working group meet to discuss issues associated with access to the HSBB network. The SKMM encourages all industry participants to engage through working groups and other fora such as the MAFB to consider the practical implications of access to the HSBB network. However, the SKMM does not consider that this suggestion provides grounds from refraining from regulating for all of the reasons expressed above.

Question 54: The SKMM invites comments on whether there is likely to be significant demand side and other risks associated with the HSBB network investment which is not otherwise offset by the Government's funding contribution.

12.4.7 Comments received

ASTRO submitted that the demand-side risk is a factor of service quality versus cost of provision and that while HSBB networks are in their infancy, some form of hybrid delivery of service leveraging on existing DTH and DTTB distribution in conjunction with NGNs may help to reduce risk.

Celcom and Packet One considered that question 54 was best addressed in an industry working group comprising representatives from all licensees.

DiGi submitted that HSBB will have a large captive market in existing areas from the migrating Streamyx customers. In new areas the demand will emanate from TM having a virtual monopoly in the provision of fixed services in these areas. DiGi detailed that it believes that TM and the government agreed that the demand side risk was acceptable.

Ericsson believed that building of broadband services is inherently low risk as long as media industries take an active role in the master plan.

Jaring considered strongly that the structure of government funding for HSBB is not fair to other industry players irrespective of demand.

Maxis considered that there are unlikely to be significant demand side risks associated with the HSBB which are not offset by government funding.

Paycomm considered that a current risk is that the HSBB network investment is grossly overpriced. They submitted that correct pricing and utilisation of technologies such as Broadband over Powerline is required.

TIME submitted that the issue of demand risk should not be a consideration since the infrastructure has to be made available before applications and content services can come on board. If access to HSBB is allowed, TIME submitted that the investment risk will be reduced.

TM detailed that investing in high-speed broadband network even when pricing is affordable is not without risk as these services are not well-established.

12.4.8 SKMM final view

The SKMM remains aware that demand side risk will be a factor at least in the short to medium term for TM. However, this has been addressed to a certain extent by the Government co-investment in the HSBB project.

With the Government's emphasis on the National Broadband Plan, there is demand stimulated through the initiatives such as e-Government, e-Health, e-Learning and e-Library. In addition, under the Cabinet Committee on Broadband, there are initiatives such as Integrated Content Development Task Force (ICON) chaired by Chief Secretary to the Government which will encourage the public and private sectors to create demand for broadband. All these initiatives will mitigate the demand risk.

The SKMM does not agree entirely with respondent views that TM has a "captive market". There are likely to be significant marketing resources dedicated to stimulating demand for services over the HSBB network.

Perhaps more importantly for this Public Inquiry, the SKMM envisage that the access measures discussed in this review would allow competitors to TM to participate in stimulating demand for high-speed broadband services.

Nevertheless, demand side risk remains a factor and this will continue to be considered by the SKMM when pricing issues are dealt with.

Question 55:

(a) The SKMM invites comments on whether regulatory forbearance is an appropriate response when considering whether to regulate high speed broadband services over the HSBB network.

(b) The SKMM also invites comments on whether there are other countries not considered above where regulatory forbearance has been considered, with particular emphasis on those countries which are likely to have application to Malaysia.

(c) The SKMM also invites comments on the risks if the SKMM decided not to impose regulation on high speed broadband network owners.

12.4.9 Comments received

ASTRO, DiGi, Jaring, Maxis, REDtone, TIME and U Mobile agreed with the SKMM and strongly considered that an appropriate regulatory response to ensure reasonable commercial terms of access is required and forbearance is not an option.

Celcom and Packet One considered that this question was best addressed in an industry working group comprising representatives from all licensees.

Maxis detailed several countries where HSBB like networks have been regulated according to the principles of open access, separation and non-discrimination. These include Singapore, the Netherlands, USA, Spain and France.

Paycomm submitted that bottlenecks and market domination require regulation.

TIME additionally submitted that without regulation the incumbent will continue to monopolise the broadband services market. They considered that regulation should be in place so that pricing, access terms and last mile connectivity are clearly spelt out.

In contrast, TM submitted that as HSBB is supply driven and considering the high investment costs and risk exposure, regulatory forbearance is necessary. As the development of NGN is happening very quickly and the development of NGN core and NGN access infrastructure are not occurring in parallel, regulators are likely to face different challenges in addressing NGN issues. Given the large investment by TM and

the risky return, TM considered that it is crucial to ensure a high degree of certainty. TM is of the view that only in the event of market failure should the SKMM intervene.

Additionally, TM strongly argued that providing/seeking access in a similar way to the existing PSTN access regime is inappropriate from a policy perspective and serves to distort the market. TM detailed the case of Germany where the regulator and government supported a model of regulatory forbearance.

12.4.10 SKMM final view

For the reasons expressed in the PI Paper, the SKMM does not consider that regulatory forbearance is an appropriate response. None of the countries cited where regulatory forbearance has been accepted are applicable to the Malaysian environment. The SKMM does not consider that the example of Germany provides a useful precedent for the Malaysian context. As TM itself has acknowledged, the arrangements proposed in Germany appear to be inconsistent with the EU Directives relevant to electronic communications. Further, the German example does not appear to be consistent with the overall objective of regulating for the long term benefit of the end user.

Question 56: The SKMM invites comments on whether the imposition of a non-discrimination and openness requirement on the provision of high speed broadband services over the HSBB network is a proportionate regulatory response.

12.4.11 Comments received

ASTRO, DiGi, Jaring, Maxis, Paycomm, REDtone, TIME and U Mobile believed that openness and non-discrimination are core attributes of a proportionate regulatory response.

Celcom and Packet One considered that this question was best addressed in an industry working group comprising representatives from all licensees.

Maxis additionally is of the view that there should be either structural or operation separation of the HSBB network. Maxis submits this is consistent with international benchmarks such as Singapore and the UK.

TM is generally supportive of the principle of non-discrimination and openness requirement for interconnection of facilities and services. TM discussed the different

application of the principles in an IP environment and an NGN environment. TM also reiterated that it is important to ensure that the regulatory regime ensures that other players have access to the HSBB network on fair terms and also ensures TM maintains a reasonable return on its investment.

12.4.12 SKMM final view

The SKMM notes that there is a high degree of support from all operators including TM for the principle of openness and non-discrimination of access to the HSBB network in Malaysia. The non-discriminatory principle is expressed in section 149 of the CMA and applicable to facilities and services on the Access List.

The SKMM considers that in circumstances where there is not likely to be another wireline based high-speed broadband network as extensive as TM's HSBB networks, and where wireless broadband networks do not provide sufficient competitive constraints, provision of access on a non-discriminatory basis is a proportionate way of regulating.

Again, the SKMM concludes that TM is likely to be the major supplier of high speed fixed broadband services and that, as a consequence, there is a risk that in the absence of regulation, TM will seek to profit maximise and discriminate in favour of itself as a vertically integrated operator. For this reason, access to the services to be provided over the HSBB network should be on reasonable and non-discriminatory terms and conditions.

Question 57:

The SKMM invites preliminary comments on the effect of cost-based regulation on incentives to invest and risk of investment in high speed broadband networks.

12.4.13 Comments received

ASTRO submitted that cost based regulation is undesirable at this point in time.

Celcom and Packet One considered that this question was best addressed in an industry working group comprising representatives from all licensees.

In contrast, DiGi believed that cost based regulation is reasonable and justifiable as it will assist to establish healthy competition and stimulate demand. DiGi appreciated the difficulty with cost based regulation but considered that some type of effective price regulation must apply. DiGi are concerned that without price regulation TM will seek to

charge very high prices. DiGi concluded that price regulation is particularly applicable as TM is receiving government funding with a condition of 'open access'.

Jaring submitted that the current investment model for high speed broadband needs further review in order for it to be sustainable. They considered that it will need to be reviewed to minimise investment whilst maintaining reasonable competition.

Maxis agreed with ASTRO as it has identified some practical problems and risks associated with regulating services over the HSBB based on cost. They considered it could lead to inflated wholesale price, potentially inflated retail prices and less competition.

Paycomm urged the SKMM to consider Broadband over Powerline as they believed the objectives of HSBB can be achieved at a much lower cost.

REDtone submitted that 'retail minus' pricing is required.

TIME submitted that cost based minus subsidy is a good approach.

TM considered that traditional concepts in relation to connectivity, access and interconnection payments are likely to change as we move into an IP environment. TM submitted that the relationship between wholesale and retail charging environment will significantly influence market outcomes in Malaysia's NGN environment and that the SKMM should not foreclose on potential pricing options until it has undertaken an industry wide costing and forecasting.

U Mobile urged the SKMM to undertake a study to determine the most appropriate charging mechanism. Additionally, U Mobile did not consider that the views presented in the PI Report at 12.6.8 to be applicable to Malaysia.

12.4.14 SKMM final view

Although as stated in the PI Paper that it is not within the scope of this Public Inquiry to determine the appropriate pricing principles for HSBB, these views will be considered in the SKMM's access pricing review process to be separately conducted.

The SKMM emphasises that the inclusion of a service on the Access List does not pre-empt pricing outcomes. The SKMM will consider issues such as demand uncertainty and the need for predictive information to produce robust pricing outcomes when considering price regulation.

12.5 Elements and definition of regulated high speed broadband services

12.5.1 Comments received

Question 58: The SKMM invites comments on the feasibility of unbundling fibre networks and whether there would be demand for unbundled fibre network elements.

ASTRO submitted that there should be an expression of the demand to migrate to full ULL in a fibre network in due course.

Celcom and Packet One considered that this question was best addressed in an industry working group comprising representatives from all licensees.

DiGi acknowledged that unbundling fibre in access networks might have some technical challenges but submitted that those challenges are only applicable to the access network. The challenges in the access nodes and further up in the transport network are much less. DiGi submitted that without unbundling of the fibre network, operators may duplicate networks.

Jaring agreed that the traditional method of cable unbundling is not feasible for fibre network (PON) and that a different approach should be taken (for instance, service neutral PON).

Maxis considered that the feasibility of unbundling fibre networks depends largely on the network architecture.

TIME submitted that unbundling fibre networks will spark a surge of supply by new service providers to fill broadband demand. TIME also submitted that it should be unbundled at the switch level.

TM agreed with the SKMM that fibre unbundling of an FTTx network is not feasible as it will result in duplication of infrastructure and an increased number of POIs. TM also noted that the fibre network built by TM is a dedicated fibre network which does not have excess fibres which can be provided to Access Seekers.

U Mobile did not have a view on the feasibility of unbundling fibre at the access network level but considered that unbundling of fibre networks can be possible on point-to-point fibre routes and that the availability of unbundled fibre could lower costs for building

long haul transmission networks. U Mobile additionally believed that it would be important to have access obligations for unbundled fibre.

12.5.2 SKMM final view

The SKMM does not believe that there is a strong case for fibre unbundling presented by any of the respondents. Furthermore, and as expressed in the PI Paper, the SKMM's own research suggests that fibre unbundling in the access network is likely to be problematic. The cost of fibre unbundling are also likely to be significant and, in the absence of demand certainty for unbundled fibre, this cost is not warranted.

In addition, the SKMM considers that the other remedies described below (eg the inclusion on the Access List the HSBB Network Service with and without QoS) are sufficiently pre-emptive of market failure concerns without needing a more extreme fibre unbundling remedy at this point.

Accordingly, the SKMM does not consider that fibre unbundling is a necessary remedy, nor would it be a proportionate response to the existing concerns of the industry and end users.

Question 59: The SKMM invites comments on whether regulation should be applied to a Layer 2 or Layer 3 network service.

12.5.3 Comments received

ASTRO, DiGi, Jaring, Maxis and U Mobile submitted that regulation should be applied to Layer 2.

Celcom and Packet One considered that this question was best addressed in an industry working group comprising representatives from all licensees.

Ericsson detailed two scenarios for operator approaches. The first is that there are operators running wireline and wireless network infrastructure with a trend to consolidate existing IP MPLS core towards the last mile. The second scenario is a mobile operator that only operates simple voice and SMS network will prefer to just execute a layer 2 IP network architecture.

Maxis additionally submitted that this will ensure that control over QoS is retained by the Access Seeker.

In contrast, Paycomm submitted that both Layers should be regulated.

TM strongly urged the SKMM to refrain from regulating in this area as it is still premature. However, if it is to be regulated TM would prefer it to be limited at Layer 2.

TIME considered that regulators should not concentrate on in depth regulation. They submitted that operators should be free to set their own standard.

12.5.4 SKMM final view

There is a high degree of consensus that Layer 2 connectivity should be provided. Hence, when considering regulation of HSBB Network Services, the SKMM will ensure that Layer 2 connectivity is facilitated.

Question 60: The SKMM invites comments on the proposed QoS regime described in Table 13 of the PI Paper.

12.5.5 Comments received

ASTRO considered that although the current IPTV services are clearly Class 2, the growing interest in encrypted peer-to-peer live streaming as a valid content distribution mechanism may raise this requirement to Class 1.

Celcom and Packet One considered that this question was best addressed in an industry working group comprising representatives from all licensees.

DiGi supported the fact that QoS requirements must be implemented on the services offered by TM to Access Seekers. However, DiGi believed that including both a packet loss and overbooking factor are contradictory and so DiGi submitted that QoS should be based on packet loss only. DiGi suggested alternative parameters as a guide to the QoS for 2 classes, VoIP and IPTV, and for Internet traffic.

Ericsson and Jaring submitted that the ratio for the QoS regime is reasonable.

Maxis submitted that the contention ratios do not fully describe the requirements of the Access Seeker and an alternative set of measurements should be provided. It was submitted that QoS is necessary as well as protocols for ensuring packets are prioritised and handled so that various classes of service can be implemented for different products.

Paycomm submitted that contention ratios and QoS need to be regulated.

TIME stated that ITU-T recommendation Y.1541, QoS regime is the most appropriate.

TM considered that QoS parameters such as the contention ratio should be a matter for commercial negotiation between the Access Provider and the Access Seeker in order to guarantee the performance and QoS of Access Seekers' application and services inside of the HSBB network. TM also commented that where the Access Provider assigns an IP address (as in the SKMM's service description of HSBB Network Service with QoS) the service would be a Layer 3 Service and not a Layer 2 service.

12.5.6 SKMM final view

The SKMM received wide-ranging views from the respondents on the QoS parameters described in Table 13 of the PI Paper.

The SKMM agrees with TM's comment regarding Layer 3 status where the Access Provider assigns the IP address. The service definition for HSBB Network Service with QoS in the Access List has been amended to clarify that the reference should be to the Access Seeker assigning the IP address.

The SKMM has considered the responses received and it is the final view to retain the QoS parameters. However, the SKMM considers that there may be additional QoS parameters which could be proposed by the MAFB, including those suggested by DiGi.

Question 61: The SKMM invites comments on how different speeds should be offered to customers of high speed broadband services and whether the network owner should pre-define these speeds and/or whether the Access Seeker should control these speeds (or both).

12.5.7Comments received

ASTRO submitted that it is appropriate to offer both types of speed access to permit different service types to be carried, and the network bandwidth used most efficiently for all service classes. DiGi, Maxis, Paycomm and TIME agreed and submitted that Access Seekers should have control of speeds.

Celcom and Packet One considered that this question was best addressed in an industry working group comprising representatives from all licensees.

Ericsson submitted that implementing QoS for minimum guarantee bit rate is possible and they also submitted that network operators should offer a package with minimum guarantee bit rate for premier Access Seekers and best effort for flat rate access.

Jaring submitted that raw speed for Access Seekers should be provided to the premises owner and that the same line should be shared by more than one service provider.

TM considered that to provide satisfactory QoS treatment over its network, the traffic capacity sought by the Access Seeker must be mutually agreed by both parties.

12.5.8 SKMM final view

The SKMM takes the view that it is appropriate to offer raw and unconstrained access when no QoS parameters are associated with the HSBB Network Service without QoS, other than the obligation of non-discrimination on the Access Provider. That is, a best efforts access service should not have a constraint on the bit rate speed which is provided to the Access Seeker.

However, when the Access Provider is required to deliver a HSBB Network Service with QoS, the SKMM considers that a finite set of speeds will need to be offered, and that this set of bit rates should not include bit rates which are greater than that being offered by the Access Provider.

The SKMM clarifies that the notes associated with the table for the pre-defined speeds in the service description of HSBB Network Service with QoS are intended as examples, and as such the service is not intended to be constrained by the examples.

Question 62: The SKMM invites comments on the POIs to high speed broadband networks.

12.5.9 Comments received

ASTRO would be likely to seek access to POIs at the entry or even backbone level for multicast IPTV distribution. It would also seek access at more distributed locations for edge-media VoD and other Unicast-based services.

Celcom and Packet One considered that this question was best addressed in an industry working group comprising representatives from all licensees.

DiGi considered that interconnection should be flexible to accommodate POI at all access aggregation and exchange locations where applicable. DiGi also considered that TM should provide a list of proposed HSBB POI locations. Additionally, DiGi considered that there should be the ability to interconnect both locally and regionally.

Ericsson submitted that the POI of each architecture is valid depending on the kind of business the operator is focussing on.

Jaring submitted that the POI should be at the meeting point between the access network and the transmission network.

Maxis submitted that Access Seekers should be granted access at the closest POI to the customer (usually the OLT or aggregation node at the local exchange). In addition they should be granted access further away from the customer where the seeker does not have the requisite backhaul. Maxis urged the SKMM to mandate this.

REDtone strongly disagreed with TM's model on access to HSBB and submitted that POIs to HSBB must allow fair participation from an Access Seeker at all levels of the network.

TIME agreed that POI should have the options of both the aggregation point and Metro Ethernet network.

TM considered that it is not possible to predict the number of POIs required in an NGN context, but an overall reduction may take place.

U Mobile agreed with the SKMM's locations of the POI and agreed that TM should provide a list of locations for the POI.

12.5.10 SKMM final view

The SKMM is aware of the issues associated with NGN architecture and this was a major influence in the proposed locations of POIs in the PI Paper. As a result of the submissions received, the SKMM remains of the same view that the POI for HSBB without QoS should be at an aggregation point in the HSBB network, and that the POI for HSBB with QoS should be at the Access Seeker's premises.

Question 63:

The SKMM invites comments on this proposal to consider two services for inclusion on the Access List:

(a) an HSBB Network Service with QoS; and

(b) an HSBB Network Service without QoS.

12.5.11 Comments received

ASTRO, DiGi, Jaring, Paycomm, REDtone and TIME submitted that both the HSBB Network Service with and without QoS are appropriate for inclusion on the Access List.

In contrast, Maxis detailed that it does not agree with adding HSBB Network Service without QoS and a regulated service must have some kind of QoS guarantees and SLAs.

Celcom and Packet One considered that this question was best addressed in an industry working group comprising representatives from all licensees.

12.5.12 SKMM final view

The SKMM reiterates that it is within the purview of the SKMM to consider the inclusion of access services over the HSBB network in the Access List.

Having considered all the submissions received in relation to high-speed broadband networks, which includes TM's HSBB network, the SKMM reiterates the following:

- Even though there are demand risk on deploying the high-speed broadband network, the SKMM considers that they are reduced through stimulating private-sector demand by providing other operators access on a non-discriminatory basis as well as through Government initiatives;

- There is not likely to be another wireline-based high-speed broadband network that would be as extensive as TM's HSBB network, and that wireless broadband services are not likely to place a competitive constraint on TM's HSBB network;

- Currently, TM has about 96% market share of the broadband market;

- To allow market failure to occur before the SKMM intervenes is not an option, as there would be significant detrimental effect on the competitors and the industry, and severe remedies including structural or functional separation or tremendous Government resources would be required to restore the industry. This would result in high costs to society and is counter-productive to the Government's aspirations and the national policy objectives;

- Therefore, the SKMM would need to be proactive and believes that a forward-looking approach needs to be undertaken when considering regulation of services over the HSBB network. Hence, the SKMM views that access to the high-speed broadband network on a non-discriminatory basis is essential,

- As the access and transmission components of the high-speed broadband network are bottlenecks, these components should also be regulated on a non-discriminatory basis;

Therefore based on the above, the SKMM views that including the HSBB Network Service on the Access List is a proportionate regulatory response having regard to the LTBE. The comments and submissions received by the SKMM in this Public Inquiry confirm the SKMM's view expressed in the PI Paper that the HSBB Network Service with and without QoS should be included on the Access List. Therefore, the HSBB Network Service with and without QoS is included on the Access List.

Question 64:

(a) The SKMM invites comments about whether there are any other services or amendments to existing services required to ensure the origination and termination of telephony services over the HSBB network.

(b) Should the proposed services over the HSBB/NGN network by the SKMM in this PI Paper co-exist with TM's commercially negotiated services over the HSBB network, or do TM's services render redundant the need to regulate services over the HSBB network?

12.5.13 Comments received

Celcom and Packet One considered that this question was best addressed in an industry working group comprising representatives from all licensees.

DiGi submitted that the amendment of the origination and termination services should include the IP network. Additionally, DiGi detailed that it is essential that the SKMM clarify the requirement to offer HSBB services in the Access List and allow TM to choose to offer other services in a non-discriminatory manner if it chooses.

DiGi was very concerned that TM in the HSBB Awareness Programme organised on 7 November 2008 clearly indicated that basic services would not be offered in a wholesale manner, and that access to multiple service providers would only be permitted if these service providers offered value-added services.

Ericsson submitted that MMTEL will play an important role as one of the new services that go through broadband/NGN network infrastructure. Additionally, they considered that MMTEL services work most effectively over a HSBB network.

Jaring considered that the origination and termination of services should be independent of the underlying networks and as such agreed with the SKMM proposal to alter the description.

Maxis submitted that fixed termination services should continue despite changes in technology. Additionally, Maxis detailed that commercial negotiation is ineffective in generating competition.

Paycomm considered that any bottleneck or scenario of market dominance should be regulated and included on the Access List.

REDtone agreed with Maxis and submitted that commercial negotiation is not appropriate and access to TM's HSBB network should be regulated.

TIME considered that HSBB is a bottleneck service and should be highly regulated.

TM detailed that it has developed a high speed broadband connection service to cater for origination and termination of a telephony service over the HSBB network and as such no change is required to the definition.

U Mobile agreed with the SKMM that the continued provision of legacy services in a high speed broadband environment is important. U Mobile submitted that additional legacy services such as DNTS should remain.

Additionally, U Mobile submitted that it did not agree with the SKMM's statement that a review of the Access List would only be conducted every 3 years and suggested that a new services could be offered as determined by the SKMM and without a comprehensive review.

12.5.14 SKMM final view

The SKMM has not received any comments and is not aware of any other services to be offered or amendments to existing services required, other than those proposed in the Fixed Network Origination and Termination Services, to ensure the origination and termination of telephony services over the HSBB network.

Further, the SKMM concludes that the proposed services over the HSBB/NGN network can co-exist with TM's commercially negotiated services over the HSBB network, and that access regulation and pricing can be structured accordingly. The SKMM notes that there are still very few details available in relation to TM's commercially negotiated services. In the absence of further information, the SKMM does not consider that it can rely on the provision of these services and to refrain from regulation as a consequence.

Finally, the SKMM notes DiGi's concern that the TM commercially negotiated services may only be made available to value-added service providers. The SKMM cannot presently comment on TM's proposals in this respect. However, the SKMM notes that the HSBB Network with and without QoS services will be required to be made available to Access Seekers requesting such access, irrespective of the services which those Access Providers, such as TM, are proposing to make available.

12.6 Regulation of ANE and existing broadband services in a high speed broadband environment

12.6.1 Comments received

Question 65:

(a) The SKMM invites comments about whether the copper based Full Access Service should be available on a transitional basis until the HSBB network is available in an area.

(b)	The SKMM also invites comments about whether TM should continue to make available "redundant" copper between the exchanges and the node when it is replaced with fibre in the HSBB network.

Celcom and Packet One considered that this question was best addressed in an industry working group comprising representatives from all licensees.

DiGi submitted a detailed discussion on the use of the term "HSBB areas" in the PI Paper, which the SKMM acknowledges above. In relation to the specific question, DiGi submitted that access to Full Access Service should be made available on a transitional basis. Additionally, DiGi believed that access to the copper network should be made available when HSBB services are rolled out.

Ericsson believed that copper based Full Access Services should be made available on a transitional basis and considered that it should be removed when it is replaced with fibre facilities.

Jaring submitted that copper based facilities should remain until full commission of the HSBB network to ensure continuity of service delivery. In relation to part (b) Jaring considered that the availability of 'redundant' copper should depend on price differential for services using HSBB and copper network.

Maxis reiterated that the moratorium in the Ministerial Direction on High Speed Broadband Access List must be adhered to. Maxis submitted that copper based Full Access Service should be available on a transitional basis until the HSBB network is constructed and for a sunset period after that. They detailed international precedent for this from the Netherlands and the EU.

Paycomm submitted that in order to maintain LTBE, both the Full Access Services and the 'redundant' copper should be maintained until a majority of users elect to adopt HSBB.

REDtone and TIME agreed with Maxis and considered that the copper based Full Access Service should be available on a transitional basis until the HSBB network is available in an area. Additionally, REDtone and TIME agreed with Paycomm and consider that the 'redundant' copper should be maintained as a 'back up'.

TM submitted that there will be little, or no, use for the Full Access Service due to its cost and they noted that HSBB rollout would also strand the Access Seekers' DSLAM investment in these exchanges, decreasing the attractiveness of the service even

further. TM detailed that the types of investment which TM will need to recover from the Access Seekers with short timeframes include set up capital costs, opportunity costs and operating costs.

In relation to the ”redundant” copper wire, TM submitted that the requirement is inconsistent with section 145 of the CMA, as once copper wires are made redundant and no longer form part of TM’s network, they cease to be network facilities and do not fall within the scope of section 145.

12.6.2 SKMM final view

The Ministerial Direction on HSBB and Access List provides for the deferral of Full Access Service where it is provided over the HSBB network.

In relation to the transitional period, the SKMM is concerned that the availability of Full Access Service could lead to inefficient investment and stranded DSLAM assets located at exchanges which the HSBB will bypass. In the PI Paper, the SKMM considered extensively the costs and benefits associated with continuing to regulate the Full Access Service where the HSBB network is or will be located. The SKMM does not consider that the benefits of providing the Full Access Service on a short term, transitional basis where the HSBB network is located will outweigh the costs of doing so.

Further, the SKMM proposes to retain the provision of Bitstream services on the Access List and will require these services to be made available in respect of premises up until the date on which the HSBB network is activated to those premises. Hence, the incremental benefits that would be derived from also providing access to the Full Access Service for the transitional period, in addition to the Bitstream services, is likely to be small.

For these reasons, the SKMM declines to include the Full Access Service on the Access List where the HSBB network will be located, including during the transitional period. The SKMM will amend the MS (Access) by providing an additional ground of refusal to address this.

In relation to access to the redundant copper between the node and the exchange (assuming an FTTN rollout) the SKMM does not agree with TM’s view that this copper does not fall within the definition of a “network facility” for the purposes of the CMA. The SKMM considers that this definition is sufficiently broad to cover the redundant copper. However, the SKMM does not consider it would be appropriate to require access to this copper as it has been made redundant and is being replaced with a more efficient

technology. Requiring TM to maintain this redundant copper would entail TM maintaining copper on a potentially inefficient basis. Hence, the SKMM does not agree to mandate access to this particular network facility.

Question 66: The SKMM invites comments on whether the Full Access Service should be regulated in areas where the HSBB network will not be located.

12.6.3 Comments received

Celcom and Packet One considered that this question was best addressed in an industry working group comprising representatives from all licensees.

DiGi considered that HSBB coverage still leaves significant population areas within the country that need competition for broadband services. In these areas, DiGi urged the SKMM to ensure maximum opportunities for facilities-based competition.

Maxis considered that the Full Access Service should be retained on the Access List for copper local access networks located outside the HSBB infrastructure as the copper network is a bottleneck. Maxis detailed the international precedent of the regulation of full access services including Australia, Singapore, UK, EU, USA and New Zealand.

In a similar view, Jaring, Paycomm, REDtone and TIME believed that the Full Access Service should continue to be regulated where the HSBB network will not be located.

TM proposed that the SKMM undertake a fully quantified cost-benefit analysis before implementing unbundling. In the meantime, TM detailed that they will continue to offer Bitstream service and Digital Subscriber Line Resale Service in addition to DSL wholesale.

12.6.4 SKMM final view

The SKMM considered a detailed cost-benefit analysis in the PI Paper regarding the inclusion of the Full Access Service on the Access List, where the HSBB network is not to be located, namely:

(i) TM has 96% market share of the broadband market. In addition, TM also has 97.9% market share of all DEL connections;

(ii) the SKMM assumes, but would need to verify, that the number of TM copper loops available for use by acquiring the Full Access Service where the HSBB network will not be located is relatively small compared with other more urbanised locations. Nevertheless, ADSL competition is specifically identified under BBGP. If there is sufficient number of access lines where the HSBB network is not located, the other service providers could compete in the broadband market by acquiring Full Access Service. Hence, this would support the Government's objectives of meeting 50% household broadband penetration rate by 2010;

(iii) the commercial viability for an Access Seeker to offer services using the Full Access Service where the HSBB network will not be located may only be moderate when compared with the commercial viability of using the Full Access Service in more urbanised locations. At some point, the economies of density would be quite low and may not be sufficient to justify entry through acquisition of the Full Access Service and the deployment of DSLAMs. Nevertheless, decisions about commercial viability are best left to operators in the market;

(iv) alternative technologies such as WiMAX, WiFi and HSDPA may be available in these areas which will be capable of providing equivalent speed and functionality compared with ADSL. If available, end users would benefit from facilities based competition between TM as the ADSL provider and providers of wireless based services. However, at this stage, it is difficult to assess the extent to which these technologies will be available in the next 3 years where the HSBB network will not be located;

(v) the benefits to Access Seekers of continuing to list the Full Access Service would be limited to the difference between the benefits of acquiring, say, the Bitstream Services (with or without Network Service) and the benefits of acquiring the Full Access Service. Only if the latter exceeded the former would there be an incremental benefit to Access Seekers to continue to acquire the Full Access Service; and

(vi) a potential benefit of continuing the Full Access Service is that it may encourage facilities based competition. In some areas, the economies of density where the HSBB network will not be located may not be sufficient for Access Seekers to efficiently invest in infrastructure required to acquire the Full Access Service and offer a retail broadband service. However, it may be commercially viable in other aspects where the HSBB network will not be located to use the Full Access Service as a means of providing competitive ADSL services.

In the PI Paper, the SKMM notes that it must bear in mind the Government's objective of having BBGP implementation based on facilities-based competition. One means of achieving this objective would be through the regulation of the Full Access Service. The SKMM would also see the benefits of facilities-based competition based on the acquisition of the Full Access Service where the HSBB network is not to be located.

Based on the submissions received and on balance, the SKMM is in favour of the continued inclusion of the Full Access Service on the Access List where the HSBB network is not to be located. Furthermore, the SKMM considers that the Full Access Service should become available to Access Seekers. This will ensure that Access Seekers can now make plans to rollout broadband services outside the HSBB network footprint through the use of the Full Access Service.

Question 67:

(a) The SKMM invites comments on whether it would be commercially feasible for the Sub-loop Service to be made available outside the HSBB areas.

(b) The SKMM also invites comments about the commercial feasibility and cost/benefit of requiring the supply of the copper based Sub-loop Service until the HSBB network is rolled out.

12.6.5 Comments received

Celcom and Packet One considered that this question was best addressed in an industry working group comprising representatives from all licensees.

DiGi considered that traditional sub-loop unbundling would normally be viable for an Access Seeker due to the high cost to provide their own access to each of the roadside cabinets. However, DiGi believed that there will be important instances where it is viable and as such the service should be made available.

Additionally, DiGi stated that they were disappointed by the imposition of the 7 year deferment on providing the Sub-loop Service where the HSBB network will be located as it will limit competition in dense urban areas.

Jaring considered that the Sub-loop Service should continue to be made available until HSBB is fully available. In regards to the commercial feasibility, Jaring considered that the cost of maintaining existing cable is minimal and will be less than installing new cable.

Maxis also submitted that the commercial feasibility of the Sub-loop Service depends on the density of broadband customers in a given area. The service is effectively feasible in areas of high broadband penetration which may include some areas where the HSBB network will be located. As such, Maxis concluded that the Sub-loop Service should be retained on the Access List. Where the HSBB network will be located, Maxis is of the view that the Sub-loop Service should have a sunset period.

TIME considered that it should be commercially feasible for the Sub-loop Service to be made available where the HSBB network will not be located. It also agreed with the SKMM view in relation to part (b).

TM proposed that the SKMM undertake a fully quantified cost-benefit analysis before implementing unbundling. In the meantime, TM detailed that they will continue to offer Bitstream service and Digital Subscriber Line Resale Service in addition to DSL wholesale.

12.6.6 SKMM final view

The SKMM does not consider that it would be appropriate to include the Sub-loop Service on the Access List for the transitional period where the HSBB network is to be located. The costs of access to sub-loops are likely to significantly outweigh the benefits to a greater extent that applicable to the Full Access Service. This is because the cost of investment to access sub-loops is likely to be far higher than the cost of investment to access the Full Access Service, hence the risk that this investment will become stranded will mean that these costs are unlikely to be fully recovered during the transition period.

For these reasons, the SKMM declines to include the Sub-loop Service on the Access List where the HSBB network will be located, including during the transitional period. The SKMM considers that it would be appropriate to implement a ground for refusal under the MS (Access) in respect of this service for the transitional period.

In relation to access to the Sub-loop Service where the HSBB network is not to be located, the SKMM believes that such a service may be required due to the longer loop lengths in these areas. In such a case, the Full Access Service may not provide an adequate means of accessing the copper loops for the purposes of providing DSL services, due to copper lengths. While the SKMM acknowledges that the commercial viability of sub-loop access may be more questionable where the HSBB network is not located, this is ultimately a question for Access Seekers to answer.

Hence, on the balance, the SKMM has decided to include the Sub-loop Service on the Access List where the HSBB network is not to be located. Furthermore, the SKMM considers that the Sub-loop Service should become available to Access Seekers Question 68:

(a)	The SKMM invites comments on whether the Line Sharing Service should be regulated in areas where the HSBB network is <u>not</u> located.
(b)	The SKMM also invites comments on whether a phase-out of the copper based Line Sharing Service in HSBB areas should be considered, having regard to the fact that the service would only be available for a short period of time while the HSBB network is being rolled out.

12.6.7 Comments received

Celcom and Packet One considered that this question was best addressed in an industry working group comprising representatives from all licensees.

DiGi detailed that the Line Sharing Service should be regulated as it is a viable alternative for Access Seekers to offer broadband services and should be retained on the list.

Jaring considered that the question was 'academic' as the regulation of bitstream services has not been successful.

Maxis submitted that the Line Sharing Service should be retained on the Access List for infrastructure outside of the HSBB network. Additionally, Maxis considered that there should be a sunset period for Line Sharing Service as for the Full Access Service.

Paycomm considered that end users must be given the choice between services for the desired price/performance point.

REDtone detailed that it welcomes efforts to enable alternative access methods for the participation of service providers in the provisioning of alternative services.

TIME submitted that the Line Sharing Service should be regulated in areas where the HSBB network is not located but that a phase out of the copper based Line Sharing Service is not recommended.

TM does not support the introduction of Line Sharing Service where the HSBB network will not be located.

12.6.8 SKMM final view

The SKMM's analysis and views in relation to the Full Access Service are largely and equally applicable to the Line Sharing Service. The investment required by Access Seekers to acquire the Line Sharing Service and provide broadband services over the line (eg DSLAM investment) are likely to be similar to the investment required to access the Full Access Service. For this reason, the cost-benefit analysis is similar.

As a consequence, the SKMM declines to include the Line Sharing Service on the Access List for the transitional period until the HSBB network is located in those areas. The SKMM will implement a ground of refusal under the MS (Access) for the transitional period for the Line Sharing Service.

The SKMM has decided to include the Line Sharing Service on the Access List where the HSBB network is not to be located. For the same reasons applicable to the Full Access Service, access to the Line Sharing Service will also become available to Access Seekers.

Question 69: The SKMM invites comments on whether the Bitstream Services in HSBB areas is effectively replaced by the HSBB services (with or without QoS).

12.6.9 Comments received

Celcom and Packet One considered that this question was best addressed in an industry working group comprising representatives from all licensees.

Ericsson submitted that the bitstream services today has less bandwidth and so there is no hurry to replace it with HSBB.

Jaring did not comment on this question as it is subject to an as yet unknown pricing structure.

Maxis considered that Bitstream Services within areas covered by the HSBB network is effectively replaced by a regulated wholesale services offered on the HSBB.

In contrast to Maxis, DiGi, REDtone and TIME do not consider that bitstream is replaced and considered that bitstream services will remain important.

TM does not support the proposition that the HSBB Network with QoS and without QoS Service can co-exist with TM's HSBB commercial offering. TM submitted that the proposed HSBA service is an alternative to bitstream service.

12.6.10 SKMM final view

While the Bitstream Service will not have ongoing relevance in respect of premises connected to the HSBB network, the SKMM has considered the issue of whether this service should be available in the transitional period until the HSBB network is so connected. The SKMM considers that the costs of making available the Bitstream Service are unlikely to be as high as those applicable to the Full Access Service for the following reasons:

- the Bitstream Service is currently available and has been included in several access agreements already, and is ready to be acquired; and

- the cost of investment to acquire the Bitstream Service is likely to be less than the cost of investment applicable to the Full Access Service.

The SKMM also considers that there may be significant benefits to facilitating the competitive provision of broadband services using the Bitstream Services prior to the rollout of the HSBB network, to facilitate the competitive supply of services over the HSBB network once it is rolled out. Of course, this is dependent on a smooth migration path from the Bitstream Service to the HSBB with or without QoS Service.

The SKMM is of the view that the Bitstream Service should be retained on the Access List and continue to be made available to premises until the HSBB network is rolled out to those premises. Further, the SKMM will make it a requirement in the MS (Access) that there is an open, transparent migration process made available by Access Providers to Access Seekers to ensure the smooth migration from the Bitstream Service to the HSBB with or without QoS Service.

Question 70: The SKMM invites comments on whether the Bitstream Services should be retained on the Access List in areas outside the HSBB areas.

12.6.11 Comments received

Celcom and Packet One considered that this question was best addressed in an industry working group comprising representatives from all licensees.

DiGi, Ericsson, Maxis, REDtone, TIME and TM submitted that the Bitstream Service should be retained on the Access List where the HSBB network will not be located.

Jaring submitted that the current bitstream service is non-functional and so it should be improved.

12.6.12 SKMM final view

Based on the SKMM's views expressed in the PI Paper and the consensus from respondents, the SKMM will continue to include the Bitstream Services on the Access List where the HSBB network is not to be located.

Regarding Jaring's submission, the SKMM agrees that improvement to service descriptions can be made during this review as has been done with other services. The SKMM however is unable to consider amendments without detailed submission from Jaring on the issue.

Question 71:

The SKMM invites comments on whether the Digital Subscriber Line Resale Service should be removed from the Access List in HSBB areas.

12.6.13 Comments received

Ericsson and Maxis submitted that the Digital Subscriber Resale Service can be removed from the Access List in areas where the HSBB network has already been completed provided there is a regulated wholesale service offered on the HSBB.

In contrast, DiGi, Jaring, Paycomm, REDtone and TIME did not believe that Digital Subscriber Resale Service should be removed form the Access List where the HSBB network is located.

Celcom and Packet One considered that this question was best addressed in an industry working group comprising representatives from all licensees.

TM submitted that Digital Subscriber Line Resale Service is not applicable where the HSBB network is located and should be removed from the Access List.

12.6.14 SKMM final view

The SKMM considers that the Digital Subscriber Line Resale Service is a relevant entry level wholesale service which may be acquired with little investment requirements on the part of an Access Seeker. However, this service will become redundant where the HSBB network is to be located, once DSL services are no longer available. Nevertheless, during the transitional period the SKMM does not consider that the cost to TM of continuing to make this service available are significant, and the benefits are likely to outweigh those costs.

For this reason, the SKMM considers that the Digital Subscriber Line Resale Service where the HSBB network is located should remain on the Access List during this transitional period.

Question 72:

(a) The SKMM invites comments on whether the Digital Subscriber Line Resale Service should be retained on the Access List outside the HSBB areas.

(b) The SKMM also invites comments on whether the Digital Subscriber Line Resale Service should be replaced with a service which is more similar to the TM Streamyx service outside HSBB areas.

12.6.15 Comments received

Celcom and Packet One considered that this question was best addressed in an industry working group comprising representatives from all licensees.

DiGi, Jaring, Maxis, Paycomm, REDtone and TIME submitted that the Digital Subscriber Line Resale Service should be retained on the Access List where the HSBB network is not located and offered at wholesale rates to ASPs.

Additionally, DiGi stated that they considered that Digital Subscriber Line Resale Service should be maintained on the Access List.

In contrast, Ericsson stated that Digital Subscriber Line Resale Service should be removed where the HSBB network will be located.

TIME submitted that there is no difference between Digital Subscriber Line Resale Service and TM Streamyx.

TM agreed that the Digital Subscriber Line Resale Service should be retained on the Access List where the HSBB network will not be located. Additionally, TM does not consider that Digital Subscriber Line Resale Service should be replaced with a service similar to TM Streamyx service where the HSBB network will not be located.

12.6.16 SKMM final view

Again, there is a degree of consensus that the Digital Subscriber Line Resale Service could be retained on the Access List where the HSBB network is not to be located. Hence, it is the SKMM's decision to retain this service on the Access List where the HSBB network is not located.

The SKMM was not provided with any compelling submissions or reasons to replace this service with TM's wholesale service. The SKMM considers that demand for the Digital Subscriber Line Resale Service may be addressed during the MS (Pricing) review.

13. REGULATION OF WIRELESS BROADBAND SERVICES

13.1 Overview

In this section the SKMM examined the potential access issues associated with wireless broadband technologies. In particular, the SKMM focussed on the following issues:

- how to properly categorise the markets for various forms of wireless broadband technologies;

- the application of the relevant originating and terminating services to those technologies;

- access issues that may potentially arise in respect of services provided using these technologies; and

- the appropriate form of access regulation, if any, that should be applied.

13.2 Summary of submissions received

The SKMM received 11 respondents regarding the regulation of wireless broadband services.

There were differing opinions on whether wireless broadband and fixed broadband services should be included in the broader broadband market or whether the SKMM should consider them to be in separate markets with 6 respondents submitting that the markets should be separated and 4 respondents stating they should be treated together. Similarly there were different views as to whether WiMAX termination should be considered to be most similar to mobile termination or fixed termination services.

The respondents comments on the remaining issues are detailed below.

13.3 Market definition

Question 73:

(a) The SKMM invites comments on whether wireless broadband and fixed broadband services should be included in the broader broadband market or whether the SKMM should consider them to be in separate markets.

(b)	The SKMM also invites comments on whether WiMAX termination should be considered to be most similar to mobile termination or fixed termination services.

13.3.1 Comments received

Celcom submitted that deployments and usage patterns of WiMAX will be dominated by data applications. Celcom expects that commercial arrangements for almost all WiMAX based applications are based on subscription packages for data and considered it unlikely that WiMAX based voice devices will be used in a similar manner to today's mobile telephony. As such, they concluded that neither the technology, nor the services that use the technology should be classified alongside mobile services for market or regulatory purposes.

Celcom therefore submitted that WiMAX based services are likely to be comparable to fixed voice and that it is reasonable to conclude that WiMAX based broadband and fixed line broadband services belong to distinct product markets.

DiGi considered that wireless broadband, including EDGE and HSPA, should be considered as a separate market to fixed broadband. Additionally, DiGi submitted that WiMAX should be considered as a service with 'mobility' and not a fixed service. However, DiGi concluded that this should not infer that termination and termination rates should be based on mobile termination. They considered that termination rates should be set as close to LRIC as possible.

Ericsson stated that mobile WiMAX as well as the 3G/HSPA/LTE (3GPP) family of standards have the capability to deliver services on BBGP type connections as an alternative to HSBB type connections where this service is unavailable. Ericsson believed that a new wireless broadband category would only cause confusion. In relation to the substitutability between fixed and wireless broadband services, Ericsson believed it was beneficial to classify HSBB connections separately from BBGP. Ericsson further stated that a regulator should enable a competitive level playing field with as little market intervention as possible.

In relation to part (b), Ericsson agreed with the SKMM view and submitted that all of the wireless broadband providers will compete with each other and termination of services over WiMAX is more akin to mobile termination.

Jaring considered that wireless broadband should be in a broader broadband market and should not be separated as it is still addressing and targeting the same consumer

market. Additionally, Jaring considered that WiMAX termination should be considered to be most similar to mobile service.

Maxis submitted that wireless broadband should not be included in the wider broadband market and that fixed and wireless broadband services should be considered separately. Maxis considered that end users are unlikely to consider wireless broadband services to be a substitute for fixed broadband services or fixed broadband services a substitute for wireless broadband services.

In relation to WiMAX, Maxis submitted that the treatment of WiMAX voice services should be consistent with the nature of the service offered by WiMAX operators – which is most likely to be fixed voice or VoIP. For VoIP services which have a lower cost a lower termination rate should apply.

Packet One submitted that wireless broadband and fixed broadband services should be separated as their QoS parameters are different and considered that interconnection for WiMAX and for any new technology should be treated how the service is provided to the consumers. Packet One did not agree with claims that WiMAX are neither mobile nor fixed and urged the SKMM to engage a consultant to study and analyse the possibility of having a single rate for both fixed and mobile service under a fixed mobile convergence regime.

Paycomm submitted that wireless broadband and fixed broadband services should be in separate markets.

In contrast, REDtone considered that both wireless and fixed broadband services can be included in the broader broadband market but the QoS parameter must be considered separately. Additionally, REDtone considered that WiMAX termination should be considered most similar to mobile termination.

TIME submitted that fixed broadband and wireless broadband should be consolidated to address the broader broadband service. However, they also considered that wireless broadband services cannot replace fixed broadband services over the long run.

TM strongly detailed that it considers that there is one broadband market in Malaysia and there is no separation between the fixed and wireless broadband market based on the underlying technology which is used to deliver the service. TM detailed the increasing competitive nature of the wireless market in Malaysia.

In relation to WiMAX, TM submitted that WiMAX should have its own access category on the Access List as it is different to both current fixed and mobile networks.

U Mobile agreed with Paycomm as they did not consider that the substitutability of wireless broadband for fixed broadband is currently occurring in Malaysia. As a result, the 2 services should be treated separately so that the assessment of competition and determination for ex-ante regulation can be distinguished.

13.3.2 SKMM final view

For the reasons expressed above, the SKMM considers that there may be separate markets for fixed broadband services and wireless broadband services. Although the SKMM does not need to reach a conclusive view on this issue, for the purposes of this review it has considered wireless broadband services on a standalone basis. Further as expressed above, the SKMM considers this wireless broadband segment to be highly competitive, or at least potentially highly competitive.

In relation to whether WiMAX termination should be considered most similar to mobile termination or fixed termination, the SKMM does not need to reach a conclusive view. The SKMM does not agree with the approach suggested by Packet One that this determination should be made based on the functionality of the service provided to the customer. This functionality is unlikely to result in significant cost differences between "fixed customers" and "mobile customers" which would justify the difference in the applicable termination rate for fixed and mobile termination.

The SKMM also does not agree with the TM's approach of separately including a WiMAX origination and termination service on the Access List. This approach will simply lead to a large number of technology-specific origination and termination services being included on the Access List, which would be contrary to the SKMM's technology-neutral objective.

In addition, the SKMM includes WiMAX in the Mobile Network Origination and Mobile Network Termination Service, however the SKMM emphasises that this does not necessarily mean that the same price will be equally applicable to both WiMAX providers and mobile providers. This pricing approach will be considered as part of the subsequent review on MS (Pricing).

13.4 Access issues and regulatory options

13.4.1 Comments received

Question 74:

(a) The SKMM invites comments on any potential issues between WiMAX operators and the fixed line and/or mobile operators that affect any-to-any connectivity.

(b) The SKMM also invites comments on whether there are any other issues concerning interconnection by the WiMAX operators.

Celcom considered that there is a possibility that any-to-any connectivity will be jeopardised if other operators choose not to seek termination service on a WiMAX network.

DiGi did not foresee any major issues between the WiMAX operators and the fixed or mobile operators that may affect any-to-any connectivity. DiGi also concluded that there should not be any issues for WiMAX players to obtain interconnection with the existing Access Providers.

Ericsson believed where a WiMAX operator wants to offer VoIP voice services, any-to-any connectivity should be included to fixed as well as mobile subscribers. Ericsson also concluded that Mobile WiMAX operators should have the same interconnect rules and fees as all other operators providing a mobile interconnect service.

Jaring considered that any-to-any connectivity should be technology neutral.

Packet One submitted that it is facing problems getting the other service providers to recognise their fixed service even though PSTN numbers have been obtained. As such, Packet One considered that the service should be treated as PSTN services for the purposes of determining termination rates. Packet One provided examples of international regulators who have allocated numbers from the fixed PSTN number range to WLL services including Indonesia, Brazil, Mexico and Pakistan.

Packet One strongly disagreed that WiMAX NGN voice should be treated as TSoIP and considered that the issue of determining the service for WiMAX is crucial so as not to dampen future investment.

Paycomm considered that the same interconnection rates for call termination should apply for WiMAX.

In agreement with DiGi, TIME did not foresee any potential issues on any-to-any connectivity with WiMAX operators. Additionally, TIME did not consider that there were any other issues concerning interconnection by WiMAX operators.

TM detailed that it is not aware of any jurisdiction that has determined the question of what termination rate WiMAX operators should be paid in a calling party pays environment. TM urged that a costing study be undertaken.

U Mobile submitted that it is important that the regulatory approach for WiMAX is consistently applied to avoid unnecessary disparity of access obligations.

13.4.2 SKMM final view

While some respondents have raised pricing issues in response to this question, it is not apparent to the SKMM that there are any interconnection issues to WiMAX networks which compromise the any-to-any connectivity objective.

Question 75:
SKMM seeks views on the regulatory options discussed in section 13.7 of the PI Paper to address any-to-any connectivity with, say, WiMAX networks.

Celcom considered that the best option to promote 'seeking access' as opposed to 'providing access' is to ensure that connectivity to the facilities or services provides room for commercial negotiation.

DiGi submitted that the regulatory options currently available are sufficient to ensure licensees are interconnecting with other licensees.

Ericsson believed that it is the service that should be regulated and not the technology.

Packet One supported the proposal to use MyIX as one of the POIs as it will help to reduce costs. However, Packet One submitted that mandating any-to-any connectivity is more practical and enforceable.

Paycomm considered that the proposed amendment to the description may be sufficient.

TIME agreed with the SKMM's views that MyIX could be a possible option to establish POI with operators. However, it also recommended that there should be more than one MyIX exchange nationwide.

TM supported the SKMM approach of regulating any-to-any connectivity in accordance with the access provisions of the CMA. TM noted that licence conditions require NFP and NSP licensees to provide interconnection to their network facilities and network services, and their failure to do so would be a breach of those licence conditions.

U Mobile submitted that the POI as defined in the MS (Access) should be retained.

13.4.3 SKMM final view

The SKMM is not convinced that it is required at this stage to take any action in relation to ensuring any-to-any connectivity with respect to WiMAX termination.

The SKMM notes that TM agrees that the obligation to interconnect is part of the licence condition of the licensees. The SKMM may investigate and take necessary action if it reasonably suspects that any-to-any connectivity is compromised through a failure by licensees to permit interconnection.

14. ACCESS LIST RATIONALISATION

14.1 Overview

Chapter 14 of the PI Paper presented the SKMM's initial views on an option to rationalise some Access List services into generic categories, namely network origination and termination services, and transmission services.

14.2 Comments received

Question 76: The SKMM invites comments on the proposed rationalisation of certain services into generic categories, with justifications.

Fiberail, Paycomm, Jaring, Packet One, TIME, TM and U Mobile are supportive of rationalisation of the services as proposed by the SKMM, whilst Celcom, DiGi have some reservations.

Celcom views that rather than rationalising the services, effort should be undertaken to remove services from the Access List that are not required. In addition, it raises implementation issues because access agreements contain separate prices and terms and conditions are applicable for each service. As such, it views the regulatory costs as outweighing any benefits to be gained. Finally, Celcom agrees with the view of the SKMM in the PI on Access List in 2005 that the generic approach assumes that the networks are substitutes on the demand and supply side.

DiGi acknowledges that there is regulatory convenience in categorising the services generically. However, it is not convinced that there is any advantage to be gained considering that some facets of generic services are different based on commercial and cost based pricing issues. For example, it would be simplistic to assume that mobile termination costs should be based on fixed termination costs (or vice versa). The exception is the grouping of transmission services which could assist to eradicate any confusion about definitions and applicability of the services.

Fiberail supports the rationalisation of services to avoid a bulky list of services on the Access List. However, it suggests that the definition and description of the rationalised services in Access List must be clear and unambiguous. Further, it also highlights that the different facilities and services which are rationalised must be addressed separately in MS (Pricing).

Jaring views the progression toward generic categories as a positive initiative as more services such as NGN and WiMAX have emerged. In addition, it suggests a generic category of Internet Access which comprises of Internet Access Call Origination and Internet Interconnection Service. It also proposes a Wholesale category which comprises Wholesale Line Rental, Digital Subscriber Line Resale Service and Naked DSL. Finally, it proposes to include Transport Stream over IP (TSoIP) under the Network Origination Service and Network Termination Service.

Media Prima opines that with the inadequate information provided, it is not in a position to conclude that the rationalisation will provide clarity to the industry. It feels that the main issue to be addressed is the effect on pricing. Media Prima considers that the interests of CASPs should not be overlooked in rationalisation, and that careful consideration need to be given to the cost model of the broadcast industry vis-à-vis telecommunications and market dynamics.

Packet One supports the rationalisation of services, and comments that it should cover future technology and innovation. It further proposes that the groupings should be based on service features experienced by the end customers, for example fixed voice or mobile voice whilst the technology that enables the services should be transparent.

Paycomm views rationalising the services into generic categories as proactive based on the direction of technological developments.

TIME agrees with the rationalisation of services. It sought clarification on rationalisation of Leased Line Service and whether this is the connectivity up to customer's premises.

TM is generally supportive of rationalising the services, subject to the issues on pricing which is assumed to be addressed under MS (Access). However, it cautions that voice interconnection with any-to-any connectivity is different than the provision of access to the Internet. TM is supportive of rationalising transmission service, but considers that NGN technology should be excluded.

U Mobile generally supports rationalisation of services subject to the following comments. Firstly, it is proposed that the rationalisation be undertaken on a consistent basis throughout the entire access regime. Secondly, U Mobile expressed concern as to the mapping of the rationalised services onto the 7 markets. Finally, it proposes a consistent convergent approach to be undertaken.

14.3 SKMM final view

The SKMM notes the views of operators are mixed in relation to the rationalisation. While many support the rationalisation of the transmission services, most do not support the rationalisation of the origination and termination services.

14.4 Network Origination Service and Network Termination Service

Question 77:

The SKMM invites comments on the implications of rationalising Network Origination Service and Network Termination Service, including the ability to differentiate between different technologies (for example, fixed and mobile) for the purposes of determining pricing.

14.4.1 Comments received

Jaring, Paycomm, TIME and TM generally support rationalising Network Origination Service and Network Termination Service, whilst Celcom, DiGi, Maxis and U Mobile raised some concerns with rationalising the services.

Celcom views that it is not practical to rationalise Network Origination Service and Network Termination Service. Firstly, there will need to be separate terms and conditions for the services in the access agreement. Secondly, an operator may only seek a Fixed Termination Service but not a Mobile Termination Service from the Access Provider who is a fixed operator. The Mobile Termination Service will not be applicable, and in this case, there is a need to specify the type of service in the agreement. Celcom notes that the issue of pricing will be considered separately and it strongly believes that there should be separate pricing for the specific technology within the Network Origination Service and Network Termination Service.

DiGi views the rationalising of the Network Origination and Termination Service to be consistent with promoting technology neutrality in the access regime. Further the characteristics of the individual services are similar. However, DiGi states that rationalising the service would involve the operators rationalising the detailed terms and conditions applicable for the individual services in their access agreements. Further, it stresses that though the service description is technology neutral, the access prices should be based on cost which is different between mobile, fixed, VoIP and HSBB networks. Standardised or averaged costing would give rise to inappropriate arbitrage or economically inefficient outcomes.

Fiberail notes that the implications of rationalising Network Origination Service and Network Termination Service would include pricing and service substitution due to different technologies. The pricing issues may be addressed by providing detailed segregation of various types of technologies under the Network Origination Service and Network Termination Service in the Access List.

Maxis considers that the Network Origination Service and Network Termination Service should not be rationalised. This is because mobile voice and fixed voice services are not demand side substitutes and customers view the services differently. In addition, the cost to provision mobile voice services is higher than fixed voice services due to the intrinsic network differences. Maxis is also not aware of any other regulators that have rationalised fixed and mobile termination or origination services.

Packet One views that categorisation of service and rationalisation should not lead to a generic cost. It further notes that cost should not be based on an inefficient network.

TIME notes that there are no implications of rationalising Network Origination Service and Network Termination Service, provided that the service descriptions are clearly defined. It further recommends the consideration of fixed and mobile convergence in determining the prices for the individual categories of the current Fixed Network Origination/Termination with the Mobile Network Origination/Termination categories in the MS (Pricing).

TM generally supports rationalising the Network Origination Service and Network Termination Service, subject to reservations on pricing. In view of technological neutrality, it proposes that the rationalisation should cover all technologies that support any-to-any connectivity such as WiMAX, IP, NGN and not be restricted to fixed and mobile networks only.

U Mobile maintains that it is important to ensure that the categories are clearly mapped to the MS (Access) and MS (Pricing). It further suggests that rationalisation of the Network Termination Service, for example, may impact on the state of competition analysis, because it could potentially reside in two markets. Therefore, U Mobile suggests clarification be provided on the assessment of the state of competition in the event the rationalised service falls into overlapped markets. Finally, it proposes to differentiate between different technologies for the purpose of pricing.

14.4.2 SKMM final view

The SKMM notes that rationalisation of the origination and termination services may imply substitution of fixed and mobile. For the reasons set out above, the SKMM believes that this matter should be further studied.

The SKMM notes that, there are significant unresolved issues in terms of pricing in a rationalised structure. The SKMM considers that given the importance of addressing other significant access issues raised in this review, the pricing concerns associated with rationalising these services are such that the SKMM's resources should be placed elsewhere rather than further pursuing this issue at this stage.

14.5 Transmission Service

Question 78: The SKMM invites comments on the implications of rationalising Transmission Service.

14.5.1 Comments received

Jaring, Maxis, Packet One, TM, TIME, U Mobile and U Television are generally supportive of rationalising Transmission Service. Celcom, DiGi and Media Prima raised some concerns with rationalising the service.

Celcom does not agree with the proposal to rationalise Transmission Services on the basis that there are different provisions under the MS (Access) for each of the individual services. If the services are rationalised under one category, it is still necessary to detail different terms and conditions in the access agreements. Celcom is also concerned that there would be a single price for the Transmission Service.

DiGi notes that there may be different network elements and the costs of the network may be different for the individual services under the generic Transmission Service. It is concerned with the pricing of the Transmission Service as TM may offer the access price based on a network combination of the existing and HSBB network. In the event that the Transmission Service is implemented, DiGi considers that dark fibre should also be included.

Fiberail notes that the individual services in the rationalised Transmission Service has its peculiarities in technical terms and capacity, and therefore would impact on prices. It

proposes that MS (Pricing) provide the detailed types of Transmission Services with differentiated pricing.

Maxis agrees that Transmission Service should be rationalised. In relation to Domestic Connectivity to International Services, it notes that the service includes cross-connect service and stresses the importance to retain the service as it is a bottleneck. Therefore, Maxis proposes to create a separate service for cross-connection and co-location services in the cable landing station as distinct from backhaul and transmission. In addition, it requests that dark fibre and ducts be included into the service description of the Transmission Service. Fibre capacity for backhaul purposes will grow in importance with traffic and bandwidth requirements due to broadband. Dark fibre enables service providers the flexibility to provision the speeds based on demand and service requirements or thresholds as opposed to pre-dimensioned backhaul services. The inclusion of ducts will hasten the network rollout of alternative service providers at a lower cost. Jurisdictions such as EU and UK are considering including ducts as a mandatory service to hasten rollout.

Media Prima notes the convergence between telecommunication and broadcast sectors, but it considers that technology is only an enabler. Business or market dynamics and technological innovation should not be considered in isolation in rationalising the services, and it should be done with the interest of stakeholders in mind.

TM supports the rationalisation of Transmission Services, however considers that NGN should be excluded based on their concern on pricing. Going forward, TM proposes that there are two categories of Transmission Service, namely IP based transmission services such as High Speed Broadband Transmission Service and non-IP based transmission service, namely Domestic Network Transmission Service, Broadcasting Transmission Service and Backhaul Transmission Service. Currently, Domestic Network Transmission Service, Broadcasting Transmission Service and Backhaul Transmission Service are provided via conventional technology. With a standardised pricing model on the basis of IP would mean that TM would subsidise the conventional PCM technology, as it is cheaper to deploy IP based technology.

U Mobile maintains that there should be a clear mapping of the rationalised services in the Access List to the MS (Access) and MS (Pricing). It is more straightforward to rationalise transmission services, as each of the transmission services have the same service-behaviour. There would also not be any difficulty in mapping the transmission services to MS (Pricing). However, U Mobile comments that in the event that the transmission services are rationalised, the SKMM should retain "codec" pricing for Broadcasting Transmission Services.

U Television does not object to rationalising the Broadcast Transmission Service and Digital Terrestrial Broadcasting Multiplexing Service under the generic description of Transmission Service as long as there are differentiated prices for the various components of the two services.

14.5.2 SKMM final view

The SKMM considers that unlike the current network origination and termination services, transmission services will lend themselves more readily to be rationalised into a category of services, with pricing to be mapped to the specific transmission service. Therefore, the SKMM will include a generic Transmission Service on the Access List. However, the Domestic Network Transmission Service, Domestic Connectivity to International Services and the Broadcasting Transmission Service will each be retained for an interim period to enable a smooth transition to take place. The amended service description proposed in the PI Paper will be included on the Access List.

In relation to the regulation of dark fibre, the SKMM notes that very few jurisdictions regulate dark fibre, for reasons such as the effect of regulation transferring ownership for a significant period of time. For the SKMM to consider regulation of dark fibre in any event, it would need to be shown that there are significant benefits derived from regulation. As it stands, it would be an unjustifiably arbitrary decision at this stage for the SKMM to determine that regulation is warranted without undertaking a full consultative process on the question.

Finally, in relation to comments about IP-based transmission versus SDH-based transmission, the SKMM notes TM's comments. Any issues associated with pricing will be dealt with during the MS (Pricing) review.

15. MANDATORY STANDARD ON ACCESS

15.1 Overview

The SKMM sought specific comments in amendments to various provisions of the MS (Access) primarily raised during the pre-PI process. Further, the SKMM sought views on broader issues such as the need for a model set of terms and conditions, and the need for a separate review of the MS (Access) in consideration of its overall functioning.

15.2 Comments received

Question 79:

(a) The SKMM seeks feedback, with justification on the enumerated list of facilities and services that require additional terms and conditions, including whether there are any other that could be considered.

(b) The SKMM seeks feedback on the proposed way forward by holding a separate Public Inquiry on the MS (Access).

(c) Do you consider that there could be a role for the MAFB such as developing some of the areas as access codes?

A range of submissions were received in relation to whether there are any new terms and conditions that should be considered by the SKMM. Fiberail and TM is of the view that the current MS (Access) is overly prescriptive. DiGi, Maxis, Media Prima and U Mobile made some proposals on additional terms or amendments to the MS (Access). REDtone, Jaring and TIME highlighted some proposals which are operational in nature.

Fiberail and TM are of the opinion that the MS (Access) is overly prescriptive and detailed, leaving little scope for operators to negotiate and recommend light handed approach. TM further adds that as the existing facilities and services on the Access List encompass various technologies, it is difficult for the SKMM to formulate the MS (Access) to be applicable to all the technologies. Fiberail considers that licensees do not have the flexibility to mutually agree on terms and conditions which do not replicate the obligations in the MS (Access).

DiGi proposed that HSBB services would require additional terms and conditions, and as such the MS (Access) may need to be reviewed prior to the launch of the HSBB services.

Maxis made several submissions to enhance the MS (Access). Firstly, Quality of Service is not specified for transmission services namely Interconnect Link Service, Private Circuit Completion Service, Domestic Network Transmission Service and Domestic Connectivity to International Services. As a result, the Access Providers have been providing the services on a best effort basis and there is delay in provisioning and fault restoration. Secondly, the higher bandwidth, i.e. STM4, STM16, STM64 and dark fibre was proposed to be included in the scope for Domestic Network Transmission Service and Domestic Connectivity to International Services. Thirdly, the number range activation in Network Conditioning Obligations should be reviewed to reflect the implementation of Mobile Number Portability. Fourthly, inter-operator MNP Support Services in the MS (Access) may no longer be necessary as the obligations have addressed by NEAP 2/2008. Finally, the scope of network facilities access and co-location should be limited to the services provided in the Access List.

Media Prima submitted that operation and maintenance services of transmission broadcast services should be regulated by the SKMM. Media Prima has to appoint TM to operate and maintain their transmitters as third party contractors are not allowed access to the sites. However, there were many problems faced by Media Prima on the maintenance, and Media Prima is not able to resolve the service level issues despite protracted negotiation with TM.

REDtone proposed that the SKMM take an active role in monitoring and enforcing deadlines in the MS (Access). Further, REDtone submits that the preparatory work in initiating an Access Request is cumbersome and that the submission of bank guarantee suffices. As the legal boilerplate obligations in the MS (Access) are complex and the access agreement is required at a minimum to meet the obligations, the smaller Access Seekers are at a disadvantage. Therefore, it is proposed that the SKMM provide the industry with a template of the access agreement which would provide a way forward for both parties to negotiate.

Jaring also concurred with REDtone in that it is difficult for small players to negotiate with the larger players, and also proposed terms and conditions to be standardised.

TIME highlighted that the fast track should be available to all Access Seekers. It believes that if the ARD is detailed enough this would shorten the negotiation process.

U Mobile proposed that terms and conditions for 3G-2G inter-operator domestic roaming be included in the MS (Access) such as on equivalence of service, handling of calls between networks, routing and signalling issues, fault management and fraud management.

DiGi, Maxis, Media Prima and Fiberail did not see a need to hold a separate Public Inquiry on MS (Access). On the other hand, U Mobile, REDtone, Packet One and TM are of the view that a separate Public Inquiry could be conducted for the MS (Access).

Fiberail and Media Prima are of the view that the issues raised have been discussed. DiGi adds that the MS (Access) has been accepted in the industry, and there is no necessity to conduct a separate Public Inquiry on the MS (Access) with the exception of the new services to be included in the Access List, potentially the HSBB services, LLUB services and Wholesale Line Rental. However, DiGi adds that during the process of implementation of access agreements, there may be a need to review particular terms in the MS (Access) rather than wait for the next Public Inquiry as is the norm. Maxis has a similar opinion as DiGi, and the exception is if there are many changes required to the existing MS (Access).

TM notes that historically separate public inquiries were held to review the Access List and MS (Access), and felt that consolidating the reviews into a single review shortens the review process and gives less time to the industry to comment. U Mobile views that as there are possibly significant changes to the Access List, these changes should be accounted in the MS (Access) and therefore supports the holding of a separate Public Inquiry on MS (Access). TIME also concurs with U Mobile, and adds that as additional services such as HSBB and NGN technology is added to the Access List, a separate Public Inquiry on MS (Access) is warranted. REDtone supports a separate Public Inquiry as they view that the current MS (Access) allows the Access Provider the ability to delay completion and registration of Access Agreements.

Paycomm views that given the fast pace of development and introduction of new services, the Public Inquiry on MS (Access) should be held twice a year.

Finally, most respondents generally supported that the MAFB has a role to play in the access regime. TM, Maxis, Celcom, TIME and U Mobile also highlighted in their submissions that the MAFB recently conducted the consultation on the Access Code which was drafted in 2005. Some were of the view that the Access Code could only supplement the MS (Access). Further, the MAFB was also working on 2G-2G Domestic Roaming Guidelines.

Maxis acknowledged that there were some administrative problems that plagued the effectiveness of MAFB, however, those problems have been resolved and the MAFB has embarked on some initiatives.

DiGi and Media Prima highlighted that the MAFB should be representative of all industry players, otherwise there would not be the support from the industry and implementation would be difficult.

Celcom views that the MS (Access) review should be carried out by MAFB in view of self-regulation.

Fiberail proposes that MAFB develop access codes on operational and technical issues such as installation, maintenance, technical interface, network conditioning obligations, point of interface procedure, decommissioning obligations and network change obligations. Once the access codes are developed, these sections may be removed from the MS (Access). The MS (Access) could then govern the important strategic issues and general principles.

U Mobile highlighted that as MAFB consist of many industry players with differing views, consensus may be difficult to achieve and may delay the drafting of amendments to MS (Access).

15.3 SKMM final view

The SKMM appreciates and notes the wide ranging views received in relation to the MS (Access). However, the SKMM has not been presented with strong evidence requiring major amendments to the MS (Access).

Nevertheless, the SKMM has considered all the submissions, and offers its views. The SKMM agrees with Maxis that since Inter-Operator Mobile Number Portability Support Services will be removed from the Access List, a corresponding amendment will also be made to the MS (Access) to remove subsection 5.20. The SKMM has also reviewed the Network Conditioning Obligations under subsection 5.8 in the MS (Access) and amendments were made to subsection 5.8.4 on number range activation to ensure that the intended meaning is explicit.

In relation to suggested enhancements to the MS (Access) by the inclusion of QoS for transmission services, the SKMM is of the view that rather than itself reaching a conclusion in this Public Inquiry, it is preferable for these issues to be the subject of detailed deliberation by industry. It would be the role of the MAFB to develop these QoS parameters. If the industry is unable to reach agreement then the SKMM could be approached.

The SKMM has also included obligations relating to HSBB Network Service in the MS (Access). The SKMM will closely monitor compliance with these provisions.

Finally, the SKMM continues to reiterate its support for self-regulation, and for the MAFB, to take an active role in the development of non-price terms and conditions for access through developing appropriate access codes to address some of the issues that have been highlighted by the submissions.

Question 80: Do you consider that the MS (Access) should be replaced by, or supplemented with, a model set of non-price access terms and conditions?

Some of the submissions highlighted the time taken to register access agreements and recommended that an estimated timeline be provided for the purposes of planning.

Most of the respondents support the need for a model set of non-price access terms and conditions. REDtone, Paycomm, Maxis and U Mobile are of the view that the model non-price access terms and conditions can supplement the MS (Access). On the other hand, DiGi, TIME and TM views that a model set of non-price access is not necessary. Fiberail is of the view that the model non-price access terms and conditions replaces MS (Access).

DiGi is of the view that the MS (Access) is an effective supplement to the Access List, and hence it is not necessary to have a model set of non-price access terms and conditions.

Fiberail views that the model set of non-price access terms and conditions should replace the MS (Access) as the MS (Access) specifies bulky and detailed operational matters.

Maxis views that a standard set of terms and conditions will provide guidance in drafting the access agreement. Maxis recommends that the SKMM specify whether the standard terms and conditions are to be mandatory or are meant as guideline. Clarity is requested on whether MS (Access) applies to non-regulated facilities and services. Further, clarity is sought on the parts of the access agreement that may be negotiated between the operators in the event that there are standards terms and conditions and pricing that is regulated and non-negotiable.

Media Prima welcomes any other terms and conditions that provides a positive outcome to the Access Seeker.

Packet One supports standardisation to ensure that all operators are treated fairly and on an equitable basis.

TIME is of the view that MS (Access) should be in the form of model terms and conditions for non-price access.

TM views that the model terms and conditions should not replace nor supplement the MS (Access), and they advocate light handed regulation.

15.4 SKMM final view

The SKMM does not consider that there is a compelling need for it, as the regulator, to devise a model set of terms and conditions for agreements to replace the MS (Access). The SKMM does not consider that a case has been made in the submissions to demonstrate why its own drafting of model terms would firstly be any different to the MS (Access), nor the improvements that would result from it moving beyond a registration function.

As mentioned above, in support of self-regulation, the SKMM views that the MAFB has a role to play in developing access code that provides for model terms and conditions as provided for in section 153 of the CMA. The development by the regulator of a model set of terms and conditions would ultimately be contrary to that objective.

15.5 Comments on specific provisions

15.5.1 Disclosure obligations (subsection 5.3)

Question 81: The SKMM seeks further views from the industry on the quantum of comprehensive general liability insurance in subsection 5.3.9 of the MS (Access).

(a) Comments received

Most support that the maximum quantum of comprehensive general liability insurance is sufficient and should be maintained, except TIME and Media Prima.

Fiberail and TM view that the maximum quantum is useful as a general guide and the actual quantum should depend on the risk of exposure to the Access Provider in relation to the quantum of the business and value of network elements involved. U Mobile

agrees with Fiberail and TM that the parties negotiating access agreements could agree to a smaller quantum than the maximum quantum as specified in the MS (Access). However, U Mobile disagrees with the proposal by the SKMM to modularise the comprehensive general liability insurance.

Media Prima views that the quantum of general liability insurance is charged by the Access Provider without articulating the rationale and Media Prima would not know whether the quantum is reasonable.

TIME explains that since the risk of occurrence of damage to co-located equipment is low, and there have been no incidents to date, the current maximum quantum should be reduced from RM20 million to RM10 million.

(b) SKMM final view

The SKMM considered the submissions received, and viewed that the maximum quantum is intended to be used as a guide and as such is appropriate to be adjusted according to the level of commercial risk assessed by each operator. As such, there would not be any amendment to subsection 5.3.9 of MS (Access).

15.5.2 Negotiation obligations (subsection 5.4)

Question 82:   The SKMM seeks further views about the fast track mechanism in subsection 5.4 of the MS (Access), particularly ways in which it may be improved to encourage use by parties.

(a) Comments received

All the respondents agreed that there were issues in relation with the fast track mechanism. TIME, Fiberail, U Mobile and REDtone suggested some ways to improve fast track, whilst TM, DiGi and Maxis recommends that the fast track provisions be removed from the MS (Access).

The main issue highlighted by Packet One, TIME, Maxis, REDtone was that the fast track mechanism was limiting, such as it is only applicable to 6 services, and the security sum is low. Maxis further adds that it is too simplistic and does not specify other important terms and conditions of the access agreement such as forecasting, service provisioning, operation and maintenance, technical, billing and dispute resolution. As such, both

parties would need to negotiate the terms and conditions. DiGi and TIME also has a similar view as Maxis.

Fiberail suggests that the Access Provider's service order form with the complete terms and conditions be used as the contractual document to be signed by the Access Seeker.

Media Prima generally supports fast track process as a shorter timeline would lead to a faster turnaround time.

REDtone suggests a template be provided to the industry on the possible parameters for negotiation.

TIME suggests that the fast track process to be applicable to any Access Seeker regardless of the number of services that is procured by the Access Seeker. Further, the ARD should also be detailed to minimize the negotiation process.

TM highlights that it is not feasible to customize the services and facilities within a short period of time, and from their perspective as an Access Provider, there is no interconnection which has a minimal impact. In addition, lack of knowledge and experience on the part of the new entrants caused difficulty for the provisioning of services to them.

U Mobile proposes to include a paragraph to link the fast track process to the ordering and provisioning provisions. Further, it is also proposed the inclusion of 3G-2G Inter-Operator Domestic Roaming in the list of services subject to fast track.

(b) SKMM final view

The SKMM's final view is to retain the fast track mechanism. Although it notes low take up, there appear no compelling grounds for its removal or amendment.

With respect to submissions that the fast track does not specify important terms and conditions, the SKMM clarifies that general obligations in the other sections of the MS (Access) continue to apply to fast track process. The Access Providers however may develop and implement fast track mechanism by making available an application and agreement process having shorter process.

15.5.3 Forecasting obligations (subsection 5.6)

Question 83:

The SKMM seeks input on the prevailing industry practice in relation to forecasting procedures, and whether there are any difficulties faced by new operators in this respect.

(a) Comments received

All respondents generally agree that forecasting is important. Jaring, Fiberail and TIME are of the view that the forecasting obligations in the MS (Access) should be removed. DiGi, U Mobile support the forecasting obligations in the MS (Access), whilst REDtone, Maxis, Packet One proposes some revision to the forecasting obligations.

DiGi regards that as the industry adopts the MS (Access), the forecasting obligations should continue to be maintained.

Fiberail cites that based on their experience that most of the Access Seekers do not agree to provide forecast nor do they agree to the forecasting requirements in the MS (Access). Therefore, it is proposed that the entire forecasting obligations section be made non mandatory as it is not followed in practice, and allow both parties to decide based on mutual agreement. The forecasting obligations under the MS (Access) are overly prescriptive. It also does not foresee any difficulties faced by new operators.

Maxis is of the opinion that the industry would not be able to agree amongst itself on forecasting procedures if the forecasting obligations under MS (Access) are removed in its entirety. Maxis suggests that the main reason that most operators opt not to follow the forecasting obligations under MS (Access) is due to subsection 5.6.2 whereby once the Access Seeker confirms the forecast, is deemed the confirmed order by the Access Provider and subsection 5.7.26 which contains a cancellation penalty for the confirmed order/forecast. Hence, it is proposed that the last sentence of subsection 5.6.2 be removed.

Packet One notes that the current forecasting procedure is traffic and leased line specific. The process is detailed and time consuming and therefore, Packet One suggests that the forecasting process be changed based on industry practice.

Paycomm submits that it is difficult to forecast market demand with accuracy at the start-up stage.

REDtone supports that forecasting is important for the provisioning of services by the Access Provider, and proposes that SKMM revise the procedures rather than removing them. The current forecasting obligations encourage under forecasting, as the Access Seeker does not wish to incur penalties for cancelling a confirmed forecast. Therefore, the revision could consider mechanisms to delay or postpone the delivery timelines of forecasted resources within reason. Further, REDtone highlights that low forecast requirements, such as for the 0154 services, was used by the Access Providers to not proceed with access agreement.

TIME views that the industry practice is working well and the Technical and Implementation and Operational and Maintenance manual has been established to support the terms and conditions stipulated in the access agreement. Therefore, forecasting obligations should be left to the industry best practice in accordance with their company policy.

TM regards forecasting as important to both Access Providers and Access Seekers in order that the Access Seeker's requirements are met. In the absence of a forecast from the Access Seeker, the Access Provider can only accommodate the request based on available capacity. Some of the terms in relation to forecasting can be discussed and further negotiated by the parties.

U Mobile clarifies that the forecasting obligation adopted in the technical and implementation manual, which is referred to by some operators as the sole reference for forecasting procedures, is actually consistent with the MS (Access).

(b) SKMM final view

Whilst acknowledging the difficulties faced by new entrants in determining appropriate forecasts, the practice is commonplace in the industry and regulated interconnection offer terms. The SKMM therefore proposes to retain this provision and agrees with the views expressed that it is inappropriate to remove these terms from the MS (Access).

The SKMM also notes concerns that forecasting obligations in subsection 5.6 of the MS (Access) may be overly prescriptive and that industry can agree amongst themselves. Subsection 5.6.3 of the MS (Access) permits the Access Providers and Access Seekers to agree to alternative forecasting and ordering procedure. Hence, the SKMM views that this concern may be managed by the parties.

Finally, the SKMM notes the concern raised by Maxis regarding the application of subsection 5.6.2 and whether forecasts become Orders once confirmed. The SKMM

notes that this provision applies only in cases where the Access Provider, acting reasonably, will incur significant costs to ensure that access can be provided in accordance with a forecast. The provision therefore does not apply to every forecast. If an Access Seeker considers that there is no justification for the Access Provider to assume that it will incur significant costs under this provision, this would be a matter for which the Access Seeker can raise a dispute.

15.6 Ordering and provisioning obligations (subsection 5.7)

Question 84:

(a) The SKMM seeks feedback, with justification in relation to the comments received on the indicative timeframe for delivery.

(b) The SKMM seeks feedback on the prevailing industry practice in relation to ordering procedures, and any difficulties faced by the newer operators.

(a) Comments received

DiGi, Fiberail and TM support to maintain the current indicative timeframe for delivery under the MS (Access) whilst TIME, U Mobile and Jaring propose to shorten the indicative timeframe for delivery.

Fiberail is of the opinion that the current timeframe is necessary taking into consideration the time for confirmation of details between parties, delivery of equipment, seeking approval from authorities, wayleave and execution of the wayleave agreement. Notwithstanding, Fiberail endeavours to meet the dateline of the Access Seeker. Further, Fiberail proposes that the MS (Access) is overly prescriptive and should state the principles such as the right of the Access Seeker to seek address from the SKMM should the Access Provider fail to provide the services within the stipulated timeframe, and the action to be taken by the SKMM to address the issue. Detailed matters in relation to specific time frame may be covered under the MAFB's Access Code.

Jaring proposes that the indicative timeframe should be shortened to 4 – 5 months, taking into delivery of equipment from overseas, installation time, wayleaves and approvals from the authorities.

Maxis is of the view that the ordering and provisioning obligations should not be removed, as the industry may not be able to agree amongst itself on the appropriate obligations. However, Maxis proposes that the indicative delivery times are generic and

should be revised and differentiated based on different facilities and services. Further, the one indicative delivery time is used by some Access Providers in delaying provisioning of services.

Packet One views that the delivery timeframe should not to be used as a delay tactic by the Access Provider, and that it should be equivalent to the time taken by the Access Provide to provide the same service for itself.

U Mobile is of the opinion that the indicative timeframe for delivery is too long, and proposes to reduce the provisioning of new facilities and infrastructure to 4 months and the orders for augmentation of capacity to be reduced to 1 month. Further, the definition of "new facilities and infrastructure" is proposed to be limited to ducting and core fibres, and all other provision of new facilities unrelated to ducting and core fibre falls under "augmentation of capacity". U Mobile has faced difficulty in instances where upgrade is required at an immediate basis, and the current indicative timeframe of 8 months prohibits the speed of expansion.

(b) SKMM final view

Having taken the views received into consideration, the SKMM appreciate the concerns raised by submissions that the 8 month delivery timeframe is excessive and capable of being reduced. However, the SKMM does not consider that it has sufficient justification arising from the submissions received to arbitrarily reduce the current timeframe. In particular, the SKMM notes that there are external factors which have a significant influence on these timeframes, including approvals by local authorities. These timeframes also vary based on location. The SKMM has therefore decided not to amend this provision.

15.7 Billing and settlement obligations (subsection 5.14)

Question 85:

(a) The SKMM seeks feedback with justification on the proposal received to remove subsection 5.14.5 of the MS (Access) and the impact of its removal on the inter-operator billing arrangements.

(b) The SKMM seeks feedback with justification on whether there is merit to consider the proposal that the withholding of disputed amounts provided under subsection 5.14.11 should exclude voice services.

(c) The SKMM seeks feedback with justification on the impact if back billing in subsection 5.14.16 of the MS (Access) is restricted to the immediate next invoice.

(d) The SKMM seeks feedback on the treatment of provisional Invoices after 60 days under subsection 5.14.17 of the MS (Access).

(a) Comments received

Fiberail, Fibrecomm and Jaring agreed with the proposal to remove subsection 5.14.5 of the MS (Access). However, DiGi, Maxis, Packet One, TIME, TM, U Mobile disagrees with the proposal and maintains that the subsection should be retained.

DiGi supports to maintain the subsection with the possible requirement to provide the additional summary report by product on an ad-hoc basis.

Fiberail supports the removal of the subsection as this provision is not applied by the operators in practice. As such there is no impact on its removal on the inter-operator billing arrangements. Further, the industry is sufficiently mature to regulate itself.

Fibrecomm agrees to its removal to promote self-regulation.

Jaring agrees for this subsection to be removed, however, the information to be sought by the Access Provider should not be confidential in nature.

Maxis views that the subsection need not be removed as it could be useful in the future especially to the new or smaller operators that may need to use the billing data from the other operator.

Packet One disagrees that the subsection be removed as an operator must be furnished with all reasonably necessary information to substantiate the accuracy of the billing.

TIME maintains that the other billing information is required for billing verification as well as for benchmarking purposes to ensure that TIME has accurate charging and traffic capture mechanisms. This subsection ensures that cooperation is provided by the interconnecting operator. If the subsection is removed, TIME is concerned that the same level of cooperation will not be provided by the other operator.

TM maintains that the information in the subsection is needed to verify and ensure accuracy of billing, and its removal will result in inaccurate billing and billing disputes.

U Mobile supports maintaining the subsection as the information within the Invoicing Party's possession that is reasonably necessary can be provided to the Invoiced Party to provide accurate and timely breakdown of respective chargeable facilities or services.

DiGi and Maxis agreed with the proposal that the withholding of disputed amounts under 5.14.11 of the MS (Access) should exclude voice services. However, Jaring, Packet One and TM disagreed with the proposal and maintains that voice services should be included as part of the disputed amounts that are withheld.

DiGi supports that withholding of voice services is tedious and involves complex accounting treatment to cater for this requirement.

Jaring comments that it currently follows the current arrangements of the bigger telcos that prefer full settlement of invoices. However, it prefers that the withholding of disputed amounts applies to all services including voice services.

Maxis strongly supports excluding voice services as interconnect invoices for voice services involve huge amounts of monies and traffic minutes. Delay or withholding of payment on disputed interconnect invoice adversely impact the invoicing operator's financial position. This is because an investigation of dispute takes a long time due to high volumes of traffic, billing data (CDR) sampling and verification processes. In addition, the current practice of industry is that the operators do not withhold the disputed amount.

Packet One disagrees on excluding voice services from the withholding of disputed amounts. Despite the extensive exercise that is required in withholding disputed amounts for voice services, it is necessary to prevent unfairness to one party.

TIME opines that withholding of disputed amount should not be permitted, and that the practice as agreed in the access agreement is more appropriate. Withholding of payments are costly to the operators due to the interest charged during the withholding period.

TM disagrees as it is operationally difficult to have different treatment between voice and other services under a single agreement.

All submissions did not agree to the proposal to restrict backbilling in subsection 5.14.16 of the MS (Access) to the immediate next invoice. DiGi, Jaring and Maxis, TIME, TM and U Mobile support maintaining the 3 months backbilling period, as this is generally the time taken to process CDRs and the timeframe is accepted by the industry. By shortening the timeframe, there would be less time to account for the errors. Fiberail and Fibrecomm made alternative proposals.

Fiberail disagrees with restricting backbilling to the immediate next invoice, and proposes that a distinction be made between time based and non-time based services such as fixed leased lines. In the non-time based services, there should not be any limit applied or if necessary, the timeline should be extended to one year. Based on Fiberail's experience, as their billing is based on fixed rental, there is little or no disputes to the billing sum. However, due to delay in confirmation of formal documentation, billing could not proceed. Hence, it results in the necessity of backbilling.

Fibrecomm explains that the cause of backbilling is due to delay in documentation such as acceptance of services and finalisation of contractual documents. The delay could last on average for 3 months and in some cases could be as long as 6 months. The current practice is to amend any changes to the total charges via a credit or debit note, and for the services that have not been invoiced, backdated invoices will be issued. Therefore, Fibrecomm submits that backbilling should not be restricted to the immediate next invoice or the 3 months as stipulated in the MS (Access).

Packet One opines that backbilling is treated as an addendum in the accounting records, and impacts the provisional value in the accounting books. Thus the practice of allowing backbilling will result in chaotic accounting.

Fibrecomm, Maxis, DiGi agreed with the proposal to deem the provisional Invoice as accepted after 60 days under subsection 5.14.17 of the MS (Access). U Mobile and TIME supports maintaining the subsection.

DiGi further proposes that the MS (Access) stipulates that "the provisional invoice shall be deemed accepted as actual invoice upon the expiry of the 60 days".

Fibrecomm agrees that 60 days is ample time for the Access Seeker to validate the invoices and raise billing dispute with the Access Provider.

Maxis explains that provisional invoice is issued if the operator is unable to collect actual data due to leakages or errors with the operator's billing system to issue actual invoices. 60 days is considered a reasonable period for the operator to rectify its billing system to issue actual invoices. If the operator is unable to issue actual invoices after the 60 days, then the provisional invoice is deemed accepted as the actual invoice. This practice is adopted in the industry.

Packet One views that the 60 days period to adjust the provisional invoices as too long, and proposes that the period be reduced to no more than 30 days.

TIME further adds that the access agreement contains a clause on the method to settle the differences between the provisional invoices and actual amount, and proposes that the clause be added to the MS (Access) as a guide for the operators in drafting new access agreements.

TM views that the operator would be deemed to have waived its rights after 60 days.

U Mobile notes that the current practice is to adjust the provisional invoice in the next invoice or as soon as possible but no later than 60 days.

(b) SKMM final view

In relation to subsection 5.14.5 of the MS (Access) concerning the requirement on Operators to provide interconnecting operators with information to enable the provision of billing services, the SKMM notes the arguments for its removal are mainly that it is unnecessary. However, the SKMM concludes that the arguments supporting its retention are valid. It is a common requirement in access or interconnection regulation to require all operators to disclose billing information to verify their billing processes. This ultimately has an impact on end users, and can often be a positive impact because each operator has an incentive to ensure that it is being accurately billed by its interconnecting operators. The SKMM is not satisfied that the removal of this provision will not have an adverse impact on the timely billing arrangements between operators. The SKMM has therefore decided that it will be retained.

In relation to subsection 5.14.11, the SKMM notes the views that it is a resource-intensive process to delineate voice traffic from all other traffic for the purposes of disputed amounts. These submissions also noted the large amount of voice traffic that usually comprises overall disputed amounts. However, the SKMM considers that this in itself is an important reason to retain this provision. If an operator decides to withhold payment for a disputed amount, as a practical matter this in itself consumes resources of the disputing operator who has analysed the invoice and its underlying traffic, and has decided – on a good faith judgement – that the invoice should be disputed. In other words, the submissions which noted that the provision is used sparingly if at all highlight the fact that it is not a trivial matter for an operator to make a decision to withhold disputed amounts. In addition, the SKMM is not convinced that it would be technically feasible (in both a practical as well as in a cost-efficient) to exclude voice from the ambit of this provision.

Similarly, the SKMM notes the current backbilling provisions and the provisional invoice requirements appear to be generally consistent with international practice, including those specifically concerning backbilling prohibitions. These provisions both appear to be fulfilling their purpose of providing sufficient time in which the practical elements of invoice checking and billing can be undertaken.

The SKMM therefore concludes that these provisions remain appropriate and amendments are not required.

15.8 Technical obligations (subsection 5.16)

Question 86: The SKMM seeks feedback on the adequacy of current technical obligations specified in subsection 5.16.9 of the MS (Access), including any proposals for suitable QoS parameters that could be included for transmission services.

(a) Comments received

DiGi notes that the current technical obligations have been adopted by the industry and that it is not necessary to include QoS parameters for transmission services.

Maxis proposes that the QoS specified in subsection 5.16.9 is catered for interconnect voice traffic and any-to-any connectivity, and does not cater to QoS parameters for transmission services such as Interconnect Link Service, Private Circuit Completion Service, Domestic Network Transmission Service and Domestic Connectivity to

International Services. Therefore, Maxis proposes that QoS parameters such as service delivery timeframe, service availability and service restoration timeline is critical to the industry.

Jaring proposes that the QoS parameters which are pertinent to the IP network, such as packet loss, latency, jitter and availability need to be included.

Packet One proposes that a common guideline be developed to minimise any misunderstanding.

(b) SKMM final view

The SKMM regards the non-discrimination obligations imposed on Access Providers as an important mechanism by which QoS parameters are provided to Access Seekers. That is, an Access Provider must not discriminate in favour of itself and must provide transmission services with the same or more attractive QoS parameters as it supplies to itself. As a result, the SKMM is minded not to interfere with the existing QoS parameters that are employed by Access Providers.

The SKMM also notes suggestions for guidelines to be developed. Again, the SKMM would encourage the MAFB to take on board these comments and initiate such development, considering the views expressed by some respondents.

15.9 Digital Terrestrial Broadcasting (DTB) Multiplexing Service (subsection 5.23)

Question 87:

(a) The SKMM seeks views on the standard bit rate allocation for SDTV, as applicable under MPEG-4.

(b) The SKMM also seeks views on whether standard bit rate allocation is necessary for HDTV, and the appropriate bit rate.

(a) Comments received

ASTRO views that it is difficult to determine standard bit rates for either SDTV or HDTV as there are a number of influencing factors:

- the overall performance of the encoders used;

- whether the source signals are originated from video or film;

- the complexity of the image to be encoded;

- whether statistical multiplexing is employed, and therefore a bundled bit rate is more relevant than an individual service bit rate.

Nevertheless, ASTRO considers that it is possible to obtain good quality (Grade 4) pictures with 1.5 Mbps for SDTV MPEG4 and 6 Mbps for HDTV MPEG4. Lower rates are possible with film-sourced material.

DiGi views the setting minimum bit rates for transmission of channels is contrary to utilising capacity in the most efficient manner. It removes the incentive to implement efficient encoding technologies that allow more channels in one multiplexer. Based on current available encoders, DiGi believes that 8-9 channels in a multiplexer (based on 64-QAM with approximately 22 Mbit/s available capacity) is acceptable. In upcoming years this could increase to 10-12 channels. DiGi also believes that there would be the same downsides in specifying HDTV bit rates. To date, live HDTV requires a bitstream of 18-20 Mbit/s but this could become more efficient.

Maxis supports MPEG-4 as the new digital TV standard for SDTV. However, the bit rate depends on the type of content, i.e. movie, news, sports. It varies from 1 to 1.5 Mbps for news and up to 2 to 4 Mbps. The quality should nevertheless be better than the analogue TV available today, and be of DVD quality. In relation to HDTV, Maxis views that it depends on whether the broadcaster is offering Full HD or HD ready. HD ready require bit rate of 8 to 10 Mbps and Full HD will require 12 to 15 Mbps. Maxis views that HDTV should be better than SDTV or DVD quality, and should be benchmarked against cinema video and offer a minimum of Dolby Digital 5.1 surround sound.

TM agrees that the standard bit rate allocation for SDTV under MPEG-4 can be lower in an ideal situation and in absence of other factors such as RF links robustness, set top boxes quality, picture quality of original material prior to the encoding process. Based on tests conducted by TM, encoding bit rates of less than 2 Mbps per SDTV channel produces visually poor quality pictures, and therefore it recommends a minimum bit rate at 2 Mbps for SDTV under MPEG-4. TM recommends the standard bit rate allocation for HDTV content to be no less than 6 Mbps per high definition channel. Other factors including the availability of various high definition formats such as 720p, 1080i and 1080p should also be taken into consideration in determining the bit rate.

Paycomm views that allocations are not necessary in a free market.

U Television views that standard bit rate safeguard both parties' interest in terms of QoS. It further proposes that the acceptable bit rate for SDTV is between 1.5 to 2 Mbps, and the acceptable bit rate for HDTV is between 6 to 8 Mbps. In addition, U Television offers further views that the SKMM should consider DVB-T2 standard which would allow more parameters to the broadcasters.

(b) SKMM final view

The current bit rate allocation for SDTV is no less than 4.5 Mbps, which is consistent with commercial broadcasting quality. It is the SKMM's current view that 4.5 Mbps is now too high for MPEG-4 and 2 Mbps would be an appropriate alternative, however the SKMM also notes that there is limited utility in being overly prescriptive because technological developments are likely to mean that these will fall over time.

Similarly, the minimum HDTV bit rate is 8 Mbps. The SKMM is mindful that there is no authoritative source for standard bit rate allocations because the bit rate is typically chosen by the broadcaster. The choice reflects the quality of service it wants to provide to its end users and that decision will be driven by issues such as the type of content in question (e.g. sport versus cartoons) and also the type of compression system used.

The SKMM has therefore decided that these provisions should be amended to remove specification of any standard and to avoid being prescriptive. The SKMM considers that this approach is the most consistent to avoid unnecessary regulation of technological developments that may quickly become outdated.

15.10 Conclusion – Mandatory Standard on Access

Question 88:   The SKMM seeks views and comments on the proposed amendments to the MS (Access).

(a) Comments received

In general, the respondents generally agree to most of the incidental changes proposed by the SKMM in the PI Paper. Jaring agrees to all the proposals, though it is unable to comment on the amendments relating to High Speed Broadband Services obligations in paragraph 3(u) of Annexure 3.

DiGi agrees to the proposed amendments in paragraph 3(c), 3(g), 3(h), 3(i), 3(m), 3(s), 3(x) and 3(y) in Annexure 3 of the PI Paper. DiGi does not agree to the proposed

amendment in paragraph 3(n) as it is a complex process in Annexure 3 of the PI Paper. Further, DiGi believes that the obligations for High Speed Broadband Services are generic and acceptable. However, it reiterates that the industry should be allowed to review those obligations in the MS (Access) once more information is available on TM's offering prior to the launch of the High Speed Broadband Services.

Maxis agrees to the proposed amendments in paragraph 3(c) in Annexure 3 of the PI Paper. However, it highlights that it may be difficult to accomplish especially for technical issues, where there is need for further discussion between the technical teams to minimise any potential service disruption, technical issues, network compatibility and QoS issues. Maxis also views that the ARD should be a reflection of the MS (Access) that provides the terms and conditions of the access services provided by the Access Provider.

In addition, Maxis agrees with the SKMM's view to retain churn obligations in the MS (Access) and that they are applicable to Equal Access, Access to Network Element (DSL port).

Maxis agrees to the proposed amendments in paragraphs 3(d), (f), 3(g), 3(h), 3(i), 3(j), 3(l), 3(m), 3(n), 3(q), 3(s), 3(v), 3(w), 3(x), 3(y) in Annexure 3 of the PI Paper.

Maxis does not agree to the amendment in paragraph 3(o) in Annexure 3 of the PI Paper as the amendment gives the sole discretion to the Access Seeker to decide on the term of the access agreement. It considers that the interests of both parties ought to be balanced, and that there is effort and investment undertaken by the Access Provider to provide the facilities and services requested by the Access Seeker. Maxis proposes to retain the subsection without any change.

Further, Maxis notes the SKMM's preliminary view in 15.14.1 of the PI Paper on the approval from SKMM before any suspension or termination of the access agreement. It proposes that a timeline be established.

It also views that the Equal Access (PSTN) Services should not be removed from the Access List and MS (Access), and its removal would impact on the existing customers that on their continued use of the services. Instead of removing the obligations of Equal Access (PSTN) Service, Maxis proposes further obligations in the MS (Access) such as follows:

- 2 working days for the Access Provider to activate Equal Access line from the date the line activation request was sent by the Access Seeker;

- a cooling-off period of 1 month from the Equal Access line activation date whereby the Access Provider is not allowed to make contact the Access Seeker's customer with the intention to win back the customer; and

- to set activate timeline for Equal Access fault restoration of 48 hours to avoid any unnecessary delays in investigation and restoration by the Access Provider of Equal Access faults.

Further, Maxis also proposes a lower rate for Equal Access (PSTN) Service in the MS (Pricing).

Maxis supports the inclusion of the Wholesale Line Rental Service in the Access List and MS (Access). It further recommends that the proposed subsection 5.25 of MS (Access), as discussed in paragraph 3(t) in Annexure 3 of the PI Paper, detail the technical aspects of the service, i.e. network demarcation point between customer, Access Seeker and Access Provider, QoS for service activation and delivery, restoration and availability.

Maxis also supports the inclusion of High Speed Broadband Services in the Access List and MS (Access). It further proposes that subsection 5.26 of MS (Access), as discussed in paragraph 3(u) in Annexure 3 of the PI Paper, include the appropriate QoS parameters such as service delivery timeline, service availability, minimum speed (download/upload).

Maxis disagrees with the amendment in paragraph 2(e) in Annexure 3 of the PI Paper. It is of the view that there should be a segregation between fixed origination/termination service and mobile origination/termination service as they involve totally different network elements.

Finally, Maxis further proposes two inputs in relation to billing and settlement obligations which are discussed in Annexure 1.

Paycomm maintains that Equal Access is a fundamental right of end users and must not be removed.

TM agrees to the removal of obligations concerning Equal Access (PSTN) Service from the MS (Access). It also opposes the inclusion of obligations on Wholesale Line Rental Service and HSBB Network Services in the MS (Access).

TM agrees to the amendments in paragraph 2, paragraph 3(a), 3(b), 3(d), 3(e), 3(f), 3(g), 3(h), 3(i), 3(j), 3(k), 3(m), 3(n), 3(p), 3(q), 3(s), 3(v), 3(w), 3(x) and 3(y) in Annexure 3 of the PI Paper.

TM agrees to the amendments in paragraph 3(c) and 3(l) in Annexure 3 of the PI Paper and it proposes further amendment. For paragraph 3(c) to include rates in the ARD, TM proposes that the Access Seeker should sign the Non-Disclosure Agreement except where rates are mandated in MS (Pricing). TM proposes to replace "30 minutes of the schedule commencement" with "within agreed timeframe between both operators" in subsection 5.13.5 in paragraph 3(l). This is to provide flexibility to the operators to determine the timeframe required.

TM is not agreeable to amendments in paragraph 3(o), 3(r), 3(t) and 3(u) in paragraph in Annexure 3 of the PI Paper. TM does not support the inclusion of Digital Terrestrial Broadcasting Multiplexing Service, Wholesale Line Rental Service or High Speed Broadband Services in the Access List.

TM further proposes to delete subsection 5.4.19 and 5.4.20 on fast track process, subsection 5.20 on Inter-operator Mobile Number Portability Support Services, subsection 5.22 on Internet Interconnection Service and subsection 5.23 on Digital Terrestrial Broadcasting Multiplexing Service on the MS (Access). It proposes to include subsections on Broadband Wireless Access Service, Mobile Virtual Network Operator Service in the MS (Access). Finally, TM provides other comments on the different subsections of the MS (Access).

U Mobile does not agree to the proposed amendment to subsection 5.4.11(d) of the MS (Access) as shown in paragraph 3(d) in Annexure 3 of the PI Paper. U Mobile has been refused access request by the Access Provider on the basis of insufficient capacity, however, there has not been any elaboration. U Mobile opines that this amendment would make it even easier for the Access Provider to refuse requests for access.

U Mobile does not agree to the proposed amendment to subsection 5.14.6 of the MS (Access) as shown in paragraph 3(m) in Annexure 3 of the PI Paper, and proposes that the existing wording be retained. It further proposes amendment to subsection 5.15.6 of the MS (Access).

(b) SKMM final view

The SKMM has considered all the submissions received, and note that there were general agreement with changes proposed by the SKMM on the MS (Access). The SKMM also

notes that many details of some submissions deal with amendments in relation to facilities and services that are no longer (or did not become) subject to the Access List, therefore there are no amendments in this regard.

The SKMM also sets out below the rationale for other amendments to the MS (Access), as foreshadowed in this PI Report:

(i) Grounds for refusal (subsection 5.4.11)

For the reasons expressed above in chapter 12, the SKMM also concludes that subsection 5.4.11 of the MS (Access) will be amended to include a grounds for refusal in respect of the Full Access Service, Line Sharing Service and Sub-loop Service in circumstances where those premises will be replaced by a HSBB Network Service (with or without QoS).

(ii) No prohibition on Naked DSL

The SKMM will amend subsection 5.24 in the MS (Access) to allow competitive providers that acquire one of the relevant wholesale services (i.e. Wholesale Line Rental Service, Full Access Service, Bitstream Services or Sub-loop Service) to offer Naked DSL to end users, as described in section 11.4.3 above. This is to prohibit an Access Provider from imposing a condition on the end user to acquire a retail line rental service at a fee from it before acquiring a retail DSL service from a competitive supplier.

(iii) HSBB Network Services migration

The SKMM has included a requirement in a new subsection 5.26 of the MS (Access) to include a migration plan for the HSBB Network Services. This is specified to apply in respect of both existing and future Access Seekers.

16. CONCLUSION

The SKMM thanks all parties for their participation in this comprehensive Public Inquiry. The following commentary provides a summary of the implementation issues arising from this PI Report and the associated amending instruments to the Access List and the MS (Access).

As discussed in the relevant sections above, some amendments in the Access List involves the renaming or rationalising of services currently on the Access List. The SKMM will retain the facilities or services with the original services descriptions (applicable to those renamed or rationalised services) in the Access List for an interim period to enable a smooth transition to take place. During the transition period, terms and conditions, including pricing, which apply to those original facilities or services in the Access List prior to the amendment would continue to apply. For clarity, the SKMM highlights the following:

- the re-named **Wholesale Local Leased Circuit Service**: this new service includes the Private Circuit Completion Service under the current Access List; the current arrangement including pricing for Private Circuit Completion Service continues to apply;

- the rationalised **Transmission Service**: this new service includes the Domestic Network Transmission Service, the backhaul transmission service component of the Domestic Connectivity to International Services, and the Broadcasting Transmission Service under the current Access List; the current arrangement including pricing for the respective facilities and services continue to apply.

The implications for existing access agreements are as follows:

- They must each be reviewed to ensure compliance with the MS (Access). Any amendments that are required to ensure compliance must be completed no later than 210 days of the date on which the Access List variation instrument takes effect.

- Each Access Provider modify their ARD in relation to Facilities or Services on the Access List no later than 90 days of the date on which the Access List variation instrument takes effect.

21 December 2008

SKMM