Suruhanjaya Komunikasi dan Multimedia Malaysia
Malaysian Communications and Multimedia Commission

PUBLIC INQUIRY PAPER ON

Implementation of Accounting Separation in Malaysia

7 September 2012

This Public Inquiry Paper was prepared in fulfilment of Sections 58 and 61 of the Communications and Multimedia Act 1998.

CONTENTS

PREFACE

The Malaysian Communications and Multimedia Commission (**SKMM**) invites submissions from industry participants, other interested parties and members of the public on the questions and issues raised in this PI Paper concerning the **Implementation of Accounting Separation in Malaysia**. Submissions are welcome on the specific matters on which comment is sought and on the SKMM's preliminary views. Submissions are also welcome on the rationale and analysis in this PI Paper where no specific questions have been raised. Such submissions should be substantiated with reasons and, where appropriate, evidence or source references. Written submissions, in both hard copy and electronic form, should be provided to the SKMM in full by **12 noon, Wednesday, 31 October 2012**.

Submissions should be addressed to:

The Chairman
Malaysian Communications and Multimedia Commission
63000 Cyberjaya
Selangor

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In the interest of fostering an informed and robust consultative process, the SKMM proposes to make submissions received available to interested parties upon request. The SKMM also reserves the right to publish extracts or entire submissions received. Any commercially sensitive information should be provided under a separate cover clearly marked '**CONFIDENTIAL**'. However, for any party who wishes to make a confidential submission, it would be of assistance if a "public" version of the submission were also provided (if possible).

The SKMM also proposes to conduct a Public Inquiry Clarification Session at which stakeholders may make oral submissions to the SKMM and seek clarification on the issues raised in this paper. The session will be held at the SKMM Auditorium, Cyberjaya on **Thursday, 27 September 2012 at 9.30 am**.

Members of the public who wish to attend the session should register with the SKMM on the above contact details by **12 noon on Thursday, 20 September 2012**. Parties who wish to address questions to the SKMM during the public hearings should also notify the SKMM of those questions in advance to the above contact details by **12 noon on Thursday, 20 September 2012**.

The SKMM would like to express gratitude to interested parties for their participation in this consultative process and look forward to receiving written submissions.

ABBREVIATIONS AND GLOSSARY

Term	Definition
ABC	Activity Based Costing
AS	Accounting Separation
Attribution	The process of attributing direct and directly attributable costs to services or products
Apportionment	The allocation of unattributable costs in a proportional manner
BSC	Base Station Controller
BT	British Telecoms
BTS	Base Transceiver Station
BU	Bottom-up
CCA	Current Cost Accounting
CISP	Common Intelligence Service Layer
CMA	Communication and Multimedia Act 1998
CoC	Cost of Capital
CWIP	Capital Work in Progress
DSLAM	Digital Subscriber Line Access Multiplexer
EC	European Commission
EPMU	Equi-proportional mark-up
EU	European Union
FA	Fixed Assets
FAR	Fixed Asset Register
FAC	Fully Allocated Cost
FCM	Financial Capital Maintenance
FTR	Fixed Termination Rate
GBV	Gross Book Value
GGSN	Gateway GPRS Support Node
GL	General Ledger
GPRS	General Packet Radio Service
GRC	Gross Replacement Cost

HCA	Historic Cost Accounting
HR	Human Resources
IFRS	International Financial Reporting Standards
ISDN	Integrated Services Digital Network
ISP	Internet Service Provider
LL	Leased Line
LLU	Local Loop Unbundling
LRIC	Long Run Incremental Cost
MASB	Malaysian Accounting Standards Board
Mbit/s	Megabit per second
MCE	Mean Capital Employed
MDF	Main Distribution Frame
MEA	Modern Equivalent Asset
MGW	Media Gateway
MMS	Multimedia Messaging Service
MSC	Mobile Switching Centre
MSC-CS	Mobile Switching Centre – Circuit Switched
MTR	Mobile Termination Rate
MVNO	Mobile Virtual Network Operators
NBV	Net Book Value
NERA	Nera Economic Consulting
NGN	Next Generation Network
NPV	Net Present Value
NRA	National Regulatory Authority
NRC	Net Replacement Cost
NRV	Net Realisable Value
OCM	Operating Capital Maintenance
PI	Public Inquiry
PSTN	Public Switched Telephone Network
P&L	Profit and Loss
PV	Present Value

RFS	Regulatory Financial Statements
RNC	Radio Network Controller
ROCE	Return on Capital Employed
SGSN	Service GPRS Support Node
SKMM	Malaysian Communication and Multimedia Commission
SMS	Short Messaging Services
SMSC	Short Messaging Service Centre
TD	Top-down
TRX	Transceiver
USP	Universal Service Provision
UK	United Kingdom
VOIP	Voice over Internet Protocol
WACC	Weighted Average Cost of Capital
WLR	Wholesale Line Rental

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EXECUTIVE SUMMARY

The purpose of this Public Inquiry (PI) process is to describe what accounting separation (AS) involves and to provide the industry with the opportunity to comment on the proposed AS framework and implementation plan, as well as to open up the process to a wider audience.

Most telecommunications operators are vertically integrated businesses. They have networks which they use to provide services to their own downstream retail operations and to competitors. In countries around the world this has led to issues relating to:

(i) Undue price discrimination, which involves charging unduly different prices to different customers for the same goods or services;

(ii) Cross-subsidisation, where losses incurred as a result of the provision of one service are covered using profits earned through the provision of another service; and

(iii) Margin squeeze, where a vertically integrated operator providing an essential input leverages its upstream market power by raising its wholesale prices (and/or drops its retail prices) to squeeze downstream competitors' margins and thereby forecloses the retail/downstream market to equally efficient competitors.

AS provides information that is needed for regulatory and competition authorities to investigate and analyse these types of issues as well as instances where retail prices are excessive or involve widespread cross-subsidies. In contrast, other separation measures (functional separation, structural separation, and divestiture) are more burdensome than AS in terms of the administrative and other costs involved, and are justified only if the AS process identifies serious and enduring competitive problems.

The use of AS is increasingly common in countries around the world. Not only does it provide information for regulatory purposes but it also enables operators to identify the costs and profitability of different services and what drives those costs.

AS involves the production of Regulatory Financial Statements (RFS) at the level of individual services or business units within the operating company. It requires:

(i) A set of AS principles and policies;

(ii) The production of RFS (separate accounts) based on sound analysis and economic principles of cost causation;

(iii) Fairly present the financial interactions between different parts of the operator's business and the transactions between them (transfer charges);

(iv) Fairly present the profitability of different retail and wholesale products and services;

(v) Can be reconciled back to the firm's statutory accounts; and

(vi) Subjected to independent verification (audit).

The starting point for the source data, formats and accounting policies used in AS is the statutory accounts, which telecommunication operators in Malaysia already produce. AS is based on the parts of the businesses serving individual services within wholesale and retail markets. It is relevant to both fixed and mobile networks.

Key components of AS are:

(i) A reliable system for attributing revenues to different services;

(ii) A detailed and reliable system for attributing costs to different services based on cost drivers;

(iii) Explicit and cost based transfer charges between different parts of the business; and

(iv) Revaluation of assets to reflect current costs and hence provide the correct signals for pricing, investment, expansion and build or buy decisions.

The present situation regarding the readiness of operators to implement AS is that:

(i) None of the operators are in a position to implement AS without further developments;

(ii) They have sufficient information to be able to attribute revenues to different services even where services are offered on a bundled basis;

(iii) Some operators have limited reporting that allows attribution of costs but only to a very small extent. Also, all the operators have an appropriate level of detail in their general ledgers and fixed asset registers to enable them to provide raw data for cost attribution. However, substantial development of systems and software is required. Also non-financial information relating to cost drivers needs to be collected via surveys, engineering studies and other means;

(iv) The derivation of transfer charges should be straightforward once cost attribution systems have been developed; and

(v) None of the operators uses current cost accounting. Consequently, its implementation will require substantial work to revalue fixed assets.

The main body and appendices of this Public Inquiry (PI) document describe the process of revenue and cost attribution, including recommendations regarding the cost drivers to be used to attribute different types of cost to individual products and services. Also provided are example formats for the RFS and supporting documents. In addition, the methodology for determining transfer charges is described, as is the process for revaluing assets and adjusting depreciation that forms a central part of the production of RFS based on current cost accounting.

Implementing AS in Malaysia will represent a major undertaking for the operators and for SKMM, requiring both time and resources. At the same time it needs to be introduced in a timely manner in order to provide information that is needed by SKMM.

In order to ensure that the same AS principles are applied in a consistent manner by different operators, one option would be the establishment of a joint working group, meeting on a quarterly basis or possibly more frequently.

The implementation plan set out in the main body of this PI document should be considered as a draft plan, subject to change following further discussions with the operators as to what are reasonable timescales. The main milestones are:

(i) Completion of Public Inquiry Report (November 2012);

(ii) Operators notified to Implement AS (December 2012);

(iii) Operators provide documentation on implementation plan, accounting policies and principles, methodologies used, and format of RFS (March 2013);

(iv) Submission of prototype RFS for 2012 on historic cost basis (June 2013);

(v) Submission of final RFS for 2012 on historic cost basis (December 2013);

(vi) Submission of implementation plan for RFS for 2013 based on current cost accounting and methodology for revaluing assets (March 2014);

(vii) Submission of final RFS for 2013 on historic cost basis (June 2014);

(viii) Submission of draft RFS for 2013 on current cost basis (September 2014);

(ix) Submission of final RFS for 2013 on current cost basis (December 2014);

(x) Submission of final RFS for 2014 on current cost basis (June 2015).

Final RFS for subsequent years on a current cost basis will then be submitted within six months of the financial year end.

SUMMARY OF ISSUES FOR COMMENT

The SKMM welcomes comment particularly on the following questions and issues raised in this PI Paper:

Table 1 Summary of Questions and Issues for Comment

Question	Section	Question/Issue
1	3.3.1	If accounting separation is implemented on fixed network operators, for which services should there be separate accounts? Is the suggested list in Table 4 appropriate? If not, please explain why.
2	3.3.2	If accounting separation is implemented on mobile network operators, for which services should there be separate accounts? Is the suggested list in Table 5 appropriate? If not, please explain why.
3	5.5	Is it feasible to set up and run the surveys listed in Section 5.5? If not, please explain why.
4	5 & Appendix C	Do the cost categories listed in Appendix C include all the relevant costs? If not, which types of cost are missing?
5	5 & Appendix C	Are the suggested cost drivers and attribution methods in Appendix C appropriate? If not, what should be used and why?
6	6.2	When services are offered as a bundle, is it possible to attribute revenue to different services using billing or other data? If not, please explain why.
7	7.1	Is it necessary to have CCA accounts? If not, please give reasons.
8	7.1	How could the impact of asset price changes be taken into account in the absence of CCA accounts?
9	7.2	Are replacement costs the best way to value assets under CCA? If not, what is the best approach and why?
10	7.3	Do you agree with the process for determining the replacement cost of different types of asset that is summarised in Figure 6 and explained further in Appendix B? If not, what would be more suitable and why?
11	7.3	Do you have or can you obtain the data that is necessary in order to revalue assets at replacement cost. If not, please explain why.
12	7.4.2	Do you agree that FCM is the appropriate form of capital

Question	Section	Question/Issue
		maintenance to use for CCA? If not, please give reasons.
13	8.2	If transfer charges for internal sales are based on costs is WACC the appropriate basis for determining the cost of capital? If not, what basis should be used?
14	8.3	When there are external sales, should transfer charges for internal sales be based on market prices or costs including the cost of capital? Please give reasons.
15	9 & Appendix A	Is the suggested format of the Regulatory Financial Statements appropriate? If not, please give reasons.
16	10	Are the reconciliation adjustments set out in Table 6 and Table 7 appropriate? If not, what should they comprise?
17	11.1	Are the specified levels of the audit opinion appropriate? If not, please explain why.
18	11.2	Is the accounting separation documentation specified in Section 11.2 adequate? If not, what should be added?
19	11.3	Are the accounting records specified in Section 11.3 adequate and appropriate? If not, what should be added or changed?
20	11.4	Should the Regulatory Financial Statements be published? Please give reasons.
21	12.1	Would it be useful to establish a joint working group of the operators and SKMM, which met quarterly to resolve issues and help drive the implementation process forward? If not, what would be a better co-ordination mechanism?
22	12.3	Is it appropriate to have a phased approach with HCA Regulatory Financial Statements produced first and CCA RFS produced later?
23	12.3	Is the draft implementation timetable feasible? If not, please explain why.

1. INTRODUCTION

SKMM is of the view that AS is necessary in the Malaysian communications and multimedia industry in order to increase transparency regarding the relationship between prices and costs. This, in combination with analysis of market and operator behaviour, will enable SKMM to monitor and make informed decisions on competition issues.

SKMM had carried out an assessment of the communications and multimedia industry and had considered implementing AS in accordance with the licensing framework under the Communication and Multimedia Act 1998 (CMA) that is designed to be technology neutral. However, AS is a tool that the SKMM will use to assess conduct of vertically integrated operators and SKMM's assessment indicates the AS framework is suitable only for telecommunication operators. Even among the telecommunication operators, reality at present is that, particularly at the wholesale level, the services provided by fixed and wireless operators differ, with, for example, there being no mobile equivalent of unbundled local loop and no fixed equivalent of roaming. At the same time, while there is increasing competition between fixed and mobile services at the retail level, they are still generally regarded as being in separate markets. Consequently, when investigating competition issues such as excessive prices or margin squeeze, it is necessary to have separate information about the costs and profitability of fixed and mobile services. Initially, therefore, the AS framework will need to distinguish between fixed and mobile market and kick start with telecommunication services. However, the situation will be reviewed periodically to take account of future technological and market developments.

In January 2012, SKMM engaged NERA Economic Consulting (NERA) to provide assistance in developing a policy and implementation framework for AS in Malaysia.

As the first step in the process of developing such a framework, SKMM met with a cross section of licensees who provide fixed and mobile telecommunications services. From these meetings and subsequent information gathering process, SKMM has gained a broad understanding of the internal cost accounting processes currently used by each operator, the resources available to them, including staff and software, and what they would need to do in order to implement AS.

Based on this review of the operators' cost accounting processes and what they would need to do to implement AS, and taking account of SKMM's objectives to introduce AS, a proposed framework and implementation plan has been developed.

The purpose of the public inquiry process is to describe what AS involves and to provide the industry with the opportunity to comment on the proposed AS framework and implementation plan, as well as to open up the process to a wider audience. There are questions addressed to readers throughout this PI document, to which SKMM welcomes a response.

The document is structured as follows:

Section 2	Provides an introduction to AS and its aims
Section 3	Describes the legal position regarding the introduction of AS, SKMM's objectives and the current capabilities of the operators with respect to implementing AS
Section 4	Sets out the principles of AS and the accounting policies to be used
Section 5	Explains the process by which costs are attributed to different services
Section 6	Describes the process by which revenues are attributed to different services
Section 7	Describes the methods used to calculate current costs
Section 8	Describes the use and calculation of transfer charges
Section 9	Shows the format that the accounts should take
Section 10	Explains reconciliation with the statutory accounts
Section 11	Sets out the audit requirements, including requirements for documentation and the maintenance of records
Section 12	Contains a draft implementation plan

There are four appendices:

Appendix A	Shows the formats of the RFS for fixed and mobile

	networks
Appendix B	Contains examples of the calculation of current costs
Appendix C	Shows details of the cost attribution process
Appendix D	Explains significant accounting policies

2. ACCOUNTING SEPARATION AND ITS AIMS

This section briefly describes some of the competition issues that can arise given the existence of vertically integrated telecommunications operators, sets out potential separation-based remedies, defines AS and explains its benefits and uses. It concludes by explaining why AS is necessary in the Malaysian telecommunications industry.

2.1. Economic Background

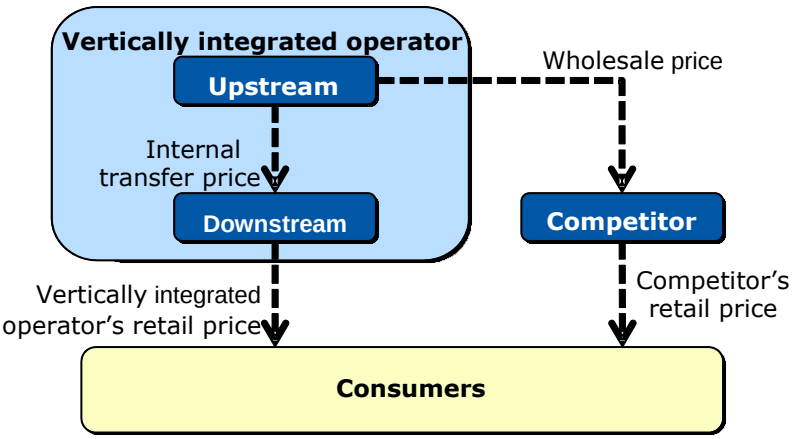
Most operators of telecommunications networks are vertically integrated businesses. In many cases, they can be thought of as having an upstream business providing wholesale services (often at regulated prices[1]), and a downstream business providing retail services. A vertically integrated operator's retail services are bought by consumers (residential and business customers), and its wholesale services are bought both by:

(i) Competitors (access-seekers), at a wholesale price; and

(ii) The vertically integrated operator's own downstream retail operations, at some internal transfer price[2].

This situation is depicted in Figure 1 below.

Figure 1
Vertical Integration



Source: NERA.

1 For example, fixed and mobile termination rates are set using a LRIC modelling process in Malaysia.

2 At present in Malaysia these internal transfer prices are implicit, but will be made explicit given Accounting Separation.

Vertical integration is not confined to telecommunications and can be found in a wide range of industries. This is because it provides benefits in the form of economies of scope in the management of the upstream and downstream businesses and the avoidance of contract and other transaction costs between the upstream and downstream businesses.

2.2. Potential Competition Issues

However, vertical integration can also lead to competition issues. For example, a vertically integrated operator has the opportunity to set prices and conditions of sale to its competitors that differ from those offered to its own downstream business. In that way it can discriminate against competitors and in favour of its own operations. In countries around the world this has led to economic problems such as:

(i) Undue[3] price discrimination, which involves charging unduly different prices to different customers for the same goods and services[4];

(ii) Cross-subsidisation, where losses incurred as a result of the provision of one service are recouped using profits earned through the provision of another service;

(iii) Margin squeeze, a situation in which a vertically integrated operator supplying an essential input leverages its upstream market power by raising its wholesale price (and/or drops its retail prices) to squeeze downstream competitors' margins to foreclose the retail/downstream market to equally efficient competitors[5].

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[3] "Bonbright suggests a two-step analysis to judge whether rates are unduly discriminatory. The first step is to determine whether the rates are discriminatory at all. The second is to determine whether the discrimination is undue." J. Stephen Henderson and Robert E. Burns, An Economic and Legal Analysis of Undue Price Discrimination, NRRI 89-12, The National Regulatory Research Institute, August 1989, p. 37.

[4] More formally, undue price discrimination can be defined as a situation in which a firm charges unduly different price-cost margins on different transactions (Stigler, 1987). Such a definition has the advantage of recognising that charging different prices for the same product may be cost-justified or is necessary to meet competition and hence would not amount to undue price discrimination.

[5] This definition uses an "equally efficient operator" (or EEO) assumption. An alternative is the "reasonably efficient operator" (REO) assumption.

A range of further problems not necessarily related to vertical integration includes:

(i) High profits on a particular service, perhaps reflecting a lack of competitive pressure in the provision of that service;

(ii) Non-price discrimination (as opposed to price discrimination described above) involving discrimination in terms of service quality or connection time;

(iii) Cross-subsidy between different retail services such as domestic and international calls; and/or

(iv) The use of domestic profits to subsidise international expansion at the expense of domestic consumers.

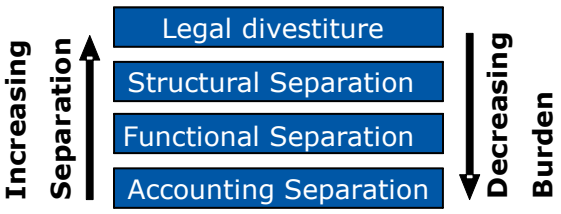
In recent years in Malaysia, there have been various concerns relating to these types of issues. Looking forward, SKMM needs tools to determine the validity of such concerns and to monitor market behaviour.

The use of separation-based measures to deal with issues of discrimination and other competition problems is discussed in the next section.

2.3. Separation-based Remedies

Any separation-based remedy involves a disaggregation of the activities of an operator to create a situation in which to some extent or in some sense different parts of the business interact "as if" they were unrelated. This aim can be achieved in a variety of ways, as shown in Figure 2 below[6].

Figure 2
Separation-based Remedies



Source: NERA.

[6] Note that some authors use these "labels" to mean slightly different things. For example Cave (2006) identifies eight ways in which separation can be achieved. Our characterisation of the meaning of each is explained below.

The most obvious way in which different parts of a business can be made to interact "as if" they were separate is through enforced legal divestiture. This involves different parts of the business being separately owned and independently run. Although this option has been chosen elsewhere in the past (an example is the breakup of AT&T in the US in 1984, which resulted from a "consent decree" in a competitive policy/antitrust proceeding) it is a strongly interventionist measure and removes the important ability of an operator to coordinate investment, amongst other things.

A somewhat less intrusive measure is structural separation, which, for example, is being implemented in the case of the Next Generation Broadband Network in Singapore. This involves the establishment of separate subsidiary companies within the group structure; for example, one for wholesale activities and another for retail activities. It entails some loss of the potential efficiency that vertical integration can bring, but makes anti-competitive behaviour less likely and more difficult.

Functional separation is one step less intrusive, involving separation of business units within the company, separated by "Chinese walls" with the use of codes of conduct, incentives or behavioural rules. This preserves some of the benefits of vertical integration while still reducing incentives to behave in an anti-competitive manner. BT, in the UK, provides an example of functional separation, with its access network company, Openreach, being functionally separated from the rest of the business.

Finally, AS involves the production of financial accounting data at the level of individual separated businesses providing services within the operating company. It is defined and explained fully in the next section. SKMM considers that AS is an appropriate means to begin to address the issues highlighted in Section 2.2.

AS, which is the focus of this study, aims to give SKMM information that is needed to investigate and analyse specific issues. It is not, in this sense, a "remedy" for "bad" behaviour but rather a tool that can be used as the starting point to investigate whether it exists. In contrast, the other separation remedies are more burdensome than AS in terms of the administrative and other costs involved, and would be justified only if the AS process identifies serious competitive problems.

2.4. Definition of Accounting Separation

The purpose of AS in the telecommunications industry in Malaysia is to assist SKMM in monitoring operators' compliance with their obligations and in particular to help

identify and hence prevent any undue discrimination, cross-subsidisation or margin squeeze (see Section 2.2). This is achieved by requiring companies to account for certain activities in a manner which reflects, as closely as possible, the performance of those activities if they had been operated as separate businesses. When the separate parts of the business interact, these transactions are also made transparent using transfer pricing.

The process of implementing AS involves matters such as accounting standards and methodologies, audit procedures, transparency of cost attribution to different services, reconciliation with statutory accounts, and the publication of information. The approach adopted should be consistent across all operators that are obliged to implement AS in order to ensure that there is certainty for SKMM, the operators and consumers in the Malaysian market.

AS can be defined as:

(i) A set of principles and policies;

(ii) Use to produce RFS (separate accounts) based on sound analysis and economic principles of cost causation;

(iii) Which are capable of independent verification (audit);

(iv) Fairly presents the financial interactions of different parts of the operator's business and the transactions between them (transfer charges); and

(v) Which fairly present the profitability of retail and wholesale products and services.

The starting point for the source data, formats and accounting policies used in AS is the statutory accounts, which the Malaysian telecommunication operators already produce. AS involves the production of financial statements at the level of individual business units offering different products and services. When the different business units interact, those interactions are treated for accounting purposes as if they were between unrelated parties.

AS is not a set of rules about how to organise an operator's business, rather it is a system for recording and reporting accounting information for certain types of regulatory purposes. The process of producing statutory accounts carries on unaffected, as would the provision by the operators to SKMM of revenue data for the purposes of calculating licence fees and contribution to universal services fund. AS is an additional process for regulatory purposes.

The proposed specification of the RFS is provided in Section 9 below. They are required for each of the separated business units or services. The RFS demonstrate the profitability of each product or service, and the use that each one makes of assets and net working capital.

2.5. Benefits of Accounting Separation

The benefits of AS are summarised in Table 2 below.

Table 2

Benefits of Accounting Separation

To SKMM and Malaysian consumers	To operators
Transparency, reduction in information asymmetry	Strategic benefits to understanding the unit costs and profitability of different services
Demonstration of cost-orientation and non-discrimination	Understanding of cost drivers
Facilitate the detection of cross-subsidies and potential abuses of market power such as margin squeeze	Understanding of the impact of technological change on profitability (when current costs are used)
Full visibility of market profitability and rebalancing	

Source: NERA.

However, AS also has costs, both to SKMM and to the operators, and so when developing the policy and implementation plan, it is necessary to consider the proportionality of the intervention.

2.6. Use of Accounting Separation

The use of AS as a regulatory remedy is increasingly common, particularly in Europe following the introduction of the EU electronic communications regulatory framework and a series of EC Recommendations. AS is the least intrusive and least costly of the separation-based revenues (in terms of the costs of the obligations on the operators, see Section 2.3), but one which nevertheless should help SKMM meet its objectives.

However, it is important to note that, while AS can identify and hence remove incentives for price discrimination, non-price discrimination (for example on the basis of quality or delays in connecting customers) remains a possibility. For this reason it is necessary to complement AS with interventions to monitor non-price activities and prevent any associated anti-competitive behaviour. If, at some point in the future,

non-price competition problems are encountered, it may be necessary to consider a more stringent separation-based remedy such as functional separation in addition to AS. Functional separation is a recognised access remedy in Europe, and has been implemented in the case of BT's fixed network in the UK, where AS was deemed insufficient to eliminate all competition problems. Similar functional separation arrangements have been implemented in Italy and in Sweden.

In addition to its use for fixed networks, AS has been implemented for mobile network operators in a number of European and other countries.

Table 3 below summarises the implementation of AS for fixed and mobile network operators in a range of countries. In some cases the requirements vary by operator, so a tick in the table represents a requirement for at least one operator to implement AS to one part of its business.

Table 3
Implementation of Accounting Separation

Country	Fixed Network	Mobile Network
UK	✓	✗
France	✓	✓
Spain	✓	✓
Portugal	✓	✓
Germany	✓	✗
Italy	✓	✓
Sweden	✓	✓
Finland	✓	✓
Malta	✓	✓
Norway	✓	✓
Cyprus	✓	✓
Romania	✓	✓
Singapore	✓	✗

Oman	✓	✖
Pakistan	✓	✓
Hong Kong	✓	✖
New Zealand	✓	✖
Australia	✓	✖

Source: NERA.

2.7. Why Accounting Separation is Necessary in Malaysia

SKMM is of the view that AS is necessary in the Malaysian telecommunications industry in order to increase transparency regarding the relationship between prices and costs. This, in combination with analysis of market and operator behaviour, will enable SKMM to monitor and make informed decisions on competition issues. As outlined in Section 2.2 a range of competition issues can arise, particularly in the presence of vertically integrated operators, and recent years have seen a number of complaints to SKMM from both Malaysian operators and consumers relating to pricing practices. At present without AS, it is difficult for SKMM to conduct thorough analysis and judge the merits of such complaints and make appropriate decisions.

In order to be able to do so, SKMM needs much more detailed and reliable financial information on the revenues, costs, capital employed, profitability and financial returns of telecommunications products and services within Malaysia (both fixed and mobile[7]). AS will provide SKMM with the information to help informed decision making on these issues, and, crucially, will provide a sound foundation of financial information within a framework that will allow any future complaints to be dealt with in a more rigorous and timely manner.

[7] In this context the term mobile encompasses both mobile and WiMax operators

3. LEGAL BACKGROUND AND OTHER CONSIDERATIONS

3.1. Legal Background

The telecommunications industry in Malaysia is regulated under two main pieces of legislation:

(i) The Communications and Multimedia Act 1998 (CMA), which came into force on 1 April 1999 and sets out the regulatory licensing framework for a convergent communications and multimedia industry; and

(ii) The Malaysian Communications and Multimedia Commission Act 1998 which created SKMM as a new regulatory body.

SKMM's mission statement requires it to be committed to:

(i) Ensuring consumers enjoy choice and a satisfactory level of services at affordable prices;

(ii) Providing transparent regulatory processes to facilitate fair competition and efficiency in the industry;

(iii) Ensuring best use of spectrum and number resources; and

(iv) Consulting regularly with consumers and service providers and facilitating industry collaboration.

Part VI, Chapter 2 and 3 of the CMA contain provisions on general competition practices and access to services. In particular, Section 133 of CMA prohibits licensees from engaging in anti-competitive conduct whilst Section 149 stipulates that network facilities providers and network service providers are to provide access on reasonable terms and conditions and on an equitable and non-discriminatory basis.

Turning to the specific issue of setting prices, Section 198 of CMA sets out the following principles to be followed when setting rates[8]:

(i) Rates must be fair and, for similarly situated persons, not unreasonably discriminatory;

(ii) Rates should be oriented toward costs and, in general, cross-subsidies should be eliminated;

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8 http://www.skmm.gov.my/link_file/the_law/NewAct/Act%20588/Act%20588/a0588s0198.htm.

(iii) Rates should not contain discounts that unreasonably prejudice the competitive opportunities of other providers;

(iv) Rates should be structured and levels set to attract investment into the communications and multimedia industry; and

(v) Rates should take account of the regulations and recommendations of the international organisations of which Malaysia is a member.

As a means for SKMM to ensure that the above CMA provisions are followed, and thereby meet the objectives in its mission statement, it is seeking to develop and implement AS, as explained in the next section.

3.2. Regulatory Objectives and Operator Readiness

In order to determine how AS might be best implemented in Malaysia it is necessary to take into consideration factors including:

(i) SKMM's objectives for AS;

(ii) The proportionality of AS as a regulatory remedy; and

(iii) The existing accounting systems used by the operators, and hence their level of readiness to implement AS.

3.2.1. SKMM's objectives

SKMM's objectives in imposing an AS obligation are to:

(i) Ensure that network operators (fixed and mobile) do not unduly discriminate in favour of their own downstream operations (and against downstream competitors) when setting charges for the use of their networks;

(ii) Ensure that prices charged for access to networks (e.g. to copper and fibre access networks) are not excessive, even if there is no discrimination;

(iii) Ensure that the charges paid by mobile virtual network operators (MVNOs) for network services are reasonable in relation to costs;

(iv) Possibly, in the longer term, to replace the setting of interconnection charges based on long run incremental cost (LRIC) modelling by the use of AS;

(v) Be in a position to check whether prices for particular retail services (e.g. mobile data) are excessive; and

(vi) Be in a position to check whether vertically integrated operators are engaging in price or margin squeezes.

3.2.2. Operators' existing cost accounting systems and expertise

During our meetings with the operators and the subsequent information gathering process, we have gained a broad understanding of both the methodologies and the internal cost accounting process currently used by each operator. It was necessary to understand not only the level of detail of the main outputs produced by the particular operator's cost accounting system but also the inputs and the underlying processes used to generate those outputs. Some of the main aspects of the operators' current systems that needed to be reviewed are:

(i) The existence of cost allocation systems, or otherwise;

(ii) The general ledger (GL) and the completeness and disaggregation of data within it;

(iii) Whether the accounts are in historic or current cost terms;

(iv) The quality, completeness and level of aggregation of data in the fixed asset register (FAR) and the recording of depreciation;

(v) The nature of the system for time recording (e.g. for maintenance, repairs and system support);

(vi) The use of activity and other surveys (e.g. use and occupancy of buildings) and their sample size and regularity;

(vii) The basis for allocating costs and the quality of the information that is used;

(viii) The cost drivers currently used to allocate costs and the availability of information on additional drivers that would be required in order to implement AS;

(ix) Information available on the volumes of different services and their use of different types of network equipment and the level of disaggregation;

(x) The level of disaggregation in terms of the allocation of costs to different network components and wholesale and other services;

(xi) The way that revenue is currently attributed to different services and the level of disaggregation involved;

(xii) Accounting systems and software;

(xiii) Number of staff with the necessary expertise; and

(xiv) The awareness of operators regarding future changes required for AS and their preparedness regarding implementation of new accounting systems.

Our discussions with the operators and their answers to follow-up questions revealed that their existing accounting systems and expertise, and hence their preparedness to implement AS, vary. This is to be expected given that the companies differ in terms of size, level of maturity and the markets in which they operate.

In general, we found that the accounting systems and experience of some operators are more fully developed than others. This means that the latter are less prepared for AS. However, none of the operators will be able to implement AS without further developments. For example, none currently have adequate accounting information systems or cost allocation manuals (or their equivalent) in place.

At present some operators have management or other internal reporting that allows them to allocate costs and revenues between services, but only to a limited extent. For example, direct costs might be allocated to services and compared to revenues. This enables an analysis of "gross margins", but is insufficient to allow the profitability of different services to be derived. None of the operators use any kind of current cost accounting.

However, all of the operators have an appropriate level of detail in their GL and FAR to provide raw figures for cost allocation, and, by augmenting their present accounting systems with new software, could implement AS. All of the operators questioned have (or could produce) information on cost drivers such as floorspace, headcount, traffic volumes and other network engineering information which would need to be developed in more detail in order to use it in the cost attribution process (see Section 5). Furthermore, the operators are able to disaggregate revenues by service using billing data.

It is important to note that it was not practical for SKMM to meet and have discussions with all operators that might be subjected to AS. However, SKMM was able to engage with a substantial sub-set of operators which provided a realistic cross-section of the market and can be assumed to be representative of the telecommunications industry as a whole.

3.3. Services Subject to Accounting Separation

SKMM proposes that the separated entities to be established under the AS system in Malaysia will be based on the parts of the businesses serving individual services within wholesale and retail markets. This approach follows recent international best practice in establishing a flexible methodology driven by outcomes rather than a more traditional framework based on specific technologies or established business units.

In accordance with international practice, the obligations would relate only to activities carried out in Malaysia. Any activities performed in other countries would not be subjected to AS in Malaysia, and would instead fall into the "Other" categories defined below.

This is the first step in the process of AS, and in the following sub-sections we set out our initial proposals regarding which fixed and mobile services should be separated for accounting purposes. The RFS that will result from this separation will help SKMM to address the issues identified in Section 2.2. However, it is important to bear in mind that in the future new issues may arise. Consequently, the services to be separated will be kept under review and revisited as circumstances change. Once AS is implemented by the operators it will be relatively simple to extend the framework to new services.

3.3.1. Fixed Network

For fixed network, ten wholesale and eight retail services have been identified, along with an "other" category for any remaining activities. These are shown in Table 4, with descriptions of the services themselves provided below the table.

Table 4

Fixed Network Services

Market	Services
Wholesale	Wholesale exchange lines
	Wholesale local access - copper
	Wholesale local access - fibre
	Wholesale broadband access
	Wholesale leased lines
	Backhaul services
	Call origination
	Call termination
	Transit services
	Interconnection circuits
	Other
Retail	Retail exchange lines - residential
	Retail exchange lines - business
	Local calls
	National calls
	International calls
	Calls to mobiles
	Leased lines
	Broadband
	Other
Other	n/a

Source: NERA.

The wholesale services are defined as follows:

(i) Wholesale exchange lines: all wholesale residential and business exchange lines including rental and connection services provided to residential customers.

(ii) Wholesale local access - copper: all unbundled local loop (LLU) products (full access, line sharing, sub-loop and bitstream services) provided over existing copper networks, including services supplied to third party ISPs but excluding services provided over alternative technologies and wholesale broadband access services. This includes rental and connection services.

(iii) Wholesale local access - fibre: all access services provided over fibre, including rental and connection services.

(iv) Wholesale broadband access: all wholesale broadband products over all existing copper broadband networks, including those to third-party internet service providers (ISPs) but excluding simple resale products. This includes rental and connection services.

(v) Wholesale leased lines: all wholesale trunk and terminating segments of analogue and digital leased lines. This includes rental and connection services.

(vi) Backhaul services: all backhaul services provided to other operators, including trunk and terminating segments and rental and connection services.

(vii) Call origination: the origination of calls on the public telephone network provided at a fixed location. This includes equal access services.

(viii) Call termination: the termination of calls on an individual public telephone network provided at a fixed location.

(ix) Transit services: the transit of calls on an individual public telephone network provided between two fixed locations at which other networks interconnect.

(x) Interconnection circuits: all interconnection circuits between the exchanges of two interconnecting operators in order to allow traffic to pass between their networks.

(xi) Other: Any other wholesale services.

The retail services are specified as follows:

(i) Retail exchange lines: Residential and non-residential public switched telephone network (PSTN) and integrated services digital network (ISDN) access lines provided over the fixed public telecommunications network, including rental and connections.

(ii) Local calls: Residential and non-residential local calls provided at a fixed location.

(iii) National calls: Residential and non-residential national calls provided at a fixed location.

(iv) International calls: Residential and non-residential international calls provided at a fixed location.

(v) Calls to mobiles: Residential and non-residential calls to mobile telephony and WiMax networks provided at a fixed location.

(vi) Leased lines: All retail national and international leased lines (terminating and trunk segments), analogue and digital regardless of capacity and distance and including rental and connection services.

(vii) Broadband: Residential and non-residential retail broadband services over existing copper networks of all speeds and including rental and connection services.

(viii) Other: Any other retail services, including, for example, dial-up services (if applicable) directory enquiry and payphone services.

The Other market contains all residual activities (such as equipment sales) and is necessary for the purposes of reconciling with the statutory accounts (see Section 10).

Q1. If accounting separation is implemented on fixed network operators, for which services should there be separate accounts? Is the suggested list in Table 4 appropriate? If not, please explain why.

3.3.2. Mobile Network

Similarly, for mobile networks, five wholesale and five retail services have been identified, along with an "other" category. These are shown in Table 5.

Table 5
Mobile Network Services

Market	Services
Wholesale	Call origination
	Call termination
	MVNO access

	National Roaming
	International Roaming
	Other
Retail	Connections and subscription
	Voice
	SMS
	Data
	International roaming
	Other
Other	n/a

Source: NERA.

The wholesale services are specified as follows:

(i) Call origination: The origination of calls on mobile networks.

(ii) Call termination: The termination of calls on mobile networks.

(iii) MVNO access: The provision of call services to mobile virtual network operators.

(iv) National and International Roaming: The provision of wholesale roaming services to other mobile networks.

(v) Other: All other wholesale services.

The retail services are specified as follows:

(i) Connections and subscription: The connection fees and monthly subscription.

(ii) Voice: All calls (on-net, off-net national and international to mobile and fixed networks) provided over mobile networks, whether pre-paid or post-paid.

(iii) Short messaging services (SMS): All SMS (on-net, off-net national and international to mobile and fixed networks) provided over mobile networks whether pre-paid or post-paid.

(iv) Data: All data services provided over mobile networks whether pre-paid or post-paid such as internet access, video calls and multimedia messaging services (MMS).

(v) International roaming: All voice calls and other services provided to international roaming customers.

(vi) Other: All other retail services, such as content and directory enquiry services.

Again, a general other category is included for any residual activities, such as equipment sales.

Q2. If accounting separation is implemented on mobile network operators, for which services should there be separate accounts? Is the suggested list in Table 5 appropriate? If not, please explain why.

3.4. Other Issues

The review described in Section 3.2.2 indicated that none of the operators' existing accounting systems are capable of supporting AS without further development. In light of the development work that will be required and the time that this will take, SKMM proposes that a phased approach be followed. This would mean that RFS would first be produced on a historic cost basis and then once that has been done successfully, the necessary steps would be taken to implement them on a current cost basis.

Such a phased approach has been used successfully in other countries, for example Italy, Ireland and the UK. In addition, intermediate milestones can be specified in order to allow SKMM to monitor progress. This is further set out in the proposed Implementation Plan in Section 12.

4. ACCOUNTING SEPARATION PRINCIPLES AND POLICIES

Having explained what AS means and having described its aims, the need for its implementation in Malaysia, and the legal basis and general form that it would take, the remainder of this report sets out the details of how it is proposed to be implemented in Malaysia[9].

The process begins with the different types of operating cost in the General Ledger. These are treated in the same way for the purposes of the RFS as they would be for statutory accounting purposes, and this is explained in the remainder of this section. Revaluation using current cost accounting as the cost base (when this becomes applicable) is described in Section 7.

The attribution of costs to different services is set out in Section 5, while Section 6 contains the corresponding discussion relating to the separation of revenues by service. Section 8 explains the use and calculation of transfer charges, Section 9 describes the proposed format of the RFS, and Section 10 shows the proposed format of the reconciliation statements. Finally, Section 11 explains the audit and documentation requirements, and Section 12 sets out the implementation plan.

4.1. Statutory and Regulatory Financial Reporting

The starting point for AS is the same as for an operator's statutory accounts. Statutory accounts are prepared in accordance with the Malaysian Companies Act 1965 and the applicable approved accounting standards in Malaysia by the Malaysian Accounting Standard Board (MASB), and give a true and fair view of an operator's performance and the results and cash flows of the Group for the financial year. In practice, this means that the RFS will also need to comply, for example, with:

(i) Communication and Multimedia (Licensing) Regulations 2000, Regulation 33A i.e. to submit audited accounts to the Commission within three months from end of its financial year;

(ii) Part VI, Division 1, Section 166A of the Malaysian Companies Act 1965 and the applicable accounting standards;

(iii) Fundamental accounting concepts and principles;

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[9] When the application of Accounting Separation is reviewed in the future it may be necessary to revisit the precise details of the implementation in order to take account of changes in circumstances.

(iv) Accounting policies of the company; and

(v) The format and content of certain financial statements.

Furthermore, AS will mean that operators will have to comply with some additional regulatory requirements such as:

(i) The accounting entity will be the operator's Malaysian business operations only;

(ii) Financial statements will be disaggregated to show income statements, mean capital employed and certain cost detail for individual services;

(iii) AS Principles such as:

- Rules for attributing costs to different services based on cost causation; and
- Transparency with respect to transfer charging between services;

(iv) AS policies relating to the proposed requirement (in due course) for RFS to be based on current costs rather than historical costs;

(v) A full reconciliation between statutory accounts and the RFS.

The relevant statutory accounts for the operators are those publicly available accounts filed with the Bursa Malaysia and/or audited accounts prepared in accordance with the Malaysian Companies Act 1965 and MASB. Given the scope of AS and the corporate structures and diverse operations of some of the operators, special treatment will be necessary for parts of the businesses that are not relevant, as explained below.

4.1.1. Fixed Network

A company's group corporate structure may consists of retail, wholesale, global, new media, support and other businesses, which do not correspond directly with the split of services described in Section 3.3.1 above. Consequently any inter-company transactions will need to be eliminated and replaced with transfer charges calculated as the product of usage and unit cost (see Section 8). If a fixed operator does not have any beneficial ownership in a mobile operator, any transactions with mobile operators for the use of its network (interconnection) would be classified as external.

4.1.2. Mobile Network

The corporate structures and accounts of Malaysian operators reflect various relationships between the individual subsidiaries within the Groups. For example, the Maxis Group results consolidate information for Maxis Mobile Sdn Bhd, Maxis International Sdn Bhd and Maxis Broadband Sdn Bhd. Maxis also have interests in the provision of fixed telecommunication services, while Celcom Group includes Celcom Mobile Sdn Bhd, Celcom Transmission Sdn Bhd, Celcom Axiata Bhd, and others. The other mobile operators have the simpler corporate structure, since they only have mobile operations in Malaysia.

For the production of the RFS, any inter-company transactions need to be eliminated and replaced by transfer charges. Where mobile and WiMax operators have business interests which are not concerned with mobile telephony, these would not be subject to AS (unless they involve the provision of fixed telecommunications services in Malaysia). Again, the costs, revenues, and capital employed attributable to these other businesses should be aggregated into the third business category termed "Other".

4.2. Principles of Financial Information Reporting

There are a number of fundamental principles that should govern the production of any set of financial information in order to ensure that it is useful. These are:

(i) **Relevance**: the information contained in the RFS must be relevant and reliable. Information is relevant when it can positively influence economic analysis and decision making in a timely manner.

(ii) **Reliability**: information is reliable when it faithfully represents the substance of transactions and other events, is free from deliberate or systematic bias and material error, is complete and, if prepared under conditions of uncertainty, caution has been applied in making judgements. If a choice exists between relevant and reliable approaches that are mutually exclusive, the approach chosen needs to be the one that results in the relevance of the information provided being maximised, and this should be explained by the operator.

(iii) **Comparability:** information needs to be prepared and presented in such a way that similarities and differences between the nature and effect of

transactions and other events over time and across reporting entities can be discerned and evaluated.

(iv) **Understandability**: information is understandable if its significance can be perceived by users that have a reasonable knowledge of business and economic activities and accounting and a willingness to study with reasonable diligence the information provided.

(v) **Materiality:** information need only be given if it is material. Information is material if its misstatement or omission might reasonably be expected to influence the economic decisions of users.

(vi) **Consistency:** there should be consistency of treatment from one year to the next in order to allow meaningful comparisons to be drawn. Where material changes in accounting principles are necessary, the previous year's results should be restated so as to allow comparison with those for the current year.

4.3. Additional Accounting Separation Principles

Specific to the process of AS, there are a number of additional general principles:

(i) **Priority**: insofar as there is conflict between the requirements of these principles, they should be applied in the order of priority in which they appear here, while balancing any concerns between the proportionality and appropriateness of the principles. For instance some network costs cannot be attributed to network components using cost causality principles but instead have to be allocated using more arbitrary methods. The disclosure of the method used ensures that the transparency principle is not breached even in the absence of objectively verifiable data for cost drivers.

(ii) **Causality:** revenues, costs[10], assets and liabilities should be attributed to network components, services or businesses in accordance with the activities that give rise to the revenues, costs, assets or liabilities concerned[11].

(iii) **Transparency:** the attribution methods used should be transparent. Also it should be made clear where revenues, costs, assets or liabilities have to be

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10 In this context, transfer charges are treated as revenues or costs depending on the circumstances.

11 "The concept of 'cost' has no meaning in either economics or logic except in terms of *causation".* Alfred E. Kahn, *Letting G* (East Lansing, MI: MSU Public Utilities Papers, 1998), p. 18.

apportioned (i.e. when they are unattributable to any individual products or services) rather than attributed.

(iv) **Objectivity:** the attribution of revenues, costs, assets and liabilities should be objective and logical and not designed to benefit one operator or user over others. Where sampling is used to derive the basis for attributing costs, revenues, assets or liabilities, it should be carried out using generally accepted statistical techniques or other methods that result in accurate attributions.

Bearing these principles in mind, the general approach is to:

(i) Identify the appropriate cost drivers for each type of operating cost, capital employed and liability;

(ii) Use objective operational or financial data related to each driver to produce the appropriate attribution base;

(iii) Review methodologies and update attribution basis annually; and

(iv) Introduce enhancements as necessary (e.g. to reflect the introduction of new services or changes in technology).

The implementation of AS by operators in Malaysia is likely to give rise to discussions about different types of costs and revenues and how they should be allocated. When considering these issues it will be essential to refer back to these principles and the general approach, which will provide guidance on how to proceed.

4.4. Accounting Separation Policies

Our review of the accounting policies used by the operators for the preparation of their statutory accounts found that there are some differences between them. In producing RFS, the operators should use accounting policies that are consistent with their statutory accounting policies. Given the differences in statutory accounting policies mentioned above, this will inevitably lead to differences between the operators in the accounting policies used to produce their RFS.

The accounting policies used for the purposes of the RFS should follow closely the Financial Reporting Standards required in Malaysia by the Malaysian Accounting Standards Board in terms of recognition and disclosure of material transactions and balances, and their effect on the Income Statement and Mean Capital Employed.

The RFS should be reconciled with the companies' group statutory accounts, which consolidate on a historic cost basis, the financial statements of the holding company and all subsidiary undertakings. Where a subsidiary company's accounting policies do not conform to the group's policies, these should be adjusted on consolidation in order to present the financial information on a consistent basis.

Most operators prepare their statutory accounts with a year end as of 31 December, and this year end should also be used in the preparation of the RFS.

In Appendix D we describe the most significant and relevant accounting policies for the purposes of producing the RFS, and highlight the differences between operators. Since this review has been performed on the basis of the operators' 2010 statutory accounts, it explains the policies that would need to be applied for AS in that year. When the first set of RFS is produced for 2012, the accounting policies should match those in the operators' 2012 statutory accounts.

5. COST ATTRIBUTION

This section outlines the process of cost attribution, which is fundamental to AS because a large proportion of the costs of telecommunications companies are shared between different products and services.

5.1. Overview of Cost Attribution

The historic cost information underlying the statutory accounts is the normal starting point for the process of attributing costs to different services. Since all costs are attributed or where that is not possible, apportioned to services, the process is referred to as fully-allocated costing. The same process is used in current cost accounting but the latter involves additional depreciation entries (see Section 7.4). An overview of the process is provided in Figure 3.

Within a company's general ledger, costs are categorised by type (e.g. payroll) and then by cost centre (e.g. marketing). A large proportion of these costs can be directly or indirectly attributed to activities (or plant groups) and thence services. Some types of cost are unattributable and have to be apportioned on some reasonable basis (e.g. in proportion to costs that can be attributed to services).

The first step in cost attribution is to organise the company's costs into those associated with:

(i) Activities, normally within broad categories of functional groupings such as maintenance or marketing and sales functions; and

(ii) Network plant groups such as switching and within each plant group by more detailed network components.

Once costs have been attributed to activities or plant groups they can then be attributed to products and services (either directly or indirectly).

The cost attribution process reflects the principle of cost causation, as far as possible. It involves a variety of methods to attribute costs, the use of surveys to identify, for example, how building space is used, and the collection of reliable "non-financial" information, such as network traffic data. Costs can be attributed to services in a number of ways. For example,

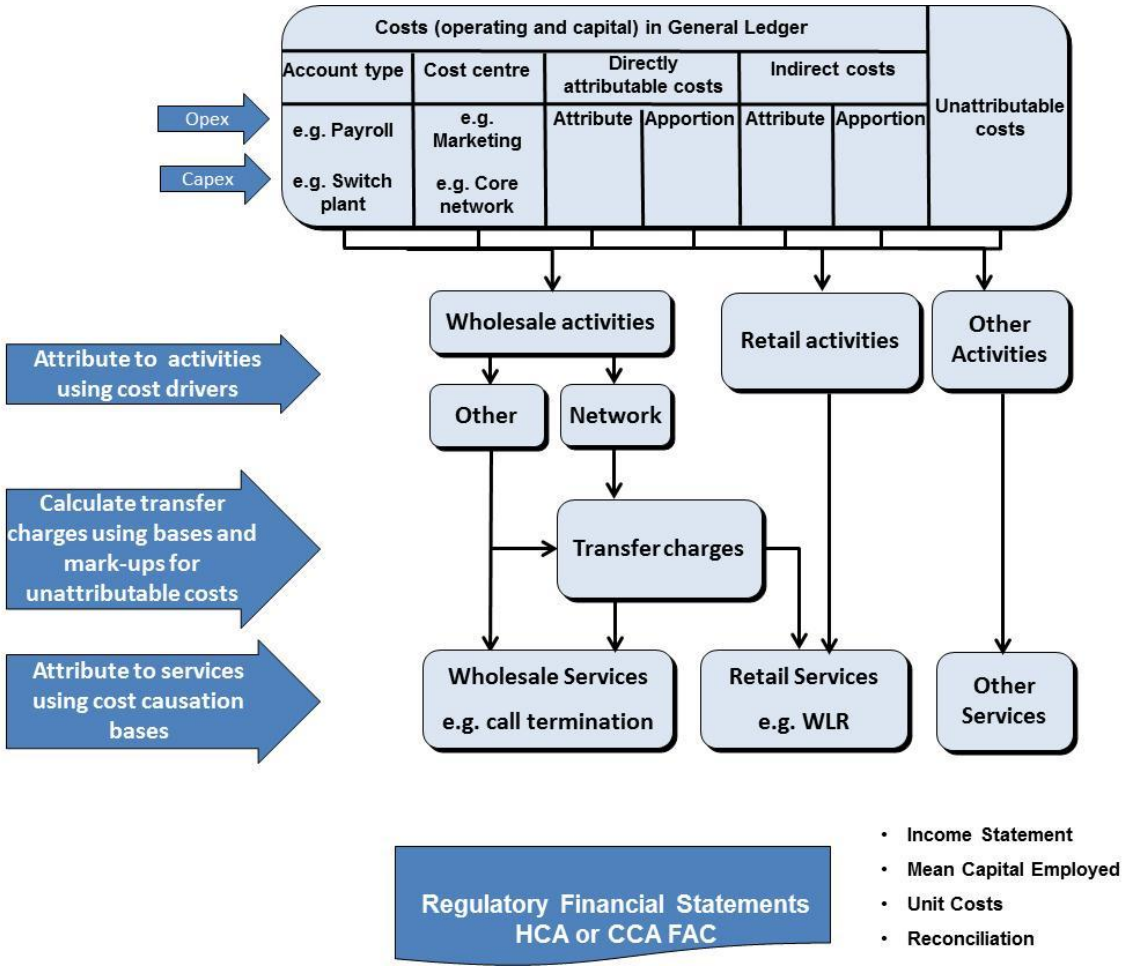
(i) Network costs (such as depreciation of equipment, maintenance and other support costs) can be attributed directly to plant groups and then to services

based on service volumes and engineering studies and analysis of how different services use different types of equipment.

(ii) Other types of costs, such as payroll costs, can be attributed in an intermediate step to network plant groups and or support functions using activity based costing (ABC[12]), and then attributed to services in the same manner as those plant categories or support functions are attributed to services.

Figure 3

Cost Attribution Overview



Source: NERA.

A firm's costs can typically be separated into:

[12] Staubus, George J., *Activity Costing and Input-Output Accounting* (Richard D. Irwin, Inc., 1971).

(i) *Direct costs*. These can be identified with a service or product in a direct and unambiguous manner because they are recorded against that service or product in the operator's accounting system. There are relatively few types of cost that fall within this category.

(ii) *Directly attributable costs*. These can be attributed to a service or product using appropriate cost drivers. For example, the costs of switching equipment are typically driven by the total volume of traffic using such equipment. The costs can therefore be attributed to different services based on their respective shares of the traffic handled by the switching equipment.

(iii) *Indirectly attributable costs* (indirect costs). These can be attributed to an activity or plant group, the costs of which can be directly attributed to products and services. For example, through the use of records of how telecommunications engineers spend their time, maintenance costs can be attributed to different types of network plant groups and components, which in turn can be directly attributed to different services (see above).

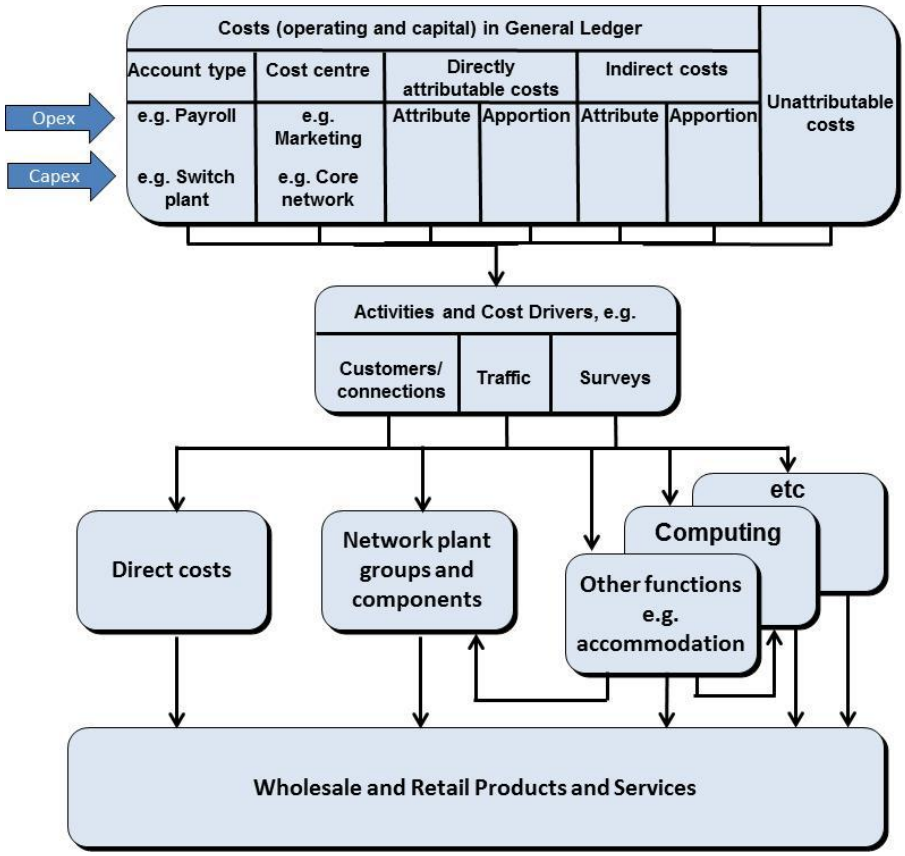
(iv) *Unattributable costs*. Not all costs can be identified causally with specific products and services. They therefore have to be apportioned under the fully allocated cost method by "grossing up" those costs that can be attributed in the ways explained above.

This separation of costs is further illustrated in Figure 4 below, which starts from the same accounting data in the General Ledger as in Figure 3, but provides more details of the use of activities and cost drivers to attribute different types of cost to wholesale and retail products and services.

It shows, as an example, that the costs of "other functions", such as accommodation, are indirectly attributable because they are caused by network plant groups and components requiring space in exchange buildings. Consequently, they can be attributed to services via the relevant plant groups and components. Similarly, other accommodation costs arise due to the need for computing, so these costs can be attributed to products and services in the same manner as those computing costs.

Figure 4

Cost Attribution Process



Source: NERA.

This idea of cost causation and how it is typically used in telecommunications networks and business operations is explained in the next section.

5.2. Cost Causation and Cost Drivers

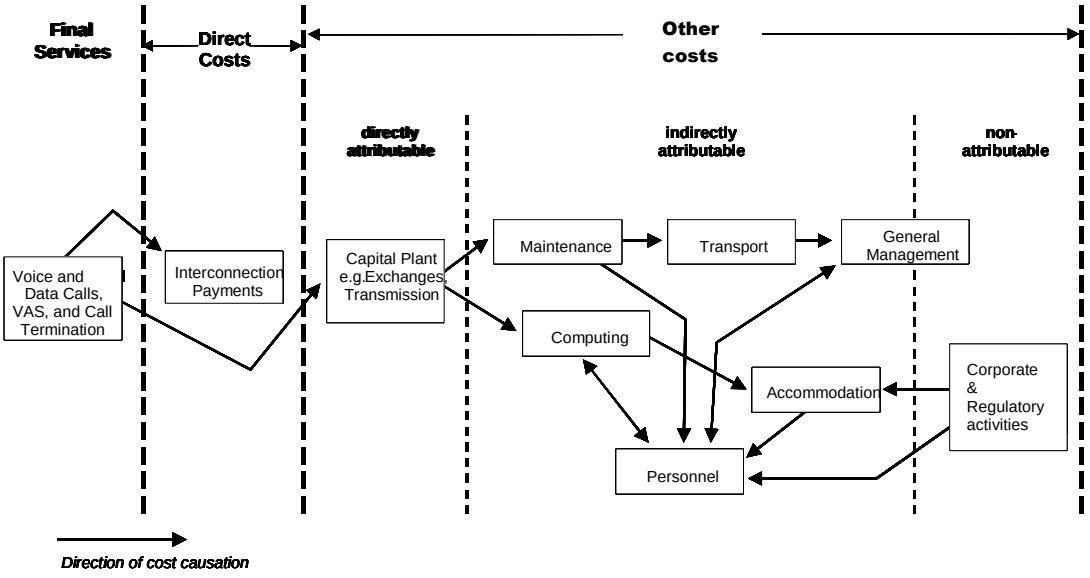
The identification of cost causation is a precondition for developing an appropriate cost attribution method. The term "cost driver" is normally used to describe any factor that causes a change in the cost of an activity to be incurred. An activity can have more than one cost driver. For example, in a fixed local access network, the external line plant maintenance costs in the local distribution side of the local switch will be driven mainly by the number of faults and also by the time taken to repair the faults.

The attribution of costs can be undertaken for all types of telecommunication network, both fixed and mobile, although there will be some specific aspects and features of network design and operation in each type of network.

Figure 5 below shows a highly simplified view of cost causation in a telecommunications network. The arrows show the general direction of causation[13]. Thus, for example, network plant assets (capital costs) are caused by the need to provide network services. In some cases, the relationship between cost categories operates in both directions (indicated by the arrows pointing in both directions). This is because one cost category both drives and is driven by another cost category.

The process of deriving fully allocated costs essentially involves reversing the direction of the arrows in the diagram and attributing the different types of cost to the services that directly or indirectly give rise to them. For example, plant capital costs are attributed to services according to the extent to which each service uses the equipment concerned.

Figure 5
Highly Simplified Example of Cost Causation in a Telecommunications Network



Source: NERA.

13 To prevent the diagram from becoming unmanageable, not all the relevant arrows are shown. For example, no arrow is shown from General Management to Accommodation even though the former would require the latter as an input.

It can be seen therefore that any fully allocated costing system requires a substantial amount of information about cost drivers and the linkages between different cost categories. More examples are provided in the following sections.

5.3. Cost Categories used by Malaysian Operators

We have been provided with the cost categories (account codes or chart of accounts) which are currently used in the general ledger systems of the operators. While there are differences between the operators, in general:

(i) Operating costs are either analysed by account type or natural expense, such as payroll (salaries and wages); or

(ii) By cost centre or function such as marketing; and

(iii) Depreciation is analysed by plant group.

This provides the starting point for cost attribution to services. However, apart from the identification of the direct costs of different services, which is used for the purpose of calculating gross margins, there appears to be no process of attributing network costs to services at present.

5.4. Steps Required for Accounting Separation

Following the principle of cost causation, each item of cost and revenue will need to be attributed using fully allocated costing to the products and services provided by an operator, and this is set out in the following sub-sections.

Most, if not all, revenues can be attributed directly to their related products or services (see Section 6.2). However, as noted above, this is not the case for costs due to the relatively high proportion of costs that are shared between different products and services. Each cost item may be considered to fall into one of the following categories.

5.4.1. Direct costs

There are relatively few direct costs in telecommunications networks. They are those costs that:

(i) Are only needed to provide a specific service or set of services;

(ii) Are recorded against the relevant product or service in the operator's accounting system; and

(iii) Can be directly and unambiguously identified to a product or service .

For example, interconnection payments to other operators are a direct cost of providing call services and can be identified with the services that give rise to them.

5.4.2. Directly attributable costs

Directly attributable costs are shared by a number of services but are still directly related to those services. As noted above most network plant and equipment costs fall into this category, and the costs to be allocated should include both depreciation and an appropriate return on capital, see Section 8.4 below. To give a few examples:

(i) The cost of exchange lines in a fixed network (links between distribution points and exchanges) is driven by the number of lines and the length. This cost can be attributed to services such as retail line rentals, wholesale line rental (WLR) and LLU based on the numbers of lines and features of length and technology provided for each service.

(ii) Some aspects of a mobile network operator's requirements for media gateways (MGW) are driven by the number of subscribers supported while other aspects are driven by the volume of traffic in the busy hour (because mobile networks are sized in order to handle traffic at peak times). In calculating the directly attributable cost, the first step is to split costs into those which are subscriber-related and those which are call-related. The next step would be to split call costs into those corresponding to different call services. These attributions should be based on the average number of MGWs used per call (captured in a routing factor), the number of calls and the average duration of calls.

(iii) Transmission equipment costs are driven by the number of circuits, which in turn is driven by services such as calls, leased lines and backhaul. To attribute costs, information is required on the transmission capacity for all types of service conveyed, for example, in terms of 2 Mbit/s paths used for voice calls. Transmission equipment costs can then be attributed to calls using routing factors, the number of calls and call durations.

5.4.3. Indirectly attributable costs

Indirectly attributable costs are costs that can be indirectly related to a service or product on a non-arbitrary basis based on the relationship these costs have to the direct and directly attributable costs explained above.

Such costs can be attributed to the relevant services or products using appropriate cost drivers. Further to the example of maintenance costs explained above:

(i) Transport costs will be partly driven by maintenance and other plant related activities and can thus be attributed in a similar way to these activities. In addition, transport costs will be incurred as a result of the activities of other functions such as marketing (since marketing managers may have company cars) or by high level staff costs.

(ii) Computing costs may be driven by particular projects, which can then be related to certain activities. The attribution of desktop computing costs may also be driven by the number of users.

(iii) Accommodation costs are partly driven by plant requirements and partly by the number of people in different activities, which in turn is partly driven by plant requirements.

5.4.4. Unattributable costs

Unattributable costs are those costs for which no direct or indirect method of attribution to services and products using cost drivers can be identified. Examples include costs relating to the CEO's office, investor relations, corporate relations and, to some extent at least, the regulatory department. The way such costs are normally apportioned to different services is to estimate their total value as a percentage of the costs that can be directly or indirectly attributed and then mark up the latter by that percentage.

Rigorous application of cost attribution methods explained above can be expected to reduce substantially the proportion of these costs that are unattributable.

5.5. Developing the Cost Attribution Process and Systems

During our meetings with the operators, we found that the larger operators had accounting information and systems that would allow them eventually to perform fully allocated costing and the AS of wholesale and retail services. It was clear,

however, that these operators do not perform AS at the present time or do so only to a very limited extent[14].

Before costs can be attributed in a reliable manner, a substantial amount of information of both a financial and non-financial nature is required by the operators. This information is necessary to identify the usage of different types of equipment and other resources by different services. From our discussions with the operators and our follow-up questions we understand that much of this information is currently held by them, but that the exact types of information available vary between the operators. In order for them to reliably attribute costs, it will be necessary for the operators to verify their existing surveys or to conduct new ones, and to have, amongst other things:

(i) A system of time recording (such as used in an ABC type system). For example, to record time spent by engineers maintaining different types of network equipment;

(ii) Activity surveys in cases where employees spread their time over a number of different activities or services;

(iii) Information on pay costs;

(iv) Details of the deployment and use of different network plant groups and components by different services;

(v) Surveys for the fixed network, for example that identify where duct is used by the core network, where it is used by the access network and where it is shared by both networks;

(vi) Sample surveys of traffic, such as busy hour traffic to identify the volumes and routings of different types of traffic;

(vii) Comprehensive billing system information;

(viii) Engineering input on cost drivers for different network components;

(ix) Surveys of the use of buildings to identify the respective responsibilities of different types of equipment for network building costs and the responsibility of different departments for non-network building costs;

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[14] For example TM does publish "segmented" results which include a similar concept of shared services, treating the network costs as part of shared services. See the 2011 Annual Report.

(x) Surveys of use of general computing and IT equipment;

Any surveys need to be updated regularly (ideally annually).

Q3.	Is it feasible to set up and run the surveys listed in Section 5.5? If not, please explain why.

SKMM has reviewed the General Ledger and Asset Register details provided to us by the operators and their detailed guidance on the relevant categories of operating costs and assets, and their attribution methods are contained in Appendix C. The tables in Appendix C also contain details of appropriate cost drivers, but in practice the engineering and other surveys explained above will confirm either the single cost driver or composite cost driver (where appropriate) which can then be used by the operators.

Q4.	Do the cost categories listed in Appendix C include all the relevant costs? If not, which types of cost are missing?
Q5.	Are the suggested cost drivers and attribution methods in Appendix C appropriate? If not, what should be used and why?

6. REVENUE RECOGNITION AND ATTRIBUTION

6.1. Revenue Recognition

For the purposes of preparing their RFS operators should apply the same accounting policies for revenue recognition that they use in their statutory accounts.

Revenues will arise from the provision of lines and access, calls, data services and other activities (such as equipment sales), and comprise the invoiced value of these products and services.

Revenue should be recognised when it is probable that the economic benefits associated with the transaction will flow to the Group and the amount of the revenue can be measured reliably. It should be shown net of service tax, returns, rebates, discounts and after eliminating sales within the Group (if applicable).

6.2. Revenue Attribution

The majority of revenues can be directly identified to the services and products specified in Section 3.3 and shown in the templates in Section 9 of this public inquiry paper. In any instances in which revenues cannot be attributed directly, they should instead be attributed using billing data, as explained below.

SKMM in its discussions with the operators highlighted the possibility of complications to the revenue attribution process as a result of the use of "bundles" of services in Malaysia. For example:

(i) Fixed access, broadband and calls can be provided as a single bundled service, or

(ii) Mobile post-paid plans can include a combination of voice calls, SMS and data services.

During the discussions with the operators and the subsequent process of information gathering and follow-up questions, SKMM was informed by the operators that they are able to attribute revenues to the services specified in Section 3.3 despite the existence of bundled services. SKMM understands that the billing records held by the operators are sufficiently detailed to allow the attribution of revenues between different elements of bundled services, and this view is reinforced by an analysis of the General Ledger codes that the operators use.

When revenues are attributed in this way, care must be taken when dealing with potential complications, such as unused credit.

Where revenues are earned from non-telephony services, they should be attributed to the relevant activities on the basis of causation. For example, any income from sources such as fixed asset investments or short term investments should be attributed in the same manner as the investments to which the income relates.

Q6.	When services are offered as a bundle, is it possible to attribute revenue to different services using billing or other data? If not, please explain why.

7. CURRENT COST ACCOUNTING METHODOLOGY

This section provides an overview of the methodologies which can be employed to value assets and indicates the most appropriate ones. More detailed explanation and examples are provided in Appendix B.

SKMM's provisional view is that it would be appropriate first to establish AS in Malaysia using historical cost accounting, and then to progress to using current cost accounting in the future. Discussion of the timing of the introduction of current cost accounting is contained in the Implementation Plan in Section 12. The discussion of asset revaluation in this section is not relevant to AS based on historical costs.

7.1. Methods of Valuing Assets

Assets can be defined as "rights to future economic benefits controlled by an entity as a result of past transactions or events". There are a number of ways of calculating the value of a company's assets, including:

(i) Historic Cost Accounting (HCA): used by companies for statutory accounting purposes. Under this method, assets are recorded (and hence valued) at their historical acquisition cost and provisions are made for any diminution in value due to use or obsolescence;

(ii) Current Cost Accounting (CCA): this method is favoured by most national regulatory authorities because it takes account of the impact of technological change and inflation on asset values and thereby provides a "forward looking" valuation of the assets and can be used to calculate the costs that would underpin prices in a competitive market.

The historical cost method is the one that is generally used in the main accounting systems and statutory accounts of companies. Transactions (revenues, operating expenses, assets and liabilities) are recorded at their cost to the business at the time of the transaction and reduced by an annual depreciation charge (which is put through the income statement).

Historical costs are arguably objective in terms of measurement and would allow comparisons to be made with other companies quoted on the Bursa Malaysia, but may be less relevant for AS purposes. This is because the focus of regulatory policy is on the economic value of assets and companies' pricing decisions. Where there is one or more of:

(i) Significant general price inflation;

(ii) Substantial changes in the real prices of assets; and/or

(iii) Rapid technological progress;

the current cost method will provide a better indication of the value of the resources consumed in providing a service.

The reason for this is that, although historical costs represent the costs that were incurred in building an existing telecommunications network, current costs are superior because they provide a more accurate and up-to-date valuation of the resources used to provide a service. This in turn leads to service prices that reflect the true cost of the resources involved and hence provide correct signals as to whether to invest or cease production. Similarly, when an operator needs to decide whether to invest in its own infrastructure or buy the use of another operator's infrastructure, the use of current costs leads to prices that provide the correct information for making that decision. This is because they embody a more accurate reflection of the costs that would be incurred by a new entrant to the market deploying its own telecommunications network today.

Q7.	Is it necessary to have CCA accounts? If not, please give reasons?
Q8.	How could the impact of asset price changes be taken into account in the absence of CCA accounts?

7.2. Asset Revaluation

In theory there are a number of ways in which assets could be revalued for the purposes of CCA. These are:

(i) Current replacement cost of an asset is what it would currently cost to purchase an identical asset (or one with similar productive capacity or service potential);

(ii) Net realisable value (or exit value) is the current sale price of the asset, net of any costs associated with the sale;

(iii) Present value (PV), sometimes called the economic value, is the value recoverable from the future use of the asset, which is the current estimate of the future net receipts attributable to the asset, appropriately discounted.

The choice between them is commonly determined by the "value to the owner convention". Under this convention, the current cost is defined as:

Current cost = min [replacement cost, recoverable value]

= min [replacement cost, max (NRV, PV)]

This states that the current cost is the lesser of the replacement cost and the recoverable value of the asset, where the recoverable value is the greater of the net realisable value (NRV) and PV.

Looking first at the recoverable value of an asset from the point of view of the operator, if NRV exceeds PV then the asset should be sold. Conversely, if PV exceeds NRV, the asset should remain in current use. For assets that remain in use, one would therefore expect PV to exceed NRV[15]. This means that the recoverable value of an asset in current use is typically equal to PV.

In equilibrium, the replacement cost of an asset would be expected to equal PV because, if the replacement cost exceeds PV, investment is not worthwhile, and if PV exceeds the replacement cost then investment will take place until they are equal.

In a well-functioning capital market, one would therefore expect replacement cost and PV to be similar. Replacement costs are, however, easier to calculate, and easier for other parties to check than calculations of present values. In particular, PV calculations involve the forecasting of net receipts (which may be uncertain for assets with long lives) and estimating discount factors. In view of this uncertainty, replacement costs are generally used in the preparation of CCA accounts.

When implementing CCA, it is assumed that the existing network topology remains unchanged and the applicable asset lives are the same as under HCA. Surplus capacity (assets constructed/purchased but not in use) is excluded from the valuation if it is not expected to be put into use over the Group's planning horizon of three years. Thus assets that have capacity planned to be brought into use within three years or which are needed to meet known planning margins should be considered to be part of the operating capacity. The methods used for deriving the replacement costs of the various asset categories should be reviewed each time valuations are prepared to ensure that they are still appropriate and produce robust valuations in the light of changes in technology and levels of investment.

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15 Also, the liquidation of all network assets would be likely to involve a discount.

Q9. Are replacement costs the best way to value assets under CCA? If not, what is the best approach and why?

7.3. Replacement Costs

When current costs are calculated on a replacement cost basis, this must be done in a consistent and transparent way. Four valuation methodologies are available:

(i) Historical costs;

(ii) Absolute valuation in the absence of technological change;

(iii) Absolute valuation when technological change has occurred (use of Modern Equivalent Assets);

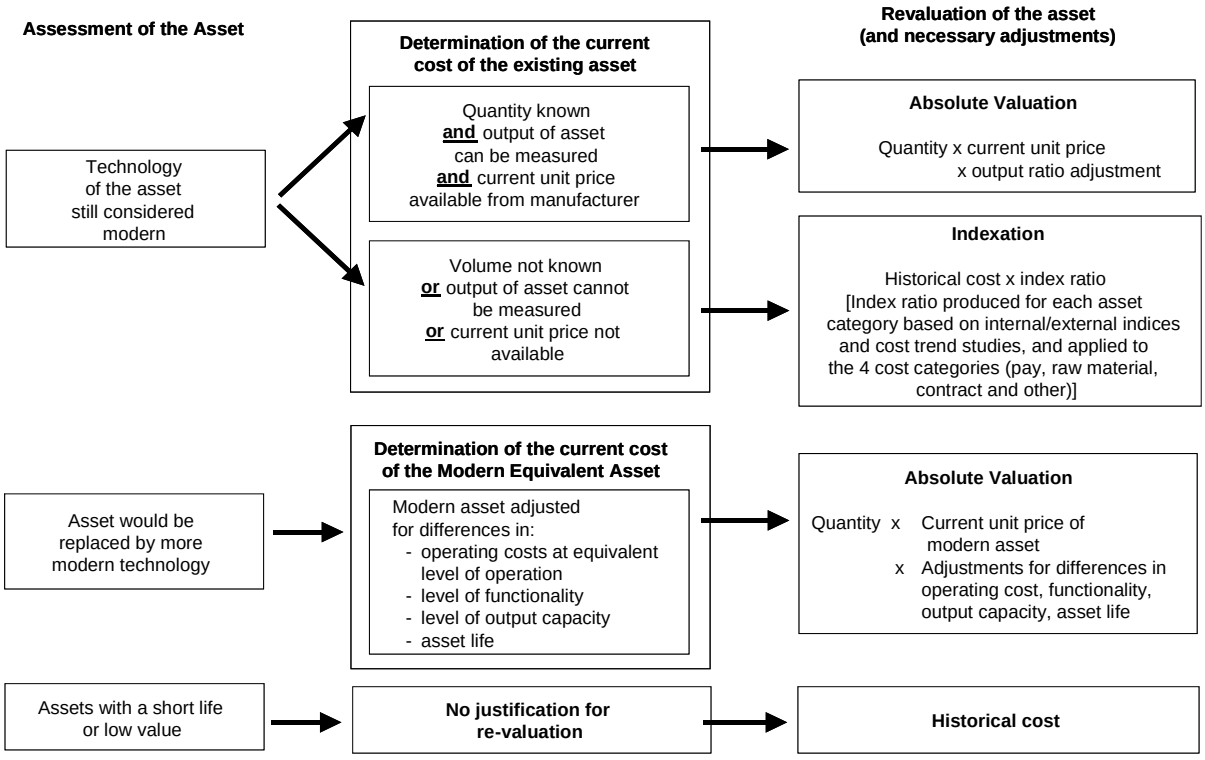
(iv) Price indices.

Figure 6 below summarizes the process to be followed in order to determine the methodology to be used for each type of asset. These alternative methodologies and examples of the types of asset to which they apply, are explained in more detail in Appendix B.

Q10. Do you agree with the process for determining the replacement cost of different types of asset that is summarised in Figure 6 and explained further in Appendix B? If not, what would be more suitable and why?

Q11. Do you have or can you obtain the data that is necessary in order to revalue assets at replacement cost. If not, please explain why.

Figure 6
Choice of Valuation Methodology



Source: NERA.

7.4. Concepts of Capital Maintenance

Once assets have been revalued, the next step is to determine depreciation and amortisation and hence the annual capital charge that is required under CCA. In order to do so, it is necessary to decide on the appropriate concept of capital maintenance.

The directors and managers of a profit making entity aim to generate sufficient funds, over a period of time, to:

(i) Maintain the capital of the business; and

(ii) Earn a surplus or generate growth in the capital, typically referred to as a return on capital.

This raises the question of what is meant by maintaining the capital when assets are valued at current cost, particularly if prices, in general or specific terms are changing. Two different capital maintenance concepts can be identified:

(i) Capital can be viewed in physical terms, which is known as operating capital maintenance (OCM). Under this approach profits are measured after provision has been made to maintain a company's physical capital stock.

(ii) The capital of a business can be viewed as a fund attributable to shareholders and profit is the difference between the value of the fund at the start and end of the period over which profit is being measured, which is known as financial capital maintenance (FCM).

7.4.1. Operating Capital Maintenance

In historic cost accounting, the cost of fixed assets is charged against revenue by allocating the acquisition cost over the lifetime of the asset. For example, if straight-line depreciation is used and the expected lifetime is 20 years, 5% of the acquisition cost is charged against revenue each year. This represents the historical cost of the fixed assets "consumed" in each year.

Under OCM, further adjustments are made to reflect the current cost of the assets, both fixed and current, "consumed" during the year. In order to maintain fixed asset operating capital in the face of changing asset prices, it is necessary to charge against revenue the current cost of the fixed assets "consumed". This involves making a supplementary depreciation charge (see Appendix B, Section B.5.2) in addition to historic cost depreciation.

Under OCM, unrealised changes in the value of closing assets (fixed and current) do not affect the Income Statement or the Statement of Mean Capital Employed.

7.4.2. Financial Capital Maintenance

Under FCM there is not only supplementary depreciation to be accounted for, but also any unrealised change in the value of assets (i.e. a change in the value of assets that have not yet been depreciated) as a result of changes in asset prices between the beginning and end of the accounting year (holding gains or losses)[16]. In order to measure if profits after financial capital (shareholders' equity or funds) has been maintained, it is therefore necessary to estimate the change in asset values brought about by price changes and to adjust profits accordingly[17].

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16 The holding gain is unrealised because the asset has not been sold.

17 For a company taken as a whole, the Financial Capital Maintenance concept also requires that an adjustment is made to the shareholder funds to reflect the impact of

Under FCM the impact of asset price changes flows quickly through into costs and prices and hence the operator's decision whether to invest in their own equipment or purchase services from others is not distorted. This is one of the reasons why international best practice is to use FCM when valuing assets at current costs. Reflecting this, SKMM's provisional view is that FCM should be used in Malaysia.

Q12.	Do you agree that FCM is the appropriate form of capital maintenance to use for CCA? If not, please give reasons.

7.5. Current Cost Adjustments

Under FCM a number of adjustments to depreciation are required:

(i) If the price of an asset increases, the replacement cost rises and so too does depreciation. Conversely, if the price decreases, the replacement cost falls and so too does depreciation. It is therefore necessary to make a supplementary depreciation charge (which will be negative in the case of a fall in the asset price) to take account of asset price changes. This is explained in more detail in Appendix B.5.2, where illustrative calculations are provided;

(ii) Changes in asset prices also affect the current cost value of accumulated depreciation. The resulting adjustment to the value of accumulated depreciation is referred to as backlog depreciation This is explained in more detail with an example in Appendix B.5.3;

(iii) Holding gains and losses (see Section 7.4.2) also need to be taken into account. An example is provided in Appendix B.5.1. Revenue Recognition and Attribution.

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general price changes on the value of shareholders' equity. This adjustment, however, does not form part of the Regulatory Financial Statements as the shareholder equity and reserves are excluded from the Mean Capital Employed. This is consistent with the recommendations of the EC, the FCC in the USA, and other national regulatory authorities.

8. TRANSFER CHARGES

As explained in Section 2.4, AS will enable SKMM to monitor operators' compliance with their regulatory obligations by requiring the latter to account for activities "as if" transactions between business units serving different products and services were with external parties. This is done using transfer charges.

Transfer charging enables, for example, a business unit providing a particular retail service to record the purchase of a wholesale service or product from another business unit that is jointly controlled, as if it were purchased from an external party. Disclosing the details of internal and external transactions involving the same services or products allows the identification of potential competition problems, such as discrimination, cross subsidy and margin squeeze.

The transfer charges will reflect the vertically integrated nature of the operators and illuminate the wholesale/retail relationships between the services, and the business units within the operator serving them.

Transfer charges could potentially be calculated in two ways, depending on the circumstances of the transaction. This is explained in the following two sub-sections, and the choice between the two alternatives is discussed in Section 8.3.

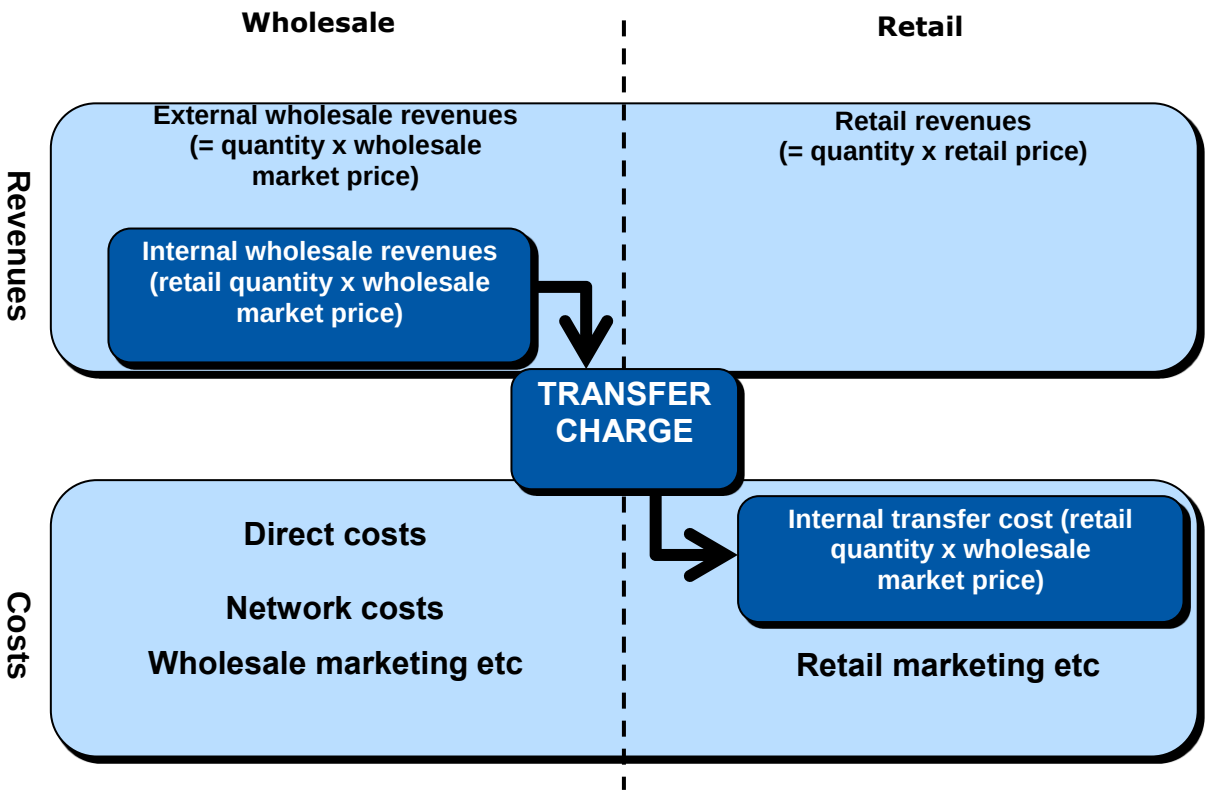
Whichever methodology is used, the Mean Capital Employed Statements will include closing year end balances resulting from inter business transactions between the Wholesale and Retail markets and Other businesses. Any balances outstanding are deemed to be settled on the same terms as with other operators.

8.1. Transfers at market prices

When a business unit providing retail services purchases a wholesale service or product, the transaction is a source of revenue to the wholesale business and a cost to the retail business. This means that there are two sources of revenue for the wholesale business: external wholesale revenues and internal wholesale revenues. Correspondingly there are two sources of retail costs: internal transfer costs (resulting from purchases from the wholesale business) and retail costs such as marketing (see Figure 7).

Figure 7

Transfer Charge at Market Prices



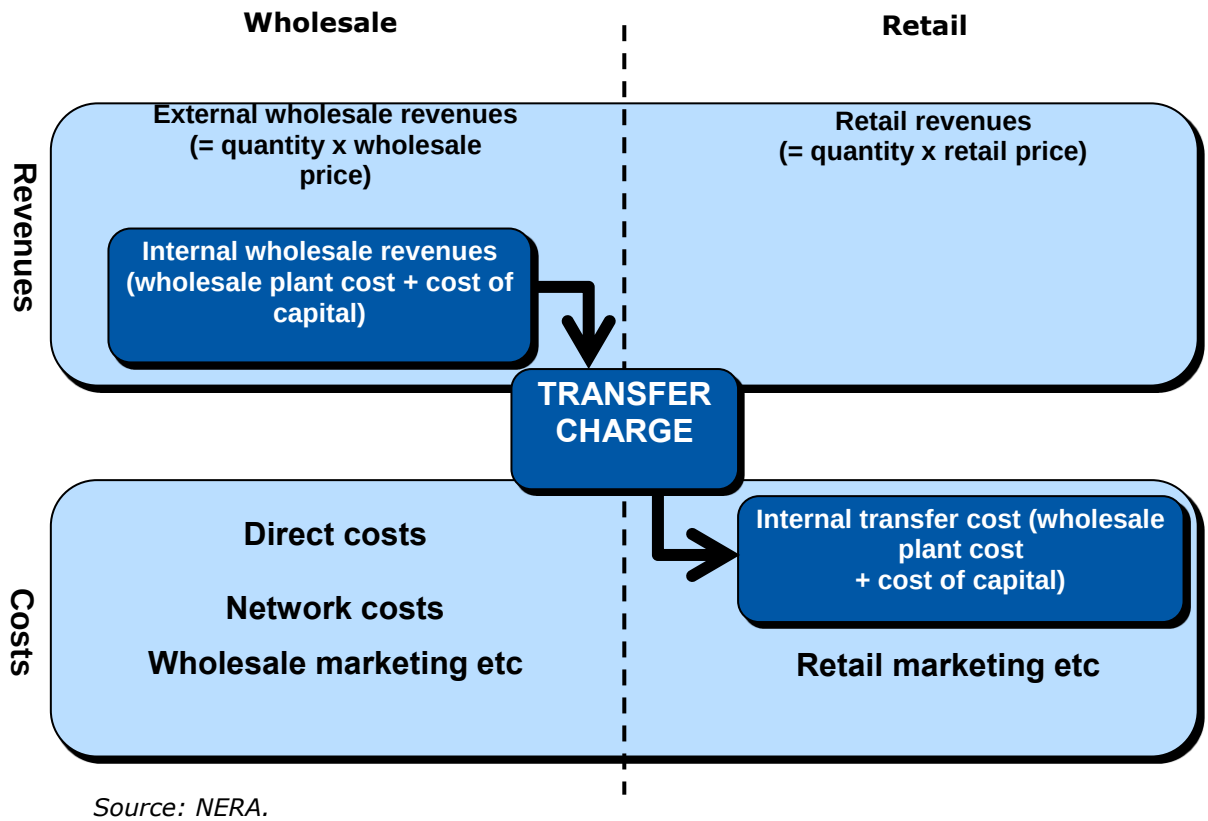
Source: NERA.

8.2. Transfers at cost plus cost of capital

In instances where the wholesale activity is not being provided to the external party, there is no market price and the transfer charge is calculated using wholesale costs including the cost of capital for that service. This is shown in Figure 8 below.

Figure 8

Transfer Charge at Cost plus Cost of Capital



Source: NERA.

SKMM is of the opinion that the relevant cost of capital is the weighted average cost of capital (WACC) of the individual operators, which have been calculated recently for the purposes of implementing the LRIC models for interconnection pricing. The use of WACC is explained further in Section 8.4 below.

Q13.	If transfer charges are based on costs, is WACC the appropriate basis for determining the cost of capital? If not, what basis should be used?

8.3. Choice of Method

Where there are external sales, a choice exists between using market prices or costs including the cost of capital. In deciding between the two methods, it is important to bear in mind that:

(i) Not all wholesale services and products purchased by business units serving retail markets are sold externally. Hence, it would be possible to use market prices for some services and products but not for others, and

(ii) Market prices might not be cost-based.

Consequently, SKMM provisionally recommends that transfer charges should be calculated using the second method (costs plus cost of capital) unless it can be substantiated that market prices are cost-based. Possible ways of substantiating that market prices are cost-based are clearly comparable transactions, auctions or appraisals.

Q14.	When there are external sales, should transfer charges for internal sales be based on market prices or costs including the cost of capital? Please give reasons.

8.4. Cost of Capital

As set out in Section 198 of the CMA (see Section 3.1), the charges for services should be cost-oriented. In order to maintain the viability of the businesses, the relevant costs should include a reasonable return on investment. The cost of capital is one of many types of cost incurred in providing telecommunications services and must be allocated to services in line with capital employed. In addition, even if market prices are used for external transactions, use of the cost of capital is necessary when calculating transfer charges for wholesale activities which are not provided to any external party (see Section 8.2).

When implementing AS, it is standard international practice to use the weighted average cost of capital (WACC). SKMM is in possession of recent estimates of the WACCs of the individual operators as a result of its LRIC modelling process. However, we note that the appropriate values for WACC will require review and updating over time, in particular when a current cost accounting (CCA) cost base is introduced. Below we outline the principles underlying its calculation.

The cost of capital reflects the opportunity cost of funds invested in a business, and should take into account the different ways in which a telecommunications network and related assets could be funded. This requires evaluation of:

(i) The costs of debt held by the operator, weighted to reflect holdings of different types of debt;

(ii) The cost of equity of the operator, measured in terms of the returns demanded by shareholders in light of the risks to the business; and

(iii) The relative holdings of debt and equity.

Based on this, (pre-tax nominal) WACC can be calculated using the following formula:

$$WACC = \left[(Rd) \times \left(D/V\right)\right] + \frac{1}{(1-Tc)}\left[(Rf + \beta(Re)) \times E/V\right]$$, where:

Rd = Weighted Average Cost of Debt

Tc = Corporate Tax Rate

D = Total Debt

E = Total Equity

V = D + E = Total Capitalisation

β = Beta

Rf = Risk Free Rate

Re = (*Rm* - *Rf*) = Equity Risk Premium, where

Rm = Market Rate of Return

8.5. Demonstration of Transfer Charges

To ensure that the information in the RFS is relevant, reliable and transparent, it is essential that the basis and nature of the transfer charges is clearly set out in the accounting documentation (see Section 11). Further, the format of the RFS (see Section 9) will separately show the internal and external revenues, costs and Mean Capital Employed of the individual products and services.

Finally, there should be consistency of treatment of transfer charges from year to year. Where changes occur, they should be transparent and by prior agreement with SKMM. Material changes in policies adopted and/or calculations may require reclassification of the prior year numbers, including closing Mean Capital Employed balances.

8.6. Fixed Network

Following the principles explained above, the wholesale Income Statement of a fixed network will include:

(i) External wholesale revenue generated as a result of sales to external wholesale customers (other telecommunications operators); and

(ii) Internal wholesale revenues in the form of transfer charges made to the parts of the business providing Retail and Other services.

The flipside of this is that the retail and other Income Statements will show internal transfer costs alongside other retail costs.

If a fixed operator does not have a beneficial ownership in a mobile operator, any transactions with mobile operators for the use of the network (interconnection) will be classified as external.

8.7. Mobile Networks

In a similar manner, the wholesale Income Statement for mobile networks will show internal and external revenues, and correspondingly the mobile network retail Income Statements will show internal and external costs. For example:

(i) A mobile network's wholesale business Income Statement will show external revenue from providing services to external customers (e.g. for interconnection) and internal revenue from providing services to its own retail businesses (voice, SMS and data).

(ii) The retail business Income Statement will record external revenue relating to the sale of post-paid and prepaid plans as well as other external sales and internal revenue for the recharge of the billing system.

Where a mobile operator also has a fixed network business and the scale of such activities is material, an internal transfer charging system between fixed and mobile markets would also need to be established.

9. FORMAT OF REGULATORY FINANCIAL STATEMENTS

The format and content of the RFS is different to that of the statutory accounts, and is described below and in Appendix A. The presentation of the RFS reflects the purposes of AS: for example, the need to identify common or support costs and how these are attributed between services. There is also a need for revenue attribution rules for certain services and products,

The format of the RFS to be provided by fixed network operators is shown in Appendix A.1 and comprises:

(i) Income Statements at the level of individual wholesale and retail services and other services;

(ii) Statements of average unit cost and revenues at the level of individual wholesale and retail services;

(iii) Income Statements consolidated at the level of wholesale and retail showing aggregate wholesale and retail and other results;

(iv) A Statement of Mean Capital Employed for individual services at the retail and wholesale levels;

(v) A consolidated Mean Capital Employed statement;

(vi) Statements of network unit costs by service;

(vii) Network Activity Statements; and

(viii) Reconciliation Statements to the statutory accounts (shown in Section 10 below).

The format of the RFS for mobile network operators is shown in Appendix A.2, and comprises:

(i) Income Statements at the level of individual wholesale and retail services;

(ii) Statements of average unit cost and revenues at the level of individual wholesale and retail services;

(iii) A Consolidated Income Statement showing wholesale, retail, other and total;

(iv) A Statement of Mean Capital Employed for individual services at the retail and wholesale levels;

(v) A consolidated Mean Capital Employed statement;

(vi) Statements of network unit costs by service;

(vii) Network Activity Statements; and

(viii) Reconciliation Statements to the statutory accounts (shown in Section 10 below)

Q15. Is the suggested format of the Regulatory Financial Statements appropriate? If not, please give reasons.

10. RECONCILIATION

In order to ensure the reliability of the RFS, and their consistency with the operators' statutory accounts, Reconciliation Statements are required. These Reconciliation Statements will need to be prepared by the operators to consolidate and reconcile all of the RFS for the individual products and services to the appropriate statutory accounts.

10.1. Reconciliation of Income Statement

The format for the Reconciliation of Consolidated Income Statements is common to both fixed and mobile networks, and is shown in Table 6 below. The starting point is the annual report for the operator concerned, which for a fixed network is reconciled with the aggregation of the Consolidated Income Statements for retail (Table 14), wholesale (Table 11) and other (Table 18). For mobile network, the reconciliation is to the Consolidated Income Statement in Table 27. The format below can be used regardless of whether a historic or current cost base is used, but when historic cost accounting is used, then the three "CCA adjustments" will not be applicable.

Table 6
Reconciliation of Consolidated Income Statements

	Revenue (RM)	**Operating costs (RM)**	**Operating profit (RM)**
As in the Annual Report	x	x	x
Adjustments			
Inter-market revenues and costs	x	x	x
Other operating income	x	x	x
Profit on disposal of property (if CCA basis)	x	x	x
Other gains	x	x	x
Total in RFS on HCA basis	x	x	x
CCA Holding gains/losses		x	x
CCA Supplementary depreciation		x	x
Other CCA adjustments		x	x
Total in RFS on CCA basis	**x**	**x**	**x**

Source: NERA.

The adjustments represent items that are included in one set of accounts and not the other. Some items in the statutory accounts are not relevant for regulatory purposes and are not included in the RFS. Consequently, inter-market revenues and

costs, other operating income and profits on disposal of property are reconciling items. The second set of adjustments is for items in the RFS (which are not in the statutory accounts) and this includes the various CCA adjustments (see Section 7.5).

There will be other adjustments which, depending on their materiality, may need to be disclosed separately within the reconciliation statement. These may include items such as profits on sale of investments in associated undertakings. The level of adjustments will in practice depend on the extent of the companies' "non-regulated" activities such as financing and investing activities.

10.2. Reconciliation of Mean Capital Employed

The format for the Reconciliation of Consolidated Mean Capital Employed is common to both fixed and mobile networks, and is shown in Table 7 below. Again, the starting point is the annual report for the operator concerned. This needs to be reconciled with the Consolidated Statement of Mean Capital Employed, which for fixed network is shown in Table 17, and for mobile network is shown in Table 29.

Table 7
Reconciliation of Consolidated Mean Capital Employed

	Current Year (RM)	**Prior Year (RM)**
Shareholders' funds as in the Annual Report	xx	xx
CCA adjustments (if applicable)	xx	xx
Adjustments		
Other long term liabilities	xx	xx
Short term borrowings	xx	xx
Taxation	xx	xx
Assets held for speculative purposes	xx	xx
Available for sale investments	xx	xx
Derivative financial instruments	xx	xx
Deferred tax assets/liability	xx	xx
Financial assets at fair value	xx	xx
Other as appropriate	xx	xx
Closing capital employed at 31 December	xx	xx
Opening capital employed at 1 January	xx	xx
Average capital employed	xx	xx
Total Mean Capital Employed	**xx**	**xx**

Source: NERA.

The adjustments in Table 7 represent the standard items that appear in most operators' statutory accounts but do not form part of Mean Capital Employed. Mean Capital Employed does not include long term funding and amounts outstanding at the year-end date that relates to non-regulated activities such as financing and investing.

This format can be used regardless of whether a historic or current cost base is used, but when historic cost accounting is used then the "CCA adjustments" will not be applicable and the relevant capital employed will be expressed on a HCA basis. The CCA adjustments take account of holding gains or losses and supplementary depreciation.

The net effect of "adjustments" in this table are also summarised on the statement of consolidated Mean Capital Employed in Table 17 and Table 29.

We note that during our review of the operators' statutory accounts, it was apparent that the organisational structures have changed over time due to corporate restructuring. In the event of further corporate restructuring in the future, it will be necessary for the operators to state prior year numbers (i.e. current year opening balances) as if the entity existed throughout the year. This is necessary in order to produce meaningful figures for Mean Capital Employed.

Q16.	Are the reconciliation adjustments set out in Table 6 and Table 7 appropriate? If not, what should they comprise?

11. AUDIT AND DOCUMENTATION REQUIREMENTS

The responsibility for preparing the RFS rests with the operators. In addition to the operators producing the RFS set out in Section 9, it will be necessary for the information to be audited and thoroughly documented.

11.1. Audit

For each set of RFS, SKMM should be provided with the necessary assurance that the information contained in them is comprehensive, relevant, reliable, and of high quality. The most appropriate way to achieve this is to secure an audit opinion. The audit should be performed by a different auditor to the one which audits the statutory accounts. The cost of the audit should be borne by the operators.

The audit opinion should cover whether the RFS:

(i) Fairly present information in accordance with the AS guidelines which state the Principles of AS, the attribution method and accounting policies in arriving at Income and Mean Capital Employed of each market and product;

(ii) Complies with the regulatory obligations in place;

(iii) Contains all the information and documents specified as to be submitted by the regulatory obligations;

(iv) Are properly prepared in accordance with the relevant guidelines and procedures, as defined in the detailed documentation (see Section 11.2); and

(v) The re-stated and re-presented prior year Income and Mean Capital Employed Statements are fairly presented in accordance with this document.

Depending on the outcome of this audit procedure, SKMM may conduct additional reviews in the future to provide an additional test of the validity and documentation of the methods used to develop the RFS.

Q17. Are the specified levels of the audit opinion appropriate? If not, please explain why.

11.2. Documentation

Alongside the RFS themselves, it will be necessary for the operators to provide a full documentary record of the framework and methods used in their preparation. This documentation should comprise:

(i) A statement of the AS Principles followed, which should be in accordance with the principles set out in Section 4.2 of this report.

(ii) A statement of the Accounting Policies used, in accordance with Section 4.4 above, and noting, where necessary, any changes in the policies over time.

(iii) An explanation of the cost attribution methods used and the principal cost drivers, following the guidance set out in Section 5 and Appendix C.

(iv) An explanation of the nature and calculation of the transfer charges, in accordance with what is described in Section 8.

(v) A full list of all codes and definitions used for:

- Products and services;
- Account codes;
- Activity codes;
- Cost centres and functions; and
- Data sources.

(vi) In future years (see the Implementation Plan in Section 12 for details) details of the methodologies used for revaluation, in accordance with Section 7 of this report.

Prior to the preparation of the first set of RFS, it will be necessary for the operators to submit documentation explaining their proposed approach to SKMM, and for this to be checked in order to ensure compliance with the requirements above and the contents of this report.

Q18. Is the accounting separation documentation specified in Section 11.2 adequate? If not, what should be added?

11.3. Maintenance of Accounting Records and Responsibilities

In addition to the required documentation explained above, it is essential that the operators maintain appropriate accounting records and that proper responsibility is taken for AS. The accounting and non-financial records have to be sufficient to provide relevant, comparable and reliable information, and key requirements include:

(i) A sufficient level of detail to allow verification of the RFS;

(ii) Sources of information, particularly non-financial data used in cost attribution;

(iii) Definitions of all services and products;

(iv) The "mapping of services" onto network plant groups and components, demonstrating how the services use the network;

(v) Network engineering information used for developing cost drivers;

(vi) The on-going availability of staff and information to support queries from SKMM;

(vii) The appropriate retention of information.

Ultimate responsibility for the keeping of proper records and the preparation of the RFS and related requirements and the reliability of the information contained in them should lie with the directors of the relevant companies.

Q19. Are the accounting records specified in Section 11.3 adequate and appropriate? If not, what should be added or changed?

11.4. Publication of Results

The information that will be contained in the operators' RFS is likely to be of interest to a wide range of parties. In addition to SKMM, competitors (whether actual or potential), investors (whether actual or potential) and consumers will have legitimate interests in the results of the RFS and understanding the manner in which they have been prepared.

It is best practice to publish the full RFS and accompanying documentation. It is self-evident but worth highlighting that this would help increase transparency because it allows the various parties mentioned above to verify for themselves that there is, for example, no discrimination and that there is an absence of margin squeeze and excessive pricing, and to understand the relationships between prices and costs.

However, in practice the publication of confidential information could harm the operators' businesses, and the benefits of publication therefore need to be weighed against issues of commercial confidentiality. As a result of this, SKMM is of the view that the RFS and accompanying documentation should not be published, instead a

higher level of information is published with the details being retained by SKMM. In both cases all the information is still provided to SKMM.

Q20.	Should the Regulatory Financial Statements be published? Please give reasons.

The implementation of AS in Malaysia will be a major undertaking for the operators and for SKMM, requiring both time and resources. At the same time it must be introduced in a timely manner in order to provide information that is needed by SKMM. It is therefore necessary for there to be an implementation plan.

12.1. Considerations

In considering an implementation plan for AS it is important to take into account:

(i) The timescales of the current project and timing of SKMM's final decision on AS;

(ii) The present state of the operators' accounting systems and expertise;

(iii) The need for the operators to purchase new software if and when necessary; and

(iv) The need for the operators to build their own expertise (if necessary by hiring additional staff) and engage consultancy and expert accounting services to provide them with support.

A number of these factors are uncertain at the current time and will be clearer following the Public Inquiry. Consequently, the implementation plan set out below should be considered as a draft plan, subject to change following further discussions with the operators as to what are reasonable timescales.

In implementing AS it is necessary to strike a balance between requiring each operator to use exactly the same set of prescribed account codes, and allowing them the flexibility to develop their own systems. Given the different starting positions of the operators, we believe it would be better to avoid an overly prescriptive approach. However, in order to ensure that the same AS principles are applied in a consistent manner, one option would be the establishment of a joint working group, perhaps meeting on a quarterly basis or probably more frequently.

Q21. Would it be useful to establish a joint working group of the operators and SKMM, which met quarterly to resolve issues and help drive the implementation process forward? If not, what would be a better co-ordination mechanism?

Regardless of the precise timing, there are a number of key tasks that must be completed by the operators, and monitored by SKMM. These are:

(i) As soon as being notified to implement AS, the operators must begin to put in place the mechanisms to be used to gather the non-financial information used to attribute costs. This requires the establishment of surveys and other data gathering, as explained in Section 5.5.

(ii) The operators must document the principles and methodologies to be used, establish an AS plan and the systems and processes that will be used to implement it, as explained in Section 11.2. This documentation, including a manual explaining the details of cost attribution must be provided to SKMM to monitor progress.

(iii) The operators must set out the precise format of their RFS, based on the tables in Appendix A.

(iv) The operators must provide draft and final submissions of the RFS themselves, both in HCA and, later, in CCA terms.

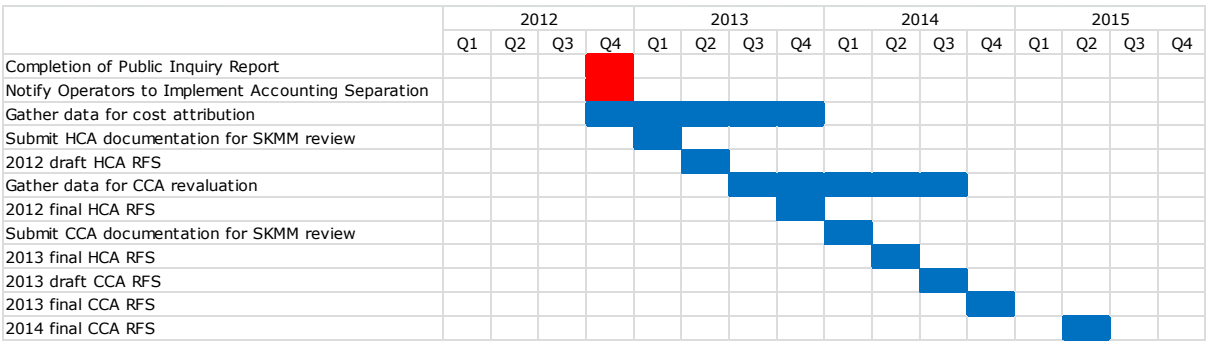
12.3. Draft Timescale

The starting point for the draft timescale set out below is SKMM's decision on AS in November 2012. This follows the Public Inquiry and the Public Inquiry Report and presentation. As already noted the final timescale can only be determined following the Public Inquiry, having taken appropriate account of the views of the operators.

Figure 9 below shows the draft implementation timescale. Bars in red indicate tasks to be completed by SKMM, and bars in blue indicate tasks to be completed by the operators.

Figure 9

Draft Implementation Timescale



Source: NERA.

This timescale is elaborated in Table 8 below. Each time draft or final RFS provided by the operators should be reviewed by SKMM.

Q22.	Is it appropriate to have a phased approach with HCA Regulatory Financial Statements produced first and CCA RFS produced later?
Q23.	Is the draft implementation timetable feasible? If not, please explain why.

Table 8

Elaboration of Draft Implementation Timescale

Date	Actions	
	SKMM	**Operator**
Nov 2012	Issue decision on AS finalising requirements and setting out final timescale	
Dec 2012		Send out letters to operators to Implement AS
Dec 2012		Begin the on-going task of data gathering. Note that operators are advised to begin the implement of AS as early as possible
March 2013	Monitor progress by reviewing the documentation in comparison to the contents of this report, and advising the operators of any shortcomings	Submit documentation explaining the operator's own implementation plan, the principles and the details of the methodologies to be used, and the format of the RFS
June 2013	Monitor progress by reviewing the draft RFS	Submit 2012 draft HCA RFS containing prototype analysis (need not include audit opinion)
Sept 2013		Begin the on-going task of data gathering for CCA asset revaluation.
Dec 2013	Monitor progress by reviewing the RFS	Submit 2012 final HCA RFS in the first formal filing
March 2014	Monitor progress by reviewing the CCA documentation in comparison to the contents of this report, and advising the operators of any shortcomings	Submit documentation explaining the operator's implementation plan for CCA RFS and the principles and the details of the methodologies to be used to revalue assets and calculate depreciation and holding gains/losses
June 2014	Monitor progress by reviewing the RFS	Formally Submit 2013 final HCA RFS
Sept 2014	Monitor progress by reviewing the RFS	Submit 2013 draft CCA RFS
Dec 2014	Monitor progress by reviewing the RFS	Formally Submit 2013 final CCA RFS
June 2015	Monitor progress by reviewing the RFS	Formally Submit 2014 final CCA RFS

Source: NERA.

Appendix A. Format of Accounts

A.1. Fixed Network

A.1.1. Wholesale Income Statement format

For each of the wholesale services identified in Table 4, the Income Statement should have the format shown in Table 9. The example shown is for when CCA is used. In the case of HCA there will be no entries for holding gains/losses, supplementary depreciation or other CCA adjustments.

Table 9

Fixed: Wholesale Income Statement Format

		Current year (RM)	**Prior year (RM)**
Income	External charges to other operators	x	x
	Internal charges to retail	x	x
	Internal charges to other business	x	x
	Total wholesale income	**x**	**x**
Operating Costs	Operating costs	x	x
	Depreciation	x	x
	Transfer charges from retail	x	x
	Holding (gain)/loss[18]	x/(x)	x/(x)
	Supplementary depreciation	x	x
	Other adjustments	x	x
	Total operating CCA costs		
Operating		x	x

[18] Holding gains/losses can be presented on a gross basis where they are calculated as closing GRC minus opening GRC, or on a net basis where they are calculated as closing GRC minus opening GRC minus backlog depreciation. We recommend that holding gains or losses are shown on a net basis, meaning net of backlog depreciation. Alternatively holding gains or losses can be shown on a gross basis, and backlog depreciation included in "other adjustments", along with entries to reflect items such as changes resulting from prior year restatements, changes in the accounting policy for asset lives and significant changes to the valuation methodology.

		Current year (RM)	Prior year (RM)
return			
Mean capital employed		x	
% return on Mean Capital Employed		%	%
% return on turnover		%	%

The corresponding statements of average unit costs for each wholesale service should be formatted as shown in Table 10.

Table 10

Fixed: Wholesale Average Unit Revenue and Cost Statement

Total revenue	xxx
External revenue	xxx
External volume	xxx
Average external unit revenue	xxx
Internal revenue	xxx
Internal volume	xxx
Average internal unit revenue	xxx
Total costs	xxx
Average unit FAC	xxx
Margin	xxx
Margin %	xxx

A.1.2. Consolidated wholesale Income Statement

The wholesale Income Statements for the individual wholesale services in the previous section should be aggregated into a consolidated wholesale Income Statement, as shown in Table 11 below, summarising wholesale total market results. The adjustments shown in this table are explained in Section 7.5, and again the example shown is for when CCA is used. In the case of HCA there will be no entries for holding gains/losses, supplementary depreciation or other CCA adjustments.

Table 11

Fixed: Consolidated Wholesale Income Statement by Service Format

Wholesale Income Statement by services	Exchange lines	Wholesale local access-copper	Wholesale local access-fibre	Wholesale Broadband access	Wholesale Leased lines	Backhaul Services	Call origination	Call termination	Transit services	Interconnection circuits	Other	TOTAL WHOLESAEL
Revenue												
External from other operators												
Internal charges to retail												
Internal charges to other business												
Total wholesale revenue												
Operating costs												
Operating costs												
Depreciation												
Transfer charges from retail												
Other costs												
Total HC operating costs												
Holding (gains)/losses[19]												
Supplementary depreciation												
Other adjustments												
Total Net CCA adjustments												
Total operating CCA costs												
Operating return												
Mean Capital Employed												
% return on Mean Capital Employed												
% return on turnover												

[19] See footnote 18.

A.1.3. Retail Income Statement format

For each of the retail services identified in Table 4, the Income Statement should have the format shown in Table 12. The example shown is for when CCA is used. In the case of HCA there will be no entries for holding gains/losses, supplementary depreciation or other CCA adjustments.

Table 12

Fixed: Retail Income Statement Format

		Current year (RM)	**Prior year (RM)**
Income	External charges	x	x
	Internal charges to wholesale	x	x
	Other	**x**	**x**
	Total income	x	x
Operating Costs	Operating costs	x	x
	Depreciation charges	x	x
	Transfer charges from wholesale	x	x
	Holding (gain)/loss[20]	x/(x)	x/(x)
	Supplementary depreciation	x	x
	Other adjustments	x	x
	Total operating CCA costs		
Operating return		x	x
Mean capital employed		x	
% return on Mean Capital Employed		%	%
% return on turnover		%	%

The corresponding statements of average unit costs for each retail service should be formatted as shown in Table 13.

[20] See footnote 18.

Table 13

Fixed: Retail Average Unit Revenue and Cost Statement

Total revenue	xxx
Volume	xxx
Average unit revenue	xxx
Total costs	xxx
Average unit FAC	xxx
Margin	xxx
Margin %	xxx

A.1.4. Consolidated retail Income Statement

The retail Income Statements for the individual retail services in the previous section should be aggregated into a consolidated retail Income Statement, as shown in Table 14 below, summarising retail total market results. The adjustments shown in this table are explained in Section 7.5. The example shown is for when CCA is used. In the case of HCA, there will be no entries for holding gains/losses, supplementary depreciation or other CCA adjustments.

Table 14
Fixed: Consolidated Retail Income Statement by Service Format

Wholesale Income Statement by services	Exchange lines residential	Exchange lines business	Total exchange liens	Local calls	National calls	International calls	Calls to mobiles	Leased lines	Broadband	Other	TOTAL RETAIL
Revenue											
External from other operators											
Internal charges to wholesale											
Internal charges to other business											
Total wholesale revenue											
Operating costs											
Operating costs											
Depreciation											
Transfer charges from retail											
Other costs											
Total HC operating costs											
Holding (gain)/loss[21]											
Supplementary depreciation											
Other adjustments											
Total Net CCA adjustments											
Total operating CCA costs											
Operating return											
Mean Capital Employed											
% return on Mean Capital Employed											
% return on turnover											

21 See footnote 18.

A.1.5. Wholesale Mean Capital Employed by service

Mean Capital Employed should be broken down by wholesale services and presented as shown in Table 15 below.

Table 15
Fixed: Wholesale Mean Capital Employed by Service Format

	Exchange lines	Wholesale local access-copper	Wholesale local access-fibre	Wholesale Broadband access	Wholesale Leased lines	Backhaul Services	Call origination	Call termination	Transit Services	Inter connection circuits	Other
Non-current assets											
Tangible fixed assets											
Land & Buildings											
Access-Copper											
Access-Fibre											
Access-Duct											
Switch and Transmission - Switch											
- Transmission											
Other											
Investments											
Total Non-current Assets											
Current Assets											
Stocks											
Debtors - Internal - External											
Total Current Assets											
Liabilities falling due within one year - Internal - External											
Total Liabilities falling due within one year											
Net Current Assets/Liabilities											
Total Assets less Current Liabilities											
Provisions for liabilities and charges											
Rounding											
Mean capital employed											

A.1.6. Retail Mean Capital Employed by service

Similarly Mean Capital Employed for retail services should be broken down by service as shown in Table 16.

Table 16
Fixed: Retail Mean Capital Employed by Service Format

	Exchange lines residential	Exchange lines business	Total exchange liens	Local calls	National calls	International calls	Calls to mobiles	Leased lines	Broadband	Other
Non-current assets										
Tangible fixed assets										
Land & Buildings										
Access-Copper										
Access-Fibre										
Access-Duct										
Switch and Transmission - Switch										
- Transmission										
Other										
Investments										
Total Non-current Assets										
Current Assets										
Stocks										
Debtors - Internal - External										
Total Current Assets										
Liabilities falling due within one year - Internal - External										
Total Liabilities falling due within one year										
Net Current Assets/Liabilities										
Total Assets less Current Liabilities										
Provisions for liabilities and charges										
Rounding										
Mean capital employed										

A.1.7. Consolidated Mean Capital Employed

Wholesale, retail and other Mean Capital Employed should be consolidated using the format shown in Table 17 below.

Table 17
Fixed: Consolidated Mean Capital Employed

		Current year (RM)
Wholesale	Wholesale exchange lines	X
	Wholesale local access - copper	X
	Wholesale local access - fibre	X
	Wholesale broadband access	X
	Wholesale leased lines	X
	Backhaul services	X
	Call origination	X
	Call termination	X
	Transit services	X
	Interconnection circuits	X
	Other	X
	Total wholesale	X
Retail	Retail exchange lines - residential	X
	Retail exchange lines - business	X
	Local calls	X
	National calls	X
	International calls	X
	Calls to mobiles	X
	Leased lines	X
	Broadband	X
	Other	X
	Total retail	X
Other	Global	X
	Value added services	X
	Other residual	X
Total separated accounts		X
Adjustments		x/(x)
Statutory accounts		X

A.1.8. Other business Income Statement format

For any other business, the Income Statement should have the format shown in in Table 18 below. The example shown is for when CCA is used. In the case of HCA there will be no entries for holding gains/losses, supplementary depreciation or other CCA adjustments.

Table 18

Fixed: Other Business Income Statement Format

		Current year (RM)	**Prior year (RM)**
Income	External charges	x	x
	Internal charges to wholesale	x	x
	Other	**x**	**x**
	Total income	x	x
Operating Costs	Operating costs	x	x
	Depreciation charges	x	x
	Transfer charges from wholesale	x	x
	Holding (gain)/loss[22]	x/(x)	x/(x)
	Supplementary depreciation	x	x
	Other adjustments	x	x
	Total operating CCA costs		
Operating return		x	x
Mean capital employed		x	
% return on Mean Capital Employed		%	%
% return on turnover		%	%

[22] See footnote 18.

A.1.9. Network Element Unit Cost Statement

In order to compare internal and external transactions and hence demonstrate that transfer charges are cost-based and non-discriminatory, it is necessary to demonstrate how unit costs are calculated. This methodology can be used for both HCA and CCA, and the first step is to calculate average unit costs for each network component, as shown in Table 19 below. For the purposes of exposition, not all network components are shown, but these lists should be completed by the operators.

Table 19

Fixed: Network Element Unit Cost Statement

	Operating costs	Mean Capital Employed	Rate of return (%)	Capital costs	Operating and capital costs	Volume	Average unit cost
Components							
Local switching							
Core switching/routing							
Etc							
Traffic sensitive transmission							
etc							
Totals							

A.1.10. Routing Factors

Routing factors specify the average number of units of each network component used by a particular type of service and should be provided in **Table 20**.

Table 20
Fixed: Network Routing Factors

	Local switching	Core switching/routing	etc		Traffic sensitive transmission	etc	
Component average unit cost (Table 19)							
Service routing factors:							
Wholesale exchange lines							
Wholesale local access - copper							
Wholesale local access - fibre							
Wholesale broadband access							
Wholesale leased lines							
Backhaul services							
Call origination							
Call termination							
Transit services							
Interconnection circuits							
Other							
Retail exchange lines - residential							
Retail exchange lines - business							
Local calls							
National calls							
International calls							
Calls to mobiles							
Leased lines							
Broadband							
Other							

A.1.11. Network Unit Costs by Service

Using the network element unit costs and the routing factors to be provided in the two tables above, the operators can then derive the unit network costs of different services, as shown in Table 21 below. For each service, this is calculated as the sum product of component average unit costs and routing factors from Table 19 and Table 20.

Table 21

Fixed: Network Unit Costs by Service

	Local switching	Core switching/routing	etc		Traffic sensitive transmission	etc		Total
Wholesale exchange lines								
Wholesale local access - copper								
Wholesale local access - fibre								
Wholesale broadband access								
Wholesale leased lines								
Backhaul services								
Call origination								
Call termination								
Transit services								
Interconnection circuits								
Other								
Retail exchange lines - residential								
Retail exchange lines - business								
Local calls								
National calls								
International calls								
Calls to mobiles								
Leased lines								
Broadband								
Other								

A.1.12. Statement of Costs on a Current Cost Basis: Network Activity Statement

When costs are restated using CCA the Network Activity Statement should show the adjustments (see Table 22).

Table 22

Fixed: Statement of Costs on a Current Cost Basis: Network Activity Statement

	HCA operating cost	Supplementary depreciation	Holding gains and other CCA adjustments	Total CCA operating costs	CCA Mean Capital Employed	Applicable rate of return on capital %	Capital costs	Total of operating costs and capital costs relating to current year	Volume	Average costs per unit on a current cost basis relating to current year
Components										
Local switching										
Core switching/routing										
Etc										
Traffic sensitive transmission										
etc										
Totals				Note 1	Note 2	Note 3				

Notes: 1. Total as per wholesale market income statement, 2. Total as per wholesale MCE, 3. Applicable rate is usually previous year's rate of return on MCE for the wholesale business.

A.2. Mobile Network

A.2.1. Wholesale Income Statement format

For each of the wholesale services identified in Table 5, the Income Statement should have the format shown in Table 23. In the case of HCA, there will be no entries for holding gains/losses, supplementary depreciation or other CCA adjustments.

Table 23

Mobile: Wholesale Income Statement Format

		Current year (RM)	**Prior year (RM)**
Income	External charges to other operators	x	x
	Internal charges to retail	x	x
	Internal charges to other business	**x**	**x**
	Total wholesale income	x	x
Operating Costs	Operating costs	x	x
	Depreciation	x	x
	Transfer charges from retail	x	x
	Holding (gain)/loss[23]	x/(x)	x/(x)
	Supplementary depreciation	x	x
	Other adjustments	x	x
	Total operating CCA costs		
	Operating return	x	x
Mean capital employed		x	
% return on Mean Capital Employed		%	%
% return on turnover		%	%

The corresponding statements of average unit costs for each wholesale service should be formatted as shown in Table 24.

[23] See footnote 18.

Table 24

Mobile: Wholesale Average Unit Revenue and Cost Statement

Total revenue	xxx
External revenue	xxx
External volume	xxx
Average external unit revenue	xxx
Internal revenue	xxx
Internal volume	xxx
Average internal unit revenue	xxx
Total costs	xxx
Average unit FAC	xxx
Margin	xxx
Margin %	xxx

A.2.2. Retail Income Statement format

For each of the retail services identified in Table 5, the Income Statement should have the format shown in Table 25. In the case of HCA, there will be no entries for holding gains/losses, supplementary depreciation or other CCA adjustments.

Table 25

Mobile: Retail Income Statement Format

		Current year (RM)	**Prior year (RM)**
Income	External charges	x	x
	Internal charges to wholesale	x	x
	Other	**x**	**x**
	Total income	x	x
Operating Costs	Operating costs	x	x
	Depreciation charges	x	x
	Transfer charges from wholesale	x	x
	Holding (gain)/loss[24]	x/(x)	x/(x)

[24] See footnote 18.

		Current year (RM)	Prior year (RM)
	Supplementary depreciation	x	x
	Other adjustments	x	x
	Total operating CCA costs		
	Operating return	x	x
Mean capital employed		x	
% return on Mean Capital Employed		%	%
% return on turnover		%	%

The corresponding statements of average unit costs for each retail service should be formatted as shown in Table 26.

Table 26

Mobile: Retail Average Unit Revenue and Cost Statement

Total revenue	xxx
Volume	xxx
Average unit revenue	xxx
Total costs	xxx
Average unit FAC	xxx
Margin	xxx
Margin %	xxx

A.2.3. Consolidated Income Statement

The retail, wholesale and any other Income Statements for the individual retail services in the previous sections should be aggregated into a consolidated retail Income Statement, as shown in Table 27 below. In the case of HCA, there will be no entries for holding gains/losses, supplementary depreciation or other CCA adjustments.

Table 27

Mobile: Consolidated Income Statement by Service

Income Statement by services	Call origination	Call termination	MVNO access	National roaming	International roaming	Other	**Total wholesale**	Connections and rentals	Voice	SMS	Data	International roaming	Other	**Total retail**	Residual/Other business	**TOTAL**
Revenue																
External from other operators																
Internal charges to retail/wholesale																
Internal charges to other business																
Total wholesale revenue																
Operating costs																
Operating costs																
Depreciation																
Transfer charges from retail																
Other costs																
Total HC operating costs																
Holding (gains)/losses[25]																
Supplementary depreciation																
Other adjustments																
Total Net CCA adjustments																
Total operating CCA costs																
Operating return																
Mean Capital Employed																
% return on Mean Capital Employed																
% return on turnover																

[25] See footnote 18.

A.2.4. Mean Capital Employed by Service (Wholesale and Retail)

Mean Capital Employed for wholesale and retail services should be broken down by service as shown in Table 28 below.

Table 28

Mobile: Mean Capital Employed by Service (Wholesale and Retail)

	Call origination	Call termination	MVNO access	National roaming	International roaming	Other	**Total wholesale**	Connections and rentals	Voice	SMS	Data	International roaming	Other	**Total retail**	Residual/Other business	**Total**
Non-current assets																
Tangible fixed assets																
Land & Buildings																
Access-Copper																
Access-Fibre																
Access-Duct																
Switch and Transmission - Switch																
- Transmission																
Other																
Investments																
Total Non-current Assets																
Current Assets																
Stocks																
Debtors																
- Internal																
- External																
Total Current Assets																
Liabilities falling due within one year																
- Internal																
- External																
Total Liabilities falling due within one year																
Net Current Assets/Liabilities																
Total Assets less Current Liabilities																
Provisions for liabilities and charges																
Rounding																
Mean capital employed																

A.2.5. Consolidated Mean Capital Employed

Mean capital employed should be broken down as shown in Table 29 below.

Table 29
Mobile: Consolidated Mean Capital Employed

		Current year (RM)
Wholesale	Call origination	X
	Call termination	X
	MVNO access	X
	National roaming	X
	International roaming	X
	Other	X
Retail	Connections and rentals	X
	Voice	X
	SMS	X
	Data	X
	International roaming	X
	Other	X
	Total retail	X
Other	Global	X
	Value added services	X
	Other residual	X
Total separated accounts		x
Adjustments		x/(x)
Statutory accounts		X

A.2.6. Network Element Unit Cost Statement

In order to compare internal and external transactions and hence demonstrate that transfer charges are cost-based and non-discriminatory, it is necessary to demonstrate how unit costs are calculated. This methodology can be used for both HCA and CCA, and the first step is to calculate average unit costs for each network component, as shown in Table 30 below. For the purposes of exposition, not all network components are shown, but these lists should be completed by the operators.

Table 30
Mobile: Network Element Unit Cost Statement

	Operating costs	Mean Capital Employed	Rate of return (%)	Capital costs	Operating and capital costs	Volume	Average unit cost
Components							
BTS/Node B							
BSC/RNC							
Etc							
Traffic sensitive transmission							
etc							
Totals							

A.2.7. Routing Factors

Routing factors specify the average number of units of each network component used by a particular type of service and should be provided in Table 31.

Table 31

Mobile: Network Routing Factors

	BTS/Node B	BSC/RNC	etc		Traffic sensitive transmission	etc	
Component average unit cost (Table 30)							
Service routing factors:							
Call origination							
Call termination							
MVNO access							
National roaming							
International roaming							
Other wholesale							
Connections and rentals							
Voice							
SMS							
Data							
International roaming							
Other retail							

A.2.8. Network Unit Costs by Service

Using the network element unit costs and the routing factors to be provided in the two tables above, the operators can then derive the unit network costs of different services, as shown in Table 32 below. For each service, this is calculated as the sum product of component average unit costs and routing factors from Table 30 and Table 31.

Table 32

Mobile: Network Unit Costs by Service

	BTS/Node B	BSC/RNC	etc		Traffic sensitive transmission	etc	
Call origination							
Call termination							
MVNO access							
National roaming							
International roaming							
Other wholesale							
Connections and rentals							
Voice							
SMS							
Data							
International roaming							
Other retail							

A.2.9. Statement of Costs on a Current Cost Basis: Network Activity Statement

When costs are restated using CCA the Network Activity Statement should show the adjustments (see Table 33).

Table 33

Mobile: Statement of Costs on a Current Cost Basis: Network Activity Statement

	HCA operating cost	Supplementary depreciation	Holding gain and other CCA adjustments	Total CCA operating costs	CCA Mean Capital Employed	Applicable rate of return on capital %	Capital costs	Total of operating costs and capital costs relating to current year	Volume	Average costs per unit on a current cost basis relating to current year
Components										
BTS/Node B										
BSC/RNC										
etc										
…										
Totals				Note 1	Note 2	Note 3				

Notes: 1. Total as per wholesale market income statement, 2. Total as per wholesale MCE, 3. Applicable rate is usually previous year's rate of return on MCE for the wholesale business.

Appendix B. Calculation of Current Costs

B.1. Historical costs

As explained in Section 7.2 above, it is desirable to revalue assets in terms of current costs in order to make correct decisions about whether to expand or contract production and to send the appropriate "build or buy" signal to the market. However, under certain specific circumstances and for a limited fraction of the asset base, historic and current cost valuations of an asset will be the same, and so no adjustment is necessary.

The historic and current cost valuations of an asset will be the same if there has been no change in the price of the asset since its purchase. This means that the use of historical cost valuation is often appropriate when the asset has a short life and/or a short residual life. Also, if the asset concerned only accounts for a small percentage of the company's total asset base, then any difference between historic and current costs will have little impact.

In either of these cases there is no need to revalue the asset and the historic costs may be used. However, it is important to note that the use of historic costs should be limited to such cases, because otherwise the aims of revaluation explained in Section 7.2 will not be achieved.

B.1.1. Example of historical cost valuation

The use of a historical cost valuation can be used to value capital work in progress (CWIP). Since the year-end balance of historical expenditure broadly reflects current price levels, no further current cost adjustment is necessary.

B.1.2. Assets to be valued using historical costs

The historical cost valuation of assets other than the example of CWIP given above is possible, but will depend on the circumstances of the individual operators and the materiality of the items, as explained above.

B.2. Absolute valuation

Absolute valuation is used to revalue assets when information on the prices and quantities of network equipment is available. Two variations on the methodology can be identified and the choice between them depends on whether or not there has been

technological progress between the time of the purchase of the original asset and when it is revalued.

The two methodologies and examples of their use are explained in the following sub-sections and it is important to keep in mind that the aim in both is to reflect as closely as possible the prices available to Malaysian operators. As a result, the prices used in the calculations should include an allowance for any discounts that operators receive against the list prices of the assets. In addition, if operators have framework contracts with a network equipment vendor or any other supplier, then the prices under this agreement should be used, because they will reflect the costs that would be incurred if that operator were to actually replace its assets.

If the asset being valued has not been subject to technological change since its purchase date, then if it were to be replaced today it would be replaced by an identical asset. However, the price of this asset may have changed over time (including as a result of the availability and size of any discounts against list prices available to the operator making the valuation).

B.2.1. Example of absolute valuation using existing assets

Since valuation using the current price of existing assets is appropriate when no technological progress has occurred it should be used for long lived assets that are unaffected by technological change such as ducts and radio masts. Absolute valuation using existing asset prices may also be appropriate for vehicles, as shown in the example below.

From their FARs, the operators should have accurate figures on the numbers of the different types of vehicles they operate but for this example we assume 100 vehicles of the same vintage. For the purposes of this illustrative example, it is assumed that the asset life for vehicles is 5 years and that the age of the vehicles considered in this example is 3 years. It is further assumed that the price of a vehicle has fallen by RM 10,000 since the existing vintage of vehicles was purchased. This lower price could, for example, be due to the list price of vehicles falling over time, or because the operator has negotiated a discount of RM 10,000 per vehicle with its supplier.

The process used to calculate the net replacement cost (NRC) from the gross book value (GBV) of the existing asset is shown in Table 34 and the steps are explained below the table.

Table 34
Calculation of NRC from GBV

	Amount (RM)
GBV of each existing vehicle	150,000
Accumulated depreciation	90,000
NBV of each existing vehicle	60,000
Price of a new asset (GRC)	140,000
CCA depreciation c/f	84,000
NRC of each existing vehicle (GRC-CCA)	56,000
NBV of all such vehicles	6,000,000
NRC of all such vehicles	5,600,000

Source: NERA

Using straight line depreciation over the 5 year asset life, vehicles of this vintage will each have accumulated depreciation of RM 90,000. This is calculated as 3/5 of the historic cost because the average vehicle is 3 years old and vehicles are assumed to have an asset life of 5 years. When the accumulated depreciation is subtracted from the GBV, this leaves an NBV of RM 60,000 for each vehicle.

The price of a new vehicle at the time of revaluation is RM 140,000 and this is the gross replacement cost (GRC) of the vehicle. As before, three years of accumulated depreciation are taken into account to leave an NRC for a vehicle of RM 56,000. Since this result is for a single vehicle, we multiply by 100 to calculate the NRC of the cohort of 100 vehicles, which is RM 5,600,000.

B.2.2. Assets to be valued with absolute valuation using existing assets

Examples of the types of assets that may be revalued using absolute valuation are:

(i) Duct

(ii) Towers

(iii) Copper and fibre

(iv) Vehicles

B.3. Modern Equivalent Asset valuation

The use of a "modern equivalent asset" (MEA) valuation may be necessary when:

(i) The existing asset is no longer available from equipment suppliers; or

(ii) Technological progress has rendered the existing asset obsolete.

In the first of these cases there will be no price data available for the existing asset. In the second case, a new entrant operator would not deploy a network using obsolete equipment, so this methodology will not provide a true reflection of the costs of replacing the existing network. In both cases MEA prices should be used when valuing the asset.

MEAs should be chosen such that they have similar service potential to the existing asset, because their prices act as a proxy for the replacement cost of the existing asset. However, there may nevertheless be differences in the features, functionality, capacity, quality, operating costs, asset lives or space requirements of the MEA compared to the existing asset. It is important that such differences should be taken into account when valuing the existing asset.

In cases where the MEA is superior to the existing asset in terms of features, functionality, capacity or quality, this should be accounted for by estimating the value of the difference and subtracting this value from the estimate of the current value of the MEA. Differences in operating costs may arise from differences in maintenance, network management or associated indirect costs and should similarly be discounted. The MEA should be chosen on the basis of the asset with the required capacity and functionality, which, summing over the asset life has the lowest net replacement cost. In doing this, any differences in asset lives should be considered.

Where there is surplus capacity, i.e. capacity that is not currently required and is not expected to be required within the network planning horizon, valuations should be adjusted downwards. This is not only the case for network traffic capacity but also physical capacity. For example, it is possible that a modern switch requires less space in the buildings that contain switching equipment than the existing asset does and this should be accounted for in the MEA valuation.

B.3.1. Examples of MEA valuation

As explained above, MEA valuation is appropriate when technological progress has occurred. This means that it is likely to be an appropriate methodology for valuing an

operator's switching/routing and transmission equipment, because these assets are subject to considerable technological change. MEA valuation is likely to be the most appropriate approach to use for much of the operators' switching and transmission equipment.

Two examples are provided below as illustrations of how the process can be implemented, but it is important to note that an operator itself is in the best position to know what assets it owns, what assets are currently available to replace them and hence, which valuation methodology is appropriate in each case. The following examples refer to the valuation of a particular asset, but where an operator has more than one asset of each type and the assets were purchased at different points in time and hence, have different gross book values and levels of accumulated depreciation, these should be revalued separately. In order to simplify this process, assets of the same type and of the same "vintage" can be revalued together.

B.3.1.1. Example 1 – Increased capacity

This example is based on MEA valuation of an operator's switch or router and assumes that sufficient technological progress has been made to justify the use of MEA over absolute valuation (which is explained in Appendix B.2 above). This asset could be a next generation network (NGN) router in a fixed network or a mobile switching centre in a mobile network, the principles are the same regardless of the precise asset in question.

To revalue the asset, it is first necessary to identify the MEA. As explained above it should be the modern asset with the lowest net replacement cost calculated over the expected life of the asset, which has at least the same capacity and functionality as the existing asset.

Operators in Malaysia will know from their FARs how many of each type of asset they use and for this example we have assumed the number to be 10. We also assume an asset life of 10 years for a switch/router. It is possible that an operator will have purchased its existing assets at different points in time, and as noted above, in this case, each vintage of switch/router should be revalued as a tranche. In the example below, we assume that an operator has five switches of the same age which are being revalued together.

Table 35 below compares the existing switch against the MEA asset. In this example, while the price of the MEA is the same as the historical cost of the existing asset the MEA has greater capacity. For example, it could be capable of handling a greater number of

busy hour call attempts. We assume for the sake of exposition that the MEA asset can handle 1,000,000 busy hour call attempts as opposed to only 750,000 for the existing asset.

Table 35
Comparison of existing asset and MEA asset

Asset	Historic cost (RM)	Asset life (years)	Age	Output
Existing asset	250,000,000	10	6	750,000
MEA	250,000,000	10	N/A	1,000,000

Source: NERA.

The process used to calculate the NRC from the GBV of the existing asset is shown in Table 36 below and the steps explained below the table. It is similar to the example in Table 34 above, but has the complication of the increased capacity.

Table 36
Calculation of NRC

	Amount (RM)
GBV of existing asset	25,000,000
Accumulated depreciation	15,000,000
NBV of existing asset	10,000,000
Price of MEA	25,000,000
GRC (if same output as existing asset)	18,750,000
Revised GBV of existing asset	18,750,000
Revised depreciation on existing asset	11,250,000
NRC of existing asset	7,500,000
NBV of all such assets	50,000,000
NRC of all such assets	37,500,000

Source: NERA.

Given a GBV of RM 25,000,000 and using straight line depreciation over the 10 year asset life, a single switch of this vintage will each have accumulated depreciation of RM 15,000,000. This is calculated as 6/10 of the historic cost because the average asset is 6 years old and the asset life is 10 years. When the accumulated depreciation is subtracted from the GBV, this leaves an NBV of RM 10,000,000 for each switch.

In this example, the MEA has greater capacity than the existing asset (see Table 35). It is therefore necessary to adjust the MEA price to what it would be if the MEA had the same level of output as the existing asset (measured in this example by busy hour call attempts). This is done by multiplying the MEA price by the ratio of the existing asset output to the MEA output, in other words 750,000/1,000,000 * RM 25,000,000. The result, RM 18,750,000, is the GRC of each the existing asset, using MEA valuation and we adjust the accumulated depreciation in the same manner (750,000/1,000,000 * RM 15,000,000 = RM 11,250,000). Subtracting one from the other we find that the NRC of each existing switch is RM 7,500,000 and so for all five of the operator's assumed switches of this vintage the NRC is RM 37,500,000, compared to an NBV of RM 50,000,000.

This result can be checked simply by recalling that the existing asset has only three quarters of the capacity of the MEA, so its NBV must be reduced by a quarter to find the NRC.

B.3.1.2. Example 2 – Reduced operating costs

As explained above, an MEA may have lower operating costs than the existing asset. This might, for example, come about as result of improved energy efficiency, as is assumed in the example below in Table 37.

Again, an operator itself is in the best position to judge the merits of its assets relative to their modern equivalents, so for the purposes of this example we assume that the operator needs to perform an MEA valuation on its voicemail equipment. We assume, for illustrative purposes, that the reason for this is that as a result of technological change, MEA voicemail equipment requires 20% less electricity than the operator's existing asset. We assume for simplicity that the operator has only one voicemail system.

Table 37
Comparison of existing asset and MEA asset

Asset	Historic cost (RM)	Asset life (years)	Average age	Operating costs
Existing asset	200,000	10	4	25,000 p.a.
Modern asset	200,000	10	N/A	20,000 p.a.

Source: NERA.

Assuming that the existing asset has operating costs relating to electricity of RM 25,000 per year, then the equivalent figure for the MEA asset will be 20% less than this, or RM 20,000. The difference in the net present values (NPVs) of these sums over the ten year lifetime of the assets, discounted at a rate of 10%, is RM 30,723. The 10% discount rate is an assumption for the purposes of this example, and should be replaced by the relevant operator's cost of capital when the actual calculations are performed.

On the assumption that the existing asset is four years old, it has six years of life remaining during which savings in operating costs could be made were the asset to be replaced by its modern equivalent. Therefore 6/10 of the difference in NPVs (i.e. RM 18,434) should be deducted from the price of the MEA asset. Table 38 below shows the reduction in the price of the MEA from RM 200,000 to RM 181,566 in order to take account of the difference in operating costs and then revises the depreciation as in the previous example.

Table 38
Calculation of NRC

	Amount (RM)
GBV of existing asset	200,000
Accumulated depreciation	80,000
NBV of existing asset	120,000
Price of MEA	200,000
GRC (if lower opex taken into account)	181,566
Revised depreciation on existing asset	72,627

	Amount (RM)
NRC of existing asset	108,940

Source: NERA.

B.3.2. Assets to be valued using MEAs

Examples of the types of assets that may be revalued using MEAs are:

(i) Radio equipment;
(ii) Exchange equipment;
(iii) Switches and routers;
(iv) Transmission equipment;
(v) IT and computer equipment.

B.4. Price Indices

The fourth methodology for revaluing assets at current costs involves the use of price indices. The latter is commonly found in interconnection cost models and SKMM and the operators will be familiar with it from their LRIC modelling process. The use of price indices is a second best option to absolute valuation when information on equipment quantities is not known. Consequently the use of price indices is only appropriate when a lack of detailed information on quantities of assets means that absolute valuation is not possible.

Furthermore, the use of price indices is only appropriate when there has been little technological change, the service potential of new assets is similar to that of the existing asset and all direct costs that have been incurred and capitalised would be incurred if the asset were replaced today. It is also necessary to have information on the age profile of assets and a split of the cost elements used in constructing the asset (pay, raw material, contract and other). In addition, care must be taken to avoid double counting, for example, if a trench is re-dug to install additional cable, as it is possible that some assets on the FAR may no longer be required.

In contrast to the use of prices and quantities in the absolute valuation explained in the preceding section, the use of price indices can be thought of as a "relative valuation" against prices in previous years. The historic costs of asset acquisition are multiplied by price indices to derive current cost valuations of those assets. An example price trend and price index is shown in Table 39 below.

Table 39
Price Index Example

	Year				
	1	2	3	4	5
Price change in year	2.0%	2.5%	3.0%	2.5%	2.5%
Price index	102.0	104.6	107.7	110.4	113.1

Source: NERA.

In this example if an asset purchased at the end of year 0 is to be revalued at the end of year 4 its price must be multiplied by 1.104. The indices used to produce the valuation can be drawn from a number of sources:

(i) Internal asset specific indices;

(ii) External asset specific indices; or

(iii) A general price inflation index.

Each operator in Malaysia could construct an internal asset specific index using data on prices that it has paid for equipment over the years. This approach has the advantage that it reflects any discounts available to that operator against list prices, but also requires that the operator has consistently purchased equipment over a period of years. An external asset specific index, where available is an alternative and could be checked by third parties such as equipment manufacturers or suppliers. However, this approach would not account for factors specific to the operator, such as discounts or any framework contract. If these price indices are not available then a more general price inflation index could be used. While this will reflect broader economy-wide trends it will not capture asset specific price trends and hence, should only be used as a last resort.

B.4.1. Example of price index valuation

As explained above, the use of price indices is appropriate in situations where information on the quantity of assets is not readily available, but the assets involved have not been subject to technological change. This makes it an appropriate methodology for assets such as support and inventory systems and fixtures, fittings and office equipment. In order to apply the methodology, the operator should first attempt to construct its own internal asset specific index, based on actual prices paid. If this is

not possible, external price indices should be sought from equipment manufacturers and suppliers. As explained above, only in the absence of these first two possibilities and as a last resort could a general price trend be used.

Furthermore, different elements of the costs of the asset will have different cost trends, so it will be necessary to separate pay related costs, raw material costs, contract costs and other costs, and apply appropriate cost trends to each element.

B.4.2. Assets to be valued using price indices

Examples of the types of assets that may be revalued using price indices are:

(i) Installation costs
(ii) Some transmission equipment, such as SDH
(iii) Planning costs
(iv) Poles
(v) Cabinets

B.5. Adjustments to Depreciation

The use of CCA requires a number of adjustments to be made to take account of holding gains and losses and the impact of asset price changes on depreciation. These are explained below.

B.5.1. Holding gains and losses

Holding gains and losses are unrealised changes in the value of assets as a result of changes in the current cost of assets held at year end. For example:

(i) If an asset was worth RM 1,000,000 at the beginning of the year and the asset price rises by 10% during the year, that asset would provide an unrealised holding gain of RM 100,000 (10% × 1,000,000). [26] This is treated as a negative cost (i.e. it increases profits).

(ii) If, on the other hand, the asset price fell by 10% during the year, an asset worth RM 1,000,000 at the beginning of the year would provide a holding loss of RM 100,000 (10% × 1,000,000). This is treated as a cost (i.e. it reduces profits).

Holding gains and losses are shown in the Income Statements (see Section 9 and Appendix A).

[26] The holding gain is unrealised because the asset has not been sold.

Where there are asset acquisitions, disposals or write outs during the year these should be treated as occurring at the end of the year for the purposes of calculating holding gains or losses. Supplementary depreciation (see next section) should also be calculated using year-end values.

B.5.2. Supplementary depreciation

Changes in asset prices also require changes to be made to depreciation charges. There will be an additional charge against revenue if asset prices are increasing (because the part of the asset that is "consumed" has risen in value) but a reduction in charges if asset prices are falling. These additional charges are referred to as supplementary depreciation (see Section 7.4.1 above).

This is illustrated in Table 40 and Table 41 below, which show the position for an asset that has a five year life and where asset prices are rising by 10% per annum and falling by 10% per annum respectively. In Table 40, the gross replacement cost (GRC) and gross book value (GBV) are used to calculate annual depreciation under CCA and HCA respectively over the five year life of the asset. The supplementary depreciation on the right hand side is simply the difference between the CCA and HCA annual depreciation charge. This must be added to the HCA depreciation and charged against revenue to reflect the current cost of assets consumed in the year.

Table 40
Supplementary Depreciation (5 Year Asset Life and 10% p.a. Price Increase)

Year	Gross Replacement Cost	Gross Book Value	Annual Depreciation		
			CCA (20% of GRC)	HCA (20% of GBV)	Supplementary
0	1,000,000	1,000,000			
1	1,100,000	1,000,000	220,000	200,000	20,000
2	1,210,000	1,000,000	242,000	200,000	42,000
3	1,331,000	1,000,000	266,200	200,000	66,200
4	1,464,100	1,000,000	292,820	200,000	92,820
5	1,610,510	1,000,000	322,102	200,000	122,102

Source: NERA.

The calculation in Table 41 below follows the same format, but in this case the reduction in asset prices means that the GBV exceeds the GRV, and so the supplementary depreciation is negative.

Table 41
Supplementary Depreciation (5 Year Asset Life and 10% p.a. Price Fall)

Year	Gross Replacement Cost	Gross Book Value	Annual Depreciation		
			CCA (20% of GRC)	HCA (20% of GBV)	Supplementary
0	1,000,000	1,000,000			
1	900,000	1,000,000	180,000	200,000	-20,000
2	810,000	1,000,000	162,000	200,000	-38,000
3	729,000	1,000,000	145,800	200,000	-54,200
4	656,100	1,000,000	131,220	200,000	-68,780
5	590,490	1,000,000	118,098	200,000	-81,902

Source: NERA.

Supplementary depreciation is shown on the Income Statements (see Section 9 and Appendix A).

B.5.3. Backlog depreciation

Just as changes in asset prices lead to changes in depreciation within the relevant year (supplementary depreciation), they also affect accumulated depreciation. Backlog deprecation adjusts accumulated depreciation to take account of any asset price changes. Continuing from the example shown for supplementary depreciation in Table 41 above (10% p.a. reduction in asset price), Table 42 below adds a column showing backlog depreciation. This is calculated as the difference between cumulative depreciation and required depreciation based on the gross replacement cost of the asset.

To give an example from Table 42 below, cumulative depreciation in year 4 is calculated as CCA depreciation in year 4 (or equivalently the sum of HCA deprecation and supplementary depreciation in year 4) plus cumulative and backlog depreciation from year 3. Required depreciation in year 4 is simply four fifths of the GRC (because the asset has a five year life), and backlog depreciation in year four is required depreciation minus cumulative depreciation.

Table 42

Example of Backlog Depreciation Calculation

Year	Gross Replacement Cost	Annual Depreciation					
		CCA	HCA	Supplementary	Cumulative	Required	Backlog
0	1,000,000						
1	900,000	180,000	200,000	-20,000	180,000	180,000	0
2	810,000	162,000	200,000	-38,000	342,000	324,000	-18,000
3	729,000	145,800	200,000	-54,200	469,800	437,400	-32,400
4	656,100	131,220	200,000	-68,780	568,620	524,880	-43,740
5	590,490	118,098	200,000	-81,902	642,978	590,490	-52,488

Source: NERA.

Any backlog depreciation is recorded in RFS in the Income Statement under "Other adjustments".

Appendix C. Cost Attribution Guidelines

C.1. Fixed Network: Attribution of bases for Operating Costs

Table 43 Fixed Network: Methods of Attributing Operating Costs

Category of functional operating cost (cost centre)	Description of account type	Cost driver	Method of Attribution
Depreciation	Depreciation	Refer to capital employed below	The attribution of depreciation should follow the attribution of the fixed asset plant groups to which it relates (see capital employed below).
Provision and installation of equipment	Payroll costs	Time spent	Direct to network components/other plant where possible, otherwise attribute to network components/other plant based on the time spent carrying out provisioning and installation work.
	Installation, contract and maintenance costs	Installation and maintenance activity	Direct to network components/other plant on the basis of the plant installed or maintained where possible.
Maintenance and repair costs	Payroll costs	Time spent	Direct to network components/other plant where possible, otherwise attribute to network components/other plant based on the time spent carrying out repair work.
	Other costs	Repair data	Direct to network components/other plant where possible, otherwise apportion in line with costs that can be attributed.
Network planning and developments costs	Payroll and external costs	Planning and development activity	Direct to network components/other plant where possible, otherwise apportion in line with costs that can be attributed.
Network management costs	Payroll costs	Time spent	Attribute to network components/other plant on the basis of the time spent by staff to manage each type of plant.
	Other costs	Time spent	Attribute to network components/other plant on the basis of the plant managed, where possible, otherwise apportion in line with costs that can be attributed.

Category of functional operating cost (cost centre)	Description of account type	Cost driver	Method of Attribution
Marketing and sales costs	Payroll	Customer acquisition	Direct to products and services where possible, otherwise attribute between products based on revenues from customer segments.
	Cost of sales of equipment	Volume of equipment	Attribute to customer equipment services within "Other activities".
	Publicity, Promotions, Market research fees, Other costs	Customer segment analysis	Direct to products and services where possible. Otherwise, for those costs where multiple services are being marketed or promoted, cost should be attributed to the related services on a revenue basis for customer segments.
Billing and collection costs	Payroll costs	Number of customers and bills raised	Direct to products and services where possible, otherwise attribute between products based on activity surveys or the number of customers/number of bills raised.
	Other billing costs (incl. Bad debts)	Number of customers and bills raised	Direct to products and services where possible, otherwise attribute between products based on usage (e.g. number of bills produced) and/or revenue.
Operator services costs	Payroll costs	Time spent	Direct to services where possible. The costs of staff that carry out tasks for several operator services should be attributed to the related operator services based on surveys of time spent on different tasks and activities.
Payments to other operators	Out payments for outgoing traffic	Interconnection traffic	Direct to products and services.
Support costs	Human resources function costs (residual)	Headcount	HR function costs should be attributed to the staff that are overseen by the HR function.
	Finance and other head office support functions	Time spent	If related specifically to a product, service or business attribute accordingly using time spent, otherwise apportion as common (unattributable).

Category of functional operating cost (cost centre)	Description of account type	Cost driver	Method of Attribution
	Building costs and rent	Occupancy rate	Costs should be attributed according to occupancy from survey data.
	General computing/IT costs	Computer use	Attribute to operations and system development on the basis of the use of the computers to support each application (jobs and projects). Costs attributed to applications can then be attributed to those products and services that they support.

C.2. Fixed Network: Capital Employed

Table 44 Fixed Network: Methods of Attributing Capital Employed

Category of assets and liabilities	Description of account type	Cost driver	Method of Attribution
Switching/routing equipment	Local switching (PSTN)	Traffic	For PSTN networks the traffic-related network components of local exchanges should be identified using information from manufacturers or engineering studies. The costs of the traffic-related network components of local exchanges should be attributed based on the use of equipment by different services (i.e. traffic levels). For the access-related network components of local exchanges see below.
	Core switching/routing equipment	Traffic	Direct to network components where possible, otherwise attribute based on traffic.
	International switching/routing equipment	Traffic	Direct to network components where possible, otherwise attribute based on traffic.
	Switching equipment for special services	Service traffic	Direct to core network components where appropriate/required by regulation or to the specific services provided by other networks – e.g. specific data switching equipment should be attributed directly to data transmission services.
	Other switching/routing equipment	Traffic	Direct to network services where possible, otherwise attribute to other switching network components on the basis of the use of the equipment.
Transmission equipment	Traffic-sensitive transmission equipment	Circuit numbers /traffic volumes	Costs include both capital and maintenance and need to be attributed using circuit volumes based on a common unit (e.g. number of 2 Mbit/s paths).
	Transmission fibre	Circuit capacity	Direct to services where possible, otherwise attribute to services based on use of capacity.

Category of assets and liabilities	Description of account type	Cost driver	Method of Attribution
	Radio and satellite equipment	Number of channels	Direct to network components where possible, otherwise allocate based on the usage of channels.
	Transmission equipment for special services networks	Service traffic	Direct to the specific non-PSTN/non-ISDN services provided by the network – e.g. specific data transmission equipment directly allocated to data transmission services.
	International/submarine cable	International traffic	Direct to network components where possible, otherwise attribute based on usage.
	Accommodation plant (network), e.g. air conditioning	Space occupied	Costs should be attributed to plant groups based on space occupied.
Other primary network assets	Local exchange (access network)	Connections	Total cost of local exchange (including capital, pay and indirect costs) should be split between access and core network components using data provided by manufacturers or engineering studies. Access network components (e.g. line cards) should be attributed to services based on the number of connections.
	DSLAMs	Tie cable volumes	Costs should be attributed to products and services based on tie cable numbers.
	MDF	Connections	Costs of main distribution frames should be attributed based on the number of connections.
	Local loop copper	Connections	Costs associated with the provision, installation and recovery of copper cable in the access network (both capital and maintenance) should be attributed based on the number of connections.
	Local loop fibre	Number of circuits	Costs associated with the provision, installation and recovery of fibre cable in the access network (both capital and maintenance) should be attributed based on the number of circuits.

Category of assets and liabilities	Description of account type	Cost driver	Method of Attribution
	Special network plant	Service traffic	Plant and equipment that is used solely to provide one specific service should be allocated directly to the relevant services. Examples may include: Intelligent network equipment, Data transmission equipment and Multimedia equipment.
	Customer premises equipment	Number of customers	Direct to products and services where possible. Otherwise attribute to products and services using appropriate cost driver (e.g. use connections for network termination equipment).
	Public payphones and related equipment	Number of payphones	Direct to service.
Support Plant	Ducting	Engineering data	Ducting can be attributed to the cable and fibre that it supports and attributed to products in the same way as cable and fibre. Engineering studies are used to attribute duct for fibre and duct for copper cable.
	Power equipment	Power usage	Attribute to plant groups on the basis of the use of power equipment, e.g. kilowatts per hour. Assets should then be attributed to products in the same way as the relevant plant groups.
	Common Intelligence Service Layer	Call volumes	These costs include CISL that supports Basic and Advanced Number Translation Services and should be attributed using call volumes.
	Ethernet Infrastructure	Service traffic	The costs of provision of Ethernet connectivity can be directly attributed.
	Network management systems	Usage	Attribute to plant groups on the basis of their use of the systems, e.g. time spent to control different types of switch/router. Costs should be attributed to products and services in the same way as the related plant group.
Non-network fixed assets	Land and buildings	Square metre occupancy	Attribute to products, services and network components on the basis of the space occupied (i.e. floor space) to support each product, service or network component.

Category of assets and liabilities	Description of account type	Cost driver	Method of Attribution
	General computers	Usage	Attribute to the applications run by the operator on the basis of the use of the computers to support each application. Costs attributed to applications can then be attributed to those products and services that they support.
	Motor vehicles	Usage	Attribute to products, network components and activities based on usage.
	Furniture and office equipment	Usage	Attribute to products and network components based on survey data.
Intangible fixed assets	Licence fees	Revenue basis	Direct to products where possible, otherwise on the basis of revenues.
	Other	Revenue basis	Attribute to products and services based on revenues achieved.
Working capital	Fixed asset investments (associates and joint ventures)	n/a	Direct to "Other activities".
	Other investments	n/a	Direct to "Other activities".
	Short-term investments (including cash at bank and in hand)	Operating profits	Direct to products and services where possible, otherwise attribute based on the operational requirements of each product or service using net operating profit.
	Stocks	Apparatus supply and network equipment	Stocks should be attributed directly to products, services or plant groups.
	Trade debtors/receivables	Turnover	Trade debtors may be attributed to products and services based on billing system information where possible.
	Other debtors/receivables	Various	Other debtors/receivables should be attributed to activities and plant groups using bases appropriate to the particular debtor type (e.g. payroll debtors on the basis of total pay).

Category of assets and liabilities	Description of account type	Cost driver	Method of Attribution
	Trade creditors	Operating expenses	Trade creditors should be attributed directly to products and services if possible.
	Long term provisions	Various	Provisions are either attributed directly to activities and plant groups or using a base appropriate to the particular charge (e.g. provisions relating to the cost of vacating leased buildings are attributed using the accommodation base).

C.3. Mobile Network: Operating Costs

Table 45 Mobile Network: Methods of Attributing Operating Costs

Category of functional operating cost (cost centre)	Description of account type	Cost driver	Method of Attribution
Depreciation	Depreciation	Refer to capital employed below	The attribution of depreciation should follow the attribution of the fixed asset plant groups to which it relates (see capital employed below).
Provision and installation of equipment	Payroll costs	Time spent	Direct to network components/other plant where possible, otherwise attribute to network components/other plant based on the time spent carrying out provisioning and installation work.
	Installation, contract and maintenance costs	Installation and maintenance activity	Direct to network components/other plant on the basis of the plant installed or maintained where possible.
Maintenance and repair costs	Payroll costs	Time spent	Direct to network components/other plant where possible, otherwise attribute to network components/other plant based on the time spent carrying out repair work.
	Other costs	Repair data	Direct to network components/other plant where possible, otherwise apportion in line with costs that can be attributed.
Network planning and developments costs	Payroll and external costs	Planning and development activity	Direct to network components/other plant where possible, otherwise apportion in line with costs that can be attributed.
Network management costs	Payroll costs	Time spent	Attribute to network components/other plant on the basis of the time spent by staff to manage each type of plant.
	Other costs	Time spent	Attribute to network components/other plant on the basis of the plant managed, where possible, otherwise apportion in line with costs that can be attributed.

Category of functional operating cost (cost centre)	Description of account type	Cost driver	Method of Attribution
Marketing and sales costs	Payroll	Customer acquisition	Direct to products and services where possible, otherwise attribute between products based on revenues from customer segments.
	Cost of sales of equipment	Volume of equipment	Attribute to customer equipment services within "Other activities".
	Publicity, promotions, market research fees, other costs	Customer segment analysis	Direct to products and services where possible. Otherwise, for those costs where multiple services are being marketed or promoted, cost should be attributed to the related services on a revenue basis for customer segments.
Customer service and support	Payroll costs	Number of customers and bills raised	Direct to products and services where possible, otherwise attribute between products based on activity surveys or the number of customers/number of bills raised.
Billing and collection costs	Other billing costs (incl. Bad debts)	Number of customers and bills raised	Direct to products and services where possible, otherwise attribute between products based on usage (e.g. number of bills produced) and/or revenue.
	Payroll costs	Time spent	Direct to services where possible. The costs of staff that carry out tasks for several operator services should be attributed to the related operator services based on surveys of time spent on different tasks and activities.
Payments to other operators	Out payments for outgoing traffic	Interconnection traffic	Direct to products and services.
Support costs	Human resources function costs (residual)	Headcount	HR function costs should be attributed to the staff that are overseen by the HR function.
	Finance and other head office support functions	Time spent	If related specifically to a product, service or business attribute accordingly using time spent, otherwise apportion as common (unattributable).

Category of functional operating cost (cost centre)	Description of account type	Cost driver	Method of Attribution
	Building costs and rent	Occupancy rate	Costs should be attributed according to occupancy from survey data.
	General computing/IT costs	Computer use	Attribute to operations and system development on the basis of the use of the computers to support each application (jobs and projects). Costs attributed to applications can then be attributed to those products and services that they support.

C.4. Mobile Network: Capital Employed

Table 46 Mobile Network: Methods of Attributing Capital Employed

Category of assets and liabilities	Description of account type	Cost driver	Method of Attribution
Radio access network	Radio equipment: TRXs/carriers	Traffic	Attribute to services on the basis of resources used by different types of traffic.
	BTS/Node B, including sites, masts, power	Traffic	As above.
	BSC/RNC	Traffic	As above.
Core network	MSC/MSC-CS	Subscribers, traffic	Attribute to services based on subscriber numbers and engineering data on traffic.
	MGW	Subscribers, traffic	Attribute to services based on subscriber numbers and engineering data on traffic.
	SGSN/GGSN	Data traffic	Attribute directly to plant groups for data traffic.
	SMSC	SMS messages	Attribute directly to plant groups for SMS traffic.
Transmission equipment	Traffic-sensitive transmission equipment	Circuit numbers /traffic volumes	Costs include both capital and maintenance and need to be attributed using circuit volumes based on a common unit (e.g. number of 2 Mbit/s paths).
Support plant	Power equipment	Power usage	Attribute to plant groups on the basis of the use of power equipment, e.g. kilowatts per hour. Assets should then be attributed to products in the same way as the relevant plant groups.

Category of assets and liabilities	Description of account type	Cost driver	Method of Attribution
	Network management systems	Usage	Attribute to plant groups on the basis of their use of the systems, e.g. time spent to control different types of switch/router. Costs should be attributed to products and services in the same way as the related plant group.
Non-network fixed assets	Land and buildings	Square metre occupancy	Attribute to products, services and network components on the basis of the space occupied (i.e. floor space) to support each product, service or network component.
	General computers	Usage	Attribute to the applications run by the operator on the basis of the use of the computers to support each application. Costs attributed to applications can then be attributed to those products and services that they support.
	Motor vehicles	Usage	Attribute to products, network components and activities based on usage.
	Furniture and office equipment	Usage	Attribute to products and network components based on survey data.
Intangible fixed assets	Licence and spectrum fees	Revenue basis	Direct to products where possible, otherwise on the basis of revenues.
	Other	Revenue basis	Attribute to products and services based on revenues achieved.
Working capital	Fixed asset investments (associates and joint ventures)	n/a	Direct to "Other activities".
	Other investments	n/a	Direct to "Other activities".
	Short-term investments (including cash at bank and in hand)	Operating profits	Direct to products and services where possible, otherwise attribute based on the operational requirements of each product or service using net operating profit.

Category of assets and liabilities	Description of account type	Cost driver	Method of Attribution
	Stocks	Apparatus supply and network equipment	Stocks should be attributed directly to products, services or plant groups.
	Trade debtors/receivables	Turnover	Trade debtors may be attributed to products and services based on billing system information where possible.
	Other debtors/receivables	Various	Other debtors/receivables should be attributed to activities and plant groups using bases appropriate to the particular debtor type (e.g. payroll debtors on the basis of total pay).
	Trade creditors	Operating expenses	Trade creditors should be attributed directly to products and services if possible.
	Long term provisions	Various	Provisions are either attributed directly to activities and plant groups or using a base appropriate to the particular charge (e.g. provisions relating to the cost of vacating leased buildings are attributed using the accommodation base).

Appendix D. SIGNIFICANT ACCOUNTING POLICIES

Below we highlight the most significant and relevant accounting policies for the purposes of producing the RFS and highlight the differences between operators. We present this separately for fixed and mobile networks because the nature and structure of their operations differ. We also identify accounting policies that should be common to both fixed and mobile networks. Since this review has been performed on the basis of the operators' 2010 statutory accounts, it explains the policies that would need to be applied for AS in that year. When the first set of RFS is produced for 2012, the accounting policies should match those in the operators' 2012 statutory accounts.

D.1. Fixed Network

The Group Financial Statements are prepared in accordance with the provisions of the Companies Act, 1965, the International Financial Reporting Standards (IFRS), and the MASB Approved Accounting Standards in Malaysia for Entities Other than Private Entities.

The financial statements are prepared under the historical cost convention except as disclosed in the significant accounting policies. Based on the accounting policies in the Group Financial Statements for 2010, the following policies would need to be followed for the production of the RFS for that year.

D.1.1. Fixed Assets

The cost of the telecommunications network should include expenditure up to and including the last distribution point before the customers' premises and include related material, labour and associated overhead charges. The cost of other property, plant and equipment should comprise their purchase price and any incidental costs of acquisition.

Depreciation should be implemented on a straight line basis to write off the cost of the assets over their estimated useful lives as follows:

(i)	Telecommunication network	3-25 years
(ii)	Movable plant and equipment	5-8 years
(iii)	Computer support systems	3-5 years
(iv)	Buildings	5-40 yeas

Depreciation should not be implemented on assets with an infinite life or on land. Leasehold land should be amortised in equal instalments over the period of the respective leases. Long term leases should have an expiry period of over 50 years.

Assets with indefinite useful lives should not be subject to amortisation and should be tested annually for impairment. Other assets with definite useful lives should also be assessed for impairment whenever events and changes in events indicate that the carrying amount may not be recoverable. Any losses arising should be written off to the Income Statement.

D.1.2. Financial Assets

Financial assets held for trading with the purpose of selling within a year should be valued at year end and any surplus or deficit put through the Income Statement. Financial assets not held for trading should be classified as hedging instruments and not included within the Mean Capital Employed Statement. The Group Company only applies fair value hedge accounting for hedging fixed interest risk on borrowings, so this policy should also be followed for the RFS. Changes in the fair value of the hedged fixed rate borrowings attributable to interest rate risk should be recognised in the Income Statement within "finance costs".

Available-for-sale Financial Assets represent non-derivatives that should either be designated in this category or not classified in any of the other categories. They should be included in non-current assets unless the investment matures or management intends to dispose of them within 12 months from the end of the reporting period. These should initially be capitalised at cost and subsequently recorded at fair value. Changes in the value of these investments should not be recorded in the Income Statement until the investment is sold.

D.1.3. Grants and Universal Service Provision (USP) funding

Government grants should be recognised at their fair value where there is a reasonable assurance that the grant will be received and the Group will comply with all attached conditions. Government grants relating to income should be deferred and recognised in the Income Statement when the expenditure to which they relate is incurred. Government grants relating to the purchase of assets should be deferred and shown in non-current liabilities and recognised in income over the estimated useful lives of the related assets.

The cost of funding the USP should be included as part of the operating cost base in both the statutory accounts and the RFS. Any government grants received in respect of this expenditure are treated in accordance with the stated policy and recognised in the Income Statement when the expenditure to which they relate is incurred.

D.1.4. Revenue

Revenue should comprise the fair value of the consideration received and receivable for the sale of products and services net of returns, duties and sales discounts. Operating revenue should be recognised or accrued at the time of the provision of products and services, when the amount of revenue can be reliably measured and it is probable that the future economic benefits will flow to the Group. Advance billings comprise mainly billings for data services, which should be amortised on a straight line basis according to contractual terms.

D.2. Mobile Networks

The mobile market is served predominantly by several mobile operators, some comprising a number of subsidiary companies operating within Malaysian territory and overseas. The Group Financial Statements of these operators are prepared in accordance with IFRSs and the Companies Act, 1965 in Malaysia. All financial statements are prepared on the historical cost basis unless otherwise indicated in the accounting policies stated below.

Although the individual companies follow the accounting policies as prescribed by the Malaysian Financial Reporting Standards, the companies are allowed a degree of flexibility with which to apply them to their individual results. The preparation of both statutory and RFS often involves the use of estimates and assumptions that are likely to differ between various organisations and businesses and require management to exercise a level of judgment in the process of applying the Group accounting policies.

For instance, the accounting policy for spectrum costs differs between the mobile operators. While some capitalise the spectrum costs and amortise them over the term of the spectrum, others considers expenditure incurred in acquiring telecommunications licences with allocated spectrum rights to have infinite economic useful lives and related costs are therefore capitalised but not amortised. This is because their Directors are of the opinion that the licence can be renewed in perpetuity at negligible cost. The company carries out annual impairment reviews.

D.2.1. Basis of consolidation

As noted in Section 4.1.2 some of the mobile operators have complex corporate structures. For the purposes of AS intra-group income and expenses should be eliminated on consolidation so that the consolidated financial statements reflect only external transactions

Subsidiaries should be consolidated using the purchase method of accounting. Under this method the results of subsidiaries acquired or disposed of during the financial year are included in the Income Statement from the effective date of acquisition or up to the effective date of disposal. The subsidiaries' identifiable assets acquired are measured initially at fair value at the date of acquisition. Adjustments to those fair values relating to previously held interests are treated as a revaluation and recognised in other comprehensive income, in other words the adjustments do not pass through the Income Statement and should be posted directly to reserves.

D.2.2. Fixed Assets

Property, Plant and Equipment should be stated at cost less accumulated depreciation and impairment losses. Cost should include expenditure that is directly attributable to the acquisition of an asset. Capital work in progress comprising mainly telecommunication equipment, submarine cables and renovations is not depreciated until the types of equipment concerned are ready for their intended use. We note that the accounting treatment of fixed assets varies between the mobile networks, as shown in Table 47 below.

Table 47 Mobile Network Policies on Asset Lives (years)

	Company A	Company B	Company C
Leasehold land	50-90	20-100	30-99
Buildings	42-50	5-50	50
Network equipment	4-25	3-20	3-30
Movable plant and equipment	3-7	5-8	3-5
Computer support systems	3-7	3-5	3-5

Source: Operators' statutory accounts.

As explained above it is essential for the production of the RFS that the operators match their own statutory accounting policies, even where this will lead to differences between the operators in the accounting policies used for their RFS.

D.2.3. Intangibles

Intangibles can be acquired through a business combination or through separate acquisitions. Intangible assets acquired in a business combination should be recorded at fair value at the date of acquisition and recognised separately from goodwill.

Intangible assets that are considered to have a finite life should be amortised on a straight line basis over the period of expected benefit. (Spectrum costs should be amortised over the spectrum period). Assets with no finite lives, or not yet available for use, should not be amortised. Impairment reviews should be carried out annually.

Handset subsidies, meaning expenditure incurred in providing customers with free or subsidised handsets, should be capitalised as intangible assets and amortised over the contractual period on a straight line basis, provided the customer signs a non-cancellable contract for a predetermined contractual period. Investments should be excluded from the statement of Mean Capital Employed if they are not related to regulated activities e.g. speculative investments in property.

D.2.4. Current assets

Inventories**,** which comprise telecommunication components, incidentals and devices, should be stated at the lower of cost and net realisable value. Cost includes the actual cost of materials and incidentals in bringing the inventories to their present location and condition and is determined on a weighted average basis.

Financial assets are deemed to be held for trading unless they are designated as effective hedging instruments.

D.2.5. Grants and USP funding

As universal service providers the operators are entitled to obtain certain qualified expenses from the SKMM in relation to USP projects. These are treated as government grants and should be recognised at their fair value where there is reasonable assurance that the grants will be received. Grants related to assets should be treated as income over the life of the related assets by way of a reduced depreciation charge. Grants related to income should be recognised in the Income Statement by crediting directly against the related expense.

D.3. Common Accounting Policies

D.3.1. Borrowing costs

Borrowing costs that are directly attributable to the acquisition, construction or production of a qualifying asset should be capitalised as part of the cost of the assets. Other borrowing costs should be recognised as an expense in the Income Statement when incurred.

Fees paid on the establishment of loan facilities should be recognised as transaction costs of the loan to the extent that it is probable that some or all of the facility will be drawn. To the extent that there is no evidence that the loan facility will be drawn, the fee should be capitalised as a prepayment and amortised over the period of the facility to which it relates.

D.3.2. Provisions for liabilities and charges.

Provisions should be recognised when the Group has an obligation as a result of past events, and it is probable that an outflow of resources will be required to settle the obligation. As such the provision will form part of the operating expenditure and will be treated as any other cost for the Regulatory Accounting purposes.

D.3.3. Significant Related Party Transactions

A related party transaction is a transfer of resources, services or obligations between related parties regardless of whether a price is charged. Our review of the Malaysian operators' statutory accounts revealed that there were a considerable number of these transactions.

For the purposes of preparing the RFS, as for their statutory accounts, the amounts due from/(to) related parties should be disclosed and the nature of the transactions that have taken place. All related party transactions should be entered in the normal course of business and at prices available to third parties or on negotiated terms.

D.3.4. Financial Instruments

The RFS exclude income, costs, assets and liabilities relating to regulatory entities' long-term funding. Accordingly, substantially all of the accounting for financial instruments is excluded from the RFS, except to form part of the Reconciliation Statement.