# A Public Consultation Document

## on

# Analysis and Recommendations for Market Definitions, Dominance and related Regulation

Issued by the Telecommunications Regulatory Authority, Sultanate of Oman, on

8 August 2012

# 1. INTRODUCTION:

The Authority is empowered under The Telecommunications Regulatory Act issued by the Royal Decree No. 30/2002 (and subsequent amendments thereto) to make decisions in relation to the definition of markets and dominance, and, where there is a finding of dominance, on the regulatory remedies that may be required to address the risks that arise for consumers and competition in consequence.

The Authority has established rules and guidelines relating to the analysis and definition of markets for telecommunications services in Oman, namely Decision 69/2012 (Ex-ante Regulation – the Regulation of Dominance) and the Market Definition and Dominance Guidelines.

In accordance with these rules and guidelines the Authority has prepared a preliminary analysis with preliminary recommendations in the draft Market Definition and Dominance Report ("Report") at Annexure A, which is the subject of this Public Consultation.

The Authority is seeking the comments of interested parties, stakeholders and the public on the Report contained in Annexure A, so that such comments can be considered by the Authority before it acts formally on this matter. The above referred Regulations and Guidelines have also been annexed for ease of regerence.

# 2. OVERVIEW OF THE MATTERS FORCONSULTATION

This Public Consultation is concerned with the application of principles relating to four distinct matters that relate to the *ex ante* regulation of markets for dominance, namely –

(a) The definition of markets for telecommunications network services in Oman;

(b) The consideration of the markets as defined in terms of their susceptibility or suitability for *ex ante* regualtion;

(c) Analysis of susceptible or suitable markets to determine if there are dominant operators in each of the relevant markets, and, if so, the nature of that dominance, and whether it is the dominance of a single operator or joint dominance involving more than one operator; and

(d) Determination of the remedies (ex ante regulatory intervention) appropriate to the circumstances of the relevant market and of the nature and extent of the dominance identified in it.

The Report is structured around these four matters and in this sequence.

# 3. STATUS OF THE REPORT

The Report is a draft and includes consideration of the materials and information available to the Authority at the time of writing. The Authority considers that there may be additional or more recent relevant information on some of the issues covered in the Report available to stakeholders and licensees and other stakeholders. The Authority would appreciate if any other information considered to be relevant is shared with the Authority in the course of this consultation.

The Report does not necessarily represent the final view of the Authority on any of the matters canvassed therein. The Authority is open to receive and consider the reasoned views and documented comments on all of these matters by respondents to this consultation. As a result of this consultation process the Authority may finally adopt, in relation to some or any matters covered in the Report, a position that differs from that in the Report.

Nevertheless, the respondents are advised that the assumption they should entertain for practical purposes is that, absent any further comment, the Authority is likely to confirm the preliminary view in the Report. If they have a different view of the matter then they should consider submitting that view together with reasons and, if relevant, evidence in support.

# 4.THE PUBLIC CONSULTATION PROCESSES

This public consultation process is in two phases, as follows –

**Phase 1**, in which licenses and other stakeholders and members of the public may make submissions in writing in relation to the Report. These should reach the Authority no later than the 3.45 PM on Wednesday 3 October 2012. During the week following the deadline for submissions all submissions will be published on the Authority's website.

**Phase 2**, in which those that made submissions in Phase 1 will be given a limited period, of 10 working days, to make any further comments and provide further evidence in relation to matters or arguments raised by other submissions. Please note that Phase 2 is intended to provide a limited opportunity to comment on or correct other submissions, and will only be open to those who made submissions in Phase 1.

The Authority intends to conduct a workshop on the Report for licensees and other invited stakeholders before Wednesday 3 October 2012.

# 5.COMMENT ON CONSULTATION DOCUMENT

This Public Consultation Document and Annexure will be available on the Authority's website at http://www.tra.gov.om

Respondents who wish to express opinions on this Public Consultation Document are invited to submit their comments in writing to the Authority. All comments must be received by the Authority no later than 3.45 PM on Wednesday 3 October 2012.

Comments filed in relation to this Public Consultation Document may be submitted to one or more of the following addresses:

a) E-mail to: **econ@tra.gov.om**

b) Delivery (hard and soft copy) by hand or by courier to:

**Telecommunications Regulatory Authority**

**Oman Oil Building – 2nd Floor**

**Qurum – Muscat – Sultanate of Oman,**

**P.O Box 579, PC 112, Ruwi.**

The Authority welcomes all comments on the Public Consultation Document. The Authority encourages respondents to support all comments with relevant argument and if relevant, data, analysis, benchmarking studies and information based on the national situation or on the experience of other countries to support their comments.

In providing comments respondents are requested to indicate the question number, paragraph or clause reference number to which their comments relate. The Authority has prepared specific questions for intending respondents to address if they wish. It would be helpful to the Authority if respondents answered those specific questions of interest to them, but submissions may take any form that the respondent chooses.

The Authority may give greater weight to comments supported by appropriate argument and, if relevant, evidence. The Authority is under no obligation to adopt the comments of any Respondent.

# Annexure A: Market Definition and Dominance Report

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# 1 Introduction

## 1.1 Purpose

This report is the initial Market Definition and Dominance Report ("Report") of the TRA pursuant to the Telecommunications Regulation Act, the Decision on ex ante Rules Governing Market Definition and the Regulation of Dominance and the Market Definition and Dominance Guidelines.

The Report contains the review undertaken by the TRA of markets for network services in the telecommunications sector in Oman.

## 1.2 Dimensions of the Review

TRA has had regard to the following factors in considering an appropriate time horizon for the current market Report:

- Anticipating technological change is difficult at any time, and is particularly difficult beyond two years at the current time because of the imminence of mass broadband services using fixed and mobile technologies, and the accelerating convergence driven by the adoption of IP technologies at all levels in the sector;
- Network technologies are in the process of moving from circuit-switched platforms to systems that are based on Internet Protocols capable of processing a convergent range of services with much higher capacity;
- Broadband infrastructure is being deployed and broadband services are being taken up at an increasing rate, and broadband demand and usage is changing very rapidly;
- The cost structures and service profiles for mobile data services are undergoing change with the adoption of new technologies, such as WiMAX, HSDPA and LTE, and the increased demand for mobile data services; and
- New entrants have recently commenced, or will shortly commence, the commercial operation of their services, with consequences for competition in many services markets.

In the light of these factors, TRA has adopted a two year time horizon in preparing this Report. This means that in assessing the susceptibility of each relevant market to ex ante regulation for dominance the likely changes and developments in the market for the next two years have been taken into account as far as they can be reasonably foreseen. In principle, possible developments that occur beyond that timeframe have been regarded as less certain and have not been taken into account. They have been left to emerge more clearly and to be taken into consideration in the course of future reviews of this kind.

## 1.3 Structure of the Report

The Report is set out as follows:

- Various candidate markets with tentative service, geographical and customer definitions are examined in Chapter 2, and a final set of market definitions is determined based on a range of considerations including the limits of demand-side and supply-side substitutability.
- In Chapter 3 the candidate markets are assessed in terms of their susceptibility to ex ante regulation for dominance and a final set of relevant markets is determined as a result of that assessment process.
- In Chapter 4 each of the relevant markets are examined in terms of the criteria for single and joint dominance included in the Market Definition and Dominance Guidelines and conclusions are reached on whether dominance exists in each and, if so, the identity of the service providers that are considered to be in a dominant position.
- In Chapter 5 the risks of harm from dominance are assessed in each of the markets characterised by dominance and ex ante remedies are considered having regard to the need for reasonable, appropriate and proportionate responses to the risks of harm that are posed. In addition Chapter 5 includes consideration of how the remedies might be shaped in terms of intensity of application in order to be no more onerous or intrusive than is necessary to address the risks of harm from dominance that are adjudged to exist.
- In Chapter 6 the means of implementation of proposed remedies for relevant markets subject to dominance are set out. In most cases they exist in the Act and existing regulations and other instruments.

## 1.4 Proposed Decisions

The decisions that the TRA proposes to make as a result of the conclusions made in the course of this review are set out in summary form in the attached Figure 1.1. The actual decisions will be couched in appropriate formal language when made.

**Remedies to be compliant with the Act and other subordinate legislation**

For the avoidance of doubt and to avoid needless repetition in relation to the remedies proposed to address the risks of harm to competition and consumer interests in markets in which one or more licensed operators has been found to be dominant, all of the remedies proposed shall be implemented in accordance with the procedures and other substantive requirements of the Telecommunications Act and other existing statutory instruments and regulations and will take account of, and where necessary amend or replace, existing obligations under the regulatory framework of Oman which address the same or similar issues.

Without affecting the general application of the above, proposed obligations in relation to price control regimes based on a price cap methodology will need to be implemented in accordance with the Telecommunications Act and with the sub-Articles (4)(1) and (11(7) in particular.

**Price control remedy**

Price control remedies cover a range of possibilities. Choices of regulatory remedies from amongst the range of price control options will have regard to the nature and seriousness of the risk of harm associated with dominance in the relevant market.

Without limiting the potential range and type of price control remedies, they may cover the following options:

(a) Direct determination of price by the regulator

Such controls might reflect pre-determined principles such as cost-based pricing on a specific costing standard. An example of the circumstances in which such a remedy might be adopted is in relation to wholesale call termination charges where the regulator, either through arbitration or otherwise, directly determines the level of the charge to apply.

(b) Price cap regimes

In price cap regimes the price control remedy is expressed as being an imposed obligation based on a price cap mechanism. This approach effectively sets a ceiling on the price for a single service or on a basket of services through the application of formula that require the service provider to increase charges by no more in a given period than an amount calculated with reference to general economic or industry price indices as adjusted for potential efficiency gains that should be shared with users through the pricing mechanism. The *RPI-x* approach used for price regulation in some countries is such an approach. RPI is a retail price index and x is an efficiency factor. Prices may need to decline to meet the constraints of the formula, depending on the values chosen by the regulator.

If a basket approach is used the services in any basket would be determined by the regulator based on the overall objectives sought to be achieved. In many situations this form of price control is superior to approval of specific price levels on a service by service basis because the service e provider has some flexibility in determining how best to meet the regulatory obligation and is therefore better placed to respond to changing customer requirements and the dynamics of competition in the relevant market.

(c) Price justification regimes

Under these arrangements prices (usually price changes) might be permitted by the regulator subject to the operator subject to the remedy being able to justify the proposed change. Justification might be in terms of changes in input cost levels, or in terms of price rebalancing between the prices of services so that both better reflect underlying cost. Price rebalancing between service access and service usage charges is an example of the latter form of justification.

The problem with approval processes based on operator justification is that there is pressure on price increases, but price decreases may be deferred or delayed by dominant operators.

(d) Price notification (to the regulator)

Price notification arrangements permit the regulator to see proposed price variations before they are implemented and afford the regulator an opportunity to intervene if anti-competitive or anti-consumer characteristics are discerned. An example of the latter might be if the statement of charges is inconsistent, unclear or confusing. Under price notification regimes, the regulator has an opportunity to intervene and ask questions, and to defer the implementation of the proposed prices until issues are resolved.

**Accounting Separation**

Accounting Separation (AS) is a specific remedy that requires the service provider to prepare its accounts in such a way as to allocate revenues and costs to appropriate services or businesses in a manner stipulated by the regulator. The purpose of AS is to enable the regulator to analyse cost and revenue allocations to determine if there is cross-subsidisation or margin squeeze or evidence of other behaviour that may be anti-competitive.

## Proposed Decisions by the TRA as a result of this Review

Figure 1.1: Proposed Decisions by the TRA as a result of this review

| Market | Susceptible to ex ante dominance regulation | Singly Dominant | Jointly Dominant | Remedies |
|---|---|---|---|---|
| Market 1: Retail access to the public telephone network at a fixed location | Yes | Omantel | | • Omantel to be subject to obligations of non-discrimination and transparency.<br>• Omantel to be subject to tariff notification and approval obligations<br>• Omantel to be subject to a price control obligation based on a price cap mechanism.<br>• Omantel to be subject to accounting separation (AS) obligations in relation to all services in this market |
| Market 2: Retail local, national voice call service from a fixed location | Yes | Omantel | | • Omantel to be subject to obligations of non-discrimination and transparency.<br>• Omantel to be subject to tariff notification and approval obligations.<br>• Omantel to be subject to a price control obligation based on a price cap |

| Market | Susceptible to ex ante dominance regulation | Singly Dominant | Jointly Dominant | Remedies |
|---|---|---|---|---|
| | | | | mechanism.<br>• Omantel to be subject to accounting separation (AS) obligations in relation to all services in this market. |
| Market 3: Retail international voice call service | Yes | | Omantel<br>Nawras | • Omantel and Nawras each to be subject to obligations of non-discrimination and transparency.<br>• Omantel and Nawras each to be subject to tariff notification and approval obligations.<br>• Omantel and Nawras each to be subject to accounting separation (AS) obligations in relation to all services in this market. |
| Market 4: Retail broadband Internet access from a fixed location | Yes | | | • No service provider is dominant in this market at this time |
| Market 5: Retail dial-up Internet access from a fixed location | No | | | |

| Market | Susceptible to ex ante dominance regulation | Singly Dominant | Jointly Dominant | Remedies |
|---|---|---|---|---|
| Market 6: Retail mobile services market | Yes | | Omantel Mobile<br><br>Nawras | • Omantel and Nawras each to be subject to obligations of non-discrimination and transparency.<br>• Omantel and Nawras each to be subject to a price control obligation based on a price cap regime. |
| Market 7: Retail national leased line services | Yes | Omantel | | • Omantel to be subject to obligations of non-discrimination and transparency;<br>• Omantel to be subject to notification and approval obligations in relation to prices of all retail leased line services;<br>• Omantel to be subject to a price control obligation based on a price cap regime; and<br>• Omantel to be subject to accounting separation (AS) obligations in relation to all services in this market. |
| Market 8: Retail international leased | Yes | Omantel | | • Omantel to be subject to obligations of non-discrimination and transparency; |

| Market | Susceptible to ex ante dominance regulation | Singly Dominant | Jointly Dominant | Remedies |
|---|---|---|---|---|
| lines | | | | • Omantel to be subject to notification and approval obligations in relation to prices of all services in this market;<br>• Omantel to be subject to a price control obligation based on a price cap regime; and<br>• Omantel to be subject to accounting separation (AS) obligations in relation to all services in this market. |
| Market 9: Retail business data services provided from a fixed location | No | | | |
| Market 10: Wholesale voice call origination on the public telephone network provided at a fixed location | Yes | Omantel | | • Omantel to be obliged to supply call origination services to all eligible service providers who request them;<br>• Omantel to be obliged to publish a current Reference Interconnection Offer in relation to the supply of wholesale call origination services in a form and with content approved by the TRA; |

| Market | Susceptible to ex ante dominance regulation | Singly Dominant | Jointly Dominant | Remedies |
|---|---|---|---|---|
| | | | | • Omantel to be subject to obligations of non-discrimination and transparency;<br>• Omantel to be subject to notification and approval obligations in relation to all changes to its Reference Interconnection Offer, and to prices for call origination services;<br>• Omantel to be subject to a price control obligation based on a price justification regime; and<br>• Omantel to be subject to accounting separation (AS) obligations in relation to all services in this market. |
| Market 11: Wholesale voice call termination on individual public telephone networks provided at a fixed location | Yes | Omantel<br><br>Nawras | | • Omantel and Nawras to be obliged to supply call termination services to all eligible service providers who request them;<br>• Omantel and Nawras to be obliged to publish respectively updated Reference Interconnection Offer in relation to the supply of wholesale call termination |

| Market | Susceptible to ex ante dominance regulation | Singly Dominant | Jointly Dominant | Remedies |
|---|---|---|---|---|
| | | | | services in a form and with content approved by the TRA;<br>• Omantel and Nawras to be subject to obligations of non-discrimination and transparency;<br>• Omantel and Nawras to be subject to notification and approval obligations in relation to all changes to their respective Reference Interconnection Offers, and specifically to prices for call termination services;<br>• Omantel and Nawras to be subject to price control obligations based on a Long Run Incremental Cost plus contributions to fixed and overhead costs (LRIC+) standard or such other cost standard as determined by the TRA from time to time; and<br>• Omantel and Nawras to be subject to accounting separation (AS) obligations in relation to all services in this market. |
| Market 12: Wholesale network | Yes | Omantel | | • Omantel to be obliged to supply nominated facility access services to all eligible service |

| Market | Susceptible to ex ante dominance regulation | Singly Dominant | Jointly Dominant | Remedies |
|---|---|---|---|---|
| infrastructure access at a fixed location | | | | providers who request them;<br>• Omantel to be obliged to publish a current Reference Access Offer in relation to the supply of wholesale facility access services in a form and with content approved by the TRA;<br>• Omantel to be subject to obligations of non-discrimination and transparency;<br>• Omantel to be subject to notification and approval obligations in relation to all changes to its Reference Access Offer, and specifically to prices for wholesale facility access services;<br>• Omantel to be subject to a price control obligation based on a price justification regime; and<br>• Omantel to be subject to accounting separation (AS) obligations in relation to all services in this market. |
| Market 13: Wholesale | Yes | | Omantel<br>Nawras | • Omantel and Nawras each to be obliged to supply wholesale broadband access services and related |

| Market | Susceptible to ex ante dominance regulation | Singly Dominant | Jointly Dominant | Remedies |
|---|---|---|---|---|
| broadband access (including bit-stream and WLR) | | | | facility access services to all eligible service providers who request them;<br>• Omantel and Nawras each to be obliged to publish respective Reference Access Offers in relation to the supply of wholesale broadband access services in a form and with content approved by the TRA;<br>• Omantel and Nawras each to be subject to obligations of non-discrimination and transparency; Omantel and Nawras each to be subject to notification and approval obligations in relation to all changes to its Reference Access Offer;<br>• Omantel and Nawras each to be subject to price control for wholesale broadband access services but the principles that apply will be determined by the TRA from time to time and will be consistent with national imperatives for investment in broadband networks; and<br>• Omantel and Nawras to be subject to accounting separation (AS) obligations in relation to wholesale broadband access services. |
| Market 14: Wholesale | Yes | Omantel | | • Omantel to be obliged to supply wholesale terminating segments of leased lines to all |

| Market | Susceptible to ex ante dominance regulation | Singly Dominant | Jointly Dominant | Remedies |
|---|---|---|---|---|
| terminating segments of leased lines | | | | eligible service providers who request them;<br>• Omantel to be obliged to publish a current Reference Access Offer in relation to the supply of wholesale leased line terminating segments in a form and with content approved by the TRA;<br>• Omantel to be subject to obligations of non-discrimination and transparency;<br>• Omantel to be subject to notification and approval obligations in relation to all changes to its Reference Access Offer, and specifically to prices for wholesale leased line terminating segments;<br>• Omantel to be subject to price control for wholesale leased line segments on the basis of appropriate principles cost-reflective mechanisms that may include retail minus avoidable costs, benchmarking and cost modelling, as determined by the TRA from time to time; and; and<br>• Omantel to be subject to accounting separation (AS) obligations in relation to wholesale leased line segments. |

| Market | Susceptible to ex ante dominance regulation | Singly Dominant | Jointly Dominant | Remedies |
|---|---|---|---|---|
| | | | | |
| Market 15: Wholesale trunk segments of leased lines | Yes | Omantel | | • Omantel to be obliged to supply wholesale trunk segments of leased lines to all eligible service providers who request them;<br>• Omantel to be obliged to publish a current Reference Access Offer in relation to the supply of wholesale leased line trunk segments in a form and with content approved by the TRA;<br>• Omantel to be subject to obligations of non-discrimination and transparency;<br>• Omantel to be subject to notification and approval obligations in relation to all changes to its Reference Access Offer, and specifically to prices for wholesale leased line trunk segments;<br>• Omantel to be subject to price control for wholesale leased line segments on the basis of appropriate principles cost-reflective mechanisms that may include retail minus avoidable costs, benchmarking and cost modelling, as determined by the TRA from time to time; and |

| Market | Susceptible to ex ante dominance regulation | Singly Dominant | Jointly Dominant | Remedies |
|---|---|---|---|---|
| | | | | • Omantel to be subject to accounting separation (AS) obligations in relation to wholesale leased line trunk segments. |
| Market 16: Wholesale international capacity (Bandwidth) | Yes | | Omantel<br>Nawras | • Omantel and Nawras to be obliged to supply wholesale international capacity to all eligible service providers who request them;<br>• Omantel and Nawras to be subject to obligations of non-discrimination and transparency;<br>• Omantel and Nawras to be subject to tariff notification and approval obligations for wholesale international capacity prices;<br>• Omantel and Nawras to be subject to price control for wholesale international capacity on the basis of assessment of the justification provided by either to support their respective applications for price changes; and<br>• Omantel and Nawras to be subject to accounting separation (AS) obligations in relation to wholesale international capacity. |

| Market | Susceptible to ex ante dominance regulation | Singly Dominant | Jointly Dominant | Remedies |
|---|---|---|---|---|
| Market 17: Wholesale voice call termination on individual mobile networks | Yes | Omantel Mobile<br><br>Nawras | | • Omantel and Nawras to be obliged to supply call termination services to all eligible service providers who request them;<br>• Omantel and Nawras to be obliged to publish Reference Interconnection Offers in relation to the supply of wholesale mobile call termination services in a form and with content approved by the TRA;<br>• Omantel and Nawras to be subject to obligations of non-discrimination and transparency;<br>• Omantel and Nawras to be subject to notification and approval obligations in relation to all changes to their Reference Interconnection Offers, and specifically to prices for mobile call termination services;<br>• Omantel and Nawras to be subject to price control based on a LRIC+ cost standard or such other cost standard as determined by the TRA from time to time; and<br>• Omantel and Nawras to be subject to accounting separation (AS) obligations in relation to all services in this market. |

| Market | Susceptible to ex ante dominance regulation | Singly Dominant | Jointly Dominant | Remedies |
|---|---|---|---|---|
| | | | | |
| Market 18: Wholesale access and call origination on public mobile telephone networks | Yes | | Omantel Mobile<br><br>Nawras | • Omantel and Nawras to be obliged to provide access to mobile voice call origination services and associated facilities available on a reasonable request basis by eligible service providers, and to negotiate access byMVNO/ mobile reseller access seekers in good faith, on reasonable terms and conditions and in a reasonable time as specified by the TRA;<br><br>• Omantel and Nawras to have obligations in respect of non-discrimination and transparency;<br><br>• Omantel and Nawras to be required to publish Reference Offers (RO) in a form and with contents approved by the TRA setting out the terms of access they are providing to the services in the wholesale MACO market;<br><br>• Omantel and Nawras each to provide wholesale MACO service with prices that comply with cost standards determined by the TRA from time to time; and<br><br>• Omantel and Nawras to be subject to accounting separation (AS) obligations in relation to all services in this market. |

| Market | Susceptible to ex ante dominance regulation | Singly Dominant | Jointly Dominant | Remedies |
|---|---|---|---|---|
| | | | | |
| Market 19: Wholesale national roaming | No | | | |
| Market 20: Wholesale transit | Yes | | | • No service provider is dominant in this market at this time. |

SOURCE: TRA

# 2 Definition of Markets

## 2.1 Candidate markets

The TRA has developed a list of possible candidate markets for consideration and definitional refinement using a number of sources including the markets adopted by regulators in other countries who have a similar approach to definition as that outlined in the Market Definition and Dominance Regulations and the Market Definition and Dominance Guidelines.

The list of candidate markets (as a starting point and with potential overlapping coverage) is:

Figure 2.1: Candidate Markets

| **Market title** | **Primary Service** | **Geographical scope** | **Customer segment** |
|---|---|---|---|
| Market 1: Retail access to the public telephone network at a fixed location | Narrowband fixed access | National | All segments (including business and residential) |
| Market 2: Retail local, national voice call service | National voice calls | National | All segments |
| Market 3: Retail international voice call service | International voice calls | National (issue as to whether market should route specific) | All segments |
| Market 4: Retail broadband Internet access from a fixed location | Broadband access | National | All segments |
| Market 5: Retail dial-up Internet access from a fixed location | Dial-up access | National | All segments |
| Market 6: Retail mobile services market | Retail mobile access and use for all applications | National | All segments |
| Market 7: Retail national leased line services | National leased lines both digital and analogue | National | Only business |
| Market 8: Retail international leased lines | International leased lines both digital and analogue | National | Only business |
| Market 9: Retail business data services provided from a fixed location | IP, Ethernet, ATM and Frame Relay based data | National | Business |

| | | | |
|---|---|---|---|
| | services | | |
| Market 10: Wholesale voice call origination on the public telephone network provided at a fixed location | Wholesale voice call fixed origination | National | Class I and II licensed service providers |
| Market 11: Wholesale voice call termination on individual public telephone networks provided at a fixed location | Wholesale voice call fixed termination | National | Class I and II licensed service providers |
| Market 12: Wholesale network infrastructure access at a fixed location | Shared and Fully Unbundled Local Loop services | National | Class I and II licensed service providers |
| Market 13: Wholesale broadband access (including bit-stream and WLR) | Bit stream and DSL end to end resale service | National | Class I and II licensed service providers |
| Market 14: Wholesale terminating segments of leased lines | Wholesale terminating segments of leased lines | National | Class I and II licensed service providers |
| Market 15: Wholesale trunk segments of leased lines | Wholesale trunk segments of leased lines | National | Class I and II licensed service providers |
| Market 16: Wholesale international capacity (Bandwidth) | Wholesale international capacity | National (through points of interconnection) | Class I and II licensed service providers |
| Market 17: Wholesale voice call termination on individual mobile networks | Mobile call termination | National | Class I and II licensed service providers |
| Market 18: Wholesale access and call origination on public mobile telephone networks | Wholesale access and call origination on mobile networks (MVNO / mobile reseller access) | National | Class I and II licensed service providers |
| Market 19: Wholesale national roaming | Wholesale national roaming service | National | Class I licensed service providers |
| Market 20: Wholesale transit | Wholesale transit service | National | Class I licensed service providers |

SOURCE: TRA

Each of these candidate markets is tested to determine the appropriateness and robustness of the market definition and the boundaries in terms of demand-side and supply-side substitutability.

**Box 2.1**

**Question 1**: Do you agree with TRA's list of candidate markets in Figure 2.1? In particular, do you consider that any of the defined markets should not be included or should be amended? If so, please provide arguments for your view.

**Question 2:**Are there other telecommunications service markets that should be considered and which are not presently included in any of the candidate markets listed in Figure 2.1? If so, please describe the market in terms of services, geography and customers and provide arguments for the market being considered.

## 2.2 Retail Markets

### Market 1: Retail access to the public telephone network at a fixed location

**Services**

The market scope proposed includes the market of access to public telephone service at a fixed location in both residential and non-residential (including business and government) premises.

It is important to determine whether the boundaries of the market should include:

(a) Calls (or usage) as well as (fixed) access

(b) Mobile access as well as fixed access

(c) Business access as well as residential access

(a) Fixed access and retail calls. In Oman telephone services are supplied as access and calls by a single provider. In other countries in the world, however, the introduction of Carrier Selection (CS), Carrier Pre Selection (CPS) and Wholesale Line Rental (WLR) allow access and calls to be unbundled and offered by separate providers, and consumers are free to switch to another provider if there is an increase of some or all outgoing calls prices. Such a regulation has not been implemented in Oman. From the perspective of functionality there is no substitutability between access and calls but only a vertical relationship between the two. On the demand side therefore access and calls are complementary services and part of two separate markets.

On the supply side, if a hypothetical monopolist applied a SSNIP of between 5% and 10% in the access market, it would not be possible for a calls provider to enter the access market without duplicating the existing core network, which would require considerable investments that are unlikely in Oman. Therefore, TRA considers that there is no substitutability also on the supply side and that retail access and retail calls should be considered as two separate markets.

(b) The level of fixed to mobile substitutability in terms of mobile access. Mobile services have characteristics that are quite different from fixed services. Fixed and mobile access services are to be considered as complementary to each other rather than as substitutes for a number of reasons:

- o Mobile services are a means of personal communication, generally used by a single subscriber. They are not considered to be shared services in residential or business settings. This aspect is enhanced by the mobility that the service offers as its defining characteristic. In contrast, fixed services are location-specific and found in family residential or business office settings. This suggests that while mobile services can be substitutable for fixed access, fixed access services are less likely to be substitutable for mobile access services.
- o Additionally, multi-person families and firms will typically prefer to have a fixed connection available for all members of the family or firm. This will ensure overall control of costs plus a shared general amenity. The control of costs was a factor mentioned by fixed service customers frequently in the Consumer Survey conducted by the TRA for the purposes of this analysis.
- o Another reason is internet connectivity. Many customers (both residential and non-residential)do not want to give up their fixed narrowband access line because they want to use it for dial-up internet connection. This will be the more so when broadband always-on access is available to them.
- o TRA recognizes that with a relatively low penetration of fixed access in Oman many residential users are opting for mobile-only solutions without getting a fixed service. Sometimes this is because only mobile services are reasonably available. According to the most recent data available the Omani telecommunications market is characterised by low fixed penetration rates in terms of subscribers and high mobile penetration rate, i.e. only 10.3% (although is much higher on a household basis[1]) with approximately 284,969 subscribers (as of September 2011) against 169% mobile penetration and 4.69 million mobile subscribers in the same period.

On the supply side, if a fixed service monopolist provider applied a SSNIP of 5 - 10% it is very unlikely that this in itself would be sufficient to attract mobile providers to offer fixed services within a reasonable time frame. This is due to the high sunk costs associated with building an access network and the economies of scale and density that characterise telecommunications access networks.

TRA has concluded that, for the present and within the time horizon of this analysis, there is no single retail market combining both fixed and mobile access services. These are sufficiently different in customer perceptions that they should be considered that way for regulatory purposes.

Which forms of narrowband fixed access are services within the relevant market? There are different products to provide fixed narrowband access services over electronic communications networks. These include:

- Circuit-switched (PSTN) – business and residential

[1] With a household numbers of 509,000 in 2010 and179,995fixed residential subscribers in 2009, the household penetration is around 35%.

- Fixed Wireless Access (FWA) – business and residential
- ISDN Basic Rate Access (BRA) – small businesses and individuals
- ISDN PRA (Primary Rate Access) – only larger businesses

On the demand side PSTN analogue, FWA, ISDN (BRA) and ISDN PRA have similar functionalities and even though the latter is intended for users with greater connectivity requirements, it mainly provides connectivity to PSTN via private branch exchanges, and therefore it can considered as a substitute for PSTN, FWA and ISDN (BRA) products. The economics of supply also suggest that all products are included in the same market for fixed narrowband access.

Fixed narrowband access is also separate from broadband access services from a fixed location and dial-up internet as further described in Market 4 and 5 respectively. For example with regard to VoIP services, these are generally provided in a bundle of services with high-speed internet services. But customers tend to switch to broadband connections primarily to get high speed access to internet services, with VoIP only being a secondary issue within that context. Additionally, the cost of providing a VoIP call minute is lower than the cost of fixed narrowband access call minute; however, choosing a broadband connection for the sole purpose of making and receiving VoIP calls is not the way customers decide the matter. This is further described in Market 4 and 5 respectively of this Report

**Geographic scope of market**

The circumstances that influence the availability and choice of services in some locations (for example in metropolitan areas in which infrastructure has been established and where the aggregation of demand has attracted one or more suppliers) may be absent or different from the circumstances in other areas (for example in rural areas).

It is therefore quite possible that as technology and choices develop the characteristics of markets may change at different rates and in different ways on a geographic basis. But given the current level of market development, TRA has concluded that, for the time horizon of this analysis, the geographic scope for fixed access services is national and geographic dissection of the market would be inappropriate and serves no practical purpose at this stage. TRA will monitor developments in this market to determine whether and when any geographical dissection may become appropriate. For example the roll out of competitive fixed services may change the market characteristics in some areas well before others, and in those conditions the definition of separate markets may be appropriate. Even without definition of geographically determined fixed markets at sub-national level, in appropriate cases it remains open for the TRA to apply different intensities of ex ante regulation, assuming regulatory intervention is justified in the first place, depending on the characteristics present in various places.

**Customers**

There is no differentiation in the provision of services in this market between business and non-business customers, or on the basis of any other customer segmentation.Both business and residential customers may avail themselves of the same fixed access service terms and conditions nationally.

**Conclusion**

The retail narrowband access market, taken as including national fixed access services for residential and non-residential customers, is appropriately defined.

**Box 2.2**

**Question 1**: Do you agree with TRA's assessment that, during the time of this review, fixed and mobile access services should be treated as complementary services rather than as substitutable services? Please provide reasons and empirical evidence supporting your view. If you disagree please provide your alternative market definition.

**Question 2:**Apart from the issue of whether or not to include retail mobile access services in this market, do you agree with TRA's conclusionsabout the relevant product, geographic and customer market definition for the retail narrowband fixed access services market?

## Market 2: Retail local and national voice call service

**Services**

This market includes the provision of local and national voice call services and related services to residential and non-residential customers.

To finalise definition of the relevant market it is necessary to consider whether mobile and national calls should be included within its scope.

Calls from fixed locations versus calls from mobile services: Fixed-mobile call substitution is the use of mobile services instead of fixed services to originate calls. In order to assess whether mobile calls are in the same relevant market as fixed calls, we need to analyse the extent to which consumers in Oman would make a mobile call rather than a fixed call and vice versa.

As analysed in Market 1 there are functional differences between fixed and mobile services that are important to users. However these differences relate to the access characteristics of the services, not to the calls that originate from them. It is quite conceivable that mobile and fixed access services constitute separate markets but that certain call services are in the same market, however originated. The issue is whether users in Oman consider fixed and mobile calls to be sufficiently substitutable that the calls should be regarded as being in the same market.

Evidence from the customer survey undertaken on behalf of the TRA for the purpose of this analysis found evidence of a large proportion of residential customers willing to accept a small but significant increase in the price (SSNIP) for fixed calls. A further proportion claimed that they would, under these conditions, use mobile only or switch to another service provider of fixed calls. The combined reduction in demand of respondents who claimed they would use mobile only or another fixed operator is higher than the critical loss factor[2] calculated by TRA[3]. This suggests that a SSNIP would be unprofitable. On the basis of the SSNIP analysis, based on the TRA's survey, the market definition should be extended to include mobile calls.

TRA, however, refrains from this conclusion and considers that the results of the survey must be treated with caution. The questions are of a hypothetical nature and the respondents are not speaking of the choices they have made in the past. In addition, survey respondents have agendas and many would not endorse the concept of a price increase being meekly accepted. In practice customers are more loyal than they indicate in surveys, where loyalty is measured in terms of inertia and tendency not to switch from service providers. TRA therefore considers that the survey responses should be considered as the maximum extent to which customers would react by switching and not necessarily a good predictor of future behaviour.

According to the survey results, the losses in demand that would be incurred by the hypothetical monopolist from a SSNIP of 5% to 10% are respectively46% and 65% as shown in the Table below.

Analysing the results of the survey at a disaggregated level, 29% of customers claim they would cancel and find another fixed operator. However, given the limited extent of fixed service competition in Oman such a result could not occur.

Figure2.2: Residential customers' reported responses to a SSNIP

| | SSNIP = 5% | SSNIP = 10% |
|---|---|---|
| Cancel the service and use mobile only | 17% | 33% |
| Cancel the service and find another fixed service provider | 29% | 32% |
| Make more calls from mobile but keep the fixed service | 45% | 26% |
| Other | 9.0% | 10% |

SOURCE: TRA

Secondly, it is sensible to assume that only a proportion of the customers that have declared they would switch to mobile would in reality do so. One of the assumptions of the survey was that customers knew about prices, however, the extent of consumer awareness of actual prices was not specifically tested. It is therefore reasonable to argue the percentage of consumers that would switch to mobile is likely to be lower than shown in the survey once price considerations and price information is fully considered by them. On the information made available from the Class I operators the mobile premium relative to the aggregate of local and national calls is around 9%. This is a modest premium.

[2]According to the standard methodology (i.e. the Critical Loss Analysis), to calculate the critical loss factor (L), which represent the loss in demand that would leave the profit unchanged for a given level of price increase, the formula to be applied is the following: *[1]* $L < SSNIP / (1 + SSNIP – (MC/P))$

[3] TRA has estimated the relationship between Omantel's marginal cost and its prices. It has based its assessment on a proxy from an operator of similar size and cost structure to Omantel. On that basis the price per minute exceeds the marginal cost by between 31% and 57%. This gives a critical loss factor for a SSNIP of 10% in the range 15% to 24%.

In addition, there is a risk that the price the TRA has used for the analysis is not a competitive price. If the starting prices are not competitive then there is a risk of greater substitutability being assumed.

The TRA is well aware that there is fixed mobile call substitution occurring in Oman in the sense that the proportion of calls that originate from mobile services is increasing much faster than the growth in calls from fixed services. This is most pronounced in the case of subscribers who have cancelled their fixed services and considered that a single service can cover all of their calling needs. However, neither the recent history of telecommunications usage profiles in Oman nor the TRA consumer survey indicates that fixed mobile call substitution is a two-way street. For example, a significant proportion of residential customers (44%) have responded that fixed and mobile calls are not interchangeable and that they are not indifferent about whether calls are originated from fixed or mobile services. The substitution effect is uni-directional. This suggests that there is no likelihood at all that the pattern will be reversed, or that fixed calls can be regarded as a substitute for mobile calls. Fixed calls appear to be considered an appropriate service to adopt in certain situations such as (i) business premises; (ii) where price sensitivity is greater; (iii) where the emphasis is not on personal convenience and (iv) where mobile service not available or coverage is uncertain.

The economics of supply also suggest that if a hypothetical monopolist of fixed calls applied a SSNIP (say 5-10%) it is very unlikely that this in itself would be sufficient to attract mobile providers to provide a call services of similar prices and quality in this market within a reasonable time frame.

Concluding, TRA considers fixed and mobile calls as services in separate markets at this stage of service development in Oman.

### Geographic scope of market

Retail fixed local and national calls services are provided on a national basis. TRA regulations and licence requirements entail that the same supply conditions, including price, quality of service and terms of service apply nationally. It is not useful, in current circumstances, to define the market in geographic terms below the national level. However, the development of the market will need to be monitored by the TRA to establish if there are any major changes in the situation requiring re-consideration at a later date of the geographical dimension of the market definition.

### Customers

Fixed call services are provided on the same terms and conditions to residential and non-residential customers. TRA therefore considers that residential and non-residential customers are part of the same market.

### Conclusion

The definition of the retail fixed call market, being the national market for local and national calls by residential and non-residential customers at fixed locations, is appropriate.

**Box 2.3**

**Question 1**: Do you agree with TRA's assessment that, during the time of this review, fixed and mobile national call services should not be treated as sufficiently substitutable services to be considered to be in the same market? Please provide reasons and empirical evidence supporting your view.

**Question 2:** Do you have any market survey or other similar information bearing on the propensity of Omani customers to substitute fixed and mobile call services that you are able to make available to the TRA?

**Question 3:** Apart from the issue of whether or not to include retail mobile call services in this market, do you agree with TRA's conclusions about the relevant service, geographic and customer market definition for the local and national fixed call services market?

## Market 3: Retail international voice call (fixed and mobile) service

### Services

The market includes the provision of international voice call services using both fixed and mobile services.

The key issue is whether mobile international calls should be regarded as being in the same or a separate market as international calls originated on fixed services. On the demand side, although international calling is available also from a mobile service, price packages do not typically include international calling. These calls are separately accounted for and priced. Importantly the cost of calls to overseas locations only vary by fixed or mobile source if there are extra costs for conveyance within Oman. Once calls are delivered to the international gateway the costs of further conveyance are not affected in any way by whether the call has originated on a fixed or mobile service. In Oman, the international call tariffs offered for calls originating from fixed and mobile telephony are very similar. Therefore a small increase in price (say 5-10%) by the fixed service provider who is also a hypothetical monopolist would not be profitable since it would result in substitution by mobile international call services. Hence from a demand perspective mobile and fixed international call services are in the same relevant market.

The economics of supply also suggest a SSNIP (say 5-10%) to fixed international calls would be sufficient to attract new mobile suppliers to the market.

Another key question is whether the market is a single market or whether it would be better considered by route type or on a country-pair basis. TRA considers that even though different international routes have potentially different volumes demand, cost and competition characteristics, all routes are better considered as constituting a single market. There are no perceived barriers to operators entering directly or indirectly all routes on which they wish to convey traffic.

### Geographic scope of the market

The market for international voice calls operates at a national level within Oman. The terms and conditions of international call services are consistent across the country.

### Customers

There is no differentiation in the provision of services in this market between business and non-business customers, or on the basis of any other customer segmentation.

### Conclusions

The retail international voice call services market is appropriately defined as including international calls originating from both fixed and mobile services.

**Box 2.4**

**Question 1**: Do you agree with TRA's conclusion that there is a material level of competition between fixed and mobile operators for international call services in Oman? Please provide reasons and empirical evidence supporting your view.

**Question 2:**Do you agree with TRA's assessment about the relevant service, geographic and customer market definition for the international call services market?

## Market 4: Retail broadband Internet access from a fixed location

### Services

The market definition that is proposed is broadband access to the Internet. For the avoidance of doubt fixed location access includes copper (xDSL) and wireless (WiMAX) access.

It is important to determine whether the boundaries of the market should include:

- Wireless broadband access: At present, penetration of wireless broadband services is almost zero (1%) in December 2011.Functionally, ADSL and WiMAX offer similar features: always-on service, access speeds above 512 Kbps, tariffs structured according to access speed and data transfer allowance. Furthermore, it is understood, based on operator plans and reports, that the WiMAX coverage reached around 87% of households by the end of 2011. The TRA considers that broadband wireless access will soon become a competitive service offering in Oman and that a SSNIP of 5% to 10% will not be profitable for ADSL. That is, broadband wireless access will impose a strong competitive constraint to other forms of retail broadband internet access in a fixed location. Therefore, the TRA considers broadband wireless access to be part of Market 4.
- Dial-up Internet access: Although Dial-up and Broadband can both be used to access the internet, there is a set of functional characteristics of broadband that implies that certain applications (e.g. video streaming) are available with broadband but not available with dial-up access. The key differences in functional characteristics are lower access speeds, higher contention rates, higher delays and lower reliability for dial-up connections when compared to broadband. The broadband offer also differs

substantially from dial-up offers in relation to the tariff structure. Broadband provides better control as the tariff packages specifies access speeds and data transfer allowances for a flat rate. The dial-up tariff is based on time metering. The TRA considers that a SSNIP of 5 – 10% applied to broadband access would be profitable as users of broadband Internet access would not be interested in reverting to dial-up access. Dial-up Internet access is therefore outside the scope of this market.

- Mobile Broadband access: At this initial stage of deployment of Mobile Broadband in Oman, there is some evidence that users perceive fixed and mobile broadband to be substitutable, however this is not substantial. In the residential customers survey only 19% of end users have reported using fixed broadband services but a significant proportion of customers, 43%, reported not having access to broadband services at all[4];50% of surveyed business customers use fixed broadband and 20% use mobile broadband. Additionally, because the Class I mobile licensees have been awarded only 5 MHz for 3G services, they can only deploy one carrier per cell site. This limits the available bandwidth for mobile broadband users and also has also important consequences for coverage (as sectorisation and frequency re-usage cannot be implemented), service quality, reliability and average access speeds. These limitations have been partly addressed by decisions of the TRA in 2011 permitting reframing, but if the limitations persist they would be expected to influence the end-user perception of mobile broadband. In TRA's view, with the expected evolution of the market, in the near future a SSNIP of 5-10% would not encourage enough users of fixed broadband to migrate to mobile broadband (i.e. it would be profitable). Hence, the TRA considers that mobile broadband is not in the same market as fixed broadband. At the time of this review, Internet access over mobile networks is not an effective demand-side substitute for broadband internet access on fixed networks. Mobile phones offer considerably less functionality than a fixed broadband network. For example, there are a number of practical limitations that mean that there is certain internet content that can reasonably be considered to be inaccessible. These limitations include the screen size, screen resolution and interactivity. An appropriate characteristisation of fixed and mobile broadband at this time and into the future defined by the horizon of this study is that they are complementary, rather than substitutes.
- On the supply side a SSNIP of 5 – 10% would not encourage market entry from similar service providers in broadly defined adjacent markets during the timeframe of this review of this market. TRA notes that there are some initiatives, from new entrants, for deployment of fibre, especially in the Muscat region, but does not expect fibre deployment from new entrants to be a material alternative available to users of other forms of retail broadband Internet access during the next 2 years.

**Geographic scope of market**

Broadband services are offered on a national basis. Both Class I licensees developing broadband coverage are licensed on a national basis and terms and conditions, including pricing structures, are offered on a national basis. The market is national, notwithstanding that service is not available in all locations yet.

**Customers**

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[4]This has changed since the survey was administered.The total dial-up subscribers (both pre-paid and post-paid) declined from 23,212 in September 2010 to 12,747 in September 2011, a reduction of 45% in a single year.

Price packages have been used to address the needs of various customer segments for fixed broadband services. For example, there are price packages for schools, residential users and for businesses. The fundamental service characteristics are available to all segments and there would seem to be no point in separately identifying or considering a business market, a school market and a residential market.

**Conclusion**

The market for fixed broadband access is appropriately definedas including xDSL and Broadband Wireless broadband access services.

**Box 2.5**

**Question 1**: Do you agree with TRA's assessment that during the time of this review fixed and mobile broadband services should not be treated as sufficiently substitutable services and should not be considered to be in the same market? Please provide reasons and empirical evidence supporting your view.

**Question 2**: Do you agree with TRA's assessment about the relevant service, geographic and customer market definition for the retail fixed broadband internet access service market?

## Market 5: Retail dial-up Internet access from a fixed location

**Services**

The market definition proposed includes retail dial-up access to the Internet through PSTN or ISDN lines and includes post-paid, pre-paid and on-demand services.

It is important to determine whether the boundaries of the market should include:

- Retail access to the public telephone network at a fixed location: These services are not substitutes, they complement each other. To be able to use dial-up services, the user needs to have access to a fixed line, but the services are recognised as separate and not as substitutes.
- Retail broadband access from a fixed location: As discussed in relation to Market 4, the service characteristics for dial-up access and broadband access services are dissimilar. Dial-up services are considered an entry level service for access to the internet whilst broadband access not only enables access to more advanced content and services (e.g. video streaming and video conferencing) but is also more cost effective for intensive use of the internet. For these reasons, the TRA considers that these services do not impose significant competitive constraints on each other and therefore belong to different markets.
- On the supply side a SSNIP of 5-10% would not encourage market entry from similar service providers in broadly defined adjacent markets.

**Geographic scope of market**

Dial-up services are offered on a national basis. The only Class I provider offering this service, Omantel, is licensed on a national basis and offers its services on national terms and conditions.

**Customers**

There is no differentiation in the provision of services in this market between business and non-business customers, or on the basis of any other customer segmentation.

**Conclusion**

Market 5, taken as including only dial-up Internet access services from a fixed location, is appropriately defined.

**Box 2.6**

**Question 1**: Do you agree with TRA's assessment that, during the time period of this review, dial-up and broadband internet access services should not be treated as sufficiently substitutable services to be considered to be in the same market, and that dial-up fixed access is better considered in a separate market? Please provide reasons and empirical evidence supporting your view.

**Question 2**: Apart from the issue of broadband covered in the previous question, do you agree with TRA's assessment about the relevant service, geographic and customer market definition for the retail dial-up internet access market?

## Market 6: Retail mobile services market

**Services**

The market scope proposed is for retail services associated with access to and use of mobile services, including access, data and text applications and national voice calls.

These services are typically sold in Oman as service packages rather than as separate services. The service providers and the suppliers regard these services as 'natural' or expected bundles that are typically provided in a price-defined and service–defined package.

It is important to determine whether the boundaries of the market should include:

- Access to services at a fixed location: The characteristics of the services are different and Omani customers have indicated that they value the personal aspect of mobile access and the mobility that this service provides. As discussed in relation to Market 1, there is fixed mobile service substitution in certain segments where the customer recognises that his or her communications requirements can be satisfied by a mobile service and that a fixed service is not required as well. However, the TRA considers that a price increase for mobile services of 5-10%

could be imposed profitably by a hypothetical mobile service monopoly provider because the increase would not encourage a sufficient substitution by fixed services.This application of the Hypothetical Monopolist Test is more conjectural than usual because the customer experience of mobiles in Oman has been one of price reductions, not increases.

- Fixed national calls: The impact of fixed mobile call substitution has been addressed in discussions above relating to Market 2. It is clear that fixed and mobile calls can be substituted and that the decision to do so is made having regard to urgency, location, convenience and price. Whether a SSNIP of 5-10% applied to calls originated from mobile services would be profitable is a matter that needs to be determined based on the starting price for mobile calls. Headline or average rates are inappropriate starting points because of the large number of price packages available in the Omani market. Some packages provide free or reduced priced calls in non-peak calling periods, for example. In response to a SSNIP of the level mentioned, mobile customers would adopt a range of strategies including changes in calling levels (at least for a time), time-shifting of calls and deferral of calls until there is access to a fixed service. Further, if the SSNIP turns out to be unprofitable it may not be entirely because of substitution by fixed calls, but because of other responsive strategies. Under these circumstances, the TRA is disinclined to regard national calls from fixed services as being in the same market as mobile services at this stage of overall market development. The average mobile price premium in 2010was around 9% based on the information provided to the TRA by the Class I operators. That premium may be understated because of the price packaging of mobile calls, but in any case it appears to be modest. The separation of mobile calls and national calls from fixed locations into separate market is therefore a function of perceived amenity and usage characteristics, rather than based on price. Developments will continue to be monitored by the TRA.

- International calls: By contrast, although international calling is available from a mobile service, price packages do not typically include international calling. These calls are separately accounted for and priced. Importantly the cost of calls to overseas locations only vary by fixed or mobile source in Oman if there are extra costs for conveyance within Oman. Once calls are delivered to the international gateway the costs of further conveyance are not affected in any way by whether the call has originated on a fixed or mobile service in Oman. These matters have been discussed in more detail in relation to Market 3. Retail international calls are not part of Market 6.

- Mobile broadband access: Mobile service providers supply mobile broadband access both separately from and in conjunction with other mobile services. The market for separate access is developing rapidly in Oman and the separate nature of the market is emphasised by the separate offer of 'dongles' and other stores of mobile broadband value. The total number of mobile broadband subscribers in September 2011 was 2,407,113, and increase of 48%, over the previous 12 months. The penetration of mobile broadband rose from 56.8% to 86.8% in the same period.[5]The same facilities can be provided in conjunction with more standard forms of mobile access. The services (broadband and voice/text) can be

[5]Source: TRA

bundled, but that is not determinative of whether they form part of the same market. The mobile broadband market is developing in Oman at this stage. The TRA recognises that when mobile broadband will become a separate market from mobile access will be a matter of judgment about the dynamics of substitution between fixed and mobile broadband on the one hand, and mobile broadband and other mobile services on the other. In the TRA's view the current state of market and service development suggests that mobile broadband, as currently provided, is part of the retail mobile services market (this market) in Oman.

- Fixed broadband access: The characteristics of mobile broadband and fixed broadband services, particularly in terms of effective capacity and therefore of current and potential applications is different. This is changing, and will be further examined in the next review of this market.
- On the supply side a SSNIP of 5-10% would not encourage market entry from similar service providers in broadly defined adjacent markets. The level of investment in a national mobile platform is substantial and would not be undertaken in response to such a price movement.

**Geographic scope of market**

Mobile services are offered and expected to be offered on a national basis, with national terms and conditions, and the service providers (including the mandated resellers with Class II licences) are licensed on a national basis.

**Customers**

Generally speaking there is no differentiation in the basic terms and conditions of service for services in this market that depend on whether the customer is business or non-business. However, some price packaging and free calling arrangements have been developed that are designed to appeal to certain business customers.[6]

**Conclusion**

Market 6, taken as including all retail mobile access and national mobile call origination, is appropriately defined. At this stage separate voice and data markets need not be defined and customer segmentation does not affect market definition.

**Box 2.7**

**Question 1:** Do you agree with TRA's assessment that, within the time horizon of this review, mobile broadband access is part of the broader market of retail mobile services? If not, should mobile broadband access (or mobile data) be considered as a separate market from mobile access and voice services? Please provide reasons and empirical evidence supporting your view.

[6]An example of this is the Nawras Business Kousbak service that allows free calls between services nominated as employees within a business.

**Question 2**: Apart from the issue of mobile broadband (or mobile data) considered in the previous question, do you agree with TRA's conclusions about the relevant service, geographic and customer market definition for the retail mobile services market?

## Market 7: Retail national leased line services

### Services

The market definition that is proposed is for national retail leased lines both digital and analogue of all distance and bandwidths.

A leased line is a fixed, permanently connected communications link providing sym metric capacity between two locations and is dedicated to the customer's exclusive use. Retail leased lines are typically used by business users to connect office sites.

To confirm that this market is appropriately defined it is important to determine whether the market should include:

- International leased lines: An initial question for this market is whether market for international leased lines, which has one point (the 'A end') in Oman and the other (the 'B end') outside Oman, differs from a market for national leased lines, which has two points within Oman. TRA considers that national and international leased lines do not exercise any competitive constraints on each other either on the demand side or the supply side and are therefore two separate markets. This is analysed in more detail in Market 8.
- Leased lines of all distances and bandwidths (including both local and national): There are various bandwidths at which retail leased lines are provided in Oman, ranging from 64 Kbit/s to 155 Mbit/s. Since the capacity of a leased line is determined by the electronic equipment attached to it, and through multiplexing and aggregation of leased line capabilities, it is reasonable to assume for present purposes that there is a significant degree of substitutability between leased lines of broadly similar capacity in the leased line range. From the user's perspective, very high-capacity leased lines are potentially not substitutable with low-capacity connections. A company that wants to connect two PBX telephone exchanges at two geographically separate locations will (depending on the size of the company) often not need a circuit with higher capacity than n*64 kbit/s or 2 Mbit/s. On the other hand, a large company or public agency wishing to connect to the Internet or connect local data networks at different addresses may, for example, require a leased line of at least 34 Mbit/s. Therefore from a purely functional perspective, high capacity leased lines are not substitutes for lower capacity services. However, there is a 'chain of substitutions' between leased lines of various bandwidths which implies that different capacity services are mutually substitutable and that are all in the same market.
- On the supply side there is also a chain of substitutability between lower and higher capacity leased lines and operators.

In conclusion, TRA considers that the market for retail leased lines includes services of all bandwidths.

In relation to other retail business data services, as described in more detail in Market 9,TRA considers that a non-transitory increase of 5-10% in the price of leased lines by a hypothetical monopolist would not cause appreciable migration of users to other retail business data services and that the price increase would most likely be profitable. Therefore the TRA concludes that other business data services are outside the scope of this market.

### Geographic scope of market

Leased line services are offered on a national basis, subject to terms and conditions that apply nationally, and the service providers are licensed on a national basis.

TRA therefore takes that view that the relevant retail geographic market is national in scope at this time. However, it is conceivable that the development of alternative backbone networks and fibre deployment might change the competitive environment on a regional basis, leading to different competitive conditions from location to location or by leased line route. The TRA will monitor market developments so that it can determine if and when this happens.

### Customers

These services are targeted at business customers only. Residential and consumer segments have no use or demand for these services.

### Conclusion

Market 7 is appropriately defined as including digital and analogue retail leased line services of all bandwidth capacities and for all distances.

**Box 2.8**

**Question 1:** Do you agree that the national leased lines market should include services of all distances and bandwidths? Are there distance and bandwidth categories that ought to be considered to be in separate markets or submarkets? Please provide your reasons and relevant evidence for your views, and, if appropriate, proposals for an alternative approach to leased line markets.

**Question 2**: Apart from the issue raised in the previous question, do you agree with TRA's conclusions about the relevant services, geographic and customer market definition for the retail national leased line market?

## Market 8: Retail international leased lines

### Services

The market definition that is proposed is for international retail leased lines both digital and analogue of various distance and bandwidths

To demonstrate this is the relevant market it is important to determine whether the boundaries of the market should include:

- Retail national leased lines: From the demand side international leased lines are not substitute with national leased lines as, from an end user's perspective; the two lines are associated with different services and are not equivalent or substitutable.

  On the supply side the key question here is whether an operator of national leased lines would respond to a small but significant non-transitory price increase made by a hypothetical monopolist of international leased lines with a prompt and cost effective switch of production into international leased lines. TRA considers that this is unlikely to occur given the significant network and marketing costs needed to offer retail international leased lines. These use different network inputs and need a different customer base. Furthermore, international leased lines are often provided as part of a broader regional or global contract with different terms and conditions than for services provided at national basis.

### Geographic scope

This market is national in scope, for similar reasons as set out in relation to Market 7

### Customer

These services are targeted at business customers only. Residential and consumer segments have no use or demand for these services.

### Conclusion

Market 7 is appropriately defined as including both analogue and digital retail international leased line services.

**Box 2.9**

**Question 1**: Do you agree with TRA's assessment about the relevant service, geographic and customer market definition for the retail international leased line market?

## Market 9: Retail business data services from a fixed location

### Services

The market scope proposed is for business data services and includes managed connectivity services delivered via IP/MPLS, Ethernet, ATM and Frame Relay networks as well as Internet Leased Lines.

It is important to determine whether the market should include:

- IP/MPLS and Ethernet services: These are the main data services offered to business customers by Omantel (MPLS) and Nawras (NES – Nawras Ethernet Services). Both types of service offer similar functionality: point-to-point and point-to-multipoint connectivity, quality of service and traffic prioritisation, and are fully managed services. Where both services are available, a SSNIP of 10% in prices of one of these services would most certainly result in an appreciable number amount of users migrating to the other service, and this would likely make the SSNIP unprofitable. Therefore, the TRA considers that IP/MPLS and Ethernet services impose competitive constraints to each other and are effectively in the same market.
- Legacy data services (Frame Relay(FR) and ATM): Use of legacy data services such as Frame Relay and ATM can deliver some similar functionality as the use of IP/MPLS and Ethernet services. In particular, these services allow features such as VPN and quality of service differentiation. However, FR and ATM are based on ageing technologies and, for operational efficiency and commercial reasons, operators have an interest in migrating users from such legacy data services to IP/MPLS. If IP/MPLS prices are raised, fewer customers will decide to upgrade their connectivity services from ATM or FR to IP/MPLS and Omantel will continue to bear higher operational costs; hence the price increase would likely not be profitable. Therefore, the TRA considers that ATM and FR services impose competitive constraints on IP/MPLS services and are effectively in the same market.
- Business internet connectivity: Many of the applications used by corporate customers can be securely accessed via the internet. The CIOs of these companies face the alternative of restricting access to these applications to a virtual private network deployed using the data services discussed previously or to make them accessible via the Internet (e.g. by using Internet Leased Line services). Usually the decision will be based on the balance of costs and convenience: the cost/convenience of using managed and secure Internet leased lines v. the cost/convenience of using VPNs. Commonly corporate customers will use both connectivity solutions (managed VPNS and managed connectivity to Internet) but relative costs will determine usage and throughputs for each of them. As relative costs determine usage volumes, the TRA considers that these services impose a competitive constraint to each other and are in the same market.
- Other business data connectivity services (retail leased lines): Users of managed connectivity provided by the data services that have been included in this market can potentially migrate to other services such as un-managed leased lines. Anecdotal evidence suggests that more and more companies are migrating from un-managed services to managed services to enjoy quality of service, security and business continuity features. However, there are numerous customers who will continue to use leased lines because of legacy communication systems and geographic reach (i.e. the continuing demand for dedicated transmission service between specific locations). On balance, the TRA considers that a non-transitory increase of 10% in the price of other data services will not cause a considerable migration of users to leased lines and that the price increase would most likely be profitable. Therefore the TRA considers that retail leased lines are outside this market.

On the supply side a SSNIP of 5-10% would not encourage market entry from similar service providers in broadly defined adjacent markets. The level of investment in a national data communications platform is substantial and would not be undertaken in response to such a price movement. We note however that new entrants are considering the largest urban centres in relation to new fibre deployment plans.The potential for supply-side substitution will be affected as such plans materialise and will be further examined in future reviews of this market.

### Geographic scope

Retail business data services are offered on a national basis, and the service providers are licensed on a national basis. To reinforce this, many of the customers operate on a national basis as well and expect the same terms and conditions of service to apply nationally, and the same service solutions to be available at all of their business locations.

### Customers

These services are targeted at business customers only. The residential and consumer segments have no use or demand for these services.

### Conclusion

Market 9 is appropriately defined as managed business data services taken as including IP/MPLS, Ethernet, ATM, FR and Internet Leased Lines.

**Box 2.10**

**Question 1**: Do you agree with TRA's assessment about the relevant service, geographic and customer market definition for the retail fixed business data services market?

# 2.3 Wholesale Markets

## Market 10: Wholesale voice call origination on the public telephone network provided at a fixed location

### Services

The market that is proposed comprises wholesale voice call origination services on the public telephone network provided at fixed location.

This service is not operational at this time. It could become operational in the time horizon of this analysis

Origination services provide switching and routing functionality at the origination of the call. Unlike fixed voice call termination service (where the customer receiving the call does not control or pay for the call), with call origination, if the calling customer does not accept the price charged for call origination, he may seek to transfer his access service to another provider. Thus, at the wholesale level the originating network service provider does not have an automatic monopoly as in the call termination case.

For example, a typical call origination situation would be where a customer elects to have national long distance calls conveyed by a service provider other than the one providing the fixed access service – that is, Carrier Pre-selection Service (CPS). If in such a case the provider of the fixed access service increases the costs for call origination to the pre-selected carrier, that increase would most likely be passed on to the customer. The customer is therefore directly impacted by the originating service provider's actions at the wholesale level, and may have the option of switching to another fixed access provider.

To confirm the scope of the wholesale voice call origination it is important to consider:

- Potential alternative facilities. If the fixed operator providing the access service is a hypothetical monopolist and applies a SSNIP, it is likely that this would be profitable. There would, by definition, be no other service provider in this scenario. The customers(or other licensed service providers)would not be able to establish or switch, for example to fibre or alternative networks, quickly enough, or on a sufficient scale, to constrain the hypothetical monopolist. However, TRA also recognizes, as outlined in relation to Market 1, that the substantial Fixed Wireless Access (FWA) and various fibre (FTTX) deployments coming into operation in Oman will significantly help to increase the level of demand substitutability for fixed origination services in the industry. TRA, therefore, considers that, at the time of this report, limited alternatives exist, but this needs to be monitored and may well change before any future analysis of the market. On the supply side, the issue here is whether, if a hypothetical monopolist of fixed origination applied a SSNIP, this would be sufficient to attract other providers of end user connection to provide a service in the specific market.TRA considers that there is no supplier that would be attracted to the market in response to a SSNIP. The mobilisation of resources to enter a market with substantial fixed costs associated with infrastructure rollout would not be considered likely in response to a price increase of only 5-10%.

- Wholesale broadband services. As described in more detail in Market 13, the TRA considers that a non-transitory increase of 5-10% in the price of fixed origination voice services will not cause a considerable migration of users to wholesale broadband services and that the price increase would most likely be profitable. Therefore the TRA considers that, given the absence also of supply substitutability between wholesale origination and wholesale broadband access, the latter is outside the scope of this market.

## Geographic scope

The geographic scope for this market is national.

## Customers

The customers who are eligible to have wholesale voice origination on a fixed network are other licensed service providers.

## Conclusion

This market is appropriately defined.

**Box 2.11**

**Question 1:** Do you agree with TRA's conclusions about the relevant product, geographic and customer market definition for the wholesale fixed voice call origination market?

## Market 11: Wholesale voice call termination on fixed networks

### Services

This is the market for voice call termination services provided on a fixed network to interconnected service providers. Under a Calling Party Network Pays (CPNP) regime the wholesale service provider has a monopoly in relation to termination services. Each network is a separate market. The reason is that, if a calling customer wants to call another customer on a particular service, the only route to the called service is via the network to which that service is directly connected. The wholesale voice termination service is a conveyance service that commences at the point of interconnection and finishes at the network boundary associated with the called customer's service. This call route is entirely on the network of the terminating network operator and there is no demand-side or supply-side substitute.

### Geographic scope of the market

The service is offered on a national basis and the terms and conditions are national.

### Customers

The customers who are eligible to have wholesale voice termination on a fixed network are other Class I licensed service providers.

### Conclusion

The definition of the market is appropriate.

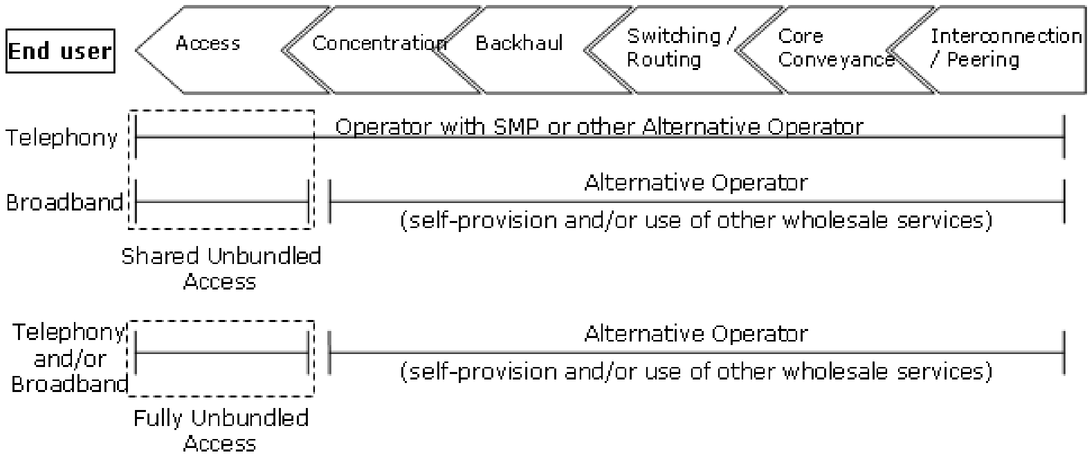
**Box 2.12**

**Question 1**: Do you agree with TRA's assessment about the relevant service, geographic and customer market definition for the wholesale fixed voice call termination market?

## Market 12: Wholesale network infrastructure access at a fixed location

For the correct identification and definition of Market 12 it is necessary first to identify the value chain observed by potential alternative operators providing telephony and/or broadband services at fixed locations to retail customers using, as inputs, the wholesale services (in particular the wholesale physical network infrastructure access service) provided by a potential incumbent operator.

Figure 2.3: Value chain - alternative provider using unbundled access




SOURCE: TRA

Market 12 focuses on the part of the value chain that is closer to the end user; that is, the physical access that provides connectivity between the end-user premises and the first point of concentration in the network. For the avoidance of doubt, TRA considers the connectivity to be that which is provided by copper pairs. It also considers the demarcation point between access and concentration as the Main Distribution Frame (MDF) to which these copper pairs are connected.

**Services**

This market comprises wholesale services for the provision of physical access to end users, also referred to as unbundled local loop. Two sub-products are identified:1 - partially unbundled local loops where access is provided to the higher frequency bands in the copper access line, enabling the alternative operator to deploy xDSL based broadband services (called 'line sharing' in many other countries); 2 – fully unbundled local loops where full access is provided to the unbundled local loop.

On the demand side in response to a SSNIP of 5-10% by a hypothetical monopolist, wholesale ULL customers would likely accept the impact of the increase themselves. The ULL costs are a relatively small portion of the total costs faced by an alternative operator seeking to provide telephony and/or broadband services to customers in a fixed location. In addition to access to the local loop, these operators also need to self-deploy or buy wholesale a number of other functions in the value chain (e.g. backhaul, switching/routing, core traffic conveyance, etc.). A SSNIP of 5-10% in the ULL charges would therefore involve a smaller impact in the overall costs faced by the alternative operator. Additionally, the alternative operator will have incurred a reasonable amount of sunk costs deploying DSLAMs or MSANs and potentially other equipment (in the case of self-deployment) and would likely compare the loss of profitability due to the SSNIP with the cost to exit the business model based on ULL. The viability of the alternative to users of partial ULL to migrate to bit stream services (Market 13) depends on an assessment of end to end costs between the two alternatives. An alternative operator would also consider the ability to differentiate that is enabled by the self-provision of DSLAM and how this could have an impact on customer acquisition and retention in relation to a broadband service provided by means of bit stream. The TRA will seek to conduct a cost assessment in the next market review, when costs associated with deployment of broadband services using each of these two services (shared ULL and bit stream) in Oman are likely to be better known. For the time being, the TRA considers that, because of sunk costs and the additional flexibility for differentiation provided by shared ULL, there would not be a sufficient potential level of demand substitution to make a SSNIP of 5-10% on shared ULL unprofitable for the hypothetical monopolist. The same conclusion is reached for full ULL in relation to other alternatives such as Carrier Pre-selection Service plus Wholesale Line Rental and Bit stream Access.

On the supply side the question is whether alternative sources of wholesale network infrastructure access exist or could potentially exist, including the self-supply of wholesale physical access infrastructure access services. In TRA's view the costs associated with providing physical network access at fixed location are high and deployment would take a considerable amount of time. A SSNIP of 5-10% would therefore be insufficient to attract new entrants or self-supply to the timely provision of an alternative to ULL.

Finally as highlighted in the case of Market 11, TRA considers that neither fixed wireless access nor fibre access networks exercise a competitive constraint on loop based wholesale access. Furthermore, it is unlikely that the extent of competitive constraint exercised by these technologies will change sufficiently to require a different conclusion for this market review. However, TRA will monitor closely the market and should circumstances change will be prepared to undertake a further analysis of this market.

### Geographic scope of the market

The service is offered on a national basis but the TRA notes that it may not be economically viable to unbundle local loops in MDFs that have a small number of PSTN lines currently connected. The TRA has looked at the distribution of lines per central exchange and concluded that approximately 85% of the PSTN lines are connected to approximately 25% of the larger MDFs in Oman. The other 75% MDF locations in Oman have fewer than 750 PSTN lines currently connected and are less likely to be economically viable for unbundling. TRA concludes that, although ULL is available at national level, it may only be economically feasible in the larger urban centres. However this is a matter for the market itself to determine, and if there is an impact on the geographic definition as the market develops that will picked up in a later market review.

### Customers

The customers who are eligible to have wholesale physical network infrastructure access are other licensed service providers.

### Conclusion

The definition of the market is appropriate

**Box 2.13**

**Question 1**: Do you agree with TRA's conclusion that line sharing (partial unbundling) and full local loop unbundling (ULL) should be considered to be in the same market? Please provide your reasons.

**Question 2:**Is ULL technically feasible in Oman? Please provide your reasons and supporting evidence.

**Question 3**: Do you agree with TRA's approach to exclude from the market definition alternative operators of alternative fibre access networks as well as fixed wireless access operators within the time frame of this review?

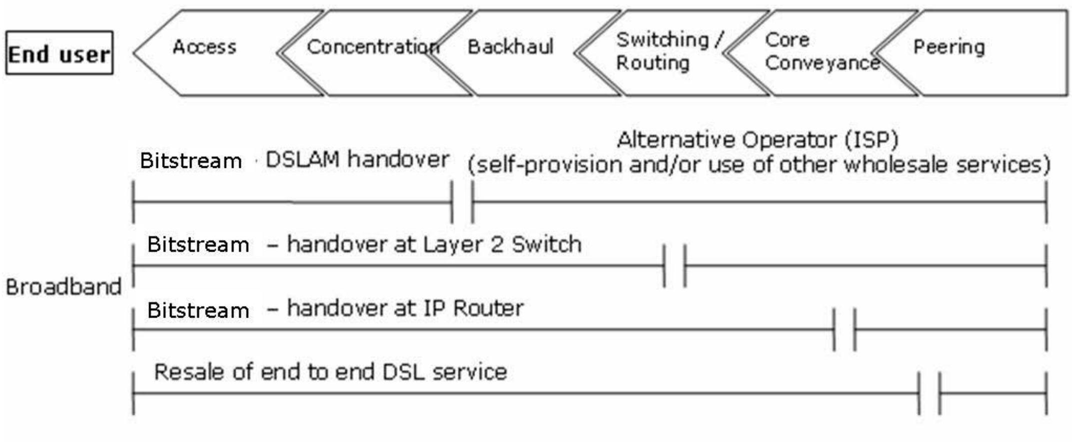
**Question 4**: Do you agree with TRA's conclusions about the relevant service, geographic and customer market definition for the wholesale fixed network infrastructure market?

## Market 13: Wholesale broadband access (bit stream)

The definition of Market 13 is assisted by examining the value chain associated with alternative operators providing broadband services at fixed location to retail customers using wholesale services as inputs (in particular the wholesale broadband access service).

Market 13 focuses on the wholesale services that enable the alternative service provider to have connectivity with broadband users (e.g. ADSL users) from a remote location. This remote connectivity can be provided at the level of concentration node (e.g. immediately after a DSLAM), at the level of a layer 2 switch (e.g. at an ATM or Ethernet switch) or at one or more points in the IP network of the player with SMP. This wholesale service can also be provided as a resale service relating to end to end DSL access.

Figure 2.4: Value chain - alternative provider using wholesale broadband access




SOURCE: TRA

**Services**

This market comprises wholesale services for the provision of broadband access to end users and conveyance of internet traffic to a point of presence for handover to an ISP. This wholesale service is commonly known as "Bit stream".

- Demand-side substitution: In response to a SSNIP of 5-10% by a hypothetical monopolist, wholesale broadband access customers would seek to pass the increase onto their own customers or would otherwise accept the impact of the increase themselves. The TRA has considered whether a retail provider of broadband services based on Wholesale Broadband Access would switch to ULL in response to a SSNIP of WBA products (bit stream). Bit stream is sometimes regarded as a stepping stone to ULL, but unbundling local loops takes a considerable amount of time and requires investment in infrastructure, potentially along with access to other wholesale services such as backhaul (see analysis in Market 12). The TRA considers that a SSNIP of 5-10% would not be sufficient to result in switching to ULL so as to make the SSNIP unprofitable.

- Supply-side substitution: A 5-10% increase in price would likely be insufficient to attract other suppliers from adjacent markets or to support a business model for self-supply, given the substantial investment required to be in this market.

**Geographic scope of the market**

The service is offered through points of interconnection on a national basis and the terms and conditions are national.

**Customers**

The customers who are eligible to have wholesale broadband access are other licensed service providers.

**Conclusion**

The definition of the market is appropriate

**Box 2.14**

**Question 1**: Do you consider that bit stream access and ULL should be included in the same wholesale market? Please provide your reasons and relevant evidence.

**Question 2:** Leaving aside the specific issue raised in the previous question, do you agree with TRA's assessment about the relevant service, geographic and customer market definition for the wholesale broadband access market?

## Market 14: Wholesale terminating segments of leased lines

**Services**

The terminating segments of leased line services comprise dedicated capacity between a customer's premises and the first switching node on which the line terminates at the service provider's premises. In practice the LTE and NTE (line and network terminating equipment) establish the end points of the service. The services may comprise any bandwidth using any transmission medium and cover any distance, although typically terminating segments in urban and semi-urban areas will be less than 10 km.

The terminating segments are used as inputs into the provision of retail telecommunications services, such as retail end-to-end leased line services, by wholesale customers. This limits the alternatives that they might consider as substitutes. The main potential substitutes are discussed below:

- Demand-side: If terminating segment leased lines were subjected to a price increase of 5-10% it is likely to be profitable for the wholesale service provider. Wholesale customers would have a number of options, including accepting the increase or switching their mode of operation to various types of Switched and/or Managed Data Services. Being retail service providers themselves, the wholesale customers would seek, in the short to medium term, to pass on all or some of the cost increase to their own retail customers. Either way, this response would assist in the profitability of the SSNIP. However, some wholesale customers might consider reorganising their businesses around alternatives such as switched data services or managed data services. For example, instead of concentrating traffic from DSLAMs in the wholesaler's exchanges via leased lines, a wholesale customer might do so using IP-VPN or ATM services. However these are likely to be supplied by the same wholesaler and therefore be at risk of a similar price increase either at the same time or in the future. In any case the retail customer will have expectations about the type of service it requires for its business, and these will determine whether something other than a dedicated 'unmanaged' transmission service is an acceptable substitute. Taking all of these factors into account, and recognising that the equation is by no means certain in some situations, the TRA concludes that a SSNIP would be profitable and therefore that the managed and switched data service options are not part of the terminating segment leased line market.

- Supply-side: For short distances a retail service provider may consider the alternative of self-supply using, for example, microwave delivery technology. Whether this is a viable and economic alternative will depend on the distance to be covered and the capacity required. It would not necessarily be economic to establish a full transmission system in order to use it for voice grade capacity (nx64 kbit/s) leased lines. It might be argued that the retail service provider could re-sell the excess capacity from self-supplied systems, subject to suitable licensing, but this may not be the market the service provider wishes to be in or consistent with its business model. In addition self-supply of terminating segments that connect to trunk segments will require physical interconnection to the network of the wholesale service provider and this will have logistical challenges including, potentially, co-location in the latter's premises. It is reasonable to assume that, where there are benefits in self-supply and no regulatory barriers, then that form of supply will already be in place. In principle, self-supply should be included as part of the market, recognising that it is not a viable alternative in all cases.

**Geographic scope of the market**

Terminating segments of leased lines are offered on the same terms and conditions nationally in Oman. This is the result of direct price regulation over a long period, and need not necessarily reflect the price outcomes and other terms that would apply if a service provider were not regulated on these matters. However for now there is a national approach to service provision and this is consistent with the (conditioned) expectations of the customers. Even though a uniform price regime applies for the whole of Oman the costs of service will vary with the regional location in which the service is provided. The terms of competition may also vary from place to place as competitive backbone fibre systems are being rolled out to major towns and cities and some intermediate places. For this reason the TRA will need to keep the geographic dimension of the definition of this market under scrutiny.

**Customers**

The customers who are eligible to demand wholesale leased line terminating segments are licensed service providers.

**Conclusion**

The definition of the market is appropriate.

**Box 2.15**

**Question 1**: Should wholesale leased line trunk and terminating segments be considered to be in the same market? Please provide your reasons and relevant evidence.

**Question 2**: Apart from the issue raised in the previous question, do you agree with TRA's conclusions about the relevant service, geographic and customer market definition for the wholesale leased line terminating segments market?

## Market 15: Wholesale trunk segments of leased lines

**Services**

The service that comprises the trunk segment leased line market is the capacity between the public switching nodes of the wholesale service provider. The capacity could be of any kind and the distances involved could vary from a few kilometres between exchanges in urban locations to hundreds of kilometres.

The trunk segments are used as inputs into the provision of retail telecommunications services by the wholesale customers. This limits the alternatives that they might consider as substitutes. The main potential substitutes are discussed below:

- Demand-side: similarly to Market 14, if terminating segment leased lines were subjected to a price increase of 5-10% it would likely be profitable for the service provider. Wholesale customers would have a number of options including accepting the increase or switching their mode of operation to various types of Switched and/or Managed Data Services. Being retail service providers themselves, the wholesale customers would seek, in the short to medium term, to pass on all or some of the cost increase to their own retail customers. Either way, this response would assist in the profitability of the SSNIP. However some wholesale customers might consider reorganising their businesses around alternatives such as switched data services or managed data services such as IP-VPN or ATM services. It is likely that, even before a SSNIP, the wholesale customer would have considered the merits of a leased line solution compared to a data services solution. In fact, leased line customers are the primary sales target audience for managed and switched data services at the retail level and, to a lesser extent, at the wholesale level. The issue is whether a 5-10% SSNIP would induce a sufficient number of the residual trunk segment leased line users to move to render the SSNIP unprofitable. On balance, the TRA thinks not. The increase is likely to be too small for a sufficient number of the wholesale customers to change their business model and delivery platform. Taking all of these factors into account, and recognising that the equation is by no means certain in some situations, the TRA concludes that a SSNIP would be profitable and that therefore the managed and switched data service options are not part of the terminating segment leased line market.

- Supply-side: For short distances a retail service provider may consider the alternative of self-supply using, for example, microwave delivery technology, as already discussed in relation to Market 14. However self-supply would be less of an option in the case of trunk segment leased lines (which can range up to hundreds of kilometres). Self-supply is a more attractive option where the distance is within a single hop radio distance (depending on line of site, this could be up to 35 km). Whether this is a viable and economic alternative will depend on both the distance to be covered and the capacity required. It would not necessarily be economic to establish a full transmission system or even a single link in order to use it for voice grade capacity (n x 64 kbit/s). It might be argued that the retail service provider could re-sell the excess capacity from self-supplied systems, subject to having an appropriate licence to do so, but this may not be the market the service provider wishes to be in. In addition self-supply of terminating segments that connect to trunk segments will require physical interconnection to the network of the wholesale service provider and this will have logistical challenges including, potentially, co-location in the latter's premises. It is reasonable to assume that where self-supply is feasible with no regulatory barriers, and where there are benefits in self-supply, and then that form of supply will be already in place. In principle, self-supply where feasible should be included as part of this market. In practice this may not be significant.

**Geographic scope of the market**

Trunk segments of leased lines are offered on the same terms and conditions nationally in Oman. This outcome does not necessarily reflect the price outcomes and other terms that would apply if a service provider had not been regulated closely. However for now there is a national approach to service provision and this is consistent with the (conditioned) expectations of the customers. Even though a uniform price regime applies for the whole of Oman the costs of service will vary with the regional location in which the service is providedand by route. The terms of competition may also vary from place to place and by route as competitive backbone fibre systems are being rolled out to major towns and cities and some intermediate places. For this reason the TRA will need to keep the geographic dimension of the definition of this market under scrutiny.

**Customers**

The customers who are eligible to have wholesale leased line terminating segments are licensed service providers.

**Conclusion**

The definition of the market is appropriate.

**Box 2.16**

**Question 1**: Should wholesale leased line trunk and terminating segments be considered to be in the same market? Please provide your reasons and relevant evidence.

**Question 2**: Apart from the issue raised in the previous question, do you agree with TRA's conclusions about the relevant service, geographic and customer market definition for the wholesale leased line trunk segments market?

## Market 16: Wholesale international capacity (Bandwidth)

**Services**

This market comprises wholesale access to bandwidth for connectivity with other networks outside Oman.

- Demand-side substitution: In response to a SSNIP of 5-10% by a hypothetical monopolist, wholesale international capacity customers would seek, so far as they could, to pass the increase onto their own retail customers. To the extent that they did that, they would be making the SSNIP profitable. The only other solution, given the hypothetical monopoly, would be to accept the impact of the increase themselves. Again, given the monopoly assumption, there are no service substitutes for international connectivity,
- Supply-side substitution: A 5-10% increase in price would likely be insufficient to attract other suppliers from adjacent markets or to support a business model for self-supply, given the substantial investment required to be in this market.

**Geographic scope of the market**

The service is offered on a national basis (through points of interconnection) and the terms and conditions are national.

**Customers**

The customers who are eligible to have wholesale international capacity are other licensed service providers.

**Conclusion**

The definition of the market is appropriate.

**Box 2.17**

**Question 1**: Do you agree with TRA's assessment about the relevant service, geographic and customer market definition for the international capacity market?

## Market 17: Wholesale voice call termination on individual mobile networks

**Services**

This market comprises the termination of voice calls from interconnected service providers on a mobile network. Each network is a separate market. If a calling customer wants to call another customer on a particular service the only route to the called service is via the network to which that service is directly connected. Therefore each network must be taken as a separate entity and, effectively, a separate call termination market. The wholesale voice termination service is a conveyance service that commences at the point of interconnection and finishes on the called customer's service. This call route is entirely on the network of the terminating network operator and there is no demand-side or supply-side substitute.

**Geographic scope of the market**

The service is offered on a national basis and the terms and conditions are national.

**Customers**

The customers who are eligible to have wholesale voice termination on a mobile network are other Class I licensed service providers.

**Conclusion**

The definition of the market is appropriate.

**Box 2.18**

**Question 1**: Do you agree with TRA's assessment about the relevant service, geographic and customer market definition for wholesale mobile termination services?

## Market 18: Wholesale access and call origination on public mobile telephone networks

**Services**

This is the wholesale market for access to airtime for voice and data applications on mobile networks in Oman. Class I licensees provide wholesale resale services for mobile access and call origination for Class II mobile resale licensees.

A SSNIP of 5-10% of a hypothetical monopolist would not trigger supply-side substitution because spectrum licenses are not readily available to new entrants and the investment required for establishing a nationwide mobile network represents a very high barrier to entry. In theory Class II operators could have the ability to switch between wholesale providers but in practice this possibility does not exist as Class II licensees have to sign long term contracts with the partner Class I licensee that are in effect exclusive. In any case there are no cases where the reseller has contracts with both Class I licensees.

### Geographic scope of the market

The service is offered on a national basis and the terms and conditions are national.

### Customers

The customers who are eligible to have wholesale access and call origination on a mobile network are Class II licensed service providers who are licensed to resell mobile services to retail customers.

### Conclusion

The definition of the market is appropriate.

**Box 2.19**

**Question 1**: Do you agree with TRA's assessment about the relevant service, geographic and customer market definition for wholesale mobile access and call origination services?

## Market 19: Wholesale national roaming services

### Services

This is the wholesale market for roaming of customers between national mobile networks. In Oman there are only two licensed mobile network operators, both Class I licensees, Omantel and Nawras, and the potential roaming service involves roaming of Omantel customer's on Nawras's network and roaming of Nawras's customers on Omantel's network. This means that each of the licensees has a roaming service capability that is a monopoly as far as the other is concerned. In practice, mobile operators only seek roaming deals at national level if their network does not have the same coverage as that of the other mobile networks currently operating in the country. In many countries, including Oman, the respective licences envisage investment in competing national networks that serve most of the population without continuing reliance on roaming agreements to deliver national service. This means that any demand for a national roaming service will be transitional, whilst networks are being built or extended, or to serve small areas where only one network has coverage and this cannot be replicated for economic or technical reasons.

If one service provider sought a roaming agreement in relation to a coverage area and this was denied or, if offered, the price were increased, the service provider would have the choice of either paying a higher price or leaving the area unserved (subject to licence obligations) or self-supply (that is, rolling out its own network to remove the need for roaming services in the first place). Potentially a SSNIP in this situation would be unprofitable, since all potential revenue from roaming would be put at risk. Therefore the TRA is of the view that self-supply in the sense described above is potentially a service within the market definition. The TRA would, however, examine the circumstances of the market and of the service providers before deciding that self-supply within a time period of say one year was a realistic option for the mobile service provider in question. A new third entrant without any service coverage but with a licence network rollout obligation and a commercial service deploymentplan might cause the extent of realistic self-supply to require reconsideration. That situation does not yet exist in Oman and the TRA sees no benefit in speculating whether, as a matter of economic policy, it should be excluding self-supply from the roaming services market in advance.

**Geographic scope of the market**

National roaming service is typically offered on a geographically defined area basis, and the areas might be required to contract as the wholesale customer's own network is planned to roll out.

**Customers**

The customers who are eligible to have wholesale voice termination on a mobile network are other Class I licensed service providers who are licensed to construct mobile networks and to provide mobile services.

**Conclusion**

The definition of the market is appropriate.

**Box 2.20**

**Question 1**: Do you agree with TRA's assessment about the relevant service, geographic and customer market definition for wholesale national roaming services?

**Question 2:** If there is no current demand for wholesale national roaming services, should the TRA define a relevant market? Please provide your reasons and any evidence in relation to the existence of demand.

## Market 20: Wholesale transit

**Services**

This is a wholesale service for the conveyance of traffic between points of interconnection ("POI") for other service providers. This market also covers self-provision of transit interconnection service.

In Oman demand for such a service would arise if one of the two Class I licensees who have been granted licences to operate their own networks could not deliver its traffic to a nominated POI for termination by the other network. In that situation the second network operator could provide a transit service from a different POI (one accessible to the first network operator) to the nominated POI. Alternatively, the first network operator might seek a leased line service, but the economic feasibility of a leased line solution would depend on the amount of interconnection traffic to be carried. In practice it is the need to deliver traffic for termination to POIs in more remote locations at the end of 'thin traffic' routes that raise the question of the availability of transit services. So a leased line solution will likely be inappropriate and place an excessive cost burden on the first network operator. It is usually more economic for the industry as a whole if the transmission capacity of the second network operator is more heavily utilised and compensated for via a transit service fee. In practice there are no substitutes that are economically viable.

**Geographic scope of the market**

The service is offered on a national basis and the terms and conditions are national.

**Customers**

The customers who are eligible to have wholesale transit service are other Class I licensed service providers.

**Conclusion**

The definition of the market is appropriate.

**Box 2.21**

**Question 1**: Do you agree with TRA's assessment about the relevant service, geographic and customer market definition for the wholesale national transit market?

**Question 2:** If there is no current demand for wholesale national transit services should the TRA define a relevant market? Please provide your reasons and any evidence in relation to the existence of demand.

# 3 Susceptibility of Relevant Markets to ex ante regulation of dominance

## 3.1 The meaning of susceptibility

The definition of each of the candidate markets considered in Chapter 2 of this Report has been assessed, and, where appropriate, revised. The final list of markets defined after the assessment and substitution-testing processes in Chapter 2 are now considered to be 'Relevant Markets' for the purposes of the analysis in this Report.

In this Chapter the Relevant Markets need to be assessed in terms of their susceptibility to ex ante regulation for dominance. This means whether, having regard to the three criteria test set out in the Market Definition and Dominance Guidelines ("the Guidelines"), each market should be assessed in detail for dominance or whether such regulatory intervention is not needed to address concerns arising from the risk of harm from dominance. 'Susceptibility' means no more than that ex ante regulatory intervention for dominance may be appropriate to the Relevant Market under consideration; it is a coarse filter that may enable some markets to not be considered further in the present analysis.

The three criteria are set out in Section 4.2 of the Guidelines, as follows:

> *"When considering whether or not to impose ex ante regulation, the TRA will apply the so-called three-criteria test. This states that a market is susceptible to ex ante regulation in cases where:*
>
> *(a) there are high and non–transitory barriers to market entry;*
>
> *(b) there is no tendency towards competition behind such barriers; and*
>
> *(c) ex post control by competition rules is insufficient to address market failures. At this scope the TRA will take into account number of conditions including*
>
> - *the degree of generalisation of non-competitive behaviour*
> - *the degree of difficulty involved in addressing non-competitive behaviour*
> - *the degree of risk that non-competitive behaviour might result in irreparable damage in related or connected markets*
> - *the need for regulatory intervention to ensure the development of effective competition in the long run*
>
> *The three criteria test is cumulative in its application. That means that if any one of the three criteria is no longer satisfied in a market, ex-ante regulation is likely to be removed in the course of a market review and that the ex post competition framework will be relied on to address anti-competitive behaviour in the market.*
>
> *In applying the three criteria test the TRA will apply the following detailed interpretations:*

- *Barriers to market entry include structural, legal or regulatory barriers (such as licensing barriers).*
- *The tendency towards competition that may or may not exist behind barriers to entry will be considered over the forecasting horizon of the review and the Report.*
- *If there is a tendency towards competition it will need to be one that is material within the forecasting horizon of the review and the Report.*"

For convenience the criteria will be referred to by their letter (a), (b) or (c) (above) and short title for the purposes of this Chapter.

## 3.2 Retail Markets

### Market 1: Retail access to the public telephone network at a fixed location

#### Criterion (a): High and non–transitory barriers to market entry

Retail fixed access service provision is subject to regulatory barriers, in that entry is subject to an individual licence. Such licences are subject to terms and conditions established by TRA.

Furthermore, certain infrastructure required to connect premises to the network is not generally economically replicable, so there is a significant first-in advantage in favour of the incumbent due, amongst other factors, to the presence of economies of scale, scope and density that the access network provider enjoys under monopoly or quasi-monopoly conditions. In particular, it is not generally economic to replicate easements, ducting systems and conduit. However, the market also includes fixed wireless access provision of such services, and existing operators are using wireless technologies to establish themselves in the market.

These barriers to entry are continuing. They have been in place for a long time and will remain effective for the forward horizon of this report.

#### Criterion (b): No tendency towards competition behind such barriers

The access component of the local network has bottleneck characteristics, in that it is not economically feasible to duplicate it, and these characteristics are unlikely to change over time. New wireless and broadband technologies are enabling alternative service providers to address demand for fixed access service on a commercially sustainable basis. However the process of providing a range of competitive alternatives and to gain significant market share takes time and may not match the service characteristics associated with PSTN services. In Oman, the processes of market assessment and service mobilisation are now under way and it will take considerably more time for the nascent competitive forces to be sufficient to protect the interests of customers.Therefore there is no tendency towards effective competition in the time period of this review.

**Criterion (c): ex post control by competition rules is insufficient to address market failures**

Ex-post competition controls are unlikely to adequately address concerns related to dominance in this market. Most residential and business customers who rely on this service have no alternative means of communication short of moving to mobile services. They therefore have no practical choice under the same or similar terms and conditions, and, in the absence of *ex ante* regulation would potentially be exposed to reduced quality of service or increased prices. In this case it is important that any exercise of dominant market power be prevented at source rather than addressed after the event.

**Conclusion**

This market has high entry barriers, is not now and will not within the time horizon of this report be subject to competitive market forces sufficient to protect the interests of customers, and is one where *ex-post* controls and *ex-ante* regulation in other markets are unlikely to address the potential harm from dominance.

This market is susceptible to ex ante regulation for dominance.

**Box: 3.1**

**Question 1:** Do you agree with TRA's assessment set out above that in this market the three criteria are cumulatively satisfied and the market for retail access to the public telephone network from a fixed location is susceptible to ex ante regulation? Please state your reasons and provide relevant supporting evidence.

## Market 2: Retail local, national voice call service

**Criterion (a): High and non–transitory barriers to market entry**

In a market of the size of Oman with limited growth potential due to small population size there are structural barriers arising from the level of demand and the resulting cost structure, which create asymmetric conditions between the incumbent and the new entrant and further inhibit entry into this market, that is characterised by only two licensed fixed service providers one of whom has only recentlylaunched its portfolio of fixed line services. The licensing regime also constitutes a further non-transitory barrier to entry.

These barriers to entry are non-transitory and are unlikely to be reduced in the short to medium term.

**Criterion (b): No tendency towards competition behind such barriers**

There are no characteristics of this market as currently defined that would lead to the conclusion that, in the short to medium term, there is likely to be competition in this market of a sufficient level to protect the interests of consumers. The development of broadband services, with convergent applications including voice-mode services, will inevitably impact on the way in which customers use and manage voice calls.

However, TRA does not expect those developments to be significant within the time horizon of this review.

**Criterion (c): ex post control by competition rules is insufficient to address market failures**

In practice, there is very little competition currently in this market and there is potentially a high risk of harm to consumers via arbitrary price increases and/or service quality reduction. *Ex-post* competition controls alone are unlikely to address concerns related to dominance in this market. New entrants have only recently been licensed and their ability to successfully achieve some early traction in the market cannot be anticipated. The fragility of competition is a key reason why controls other than *ex-post* measures need to be applied in this market. The experience in other developed countries suggests that *ex-ante* remedies may be appropriate for a number of years after the introduction of network services competition in this market to ensure that the competition is taking hold.

**Conclusion**

This market is susceptible to ex ante regulation for dominance.

**Box: 3.2**

**Question 1:** Do you agree with TRA's assessment set out above that in this market the three criteria are cumulatively satisfied and the market for retail national voice call services is susceptible to ex ante regulation? Please state your reasons and provide relevant supporting evidence.

## Market 3: Retail international voice call service

**Criterion (a): High and non–transitory barriers to market entry**

International fixed and mobile voice call service provision is subject to licensed entry. At present there are three operators licensed to provide international gateway facilities. Only two of the licensed operators have commissioned their gateway facilities and operating them to provide services. In addition to obtaining a licence, new entrants will need to establish a gateway facility or else operate as a retailer of the service that current operators may offer at wholesale level. The first involves significant resource and effort, and the second is also challenging, given the uncertainty at present whether and on what terms current licensees need to provide a wholesale service. In relation to potential entrants, that is, operators other than those already licensed the barriers, considered in total, are high and non-transitory.

**Criterion (b): No tendency towards competition behind such barriers**

This criterion is concerned with whether there is a tendency towards longer term effective, or sustainable, competition amongst the operators who are licensed and who are operating behind the entry barriers. There has been a once-only shift of traffic away from Omantel to Nawras when Nawras' international gateway facility went into operation during 2011. The traffic that has moved originated on Nawras' network, and was effectively Nawras's own traffic or that of its affiliated resellers. We are concerned here with on-going competition and continuing rivalry between the gateway operators for other traffic and for incoming traffic. At this stage there is no clear indication that competition will be of that kind.

**Criterion (c): ex post control by competition rules is insufficient to address market failures**

*Ex post* controls provide the TRA with means to address anti-competitive conduct, if and when it occurs, in this market. It is an untested matter whether these controls will be sufficient to address market failures in the international voice service market in a timely manner.

**Conclusion**

This market is susceptible to ex ante regulation for dominance.

**Box: 3.3**

**Question 1:** Do you agree with TRA's assessment set out above that in this market the three criteria are cumulatively satisfied and the market for retail fixed and mobile international voice call services is susceptible to ex ante regulation? Please state your reasons and provide relevant supporting evidence.

## Market 4: Retail broadband Internet access from a fixed location

**Criterion (a): High and non–transitory barriers to market entry**

This market has high and non-transitory barriers to entry in the form of both regulatory and economic barriers. The regulatory barriers take the form of Class I licence requirements which have so far been granted to only two operators. The economic barriers take the form of substantial capital requirements to establish a national broadband network and related support systems.

**Criterion (b): No tendency towards competition behind such barriers**

Haya Water is now building out a regional access fibre network which will in time have the capacity to provide competition to Nawras and Omantel in this market. However the development of that competitive facility is on-going and the TRA is not prepared to anticipate the competitive situation at the time when it is completed. Therefore the TRA is not prepared to conclude that there will be a position of sustainable competition in the time horizon of this report. In any case, such competition appears to be of a regional nature and not national, and, if and when it becomes established, is likely to stay regional for some time.

### Criterion (c): ex post control by competition rules is insufficient to address market failures

The risk of harm to competition in this market could result from a refusal to provide retail broadband access at fair and reasonable prices if Class I licensees act conjointly. If that occurs the TRA believes that ex post controls may be insufficient in terms of effectiveness or timeliness to prevent long term and substantial damage to competition in the relevant retail market.

### Conclusion

This market is susceptible to ex ante regulation for dominance.

**Box: 3.4**

**Question 1:** Do you agree with TRA's assessment set out above that in this marketthe three criteria are cumulatively satisfied and the market for retail broadband access services from a fixed location is susceptible to ex ante regulation? Please state your reasons and provide relevant supporting evidence.

## Market 5: Retail dial-up Internet access from a fixed location

### Criterion (a): High and non–transitory barriers to market entry

This market has low barriers to entry. Operationally, an ISP willing to provide dial-up services can readily obtain a Class II ISP licence and to replicate Omantel dial-up services through use of 0800 numbers (or any other reverse charging short dialling code) and Internet peering services. There are potential economic barriers as the ISP may not be able to obtain sufficient margins to justify a business case for competition with Omantel. This, however, is a matter for regulation of wholesale services and for ex-post control if it amounts to anti-competitive behaviour.

### Criterion (b): No tendency towards competition behind such barriers

To date competition in dial-up services has not developed in Oman. Given the use of mobile data services for internet access it is unlikely that there will be any incentive for new entrants to enter the dial-up market. In addition the rapid decline in the numbers of dial-up internet subscribers suggests that more recently available alternative services, especially mobile broadband access services and WiMAX based fixed internet access services constitute an effective constraint on what can be done by a dial-up service provider. TRA considers that going forward, with clear ex-post controls and regulation at wholesale level, there will be adequate protection of the consumer interest in any competition that does develop in the provision of dial-up services.

**Criterion (c): ex post control by competition rules is insufficient to address market failures**

Ex post controls provide the TRA with means to address issues such as excessive pricing, predatory pricing and refusal to supply. The TRA considers that these controls, combined with regulation at wholesale level, are sufficient to address market failures in the retail Dial-up market.

**Conclusion**
This market is not susceptible to ex ante regulation for dominance.

**Box: 3.5**

**Question 1:** Do you agree with TRA's assessment set out above that in this market the three criteria are not cumulatively satisfied and the market for retail dial up internet services is not susceptible to ex ante regulation? Please state your reasons and provide relevant supporting evidence.

## Market 6: Retail mobile services market

**Criterion (a): High and non–transitory barriers to market entry**

This market has high and non-transitory barriers to entry in the form of regulatory and economic barriers. The regulatory barriers take the form of Class I licence requirements which have so far been granted to only two operators. There are licensing barriers also in relation to the entry of mobile resellers into the market. The economic barriers take the form of substantial capital requirements to establish a national mobile network platform and related support systems, and to establish appropriate reseller operations.

**Criterion (b): No tendency towards competition behind such barriers**

There is a tendency towards competition behind such barriers, but it is a tendency that is propelled by only two network competitors with some limited assistance from mandated resellers (Class II licensees). The competition is of recent duration and is unlikely to become sustainable within the time horizon of this Report. (Note that detailed considerations by the TRA about whether there is effective competition in this market or some form of dominance appears later in Chapter 4 of this report.)

**Criterion (c): Ex post control by competition rules is insufficient to address market failures**

The risk of harm to competition in this market could result from the actions of either of the Class I licensees acting alone to seriously damage their own mandated resellers or the other Class I licensee, or if they act conjointly to defer competitive outcomes and the consumer welfare benefits that would then result. In any of these situations the TRA believes that ex post controls would be insufficient in terms of effectiveness or timeliness to prevent long term and substantial damage to competition in the market. It is relevant that the ex post controls that exist are largely untried and untested and reliance on their sufficiency may be misplaced or premature.

**Conclusion**

This market is susceptible to ex ante regulation for dominance.

| |
|---|
| **Box: 3.6**<br>**Question 1:** Do you agree with TRA's assessment set out above that in this market the three criteria are cumulatively satisfied and the market for retail mobile services is susceptible to ex ante regulation? Please state your reasons and provide relevant supporting evidence. |

## Market 7: Retail national leased line services

**Criterion (a): High and non–transitory barriers to market entry**

The underlying technology used to supply retail low bandwidth leased lines requires substantial investment in fixed network infrastructure in situations where the first mover advantage is significant. This is because replication of infrastructure is generally uneconomic.

This market therefore has high barriers to entry and they will remain high for the time horizon of this review.

**Criterion (b): No tendency towards competition behind such barriers**

Real advantages resulting from economies of scale and scope accrue to Omantel in supplying retail low bandwidth leased lines. Omantel's backbone network infrastructure was significantly greater than that of its competitors, in terms of coverage and reach, until 2011. During 2010 and 2011 Nawras has laid over 5,200 km of broadband optic fibre cable and now has a capacity and coverage that compares with Omantel's. However the point remains – entry barriers are high – and the tendency towards competition behind these barriers is limited to Omantel and Nawras.

There are no characteristics of this market that would lead to the conclusion that in the short to medium term there is likely to be competition of a sufficient level to protect the interests of consumers. TRA does not expect the development of robust competition to be significant within the time horizon of this review. It expects that competition levels may increase as a result of Nawras' build-out of broadband cable, but that this could take time and will remain limited for the duration of the period covered by this review.

**Criterion (c): ex post control by competition rules is insufficient to address market failures**

There are some upstream wholesale markets – such as the market for wholesale termination segments and wholesale trunk segments (Market 14 and 15) – in which*ex-ante* regulation will assist in a reduction ofthe risk of potential harm from dominance in the market under consideration. However, this market will remain uncompetitive until upstream wholesale remedies have had the time to take effect. TRA considers that *ex-post* remedies alone in relation to the market under consideration will not be sufficient to address concerns related to market dominance at this stage of market development

**Conclusion**

This market is susceptible to ex ante regulation for dominance.

**Box 3.7**

**Question 1:** Do you agree with TRA's assessment set out above that in this market the three criteria are cumulatively satisfied and the market for retail national leased lines services is susceptible to ex ante regulation? Please state your reasons and provide relevant supporting evidence.

## Market 8: Retail international leased lines

**Criterion (a): High and non–transitory barriers to market entry**

This market has high and non-transitory barriers to entry in the form of regulatory and economic barriers. The regulatory barriers take the form of Class I licence requirements which have so far been granted to three operators, Omantel, Nawras and Samatel. The economic barriers take the form of substantial capital requirements to establish a network platform and the related commercial arrangements to enable access to international bandwidth and overseas correspondent carriers.

**Criterion (b): No tendency towards competition behind such barriers**

This criterion is concerned with whether or not there is a tendency towards effective and sustainable competition in the market amongst the existing service providers. Nawras established its international gateway facility and it became operational in 2011. Nawras has the capacity to enter this market and has done so to the extent of providing full circuit leased lines to an international bank. Nawras has now received TRA approval for the terms of a standard offer in this area. It is still too early to determine whether Nawras intends to be a significant participant in this market.

**Criterion (c): ex post control by competition rules is insufficient to address market failures**

TRA considers that *ex-post* remedies alone in relation to this market will not be sufficient to address concerns related to market dominance at the current stage of market development. This is an on-balance judgment because it depends on the type of anti-competitive behaviour that might be anticipated in this market. If there are no ex ante regulatory requirements, such as the registration of tariffs or major contracts, then there must be concern about the manner in which anti-competitive behaviour would be made known, even to the extent of being subject to a competitor complaint. The market is for services that are only sought by corporate and government customers, many of whom would be inclined to treat such purchases as commercially confidential. This factor may well obscure the behaviour in question and make ex post regulation difficult to apply.

**Conclusion**

This market is susceptible to ex ante regulation for dominance.

**Box 3.8**

**Question1:** Do you agree with TRA's assessment set out above that in this market the three criteria are cumulatively satisfied and the market for retail international leased lines services is susceptible to ex ante regulation? Please state your reasons and provide relevant supporting evidence.

## Market 9: Retail business data services provided from a fixed location

**Criterion (a): High and non–transitory barriers to market entry**

The barriers to entry to the market for retail business data services are related to access to and pricing of essential inputs: trunk and terminating segments of leased lines. At the moment these barriers are high, which is why there are no alternative providers of Retail business data services in Oman apart from Omantel and Nawras, but TRA considers that these barriers are transitory.

**Criterion (b): No tendency towards competition behind such barriers**

There is some competition in the market for retail business data services between Omantel and Nawras. With the enlargement of Nawras' backbone fibre network, there is a tendency for competition between Nawras and Omantel to broaden, and for Omantel's services to be seen as more contestable in the market. TRA considers that going forward, with clear ex-post controls and regulation at wholesale level, there will be a trend for competition to develop in retail business data services. It has already been noted that some of the services that are part of this market are obsolescent, or in danger of being displaced by IP based services. That aspect will also act as an increasing competitive constraint and will do so more over time.

**Criterion (c): ex post control by competition rules is insufficient to address market failures**

Ex post controls provide the TRA with means to address issues such as excessive pricing, predatory pricing and refusal to supply. The TRA considers that these controls, combined with regulation at wholesale level, are sufficient to address market failures in this market.

**Conclusion**

This market is not susceptible to ex ante regulation for dominance.

**Box 3.9**

**Question 1:** Do you agree with TRA's assessment set out above that in this market the three criteria are not cumulatively satisfied and the market for retail business data services is not susceptible to ex ante regulation? Please state your reasons and provide relevant supporting evidence.

## 3.3 Wholesale Markets

### Market 10: Wholesale voice call origination on the public telephone network provided at a fixed location

**Criterion (a): High and non–transitory barriers to market entry**

Wholesale access infrastructure required to connect premises to the network is not generally economically replicable, so there is a significant first-in advantage in favour of the incumbent. These barriers to entry are non-transitory. They have been in place for a long time and are unlikely to be reduced in the short to medium term.

**Criterion (b): No tendency towards competition behind such barriers**

The access component of the local network has bottleneck characteristics, in that it is not economically feasible to duplicate it, and these characteristics are unlikely to change over time.

**Criterion (c): ex post control by competition rules is insufficient to address market failures**

In these markets the issues that arise relate to the price and other conditions of access to the origination service. These issues can be readily anticipated and are generally addressed through *ex-ante* remedies. *Ex-post* remedies alone are insufficient to address issues or to prevent them from recurring. In the absence of *ex-ante* remedies service providers could have serious commercial consequences for new entrant service providers who seek to attract information services to their networks or to provide alternative long distance or other services to an established service provider's customer base.

**Conclusion**

This market is susceptible to ex ante regulation for dominance.

**Box 3.10**

**Question 1:** Do you agree with TRA's assessment set out above that in this market the three criteria are cumulatively satisfied and the market for wholesale origination fixed voice services is susceptible to ex ante regulation? Please state your reasons and provide relevant supporting evidence.

## Market 11: Wholesale voice call termination on individual public telephone networks provided at a fixed location

**Criterion (a): High and non–transitory barriers to market entry**

Entry barriers to the market are high and non-transitory. No competitive service providers can provide this service.

**Criterion (b): No tendency towards competition behind such barriers**

The market will always have a single service provider. Therefore there is no trend towards competition in this market.

**Criterion (c): ex post control by competition rules is insufficient to address market failures**

In these markets the issues that arise relate to the price and other conditions of access to the termination service. These issues can be readily anticipated and are generally addressed through *ex-ante* remedies. *Ex-post* remedies alone are insufficient to address issues or to prevent them from recurring. The absence of *ex-ante* remedies service providers could have serious commercial consequences for new entrants and effectively delay or prevent their entry and continued operation in the market.

**Conclusion**

This market is susceptible to ex ante regulation for dominance.

**Box 3.11**

**Question 1:** Do you agree with TRA's assessment set out above that in this market the three criteria are cumulatively satisfied and the market for wholesale fixed voice call termination is susceptible to ex ante regulation? Please state your reasons and provide relevant supporting evidence.

## Market 12: Wholesale network infrastructure access at a fixed location

**Criterion (a): High and non–transitory barriers to market entry**

There are high and non-transitory barrier to entry into the wholesale network infrastructure access market. Market participants must be granted a Class I licence allowing them to operate and provide services from a fixed network. To date only two such licences have been granted – to Omantel and to Nawras.

**Criterion (b): No tendency towards competition behind such barriers**

No other operator is able to replicate the copper access network at a national level. The TRA notes that there are some regional implementations of fibre access networks which may potentially, in the future, provide wholesale services similar to ULL (e.g. unbundled fibres or unbundled wavelength). The TRA does not consider that any of these fibre access network implementations will be able to provide a sustainable competition in the time horizon of this report.

#### Criterion (c): ex post control by competition rules is insufficient to address market failures

The risk of harm to competition in this market could result from a refusal to provide unbundled access at fair and reasonable prices to enable retail competition by wholesale customers. If that occurs the TRA believes that ex post controls may be insufficient in terms of effectiveness or timeliness to prevent long term and substantial damage to competition in the relevant retail market. It is relevant that the ex post controls that exist are largely untried and untested and reliance on their sufficiency may be misplaced or premature.

#### Conclusion

This market is susceptible to ex-ante regulation for dominance.

**Box 3.12**

**Question 1:** Do you agree with TRA's assessment set out above that in this market the three criteria are cumulatively satisfied and the market for wholesale fixed network infrastructure services is susceptible to ex ante regulation? Please state your reasons and provide relevant supporting evidence.

## Market 13: Wholesale broadband access (including bit-stream)

#### Criterion (a): High and non–transitory barriers to market entry

This market includes wholesale inputs into retail broadband services, examples of which are bit stream and wholesale line rental (WLR). The market also includes other forms of subscriber line access. In addition the market also includes complete services that are made available at on a wholesale basis for resale in the relevant retail market. The market therefore includes x DSL services and wireless based services using technologies such as WiMAX.

Market participants must be granted a Class I licence allowing them to operate and provide services from a fixed network. To date only two such licences have been granted – to Omantel and to Nawras. The potential demand levels of the market are constrained by population and affordability, and the existing licensees are well entrenched. There are high and non-transitory barriers to entry into the wholesale broadband access market.

#### Criterion (b): No tendency towards competition behind such barriers

NAWRAS is now building out a national backbone fibre network which, combined with WiMAX or fibre access to the premises, provides Nawras with the capacity to compete with the incumbent network operator in this market. However it is not at all clear that the oligopolistic market that will result will be characterised by effective competition or some lesser degree of competitive rivalry. If the market were not subject to any regulation both outcomes are equally plausible.

**Criterion (c): ex post control by competition rules is insufficient to address market failures**

The risk of harm to competition in this market could result from a refusal to provide bitstream access, line rental or complete services at fair and reasonable prices to enable retail competition by wholesale customers (ISPs). If that occurs the TRA believes that ex post controls may be insufficient in terms of effectiveness or timeliness to prevent long term and substantial damage to competition in the relevant retail market. It is relevant that the ex post controls that exist are largely untried and untested and reliance on their sufficiency may be misplaced or premature.

**Conclusion**

This market is susceptible to ex ante regulation for dominance.

**Box 3.13**

**Question 1:** Do you agree with TRA's assessment set out above that in this market the three criteria are cumulatively satisfied and the market for wholesale broadband access services is susceptible to ex ante regulation? Please state your reasons and provide relevant supporting evidence.

## Market 14: Wholesale terminating segments of leased lines

**Criterion (a): High and non–transitory barriers to market entry**

There are high and non-transitory barriers to entry into the wholesale market for terminating segments of leased lines. Market participants must be granted a Class I licence allowing them to operate and provide services from a fixed network. To date only two such licences have been granted – to Omantel and to Nawras. The second barrier is the significant capital investment required to establish a fixed network capable of providing these services on a national basis. Self-supply is included in this market but the costs of establishing and operating transmission systems may well be significant and, relative to the valuation of the need, may be uneconomic.

**Criterion (b): No tendency towards competition behind such barriers**

NAWRAS is now building out a national backbone fibre network which will in time have the capacity to provide competition to the incumbent network operator in this market. As at the end of 2011 Nawras had laid around 5,200 km of cable. However the development of that competitive facility is on-going and the TRA is not prepared to anticipate that the availability of alternative facilities will translate into effective competition at the wholesale level during the time horizon of this study. In other words there is no evidence that third operators will be able to rely on competition at the wholesale market level between Omantel and Nawras in the provision of the wholesale terminating segments of leased lines that those third operators need as inputs for their retail service offerings Therefore the TRA is unable to conclude that there will be a position of sustainable competition in the time horizon of this report.

**Criterion (c): ex post control by competition rules is insufficient to address market failures**

The risk of harm to competition in this market could result from a refusal to provide terminating segments of leased lines at fair and reasonable prices to enable retail competition by wholesale customers. If that occurs the TRA believes that ex post controls may be insufficient in terms of effectiveness or timeliness to prevent long term and substantial damage to competition in the relevant retail market. It is relevant that the ex post controls that exist are largely untried and untested and reliance on their sufficiency may be misplaced or premature.

**Conclusion**

This market is susceptible to ex ante regulation for dominance.

**Box 3.14**

**Question 1:** Do you agree with TRA's assessment set out above that in this marketthe three criteria are cumulatively satisfied and the market for wholesale terminating segments of leased line services is susceptible to ex ante regulation?Please state your reasons and provide relevant supporting evidence.

## Market 15: Wholesale trunk segments of leased lines

**Criterion (a): High and non–transitory barriers to market entry**

There are high and non-transitory barriers to entry into the wholesale market for trunk segments of leased lines. Market participants must be granted a Class I licence allowing them to operate and provide services from a fixed network. To date only two such licences have been granted – to Omantel and to Nawras. The second barrier is the significant capital investment required to establish a fixed network capable of providing these services on a national basis. Self-supply is included in this market but the costs of establishing and operating transmission systems may well be significant and, relative to the valuation of the need, may be uneconomic. Self-supply is likely to be relatively even more capital intensive for trunk segments than for the terminating segments discussed in Market 14, above.

**Criterion (b): No tendency towards competition behind such barriers**

NAWRAS is now building out a national backbone fibre network which will in time have the capacity to provide competition to the incumbent network operator in this market. As at the end of 2011 Nawras had laid around 5,200 km of cable. However the development of that competitive facility is on-going and the TRA is not prepared to anticipate that the availability of alternative facilities will translate into effective competition at the wholesale level during the time horizon of this study. In other words there is no evidence that third operators will be able to rely on competition at the wholesale market level between Omantel and Nawras in the provision of the wholesale trunk segments of leased lines that those third operators need as inputs for their retail service offerings Therefore the TRA is unable to conclude that there will be a position of sustainable competition in the time horizon of this report.

**Criterion (c): ex post control by competition rules is insufficient to address market failures**

The risk of harm to competition in this market could result from a refusal to provide trunk segments of leased lines on fair and reasonable terms to enable retail competition by wholesale customers. If that occurs the TRA believes that ex post controls may be insufficient in terms of effectiveness or timeliness to prevent long term and substantial damage to competition in the relevant retail market. It is relevant that the ex post controls that exist are largely untried and untested and reliance on their sufficiency may be misplaced or premature.

**Conclusion**

This market is susceptible to ex ante regulation for dominance.

**Box 3.15**

**Question 1:** Do you agree with TRA's assessment set out above that in this market the three criteria are cumulatively satisfied and the market for wholesale trunk segments of leased line services is susceptible to ex ante regulation? Please state your reasons and provide relevant supporting evidence.

## Market 16: Wholesale international capacity (Bandwidth)

**Criterion (a): High and non–transitory barriers to market entry**

There are high and non-transitory barriers to entry into the wholesale market for international capacity. Market participants must be granted a Class I licence allowing them to operate and provide services from a fixed network. To date three such licences have been granted – to Omantel, Nawras and Samatel. The second barrier is the significant capital investment required to develop the infrastructure required to provide such services (e.g. landing stations for submarine cables, earth stations for satellite connections, etc.).

**Criterion (b): No tendency towards competition behind such barriers**

In November 2011 Nawras launched its international cable service to Mumbai as a participant in Tata II Cable. The development of alternative services on the back of competitive facilities is on-going and it would be reasonable to anticipate that the market for international wholesale capacity will be significantly more competitive within the time horizon of this study than prior to Nawras' recent initiatives. However, although there is a discernible move towards competition between Omantel and Nawras with inevitable adjustment of overall market share between the two operators, it is not at all clear whether this competition is going to be effective in the time horizon of this study or will be less than that, reflecting the oligopolistic structure of the market.

**Criterion (c): ex post control by competition rules is insufficient to address market failures**

The risk of harm from dominance is that either international capacity will be denied or will not be provided on fair and reasonable terms. The damage that could be caused to competition would be immediate and severe if new entrants or other operators in relevant retail markets are unable to have direct access to international capacity, with severe disadvantage to the interests of their customers and to the interests of consumers generally. The risk of this harm can be readily foreseen and may not be capable of control or limitation by ex post action after the event. As already noted, the ex post controls are untried and untested and may be insufficient in any case, even assuming timely response and application.

**Conclusion**

This market is susceptible to ex ante regulation for dominance.

**Box 3.16**

**Question 1:** Do you agree with TRA's assessment set out above that in this market the three criteria are cumulatively satisfied and the market for wholesale international capacity services is susceptible to ex ante regulation?Please state your reasons and provide relevant supporting evidence.

## Market 17: Wholesale voice call termination on individual mobile networks

**Criterion (a): High and non–transitory barriers to market entry**

By definition, the network operator, whose network defines each separate market, has a 100% market share. There can be no competitive entry.

**Criterion (b): No tendency towards competition behind such barriers**

There can be no competition in this market by definition.

**Criterion (c): ex post control by competition rules is insufficient to address market failures**

The risk of harm from dominance is that either interconnection service will be denied or will not be provided on fair and reasonable terms. The damage that could be caused to competition would be immediate and severe if new entrants or other operators are unable to interconnect calls, with severe disadvantage to the interests of consumers. The risk of this harm can be readily foreseen and may not be capable of control or limitation after the event. As already noted, the ex post controls are untried and untested and may be insufficient in any case, even assuming timely response and application.

**Conclusion**

This market is susceptible to ex ante regulation for dominance.

**Box 3.17**

**Question 1:** Do you agree with TRA's assessment set out above that in this market the three criteria are cumulatively satisfied and the market for wholesale mobile termination services is susceptible to ex ante regulation? Please state your reasons and provide relevant supporting evidence.

## Market 18: Wholesale access and call origination on public mobile telephone networks

**Criterion (a): High and non–transitory barriers to market entry**

There are high and non-transitory barriers to entry into the wholesale market for access and call origination on public mobile telephone networks. Market participants must be granted a Class I licence and spectrum allowing them to operate and provide services from a mobile network. To date only two such licences have been granted – to Oman Mobile and to Nawras. The second barrier is the significant capital investment required to establish a mobile network capable of providing these services on a national basis. This is further exacerbated by the limited availability of spectrum and the large economies of scale enjoyed by the leading operators.

**Criterion (b): No tendency towards competition behind such barriers**

The offer of wholesale access and call origination for mobile resellers is a relatively recent development in Oman.As noted in the market definition, mobile resellers are restricted to move to a different host network due to the length of the contract and the need to develop a partnership with the host. The weakness of the mobile resellers in this related retail market is a very important consideration when assessing whether there is or will be a tendency towards competition between wholesale service providers. If the mobile resellers were strong competitors in their own markets they could, individually or as a group, leverage that position by providing countervailing pressure on the existing wholesale service providers. However, the indications available suggest that this is not the case. The TRA is not prepared to conclude that there will be a position of sustainable competition in this market in the time horizon of this report.

**Criterion (c): ex post control by competition rules is insufficient to address market failures**

The risk of harm from dominance is that access and call origination services will be denied to retail service providers or will not be provided on fair and reasonable terms. The damage that could be caused to competition would be immediate and severe if new entrants or other operators are unable to provide MVNO / mobile resale services, with severe disadvantage to the interests of consumers. The risk of this harm can be readily foreseen and may not be capable of control or limitation after the event. As already noted, the ex post controls are untried and untested and may be insufficient in any case, even assuming timely response and application.

**Conclusion**

This market is susceptible to ex ante regulation for dominance.

**Box 3.18**

**Question 1:** Do you agree with TRA's assessment set out above that in this market the three criteria are cumulatively satisfied and the market for wholesale mobile access and origination services is susceptible to ex ante regulation? Please state your reasons and provide relevant supporting evidence.

## Market 19: Wholesale national roaming services

**Criterion (a): High and non–transitory barriers to market entry**

There are high and non-transitory barriers to entry into the market for wholesale national roaming services. Service providers have to be licensed operators and also have to have the capacity and the substantial capital to invest in a mobile network with national or near-national coverage.

**Criterion (b): No tendency towards competition behind such barriers**

There are two licensed operators with the relevant capacity at present. Each is a potential supplier of roaming services to the other, if each has coverage in areas that the other does not cover. This makes each a monopoly supplier to the other. There is no evidence of competition developing in the markets for such services in the time horizon of this Report. However, there is no evidence of any demand for such services either.

**Criterion (c): ex post control by competition rules is insufficient to address market failures**

The risk of harm from dominance is that either interconnection service will be denied or will not be provided on fair and reasonable terms. The damage that could be caused to competition could potentially be serious if new entrants or other operators are unable to provide competitive service beyond their immediate (and initially limited) coverage areas, with severe disadvantage to the interests of consumers in areas covered by only a single mobile operator. In this case the risk of harm is limited and it would be appropriate to see if commercial negotiation might not produce a suitable solution. In any case the matter would seem to be capable of control through ex post regulation of the anti-competitive behaviour in refusing supply. As already noted, the ex post controls are untried and untested but application in the situation envisaged would not seem to be a particularly difficult or challenging matter.

**Conclusion**

The application of the three criteria test indicates that this market is not susceptible to ex ante regulation for dominance. Specifically, the TRA considers that if demand for national roaming services arises and if the demand is not met through the appropriate response of wholesale operators (under present circumstances by the other mobile operator) then the nature of the issues would need to be examined in the context of the market at that time. There may well be sufficient controls in place to address such a circumstance ex post. In addition, the licences that both operators have are for national roll out of service. The TRA may decide not to act in response to a request for national roaming under these circumstances. This further confirms that in these circumstances the use of ex ante regulation to address issues that have not arisen in any specific form is inappropriate.

**Box 3.19**

**Question 1:** Do you agree with TRA's assessment set out above that in this market the three criteria are not cumulatively satisfied and the market for wholesale national roaming is not susceptible to ex ante regulation? Please state your reasons and provide relevant supporting evidence.

## Market 20: Wholesale transit

**Criterion (a): High and non–transitory barriers to market entry**

There are high and non-transitory barriers to entry into the wholesale market for transit services. Market participants must be granted a Class I licence allowing them to operate and provide services from a fixed network. To date only two such licences have been granted – to Omantel and to Nawras. The second barrier is the significant capital investment required to establish a fixed network capable of providing these services on a national basis.

**Criterion (b): No tendency towards competition behind such barriers**

NAWRAS is now building out a national backbone fibre network and as at the end of 2011 had laid around 5,200 km of cable – an appreciable infrastructure comparable to that of Omantel. However, it is one thing to have alternative network platforms capable of providing wholesale services to third operators, but it is quite another to see that situation converted into actual competition at the wholesale service level. Therefore the TRA is not prepared to assume that there will be a position of sustainable competition in the time horizon of this report, or, in the absence of more indications from the current participants, to discern a tendency towards effective competition in this market.

**Criterion (c): ex post control by competition rules is insufficient to address market failures**

The risk of harm to competition in this market could result from a refusal to provide wholesale transit services on fair and reasonable terms to enable effective interconnection and therefore effective retail competition by wholesale customers. If that occurs the TRA believes that ex post controls may be insufficient in terms of effectiveness or timeliness to prevent long term and substantial damage to competition in the relevant retail market. It is relevant that the ex post controls that exist are largely untried and untested and reliance on their sufficiency may be misplaced or premature.

**Conclusion**

This market is susceptible to ex ante regulation for dominance.

**Box 3.20**

**Question 1:** Do you agree with TRA's assessment set out above that in this market the three criteria are cumulatively satisfied and the market for wholesale transit services is susceptible to ex ante regulation? Please state your reasons and provide relevant supporting evidence.

## 3.4 Summary

Based on the analysis above the following markets are assessed by the TRA as being susceptible to ex ante regulation for dominance. The original market reference numbers have been retained throughout this report for convenience.

Figure 3.1: Summary of markets susceptible to ex ante regulation for dominance

| Market | Susceptible to ex ante regulation for dominance |
|---|---|
| Market 1: Retail access to the public telephone network at a fixed location | Yes |
| Market 2: Retail local, national voice call service | Yes |
| Market 3: Retail international voice call service | Yes |
| Market 4: Retail broadband Internet access from a fixed location | Yes |
| Market 5: Retail dial-up Internet access from a fixed location | No |
| Market 6: Retail mobile services market | Yes |
| Market 7: Retail national leased line services | Yes |
| Market 8: Retail international leased lines | Yes |
| Market 9: Retail business data services | No |

| Market | Susceptible to ex ante regulation for dominance |
|---|---|
| Market 10: Wholesale voice call origination on the public telephone network provided at a fixed location | Yes |
| Market 11: Wholesale voice call termination on individual public telephone networks provided at a fixed location | Yes |
| Market 12: Wholesale network infrastructure access at a fixed location | Yes |
| Market 13: Wholesale broadband access (including bit-stream and WLR) | Yes |
| Market 14: Wholesale terminating segments of leased lines | Yes |
| Market 15: Wholesale trunk segments of leased lines | Yes |
| Market 16: Wholesale international capacity (Bandwidth) | Yes |
| Market 17: Wholesale voice call termination on individual mobile networks | Yes |
| Market 18: Wholesale access and call origination on public mobile telephone networks | Yes |
| Market 19: Wholesale national roaming services | No |
| Market 20: Wholesale transit | Yes |

SOURCE: TRA

Only those markets considered to be susceptible to ex ante regulation for dominance will be further considered in Chapter 4 following.

# 4 Market Analysis of Dominance

## 4.1 General approach to analysis of each relevant market

The TRA has adopted extensive lists of criteria for single dominance and joint dominance. The criteria are non-exclusive and may overlap in their application. For logistical reasons it is important to concentrate on those criteria which appear to be most relevant in each market context, but also to ensure that a holistic approach is taken in each case. The TRA believes that it is inappropriate to base conclusions on a count of the criteria that may be relevant and important and on 'ticking the boxes'. In order to focus efficiently on key criteria the analysis of each market commences with a table in which each criterion is assessed for relevance and importance, followed by a more detailed analysis of those criteria that are most important for the analysis of the relevant market under study.

The second aspect of the TRA's approach is to consider first whether there is single dominance in a market. If the case for single dominance cannot be made, and if the market is not a monopoly, the issue ofjoint dominance is then considered.

A finding of joint dominance, where it is made in relation to a relevant market, is an ex ante decision that is based on the structure of the relevant market in Oman. To determine that two competitors are jointly dominant is to conclude that the structure of the market gives rise to a reasonable anticipation that they may act in pursuit of a common interest, rather than in pursuit of sole interests on a competitive basis for the ultimate benefit of end-users. A determination of joint dominance in a market is not to be taken as an assertion that there is any particular behaviour, but, rather, that the structure gives rise to a reasonable apprehension that anti-competitive behaviour might occur in the absence of ex ante regulation. A determination of joint dominance should not be confused with any suggestion of present or past collusion, either explicitly or tacitly, but that collusion is an outcome to that may be reasonably expected under the circumstances.

Those that want to argue against a finding of joint dominance in the case of a particular market need to address the issue of why the apprehension orascertained risk of tacit or other joint behaviour, in the absence of ex ante regulation, is unreasonable or of such low probability that it should be discarded.

**Box 4.1**

**Question 1:** Do you agree with TRA's general approach as described in Section 4.1?

**Question 2:** If not please provide reasons and your alternative proposals for approach that you consider should be adopted, noting that the approach needs to be consistent with the Market Dominance Regulations and Guidelines formally adopted by the TRA.

# 4.2 Retail markets

## Market 1: Retail access to the public telephone network at a fixed location

### (a) Criteria for single dominance

The Figure below provides an overall assessment of the relative importance of the single dominance criteria to this market.

Figure 4.1: Criteria for single dominance (Market 1)

| Criterion | Relevance and Importance to this Market | Comments |
|---|---|---|
| A.1 Market share | This criterion is relevant and important. | Omantel has almost 100% share of the fixed access market, and is not under any immediate or short term competitive pressure in relation to that share. |
| A.2 Overall size of the undertaking | This criterion is relevant. | Omantel is a major undertaking and this is important in order to be able to develop and manage a fixed access undertaking that has national coverage. Although smaller service providers may use new wireless-based technologies to access local markets they need to have the size to gain the national reach and ubiquity to seriously challenge Omantel. |
| A.3 Control of infrastructure not easily duplicated | This criterion is relevant and important. | This is perhaps the most critical criterion. The platform used by Omantel is based on substantial investment in infrastructure that is not economically duplicable, including ducts and rights of way, and the customer access network connecting customer premises. |
| A.4 Sunk Costs | This criterion is relevant and important | Fixed networks are characterised by a high share of sunk costs which may advantage incumbents and deter new entry. |
| A.5 Network effects | This criterion is only potentially relevant and important. | Competing networks would have major disadvantages in the absence of mandated interconnection and any-to-any connectivity for voice services. However, this is not a practical consideration because of the |

| Criterion | Relevance and Importance to this Market | Comments |
|---|---|---|
| | | interconnection regulatory obligations that are in place. |
| A.6 Technological advantages and superiority | Not relevant to this market | No service provider in this market has exclusive access to superior technology or other technological advantages. The relevant technological solutions are available from a number of global equipment vendors. |
| A.7 Absence of or low countervailing buying power | Not relevant to this market | This is a retail market and there is no evidence of any customers having such countervailing buying power. |
| A.8 Easy or privileged access to capital markets / financial resources | Not relevant to this market | Clearly this market requires substantial capital investment. However there is no evidence that Omantel has privileged access to capital or advantages in this respect, relative to other operators. |
| A.9 Product / services diversification | This criterion is relevant and important. | The access service is not economically replicable. Additionally access has commodity characteristics with little potential for diversification. |
| A.10 Economies of scale | This criterion is relevant and important. | Economies of scale are important in fixed network operations and may provide substantial cost advantages over new entrants and smaller scale operators. |
| A.11 Economies of scope | This criterion is relevant and important. | Economies of scope, particularly resulting from shared network infrastructure and overheads for multiple network businesses, can provide cost advantages over single business new entrants. |
| A.12 Vertical integration | This criterion is relevant and important. | Omantel operates in Market 12 and competitors would potentially be disadvantaged by Omantel's vertical integration. |
| A.13 A highly developed distribution and sales network | Not relevant to this market | This criterion is not currently relevant because the market has commodity characteristics. Omantel has not developed a sales network that would exclude others in this market from |

| Criterion | Relevance and Importance to this Market | Comments |
|---|---|---|
| | | doing the same or using other organisations as sales agents. |
| A.14 Absence of potential competition | This criterion is relevant and important. | Nawras is a clearly identifiable competitor that has recently commenced the provision of competitive services in this market using WiMAX technologies. |
| A.15 Barriers to expansion | This criterion is relevant and important. | Fixed Mobile Substitution and longer term service developments suggest that growth prospects exist but will be taken up by other services such as mobile, and not in the time frame of this review |
| A.16 Ease of market entry | This criterion is relevant and important. | The capital and regulatory (licence) barriers to entry into this market are high. However Nawras is licensed and has the resources to enter the market. |
| A.17Excess pricing and profitability | This criterion is relevant and potentially important. | Retail regulation of fixed access prices has been in place for a long time. This regulation is based on social factors such as perceived affordability rather than on strict cost and profitability considerations, but has had a constraining effect. |
| A.18 Lack of active competition on non-price factors | This criterion is relevant and potentially important. | Fixed access services have commodity characteristics in Oman, as elsewhere. |
| A.19 Switching barriers | This criterion is relevant and important. | Most customers have no real alternative and therefore no opportunity to switch. For those who do, there are no arrangements to facilitate the switching. Carrier pre-selection and call selection have yet to be implemented. |
| A.20 Customers ability to access and use information | Not relevant to this market | There is no evidence that these are issues for competition in this market. Key information is made available to customers under licence and other conditions of operation. |

SOURCE: TRA

**(b) Discussion on single dominance**

In this section a detailed discussion of the most relevant criteria to this market is further developed

*Control of infrastructure not easily duplicated*

It is not feasible for any other operator to replicate Omantel's access network. However using WiMAX technology, Nawras has now rolled out its platform covering around 90% of the population of Oman and providing fixed services in competition to Omantel in both the consumer and business segments of this market.

*Sunk costs*

Omantel has a substantial sunk investment in its fixed network. The level of sunk costs has not been assessed for this review. These sunk costs ensure that, in the normal course and absent regulation, Omantel would be able to deter competitive commercial entry. However, Nawras has now completed a substantial part of its WiMAX coverage and related investment. Together they represent a formidable obstacle for other potential entrants to this market.

*Market share*

Nawras' share of the fixed service was around 6% at September 2011, but this is expected to grow significantly in the next five years.[7] The fixed service access market is growing by in excess of 3% annually, driven largely by the WiMAX rollout and marketing initiatives of Nawras (and Omantel's response) after a considerable period of limited growth.

*Overall size of the undertaking*

Omantel is a major undertaking in Oman and this is important in order to be able to develop and manage a fixed access undertaking that has national coverage.Nawras also is a major undertaking. It has extended its WiMAX network platform to cover 87% of the population by the end of 2011. Overall size is not a factor favouring single dominance on Omantel's part.

*Product / services diversification*

Nawras' entry into this market has meant that a market that was exhibiting commodity characteristics has been energised through the use of various forms of price/service packaging.

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[7]See for example, NBK Capital who expect the market share to rise to 28% by 2016. http://www.nbkcapital.com/BR/Research/MER/Telecom%20Sector/Oman/Nawras/NBK%20Capital-Oman%20Telecoms%20Update-07December2011.pdf

*Economies of scale*

Economies of scale are the advantages in terms of lower unit costs from increased production achieved as a result of fixed costs being spread across the greater scale of outputs that a larger scale operator may have over smaller operators. A smaller operator will have to recover a higher level of shared, fixed and common costs over a smaller customer base.

But scale economies do not continue indefinitely. They are exhausted at various levels of production or output or can be matched by operators adopting alternative technologies. For this review the TRA has not carried out an analysis to quantify the point in which economies of scale are exhausted. However, on the basis of a "*Study on EU Regulatory Framework in Microstates*"[8] carried out by Ovum and Indepen, the TRA considers that the relative impact of size is greater for smaller operators and proposed that economies of scale start to have a reduced impact at around 1 million lines. In the context of Oman this suggests that Omantel still enjoys significant economies of scale and will do so until it has reached that level of subscribers, or until Nawras has reached a customer base of sufficient size to achieve the benefit of equivalent scale economies on its network.

*Economies of scope*

Economies of scope are the efficiency gains from having a range of services or businesses rather than a single service or business. Economies of scope occur when the range of businesses and operations of an enterprise allow it to spread its fixed common and overhead costs across itsfull range, thereby reducing the unit costs that would otherwise result in a single business or service.

Omantel has potentially significant economies of scope resulting from its range of businesses, including fixed and mobile at retail and wholesale levels. However, these are likely to be matched by Nawras, which also has an expanding range of businesses.

*Vertical integration*

Both Omantel and Nawras are vertically integrated in the sense that they operate at both the wholesale and retail levels of this market. Lack of effective wholesale regulation allows both to control retail competition by controlling the access to and usage of relevant wholesale services by potential competitors.

The TRA considers that vertical integration, and potential market dominance at the wholesale level, deters entry into this market and are potential sources of dominance for Omantel and Nawras in the market for retail fixed narrowband access.

*Barriers to expansion*

Saturation in mature markets is a barrier to further expansion that discourages competitive entry. In Oman, fixed access penetration is around 65% of households. This figure is affected by the coverage of the fixed service networks nationally. The fixed access market in Oman has some potential for expansion, but thiscould be limited considering the physical barriers arising fromthe Omani geographic characteristics.

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[8] Source: http://ec.europa.eu/information_society/policy/ecomm/doc/info_centre/public_consult/review/comments/athk_cyta_ptlux_malta_final_report_v4.pdf

Without access to wholesale inputs potential or existing alternative operators to Omantel and Nawras will not be able to expand their customer basein a competitive manner.The potential for fixed service expansion is difficult to assess because mobile service coverage has addressed communications needs in areas not served by fixed networks, and the potential for fixed may have been transformed and reduced as a result. If so, the future for fixed services may in delivering broadband access.The recent introduction by Nawras of its Home Internet & Voice service and various bundles for business tends to support that outlook.

*Ease of market entry*

Market entry requires an individual licence subject to terms and conditions established by TRA

In addition, substantial capital and other resources are required to enter this market and to achieve a viable scale of operation. Certain infrastructure required to connect premises to the network is not generally economically replicable, so there is a significant first-in advantage in favour of Omantel as incumbent. In particular, it is not generally economic to replicate easements, ducting systems and conduit.

Additionally, even considering the introduction of wholesale regulation in the form of local loop unbundling the barriers to entry will remain high as LLU requires high investments a large proportion of which are sunk. On a total system or network basis the costs of WiMAX would be substantial as well and would be a barrier to entry by smaller operators.

*Excess profitability*

Retail regulation of fixed access prices has been in place for a long time. This regulation is based on social factors such as perceived affordability rather than on strict cost and profitability considerations, but has had a constraining effect on potential entry of other operators. No evidence is available to the TRA to suggest excess profitability in this market as a whole. Uniform national pricing may well disguise higher profitability in high density low cost areas.

*Lack of active competition on non-price factors*

Fixed access services have commodity characteristics in Oman, as elsewhere in the world. Therefore is very difficult for operators to compete on non-price characteristics. Since mid-2011 the market has seen increasing competition based on price/service packaging and bundling. A convenience factor has therefore been introduced, but otherwise the primary dimension for competition remains price.

*Switching barriers for consumers*

Until Nawras' market entry, there were no options for switching from Omantel to another fixed call service provider in Oman. Nawras' entry into the market does not immediately change anything in this regard. An option to switch to Nawras only exists where Nawras has an operational presence and has been able to market its services on the back of that presence, but this will take time to develop. A major factor for many customers who might switch, assuming there is a practical option available, is the ease of doing so and the ability to port their service number. This is especially important for business customers and others who may have significantly invested in the promotion of their service numbers.

At the moment, even though it is open for some customers to switch to Nawras, there is no option for them to port their numbers or for existing or potential competitive operators to resell Omantel's services on a mandated wholesale basis. This is likely to be of greater importance for business and other customers who may have invested in their current service number. Some switching barriers therefore remain for the present and foreseeable future.

The recent rollout of a significant WiMAX network and marketing initiatives in this market since mid-2011 by Nawras has changed the dynamics of the market for fixed services. The issue is whether the introduction of services in this market by Nawras has resulted in sufficient change to be able to conclude that the market is likely to be effectively competitive either now or in the time horizon of this study.The analysis referred to in Footnote 7 suggests that in terms of share, Omantel will retain over 70% in five years' time – well outside the time horizon for this study. There is no doubt that the presence of Nawras will add a level of increasing constraint to Omantel which, absent regulation, would not have existed in past years. However that level is assessed as modest or small at present. TRA is not confident in forecasting that effective competition will occur in this market sufficient to ensure that consumer welfare is delivered across the board in the next two years.

**(c) Conclusion on single dominance**

TRA concludes that Omantel remains singly dominant in this market.

**(d) Relevance of joint dominance**

Under the circumstances Omantel is dominant as a single operator. It follows that, absent regulation, it is able to operate independently of customers and competitors to an appreciable (albeit declining) extent, and that this precludes the need to consider joint dominance in this market.

**Box 4.2**

**Question 1:** Do you agree with TRA's assessment that during the time frame of this review, Omantel is a singly dominant operator in the provision of retail fixed access service to the public telephone network? Please provide reasons and relevant evidence to support your views.

**Question 2:** Do you have specific evidence that Omantel achieves above-normal or below-normal profitability in this market? If so please provide it to the TRA.

## Market 2: Retail local, national voice call service from a fixed location

**(a) Criteria for single dominance**

Figure 4.2: Criteria for single dominance (Market 2)

| Criterion | Relevance and | Comments |
|---|---|---|

| | Importance to this Market | |
|---|---|---|
| A.1 Market share | This criterion is relevant and important. | Omantel has almost over 90% share in this market and the new fixed operator, Nawras, has only recently launched its fixed retail services in this market And its share is estimated to be around 6-7% as at September 2011. |
| A.2 Overall size of the undertaking | This criterion is relevant and potentially important. | Omantel is a major undertaking and this is important in order to be able to develop and manage a retail calls on a national basis. |
| A.3 Control of infrastructure not easily duplicated | This criterion is relevant. | The platform used by Omantel is based on substantial investment in infrastructure that is not economically duplicable in that form. However, this is of less importance compared to access services. Resale competition remains possible. As well, Nawras has developed an alternative infrastructure which is scalable, and which can be used to provide voice services from a fixed location. |
| A.4 Sunk costs | This criterion is relevant | The platform used by Omantel is based on substantial investment in infrastructure that is not economically duplicable. However, this is of less importance compared to access services. Resale competition remains possible. |
| A.5 Network effects | This criteria is not relevant | Competing networks would have major disadvantages in the absence of mandated interconnection and any-to-any connectivity for voice services. However, regulation for any to any connectivity is in place and may be assumed for the future. |
| A.6 Technological advantages and superiority | Not relevant to this market | No service provider in this market has exclusive access to superior technology or other technological advantages. The relevant technological solutions available are available from a number of global equipment vendors. |
| A.7 Absence of or low countervailing buying | Not relevant to this market | This is a retail market and no customers have such countervailing |

| | | |
|---|---|---|
| power | | buying power. |
| A.8 Easy or privileged access to capital markets / financial resources | Not relevant to this market | However there is no evidence that Omantel has privileged access to capital or advantages in this market. Resellers can succeed in call markets with limited investment in systems and organisation. |
| A.9 Product / services diversification | This criteria is potentially relevant | Both Omantel and Nawras are able to bundle combinations of calls and access. However service diversity, based on different service characteristics that may be sought by customers, is limited. |
| A.10 Economies of scale | This criterion is relevant and important. | Economies of scale are important in fixed network operations and may provide substantial cost advantages over new entrants. |
| A.11 Economies of scope | This criterion is relevant and important. | Economies of scope, particularly resulting from shared network infrastructure and overheads for multiple network businesses, can provide cost advantages over single business new entrants. |
| A.12 Vertical integration | This criterion is relevant and important. | This is important because both Omantel and Nawras have the capacity to operate in wholesale markets and to gain competitive advantage from this vis-à-vis purely retail providers. There are currently no purely retail providers in the fixed voice services market in Oman. |
| A.13 A highly developed distribution and sales network | Not relevant to this market | Neither Omantel nor Nawras have developed sales networks that would exclude others in this market from doing the same or using other organisations as sales agents. |
| A.14 Absence of potential competition | This criterion is potentially relevant | There are no other potential competitors to Omantel and Nawras in existence at this stage. TRA is not aware of any intending entrants to the market. |
| A.15 Barriers to expansion | This criterion is potentially relevant | The limited penetration of households together with recent growth following the Nawras initiatives suggests that there is potential for expansion. However the growing preference for |

| | | |
|---|---|---|
| | | mobile services further suggests that this potential is probably much more limited than the fixed penetration rate might otherwise indicate. |
| A.16 Ease of market entry | This criteria is potentially relevant | The capital and regulatory (licence) barriers to entry into this market are high. There is no requirement for either Omantel or Nawras to provide fixed voice services to intending retail-only service providers; therefore a substantial barrier exists for that form of market entry as well. |
| A.17 Excess pricing and profitability | This criterion is potentially relevant | Absent regulation, Omantel has the potential to earn above normal profits in this market. The constraint posed by Nawras is considered to be modest at this stage. |
| A.18 Lack of active competition on non-price factors | This criterion is potentially relevant | Retail fixed call services have commodity characteristics in Oman, as elsewhere. New bundles from Nawras are built on price competition, rather than non-price factors. |
| A.19 Switching barriers | This criterion is relevant and important. | There are significant barriers to switch into this market due to the absence of regulatory frameworks, such as for number portability. Carrier pre-selection and call selection have yet to be implemented. |
| A.20 Customers ability to access and use information | Not relevant to this market | There is no evidence that these are issues for competition in the market. Key information is made available to customers under licence and other conditions of operation. |

SOURCE: TRA

**(b) Discussion on single dominance**

*Market share*

The MDD Guidelines state that market shares of all relevant firms in the market can provide only an initial picture of the relative competitive positions of the firms in the market; other element and the overall analysis of the economics characteristics of the market will help to assess dominance into this market.

In this market, Omantel Fixed has around 90% share based on subscribers. The new fixed operator, Nawras, has only recently launched its fixed retail services. It is expected that Nawras will encourage new take up and attract customers from Omantel, but will still have less than 30% share by 2016.

Although market share alone is not determinative of dominance, the high market share currently enjoyed by Omantel is the result of the aggregated effect of other factors (referred to below) which suggest continued dominance.

*Overall size of undertaking*

This is marginally relevant to dominance. Omantel is a large undertaking by Omani standards and has the capacity to operate effectively and on a national basis in this market, with sales, customer care, back office and service organisations that have been dimensioned to the task.

*Control of infrastructure not easily duplicated*

Local and national call services are supported by circuit-switched network platforms. The switching systems are economic to replicate, but the customer access transmission systems and the infrastructure platforms on which they operate are not replicable on a national basis at this time. In the absent of the wholesale regulation to provide indirect access such as CS, CPS or WLR, an alternative provider who wanted to enter the callservices market would have to duplicate the existing core network in some form, which would require considerable investments that are unlikely to happen in the timeframe of this review. Nawras is pursuing such a course and has extensive coverage with its WiMAX platform. This factor is therefore no longer a criterion pointing to Omantel dominance.

Competition in the resale market for national and local calls could be effectively achieved by appropriate reseller arrangements. These do not exist and if they are to be encouraged through regulation, it will be at the wholesale level.

*Economies of scale*

Omantel's network scale economies provide it with a unit cost advantage in relation to both calls access (as already discussed) and calls. Unless a competitor was able to access the scale economies enjoyed by Omantel (as a reseller) or develop its own equivalent economies (as an alternative network operator), it would be unable to profitably compete. This then is a source of dominance for Omantel in the market for the time being, pending greater utilisation by Nawras of its WiMAX network to address this specific service market.

*Economies of scope*

As already mentioned in relation to Market 1, Omantel has an advantage in its ability to recover common and overhead costs through the supply of a greater range of services. These economies can be passed to customers for local and national calls.Competitors without Omantel's scope do not have this advantage and may find it difficult to compete profitably.

*Vertical integration*

Omantel is a vertically integrated operator in the provision of access and retail calls and by leveraging its market power at the access level can potentially adversely impact competition in the retail market of national and local calls by price and non-price strategies. Nawras is also a vertically integrated operator and has similar ability to leverage this against retail-only operators.

*Ease of market entry*

Competitors have a choice on the way they operate in the market for local and national call services. They can do so by developing their own alternative network platforms as a means of delivering the services or they can adopt a reseller strategy. Both are difficult paths to take. The facilities-based approach requires substantial investment and takes time to build up a presence and coverage that allows for effective competition. The absence of suitable wholesale regulation means that reseller (or services-based) competition is also difficult and relies on a commercial agreement with the incumbent – an agreement that might not happen, and, if it does, that will not favour competition.

*Switching barriers for consumers*

Until Nawras' market entry, there were no options for switching from Omantel to another fixed call service provider in Oman. Nawras' entry into the market does not immediately change anything in this regard. An option to switch to Nawras only exists where Nawras has an operational presence and has been able to market its services on the back of that presence, but this will take time to develop. The switching of access services has been discussed in relation to Market 1, above. In terms of fixed voice calls, leaving aside switching of access service, the relevant switching option would be provided through call selection. This has been facilitated in other countries in the past through the provision of short codes that callers may add as prefixes before the called service number.

At the moment, even though it is open for some customers to switch to Nawras, there is no option for them to port their numbers, use a call selection facility, or for existing or potential competitive operators to resell Omantel's services on a mandated wholesale basis.

**(c) Conclusion on single dominance**

Omantel is dominant as a single service provider in this market. No other service provider is dominant in this market. This is an on-balance conclusion, bearing in mind that the market is changing as a result of Nawras' network investment and market initiatives from 2011.

**(d) Relevance of joint dominance**

Under the circumstances Omantel is dominant as a single operator. It follows that, absent regulation, it is able to operate independently of customers and competitors to an appreciable extent, and that this precludes the need to consider joint dominance in this market.

**Box 4.3**

**Question 1:** Do you agree with TRA's assessment that during the time frame of this review, Omantel is a singly dominant operator in the provision of retail fixed voice call national and local services? Please provide reasons and relevant evidence to support your views.

**Question 2:** Do you have specific evidence that Omantel achieves above-normal or below-normal profitability in this market? If so please provide it to the TRA.

# Market 3: Retail international voice call service

### (a) Criteria for single dominance

Figure 4.3: Criteria for single dominance (Market 3)

| Criterion | Relevance and Importance to this Market | Comments |
|---|---|---|
| A.1 Market share | This criterion is relevant and important. | Omantel retains a high market share. Market share is indicative only, not determinative of the issue of dominance. |
| A.2 Overall size of the undertaking | This criterion is relevant and potentially important. | Omantel is a major undertaking and this is important in order to be able to develop and manage international retail calls. However relative to international correspondents and partners, Oman's size may be relatively unimportant. |
| A.3 Control of infrastructure not easily duplicated | This criterion is relevant and important. | The international gateway and physical connectivity used by Omantel is based on substantial investments in infrastructure. Nawras has now established and commenced operation of its own international gateway, and connected via the Tata II cable. The investments involved for both companies are significant and not easily duplicated. . |
| A.4 Sunk costs | This criterion is relevant and important. | Sunk costs in infrastructure within Oman are important for competitive advantage. |
| A.5 Network effects | Not relevant to this market | Competing networks would have major disadvantages in the absence of mandated interconnection and any-to-any connectivity for voice services. However that regulation is in place and will continue. |
| A.6 Technological advantages and superiority | This criterion is potentially relevant | No service provider in this market has exclusive access to superior technology or other technological advantages. The relevant technological solutions are available from a number of global equipment |

| Criterion | Relevance and Importance to this Market | Comments |
|---|---|---|
| | | and service suppliers. |
| A.7 Absence of or low countervailing buying power | Not relevant to this market | This is a retail market and no customers have such countervailing buying power. |
| A.8 Easy or privileged access to capital markets / financial resources | Not relevant to this market | Depending on whether a facilities or reseller business model is adopted, participation in this market may require substantial capital investment. However the TRA is not aware that Omantel has privileged access to capital or advantages in this respect. |
| A.9 Product / services diversification | This criterion is potentially relevant | Omantel is the only operator that is currently able to offer a bundle of access and national as well as international calls. There is only modest scope for diversification by potential entrants into this market. |
| A.10 Economies of scale | This criterion is relevant and important. | Economies of scale are important in fixed network operations and may provide substantial cost advantages over new entrants. |
| A.11 Economies of scope | This criterion is relevant and may be important. | Economies of scope, particularly resulting from shared network infrastructure and overheads for multiple network businesses, can provide cost advantages over single business new entrants. |
| A.12 Vertical integration | This criterion is relevant and potentially important. | Omantel's fixed network is not the only operation that is vertically integrated. Competitors in this market include both fixed and mobile operators, as well as VOIP service providers. |
| A.13 A highly developed distribution and sales network | Not relevant to this market | Omantel has not developed a sales network that would exclude others in this market from doing the same or using other organisations as sales agents. |
| A.14 Absence of potential competition | Not relevant to this market | In practice this is not relevant, because there is actual competition and also potentially more. This criterion is usually considered when a |

| Criterion | Relevance and Importance to this Market | Comments |
|---|---|---|
| | | market is not competitive, but competitors are hovering or imminent. |
| A.15 Barriers to expansion | Not relevant to this market | There is no evidence of saturation in the market for international calls from Oman. It is likely that there is repressed demand because of perceptions of high call prices and roaming charges. |
| A.16 Ease of market entry | This criterion is potentially relevant | -Entry barriers to the market are high, but in practice there may be significant multi-modal competition in any case. |
| A.17 Excess pricing and profitability | This criterion is potentially relevant | Absent wholesale regulation, Omantel has the potential to earn above normal profits in this market |
| A.18 Lack of active competition on non-price factors | This criterion is potentially relevant | International calling has so far not been the subject of significant non-price competition other than in terms of calling convenience claims. |
| A.19 Switching barriers | This criterion is potentially important. | Calling card and other services involving stored value provide customer options, as does the choice of using fixed or mobile services to originate calls. Competition would be increased if Carrier Pre-selection Service were available for international calls. The issue is how important is its absence. |
| A.20 Customers ability to access and use information | Not relevant | There is no evidence that these are issues for competition in this market. Key information is made available to customers under licence and other conditions of operation. |

SOURCE: TRA

**(b) Discussion on single dominance**

*Market shares*

Figure 4.4 shows the respective market shares of Nawras and Omantel for outgoing international traffic at their gateways for the whole of 2011 and for the first four months of 2012.

Figure 4.4: International outgoing minutes – market shares

| Operator/ Date | 2011 – Complete year | 2012 – to end April |
|---|---|---|
| Omantel | 66.4% | 60.3% |
| Nawras | 33.6% | 39.8% |

Source: TRA, Operator returns

In Oman there are two International Gateways or International Switching Service Centres (i.e. ISC1 and ISC2) that belong to Omantel and are connected to several routes. Prior to 2011 Nawras used the service from the Omantel's International Gateway, but in 2011 commissioned its own gateway. Nawras is therefore better positioned than earlier to control the costs of its international calling services and to compete in the provision of voice call services. Samatelis also licensed to operate an international gateway service, but has not done so to date.

*Economies of scale and scope*

Similarly to the retail fixed national call market, but to a smaller extent, Omantel and Nawras have cost advantages arising from their ability to use their respective access networks and gateway facilities. Potential entrants in the market would need to enter the market on a similar basis to obtain the same economies of scale as Omantel and Nawras which means charging at prices below those offered by the incumbent in order to gain appreciable market share. This makes it even more difficult for the new entrants to recover the sunk investments made to enter the market.

**(c) Conclusion on single dominance**

No operator is singly dominant in this market. In the case of Omantel its previous position has been eroded by Nawras' improving share of the mobile services market and by its more recent incursion into the fixed voice market. The position has also been affected by the initially significant, and recently more modest, market share gain of mobile resellers. Omantel is no longer the sole international gateway operator in Oman and the ability to leverage control of costs in the gateway market into the retail international voice call market has substantially declined, and might well have disappeared altogether.

Under these circumstances the TRA concludes that Omantel is not dominant as a single service provider in this market, and that no other service provider is singly dominant in this market.

**(d) Joint dominance criteria**

Figure 4.5: Criteria for Joint dominance (Market 6)

| Criterion | Relevance and Importance to this Market | Comments |
|---|---|---|

| Criterion | Relevance and Importance to this Market | Comments |
|---|---|---|
| B.1 Market concentration | Relevant and Important | This market is highly concentrated. |
| B.2 Transparency | Relevant and Important | Behaviour is clear and obvious to competitors. |
| B.3 Mature market | Relevant and important | The market is mature. |
| B.4 Stagnant or moderate growth on the demand side | Relevant and important | Demand is growing. |
| B.5 Low elasticity of demand | Relevant and important | The TRA has no information on the elasticities of demand for outgoing international voice calls. However, international experience suggests that the elasticities are higher than for other call services. |
| B.6 Homogenous product | Relevant and important | Service differentiation has limits. The service is effectively homogenous. |
| B.7 Similar cost structure | Relevant and important | The two mobile networks are similar in structure and coverage and are likely to have similar costs. The same may not be true of the cost of fixed international calls originated on copper and WiMAX network platforms. |
| B.8 Similar market share | Relevant and important | The shares of the Class I operators are effectively the same. |
| B.9 Lack of technical innovation, mature technology | Relevant and important | Technical innovation is in the hands of the international equipment vendors. Both operators have access to these vendors. |
| B.10 Absence of excess capacity | Relevant and potentially important | TRA has no evidence of the existence or lack of spare capacity in the Class I operator networks. |
| B.11 High barriers to entry | Relevant and important | The need for a Class I or Class II licence, taken together with the entrenched position of the current established operators represents a high barrier to entry into the market. |
| B.12 Lack of countervailing buying power | Relevant and important | Neither reseller competitors nor customers have countervailing buying |

| Criterion | Relevance and Importance to this Market | Comments |
|---|---|---|
| | | power. |
| B.13 Lack of potential competition | Relevant and important | Under the current regulatory framework there is a clear lack of effective competition in the near term and possibly at all |
| B.14 Various kinds of informal and other links between the undertakings concerned | Relevant and important | There is no evidence of any particular links with the TRA. |
| B.15 Retaliatory mechanisms | Relevant and important | Such mechanisms must be possible for joint dominance to be possible. As argued below there are very credible mechanisms available in this market. |
| B.16 Lack of or reduced scope for price competition | Relevant and potentially important | The reseller agreements show how the scope for price competition has been reduced. |
| B.17 Existence of incentives for tacit collusion | Relevant and possibly important | There are many incentives for tacit collusion associated with the structure of the market and the circumstances of each of the Class I operators. An important factor is that neither of the Class I operators has any clear or apparent competitive advantage over the other that it might try to exploit. They are evenly matched. |
| B.18 Ability to enforce the terms of a collusive agreement or tacit understanding | Relevant and important | An operator in the position of the Class I operators would know that all-out price competition could be mutually damaging and that price wars can be initiated by either of them. |

**(e) Joint dominance – assessment**

Many of the individual criteria relevant to joint dominance have been considered and discussed earlier in relation to single dominance, and so will not be repeated. Not all of the factors that sometimes are present to support a conclusion of joint dominance are present in the case of this market. However many factors are present; so the assessment will inevitably give rise to an on-balance conclusion.

This is a highly concentrated market. Between them, Omantel and Nawras have 88% of the international outgoing traffic originated on mobile services and all of the traffic originated on fixed services, resulting in a combined share of well over 90% of all such calls. This situation is unlikely to change materially in the time horizon of this study. The market share increase of the mobile resellers combined is becoming more moderate.

There are no constraints on price and performance for each of the operators other than each other. The market is mature and competition is effectively in price terms. VoIP services are not permitted and therefore a major factor that would impinge heavily on both operators is not on the horizon. The clear independence created by the market structure is reinforced by the clear and immediate visibility that the operators have of the other's actions. Any operator in their position would be aware that a price war would not be in the interests of either, and that retaliation is likely. There are no net gains to be had through price reductions.

These conditions are therefore of the kind that enables the TRA to have a reasonable apprehension of interdependent or collusive conduct in the absence of any ex ante regulatory intervention for dominance. The harm to the consumer interest that would otherwise result is not that the operators would raise international voice call prices, but that the rate of reduction justified by cost decreases and enjoyed by consumers elsewhere, would not occur.

**(f) Conclusion**

Omantel and Nawras are jointly dominant in this market.

**Box 4.4**

**Question 1:** Do you agree with TRA's assessment that during the time frame of this review, Omantel and Nawras are jointly dominant in the provision of retail mobile and fixed voice call international voice call services? Please provide reasons and relevant evidence to support your views.

## Market 4: Retail broadband Internet access from a fixed location

**(a) Criteria for single dominance**

Figure 4.6: Criteria for single dominance (Market 4)

| Criterion | Relevance and Importance to this Market | Comments |
|---|---|---|
| A.1 Market share | Relevant and Important | Omantel retains a high market share but Nawras has the ability to deliver to most of the population via its WiMAX platform. Market share is indicative only, not determinative of the issue of dominance. |
| A.2 Overall size of the undertaking | Potentially relevant but not important | This criterion is relevant because the undertaking can potentially leverage its size (volume of business) to demand exclusivity or preferential terms from distribution channels. Not particularly important in Oman |

| Criterion | Relevance and Importance to this Market | Comments |
| --- | --- | --- |
| | | because the both Omantel and Nawras have established distribution channels. |
| A.3 Control of infrastructure not easily duplicated | Relevant but ceasing to be important | In principle this is relevant. However Nawras has rolled out an alternative platform that enables it to offer services to most of the population. |
| A.4 Sunk costs | Relevant and important | Facilities-based competition requires investment in infrastructure that of the incumbent. Much of that investment will comprise sunk costs. However, both Nawras and Omantel have sunk investments in this area. |
| A.5 Network effects | Not relevant | Broadband access is used mostly to access the internet. As such, users do not benefit directly from other users joining the access service. This may change in the future. Clearly social networks have strong network effects, but these are accessible whichever operator's service is used. |
| A.6 Technological advantages and superiority | Relevant but not important | The criterion is relevant because access to superior technology would give the undertaking a distinctive differentiation of the retail offer. It is not established whether the technologies used by Omantel and Nawras, respectively, involve any technological superiority that would translate into significant cost or market advantages. |
| A.7 Absence of or low countervailing buying power | Not relevant | Countervailing buying power is unlikely at retail level in this market. |
| A.8 Easy or privileged access to capital markets / financial resources | Not relevant | No evidence of this being an issue for any operator or service provider in Oman in this market |
| A.9 Product / services diversification | Potentially relevant | Broadband service is sold as a commodity service in Oman. This criterion should be re-evaluated in the future if multi-play bundles, in particular offers including IPTV, become common place. |

| Criterion | Relevance and Importance to this Market | Comments |
|---|---|---|
| A.10 Economies of scale | Relevant and important | The platforms used for fixed broadband service provision by both Omantel and Nawras are scalable and generate scale economy benefits for the cost structure of their owner. TRA has no evidence to suggest that there is a crucial difference in the economies of scale involved that would substantially advantage either operator into the future. |
| A.11 Economies of scope | Relevant and important | There are relevant and important economies of scope associated with retail of broadband services because the same retail resources can be used to market and support multiple products/services. |
| A.12 Vertical integration | Relevant and important | Relevant because vertical integration gives the retail division of the incumbent access to infrastructure not easily duplicated (e.g. the copper access network). Important because this and similar infrastructure is not available to other service providers on a competitive basis at present. |
| A.13 A highly developed distribution and sales network | Relevant but not important | Relevant because a highly developed distribution and sales network gives the undertaking differentiated access to customers. Not important in Oman because other undertakings are also able to establish effective distribution and sales networks through partnerships (as observed in the mobile resale market). |
| A.14 Absence of potential competition | Not relevant | Not relevant because there is immediate competition in the form of Nawras. |
| A.15 Barriers to expansion | Not relevant | The internet access and market is not saturated in Oman and functional (application) and geographic expansion potential exists. |
| A.16 Ease of market entry | Not relevant | There are no major barriers to enter the retail market provided service providers have access to upstream |

| Criterion | Relevance and Importance to this Market | Comments |
|---|---|---|
| | | inputs at appropriate cost levels and on a national basis. Licences are readily available for new entrants. |
| A.17 Excess pricing and profitability | Not relevant | Costs for provision of broadband services are not available to TRA and it is difficult to assess whether prices and profitability are excessive. |
| A.18 Lack of active competition on non-price factors | Not relevant | Competition in this market has just recently been introduced and it is too early to evaluate how retail offers from different broadband providers will compete with each other longer term. Competition to date relies on price and service bundling. |
| A.19 Switching barriers | Relevant but not important | Relevant because contract duration and/or investment in modems can work as barriers to switch. Not important because broadband is a developing market in Oman and growth can be obtained by addressing non-users. That is, entrants are not reliant on switching in a saturated market. |
| A.20 Customers ability to access and use information | Not relevant | Details of retail broadband offer are easily accessible to end users (e.g. via Internet). |

SOURCE: TRA

**(b) Discussion on single dominance**

In this section we assess the most relevant criteria for single dominance.

*Market Share*

Omantel's market share in this market is now being eroded by competition from Nawras which is providing service from its recently established WiMAX platform. Nawras' share at the end of 2011 is estimated at 33.5% and is growing rapidly from a small base.[9]

*Control of infrastructure not easily duplicated*

It is not feasible for other service providers to replicate Omantel's copper access network. However Nawras has used WiMAX technology to establish in a short period a

[9] Based on Omantel and TRA published data for Q4 2011

comprehensive alternative service platform. It can no longer be said that Omantel has control over non-duplicable essential facilities for the purposes of serving this market.

*Economies of scale and scope*

Both Omantel and Nawras have the ability to leverage scale economies that are associated with their respective networks. It is not clear that there is a differential in the scale economies available that would advantage either operator in the time horizon of this study.

*Vertical integration*

Both Omantel and Nawras control infrastructure relevant to the provision of broadband internet access that is not easily duplicated. Consequently both have the capacity to control access to wholesale services by rivals and to enhance its competitive position in the retail market. However, this is a matter for wholesale level rather than retail level competition.

**(c) Conclusion on single dominance**

Nawras' recent entry into this market, providing services from its own platform, makes it difficult to argue that Omantel is singly dominant and that its decisions about service and price can be made independently. Nawras is a constraint on such decision-making, and an increasingly compelling one. Therefore Omantel is not singly dominant in this market. No other operator is singly dominant in this market.

**(d) Relevance of joint dominance**

Clearly there is a case for joint dominance in this market, because Omantel and Nawras effectively need not be concerned about any third parties in the short to medium term. The structure of the market means that they need only be concerned about the decisions that the other takes on price and service. However, there are characteristics of the market that suggest that this potential is unlikely to become an issue in the shorter term. The incentives for a joint approach or a common purpose towards the market are not yet present in sufficient measure for the TRA to be apprehensive about the probability that they will be realised in the time horizon of this report. In particular:

- The market is not mature and there is substantial room for further customer take-up;
- The market shares of Omantel and Nawras at 67%:33% are not approximately equal, so the incentive, particularly for Nawras, to establish and maintain an equilibrium would appear not to be present, at least for now and the immediate future;
- Demand growth remains robust. It is not moderate or stagnant;
- Nawras must be assumed to have excess capacity at this stage, having just recently completed the first major stage of its network rollout; and
- The cost structures of the Omantel and Nawras will be different, being based on significantly different technologies. This underlines their potential for differentiated pricing.

**(e) Conclusion on joint dominance**

Some of the important factors that suggest a significant risk of harm from joint dominance are not in place. Therefore TRA is not prepared to find that joint dominance exists in this market at this stage. The matter will need to be kept under review because the relevant factors could well change in future.

**(f) Overall conclusion**

In Chapter 3 some doubts were expressed about whether ex post regulation would be adequate to address the risks associated with dominance in this market. However, as noted above, TRA considers that it is not open, on balance, for a conclusion of single dominance or joint dominance to be reached in relation to this market at this stage. It therefore follows that although the market should be monitored, no dominance-related remedies or obligations should be imposed at this stage.

**Box 4.5**

**Question 1:** Do you agree with TRA's assessment that during the time frame of this review, neither Omantel nor Nawras is singly dominant or jointly dominant in the provision of fixed broadband internet services? Please provide reasons and relevant evidence to support your views.

## Market 6: Retail mobile services market

**(a) Criteria for single dominance**

Figure 4.7: Criteria for single dominance (Market 6)

| Criterion | Relevance and Importance to this Market | Comments |
|---|---|---|
| A.1 Market share | Relevant and Important | The absolute and changing levels of market share may provide insight into way competition is emerging in this market. |
| A.2 Overall size of the undertaking | Potentially relevant but not important | This criterion is potentially relevant because the undertaking can potentially leverage its size (volume of business) to demand exclusivity or preferential terms from distribution channels, for example. |
| A.3 Control of infrastructure not easily duplicated | Not relevant | Developing a mobile network platform is a major investment, but unlike traditional fixed networks it may, subject to demand, be economically duplicated. Some aspects are not easily duplicated such as access to sites where there may be a first-in advantage. |

| Criterion | Relevance and Importance to this Market | Comments |
| --- | --- | --- |
| A.4 Sunk costs | Relevant and important | Facilities-based competition requires investment in infrastructure that of the incumbent. Much of that investment will comprise sunk costs that may deter entrants. |
| A.5 Network effects | Not relevant | Network effects are very relevant when there are low or lower service penetration levels. There is a very high penetration level in Oman and therefore network effects are now likely to be minimal and not relevant. |
| A.6 Technological advantages and superiority | Not relevant | Mobile technologies are generally available and global vendors will sell to anybody. There is no technological advantage in this market. |
| A.7 Absence of or low countervailing buying power | Not relevant | Countervailing buying power is unlikely at retail level in this market. |
| A.8 Easy or privileged access to capital markets / financial resources | Not relevant | No evidence of this being an issue for any operator or service provider in this market in Oman |
| A.9 Product / services diversification | Relevant and important | Experience in Oman and globally suggests that product and price packaging, and the ability to differentiate to attract targeted customer segments is very important in this market. |
| A.10 Economies of scale | Relevant and important | Scale economies are important for enabling retail mobile service providers to achieve sustainable cost and price advantages. Competitors need to have scale in their own network operations or be able to access the scale economies in their reseller agreements. |
| A.11 Economies of scope | Relevant and important | There are relevant and important economies of scope associated with retail mobile services because the same retail resources can be used to marketand support multiple products/services. |
| A.12 Vertical integration | Relevant and | Relevant because vertical integration |

| Criterion | Relevance and Importance to this Market | Comments |
|---|---|---|
| | important | gives service providers who are also network operatoraccess to network capacity on potentially preferential terms compared to other wholesale customers. The importance in practice will depend on regulation in upstream markets as well as Market 6. |
| A.13 A highly developed distribution and sales network | Relevant but not important | Relevant because a highly developed distribution and sales network gives the undertaking differentiated access to customers. Not important in Oman because two Class I operators and four mobile resellers have established effective sales and distribution networks. |
| A.14 Absence of potential competition | Not relevant | The competition is not potential in Oman. Competitors exist, and the issue is whether they can effectively compete. |
| A.15 Barriers to expansion | Not relevant at this stage | The penetration of mobile services in Oman was around 173% at the end of 2011. However all operators interviewed by the TRA consider that there are opportunities for some expansion in terms of service packages and minutes of use. |
| A.16 Ease of market entry | Relevant and important | Entry into the mobile retail market is difficult at present, requiring entrants to be licensed and to either invest in their own mobile platform or else to conclude a reseller agreement with a Class I operator. |
| A.17 Excess pricing and profitability | Relevant and important | TRA does not have a cost model or the means of assessing whether pricing is excessive compared to costs. |
| A.18 Lack of active competition on non-price factors | Relevant and important | The lack or existence of extensive non-price competition in a retail mobile market is important to determine whether there might be dominance. |
| A.19 Switching barriers | Relevant and important | MNP was introduced in 2006. |

| Criterion | Relevance and Importance to this Market | Comments |
|---|---|---|
| A.20 Customers ability to access and use information | Relevant but not important | Service providers advertise price and packaging information extensively and it is unlikely that customers have insufficient information to make informed choices. |

SOURCE: TRA

**(b) Discussion on single dominance**

In this section we assess the most relevant criteria for single dominance.

*Market Share*

Market share data is set out in Figure 4.8 below:

Figure 4.8: Market share based on subscriptions ('000s active services)

| Service Providers | Dec'2007 | Dec'2008 | Dec'2009 | Dec'2010 | Dec'2011 |
|---|---|---|---|---|---|
| Oman Mobile | 1,483,115 | 1,708,483 | 1,869,848 | 2,133,414 | 2,277,481 |
| Nawras | 1,016,885 | 1,510,866 | 1,860,764 | 2,013,560 | 1,933,061 |
| Reseller | 0 | 0 | 239,951 | 459,159 | 598,706 |
| **Total** | **2,500,000** | **3,219,349** | **3,970,563** | **4,606,133** | **4,809,248** |
| OM Mkt share | 59% | 53% | 47% | 46% | 48% |
| Nawras Mk share | 41% | 47% | 47% | 44% | 40% |
| Resellers Mkt Share | 0% | 0% | 6% | 10% | 12% |

| Service Providers | | Q3 2010 | Q4 2010 | Q1 2011 | Q2 2011 | Q3 2011 |
|---|---|---|---|---|---|---|
| Oman Mobile | share | 47% | 46% | 46% | 47% | 47% |
| Nawras | share | 44% | 44% | 43% | 42% | 41% |
| Resellers (aggregate) | share | 9% | 10% | 11% | 11% | 12% |
| Total | subs | 4,525,742 | 4,606,133 | 4,526,484 | 4,578,592 | 4,690,906 |
| Annual growth | | | | | | 3.7% |

SOURCE: TRA

Market shares based on revenues are approximately the same.

These data suggest that Omantel and Nawras are evenly matched in terms of market share and that the resellers count for relatively little. In terms of the Class I operators it would be difficult to conclude that either could ignore the other when taking decisions on price or service in the market. The resellers have had minimal impact to date, but that may in part be attributable to their recent entry and commencement of commercial operations, and the long duration of negotiations with Class I operators. None was in the market prior to April 2009.The longer term issue is whether this form of resale competition, with pricing that reflects the levels and structure of Class I operator pricing and with limitations on service innovation and differentiation, can have a bigger impact later. The prospects are not good however because:

- One mobile reseller has withdrawn from the market in the latter half of 2011;
- Another mobile reseller is not taking on new customers; and
- Some of the other resellers have indicated, informally, cash flow and financial issues and an inability to operate within the discount scales offered by the Class I operators.

*Sunk costs*

TRA does not have information from the current mobile network operators on the proportion of their capital costs that is represented by sunk costs. However, there is a substantial level of sunk costs associated with establishing a viable business organisation and in the commissioning of a mobile network that cannot be recovered except through the operation of the business. The extent of the sunk costs is significant because of the need, absent domestic roaming, to provide substantial and ubiquitous network coverage.

*Economies of scale and scope*

Economies of scale and scope are important for viable mobile service competition. The resellers have the potential to enjoy the economies of scale (and possibly of scope) that their respective Class I MNO partners have achieved, and may extend those economies if they are able to attract new subscribers to the networks. However, as already noted, one reseller has ceased business operations and two others are understood to be in commercial difficulties. The resellers consider that they are effectively constrained by there seller agreements and the terms under which they operate in the type of competition that they can provide to each other and to their own wholesale partners.

Under the terms of their contracts all resellers take their wholesale inputs from their respective Class I partners on the basis of a retail price less a negotiated discount. The discount varies between service circumstances outlined in the contracts and between resellers. In competition terms this means that the resellers have not so far been able to differentiate their offerings in terms of physical service characteristics from those of their wholesale partners. They are subject to the same quality of service performance, the same network parameters and even the same billing arrangements.

If customers complain about network aspects of their service quality, the resellers need to represent this to their wholesale partners. They are unable to introduce solutions themselves. The resellers cannot develop new physical products and services and to innovate in terms of the characteristics of existing services. Mobile data service competition is additionally curtailed because of the limited availability of suitable spectrum. However, it is open to the resellers to present themselves as different and to use non-networking parameters to create a separate brand identity.

The conclusion to be drawn is that the level of competition from resellers is limited and is to some extent controllable by their wholesaler partners.

In addition the resellers have entered the market recently and the medium to longer term impact of their presence is yet to be felt and assessed.

TRA is of the view that economies of scale operate in the retail mobile market, and are currently enjoyed by the two Class I licensees to the exclusion of the resellers and, potentially, any potential new infrastructure competitors.

*Vertical integration*

The major mobile competitors, Omantel and Nawras, are vertically integrated. They operate networks and therefore have a wholesale level presence, as well as provide services at the retail level of the market. Vertical integration is a source of significant advantage in the Omani retail mobile services market. As noted already there are limits to the number of separate and independent mobile network platform operators that a market with the size and potential of Oman will sustain. Whether the number of operators that can be sustained is two or three (or even more) is in some ways beside the point because potential entrants see it as limited and note that there are two well established entrants with some scale advantages operating in it already. This means that entry on some form of reseller or mobile virtual operator basis is the only practicable alternative. In turn, this means that the position of the incumbent network operators is very important because, under current regulatory arrangements, they have the power to control the conditions of entry of their retail competitors.

*Ease of market entry*

As already discussed, there are difficulties in entering this market. A licence is required and the TRA is not obliged to automatically approve an application. Spectrum is limited and the formidable situation of two large entrants with substantial sunk costs and presence makes entry difficult. The experience of all resellers indicates that the process of negotiating a reseller agreement with either of the current Class I operators is likely to be a long and tortuous process. No reseller has been able to conclude a contract withboth Class I operators and no reseller has been able to obtain wholesale services at cost based prices (despite all four stating often that this is what they want and require for commercial survival).

TRA has therefore concluded that market entry into this market is difficult.

*Excess pricing and profitability*

The TRA expects that in an effectively competitive market for mobile retail services prices would tend over time to reflect long term costs. It is always a complex matter to determine what cost reductions are achievable in a particular market and how they might reasonably be expected to be passed through to consumers. In part the unit costs are reduced through scale effects and in part through improved processes associated with the operation of the business. In an effectively competitive market the incentives to find and deliver cost reductions are augmented by competitive pressures, thereby reinforcing the incentives for profits from investors in the business.

The TRA does not have a clear picture of the profitability of either Omantel or Nawras in the mobile market. In the case of Nawras, market entry occurred in 2005 with commercial operations from 2005. This is recent compared to the size of the investment involved.

The TRA has a better view of prices in the market through its tariff controls and regulation. Overall pricing is obscured by the availability of a range of price/service packages from the Class I licensees and also from the resellers. They are using pricing packaging and branding to address different market segments. As part of this process the recent history of mobile service pricing in Oman is characterised by many and frequent temporary offers and promotions. However, an overall view of price movements can be gained by looking at revenue per minute over the total traffic conveyed. On this measure there has been limited reduction in the past three years based on the information provided in confidence by Omantel and Nawras.

*Lack of active competition on non-price factors*

As discussed immediately above there is a substantial amount of apparent competition in non-price factors including branding and special service packaging. There appears to beno lack of non-price competition, especially in the branding efforts of the resellers. The purpose of this form of competition is to establish brand characteristics that will appeal to targeted segments and demographics. The resellers who have been in the market for more than six months are claiming some measure of success for these programs in discussion.

*Switching barriers*

Mobile Number Portability was introduced between Nawras and Omantel in August 2006 for a nominal fee to the subscriber of OMR3. Published comments by Nawras suggest that this process is working and was a factor in early take-up of services immediately after it entered the market.

*Summing up on single dominance*

TRA is not prepared to conclude that either Omantel or Nawras is singly dominant in this market. It seems clear that neither can take action in this market to increase prices or reduce services without taking into account the other. Neither is therefore able to pursue policies or a course of action independent of each other to an appreciable extent, and this is the requirement for a conclusion that there is individual or single dominance.

**(c) Discussion on effective competition**

Some of the important criteria that one would expect to find in an effectively or substantially competitive market are not satisfied. One might speculate about whether the market is tending in that direction, but there is no evidence that effective competition will be an inevitable outcome in the time period of this review. One of the important unmet criteria relates to the absence of competitors who are able to provide more robust and effective form of competition than the tied resellers have been able to do so far. Even if the current reseller arrangements can provide more effective competition with the passage of time that can hardly be an argument that there is effective competition now or in the timescale of this review. TRA is not prepared to forecast that the current reseller form of competition will be effective within the time period of this review. It has no grounds for doing so.

The important unmet criteria for effective competition are:

- Price levels reducing towards cost as would be expected in a competitive market

- Difficulty of effective new entry via new network operators or MVNO / mobile resale arrangements
- Lack of active competition on non-price factors – the MVNO / mobile resellers cannot differentiate their service offering

TRA concludes that the market is not effectively competitive. Before deciding that there might be an impasse (neither single dominance nor effective competition) it is necessary to examine whether there is joint dominance.

**(d) Criteria for Joint Dominance**

Figure 4.9: Criteria for Joint dominance (Market 6)

| Criterion | Relevance and Importance to this Market | Comments |
|---|---|---|
| B.1 Market concentration | Relevant and Important | This market is concentrated. |
| B.2 Transparency | Relevant and Important | Behaviour is clear and obvious to competitors. |
| B.3 Mature market | Relevant and important | With over 173%[10] penetration the market is mature even if not necessarily saturated |
| B.4 Stagnant or moderate growth on the demand side | Relevant and important | Demand has abated in recent years, but is not stagnant |
| B.5 Low elasticity of demand | Relevant and important | Socio-demographic and workplace trends have made mobile connectivity a basic service. |
| B.6 Homogenous product | Relevant and important | Service differentiation has limits. |
| B.7 Similar cost structure | Relevant and important | The two networks are similar in structure and coverage and are likely to have similar costs |
| B.8 Similar market share | Relevant and important | The shares of the Class I operators are effectively the same. |
| B.9 Lack of technical innovation, mature technology | Relevant and important | The mobile technology is mature and the shortage of suitable spectrum limits innovation in data services. This should be relieved by recent reframing initiatives from TRA. |
| B.10 Absence of excess | Relevant and | TRA has no evidence of the existence |

[10] TRA, Telecom Market Indicators Report for December 2011.

| Criterion | Relevance and Importance to this Market | Comments |
|---|---|---|
| capacity | potentially important | or lack of spare capacity in the Class I operator networks. |
| B.11 High barriers to entry | Relevant and important | Regulatory and investment requirements results in high entry barriers. |
| B.12 Lack of countervailing buying power | Relevant and important | Neither reseller competitors nor customers have countervailing buying power |
| B.13 Lack of potential competition | Relevant and important | There are no potential new entrants visible at present and given the size of the market, current penetration levels and issues about availability of additional spectrum for new entrants, that is likely to be the case for at least the time horizon of this study. |
| B.14 Various kinds of informal and other links between the undertakings concerned | Relevant and important | Many links are possible, but the evidence is patchy |
| B.15 Retaliatory mechanisms | Relevant and important | Such mechanisms must be possible for joint dominance to be possible. As argued below there are very credible mechanisms available in this market. |
| B.16 Lack of or reduced scope for price competition | Relevant and potentially important | The reseller agreements show how the scope for price competition has been reduced. |
| B.17 Existence of incentives for tacit collusion | Relevant and possibly important | There are many incentives for tacit collusion associated with the structure of the market and the circumstances of each of the Class I operators. An important factor is that neither of the Class I operators has any clear or apparent competitive advantage over the other that it might try to exploit. They are evenly matched. |
| B.18 Ability to enforce the terms of a collusive agreement or tacit understanding | Relevant and important | An operator in the position of the Class I operators would know that all-out price competition could be mutually damaging and that price wars can be initiated by either of them. |

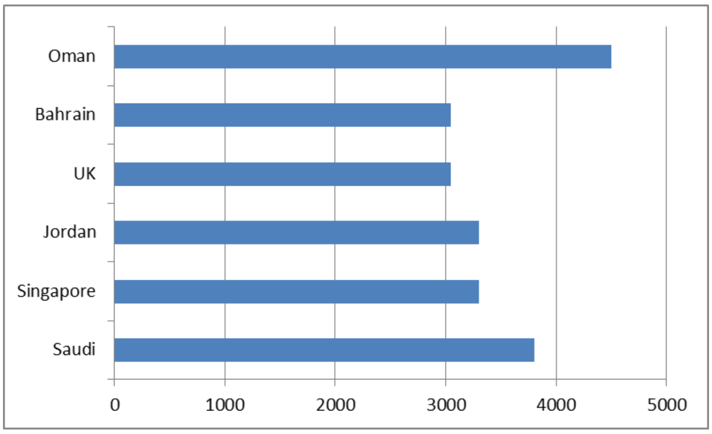
SOURCE: TRA

### (e) Discussion on Joint Dominance

*Market concentration*

The market is concentrated on any view. The two top service providers account for 88%[11] of the market if the resellers are treated as competitors rather than as channels to market. This gives a HHI of around 3,900, which is very high in absolute terms and also when compared to other countries.

Figure 4.10: Mobile HHI Index for a number of selected countries




SOURCE: WCIS, TRA

*Transparency*

In an essentially two player market the actions of each competitor are extremely visible to the other. Anything happening in the market will have been effected by one Class I licensee or its resellers or by the other Class licensee or its resellers. The competitors know from any market aggregated data how to calculate the data relating to their competitor. In addition normal consumer feedback and retail market sales and promotion activity is very visible. The competitors will have a clear view of the other's strategies at work in the market.

*Mature market*

With a penetration of 173% at the end of 2011, the market, especially for 2G services, is mature. TRA is prepared to accept the views expressed to date by the resellers and others that there is further room for expansion in the market and that it is not yet saturated. The unsatisfied demand may well be in terms of more innovative and different service price plans. As in other parts of the world, the expectations for growth are very much dependent on mobile data services. It is therefore reasonable to assume that, at the time of this review, an operator in the position of Omantel or Nawras would have no incentive to compete aggressively on voice services in order not to erode existing core voice revenues, which currently account for the largest share of mobile revenue. It is consistent with these market circumstances that competition will be in terms of shorter

[11] TRA, Telecom Market Indicators, December 2011.

term tactical promotions of various kinds, the pricing for which may be withdrawn or further adjusted more readily as required.

*Stagnant or moderate growth on the demand side*

Growth in the mobile market has continued from the inception of network competition in 2005, and given a further boost in 2011 with the impact of mobile resellers on the market. Mobile service penetration has grown by 4 percentage points for each quarter after Q1 for 2011. Growth is *moderating*, as might be expected with penetration of 173% at the end of 2011, but is not yet moderate.

*Low elasticity of demand*

TRA does not have any estimate on the elasticity of demand for mobile retail services. The service is a combination of both access and services. It is possible therefore that price increases will be reflected in lower usage rather than cancellation of services. The Customer Survey undertaken on behalf of the TRA indicates that there would be a high level of response to price increases of 5-10%. However, the response would mainly be about seeking to change mobile service providers, not to abandon mobile altogether. TRA considers that the growth of mobile services indicates that mobile is ceasing to be regarded as any form of value-added or optional service and has now become a mainstream (even 'basic') service in Oman. Some individuals and households have adopted mobile as their sole or primary communications service. It is therefore considered to be appropriate to regard mobile access service with a low elasticity of demand (certainly lower than in the past) with mobile usage as having a higher elasticity.

*Homogenous product*

Mobile services are packaged and presented as different in sales and marketing programs. However, beneath the branding and packaging, the services are essentially homogenous. There is nothing that Omantel has to offer that Nawras does not offer and vice versa. Access service, call services and test and data services are essentially homogenous. This applies to the mobile resellers as well, whose services have performance characteristics determined by the network of the host Class I operator.

*Similar cost structure*

Both Omantel and Nawras have modern networks from competitive international vendors. In the absence of demonstrative evidence that one or other is carrying a significant cost disadvantage we would expect and can reasonably assume similar cost structures associated with network and back-office functions.

*Similar market share*

At December2011 Omantel and Nawras had approximately equal shares in terms of subscribers and similar shares in other terms– at 47.4% and 40.2% respectively (see Figure 4.7). The market shares have been no more than 6% apart, in total market terms, over the last 3 years, neither has a market share advantage to leverage.

*Lack of technical innovation, mature technology*

2.5G and 3G mobile technologies are mature. This is not the generation of technology in which further break-through innovation is being introduced. Both Omantel and Nawras are matched in technology terms and neither has an advantage through this kind of innovation.

*Absence of excess capacity*

No evidence has been offered in response to enquiries about excess network capacity. However both Omantel and Nawras have noted in the past that only limited spectrum that is available to them, suggesting a need to invest more in infrastructure and related network capacity than would otherwise be required.

*High barriers to entry*

That the market has high barriers to entry has already been discussed and noted in relation to single dominance.

*Lack of countervailing buying power*

Countervailing buying power on the part of resellers and/or customers might force more competitive responses from the network operators. However the resellers are in a weak position and customers have limited choices. Neither group has countervailing or any buying power as such.

*Lack of potential competition*

Potential competition to Omantel and Nawras is unlikely to come from their own resellers or from any other source. The ability of resellers to develop truly independent marketing strategies and to offer data and other innovative services is very limited. Their actions are very visible to their own wholesale partners through the shared call accumulation and billing systems. In their present form it is unlikely that the resellers will develop to become effective competitors threatening the position of Omantel and Nawras. The withdrawal of one of the resellers from the market and the commercial difficulties being experienced by at least two of the others is not a good sign for the future. Nor is it likely that a virtual operator (MVNO / mobile reseller) will emerge because there is no requirement for the Class I operators to provide wholesale services at cost.

*Various kinds of informal and other links between the undertakings concerned*

There is considerable opportunity for informal links between Omantel and Nawras, including the movement of staff in the normal course of the labour market, feedback to the operators from customers in the course of seeking to gain and retain their patronage, and through industry forums and functions. The TRA considers that links of this nature might play a part in forming their behaviour. However, it is the structure of the mobile market rather than the opportunity for linkage or communication that provides the basis on which joint dominance will rest.

*Retaliatory mechanisms*

The primary potential retaliatory mechanism if competition becomes too robust or aggressive for one of the service providers is to retaliate with equal vigour. Given the nature of the market, competition will be mainly in price terms. The result can be easily anticipated – namely a price war with the prospect of reduced outcomes for both parties, which may extend well beyond the customer segment in which the contest commences. The TRA is proceeding on the basis that the operators know the market fairly well, know which customers they wish to acquire and retain, know how to control the zeal of their sales forces, and are generally rational in their thinking and behaviour. Any other assumptions would be hard to justify. A rational approach in the context of a mature service market would be to proceed with limited special and promotional offers, exercising a degree of caution, and refrain from creating the circumstances for a general price war. This version of a rational approach appears to the TRA to be consistent with what is in fact happening.

*Lack of or reduced scope for price competition*

This is relevant and potentially important. The pricing arrangements in the reseller agreements, based on discounted retail pricing, mean that the price structures of the wholesalers predominate and also limit the scope for independent pricing, and therefore for price competition, by the resellers. One reason that there might be reduced scope for price competition is because past competition has pared margins back excessively, relative to costs, leaving limited scope for further reductions in price in future. However, on the basis of price level stability over the past two years, this would seem to be unlikely.

*Existence of incentives for tacit collusion*

There are many incentives for tacit collusion, including avoidance of robust price competition, the lack of decided advantages in terms of cost, position or service by Omantel and Nawras, the maturity of the market and the decelerating demand. If either operator recognised that it had definite advantages along one or more dimensions then it might seek to exploit those rather than to tacitly collude, but there is no evidence of such recognition or of such an advantage.

**(f) Conclusion**

Taking the assessment of the market situation and structure as a whole, and after allowing for the fact that information on some criteria is poor, the TRA concludes that there is limited and ineffective competition in Market 6 and apprehends that there is an appreciable risk of harm from the position of joint dominance enjoyed by Omantel and Nawras.

There are clear incentives for tacit collusion in Market 6. The existence of incentives for tacit collusion is not, of course, the same as the existence of tacit collusion: the former is concerned with the opportunities inherent in a market situation while the latter is concerned with actual behaviour. The TRA considers the *existence* of incentives for tacit collusion is sufficient when assessing the need for ex-ante regulation even if actual collusion would need to be found when determining ex post anti-competitive behaviour.

Further, the TRA has concluded that the risk of harm from joint dominance is substantial and is likely to result in a continuation of the poor levels of mobile retail competition that are being experienced by customers in Oman at present. To leave the protection of customer welfare to ex post remedies based on actual evidence of collusion, or even explicit agreements of an exclusionary nature, is considered inadequate for a number of reasons.

Firstly, an ex post approach will in itself do nothing to assist in the development of a competitive market.

Secondly, the TRA is not experienced in the application of newly developed competition regulations and guidelines, and would not want to rely entirely on ex post enforcement action alone in this critical area.

Thirdly, competition remedies are likely to involve protracted administrative and even judicial procedures, and may therefore be significantly delayed. Delay would defer the benefits that customers are entitled to expect.

The TRA has studied the available economic and legal literature on the subject of joint dominance, much of it from European sources and cases, including the criteria laid down in the *Air tours* case. The TRA notes that the literature mostly deals with the assessment of behaviour and evidence of tacit collusion and of anti-competitive agreements. Apart from *Air tours*, there is little guidance from cases that are concerned with the existence of joint dominance rather than its abuse. However this literature has been considered alongside the relevant Market Definition and Dominance Guidelines already adopted by the TRA and the TRA is satisfied that the literature, such as there is, supports the TRA's conclusions: there is a high level of market transparency; given problems with market entry and the limitations placed on MVNO / mobile resellers, there is an ability to sustain a situation of tacit collusion; and no foreseeable counter-reaction from consumers or competitors is likely to undermine the situation in the near future.

The appropriate remedies will be considered in the next Chapter. It is to be noted however that the solution to joint dominance in this market may well be to facilitate greater competition through changes at the wholesale level, and to retain remedies in the retail market only for so long as the wholesale market remains unchanged or is still in the process of responding to planned wholesale remedies.

**Box 4.6**

**Question 1:** Do you agree with TRA's assessment that during the time frame of this review, Omantel and Nawras are jointly dominant in the retail mobile services market? Please provide reasons and relevant evidence to support your views.

**Question 2**: Do you have any information on the level of spare capacity that the Class I service providers have in relation to this market? Could you please provide it to the TRA?

**Question 3:** Do you have any views and relevant information on whether the Mobile Number Portability arrangements introduced in August 2006 are effective or not, and whether or not they are contributing to competition in the market?

**Question 4**: Do you have any information on whether national mobile call prices have decreased over the past 3 years? Could you please provide your views and supporting information to the TRA?

## Market 7: Retail national leased line services

**(a) Criteria for single dominance**

Figure 4.11: Criteria for single dominance (Market 7)

| Criterion | Relevance and Importance to this Market | Comments |
|---|---|---|
| A.1 Market share | Relevant and important. | Market share is an indication of many factors that may be indicative of market power, although it is not determinative by itself. |
| A.2 Overall size of the undertaking | Potentially relevant and important. | The coverage and ubiquity of the network infrastructure and operations potentially provides significant advantages. However it is not a factor that counts as much as the actual network presence that both Omantel and Nawras have now achieved in the market. |
| A.3 Control of infrastructure not easily duplicated | Relevant and important. | The underlying technology used to supply retail this market requires substantial investment in fixed network infrastructures. |
| A.4 Sunk costs | Relevant and important | A high proportion of fixed network costs are sunk thereby acting as a deterrent to new entrants. |
| A.5 Network effects | Not relevant | Competing networks would have major disadvantages in the absence of mandated interconnection and any-to-any connectivity for voice and data services. However that regulation is in place and is not in issue here. |
| A.6 Technological advantages and superiority | Relevant but not important | Technological advantage is certainly a relevant factor if proved in this market. However, both Omantel and Nawras have competing network infrastructures capable of delivery competitive leased line services. The practical importance of this factor is therefore reduced as a result. |
| A.7 Absence of or low countervailing buying power | Relevant but not important | Business customers who require leased line networks have limited choices and, despite their size, have little countervailing buying power to leverage. They may achieve modest volume discounts at best. |
| A.8 Easy or privileged access to capital markets / | Not relevant | Clearly this market requires substantial capital investment. |

| Criterion | Relevance and Importance to this Market | Comments |
| --- | --- | --- |
| financial resources | | However there is no evidence that Omantel or Nawras or both have privileged access to capital or financial resources compared to potential competitors or to each other. |
| A.9 Product / services diversification | Not relevant | There is no scope for any appreciable differentiation. The market is for dedicated transmission capacity between nominated end points. Leased line services are effectively commodities with little room for product differentiation. Even the accessory services – such as automatic back-up and route redundancy have commodity characteristics |
| A.10 Economies of scale | Relevant and important. | Economies of scale arise because of its coverage and from retail operational unit cost savings compared to other smaller operators. These are potentially very important. |
| A.11 Economies of scope | Relevant and important. | Economies of scope arise because of widespread access and also from retail operational unit cost savings from a large scope of businesses in its portfolio. |
| A.12 Vertical integration | Relevant and important. | Omantel and Nawras operate in both the retail and wholesale market creating a leveraging opportunity and a source of market power. |
| A.13 A highly developed distribution and sales network | Not relevant | Neither Omantel nor Nawras have developed a sales network that would exclude others in this market from doing the same or from using other organisations as sales agents. |
| A.14 Absence of potential competition | Relevant and potentially important | There are no potential competitors or new competitors that will be operational and effective in this market in the time frame of this review |
| A.15 Barriers to expansion | Not relevant | There is no evidence that the retail market for leased line services in Oman is mature or saturated. In |

| Criterion | Relevance and Importance to this Market | Comments |
|---|---|---|
| | | addition there appear to be no barriers to expansion in this market |
| A.16 Ease of market entry | Relevant and important | With the exception of some limited self-provision situations, entry into this market is not easy. |
| A.17 Excess pricing and profitability | Relevant and potentially important | Absent regulation Omantel and Nawras have the potential to earn above normal profits in this market. |
| A.18 Lack of active competition on non-price factors | Not relevant | Leased lines are business services that are essentially priced on capacity and distance. Service availability is important to business customers. Beyond that there is limited room for competition on non-price factors. |
| A.19 Switching barriers | Relevant and potentially important | Discount schemes constitute a potential barrier to switching. However lack of alternative supply means that switching is not an option in many locations at this stage. |
| A.20 Customers ability to access and use information | Not relevant | There is no evidence that these are issues for competition in the market. |

SOURCE: TRA

**(b) Discussion on single dominance**

*Market share*

The TRA does not have information on leased lines that are self-provided through microwave or similar technologies. Nor does it have an exact measure for Omantel's and Nawras's market shares. Given the recency of the completion of its backbone optic fibre network and its reliance on terminating segments to complete the retail end-to-end lease line service in many locations, it is estimated that Omantel's market share would remain very high. However, that market share is open to attack and is expected to reduce as Nawras seeks to realise the potential of its network platform.

*Overall size of the undertaking*

Until recently Omantel's backbone network infrastructure is significantly greater than that of its competitors in terms of coverage and reach. However during the course of 2011 Nawras has laid approximately 5,200 km of backbone optic fibre cable between areas where business customers are present in force. Although the overall size of undertakings might be potentially relevant and important, in the Omani market it is not practical to make a distinction on that basis between Omantel and Nawras, since both have immediate capability to participate in the retail leased line market.

*Control of infrastructure not easily duplicated*

The underlying technology used to supply retail leased lines requires substantial investment in fixed network infrastructure. Nawras has, during the course of 2011, been able to duplicate the capacity that Omantel has between major locations – the trunk capacity of the network. However Nawras has not at this stage been able to establish a network platform of sufficient ubiquity to provide terminating segments for leased line services. Consequently Nawras is in a position to provide retail leased lines in one of two ways: (a) to install terminating links in response to individual customer demand; or (b) to purchase terminating segments from Omantel on a wholesale basis as required. In terms of terminating segments (or last mile) Omantel has control of infrastructure not easily duplicated. Apart from establishing terminating segments on a case by case basis as required, Nawras has no current means of securing the segments from Omantel. This analysis will be taken further in discussion around the relevant wholesale market – Market 14.

*Economies of scale and scope*

There are real advantages to both Omantel and Nawras in this market in terms of economic efficiencies resulting from economies of both scale and scope in supplying retail leased lines services. The economies arise from Omantel's and Nawras's multi-service networks and businesses. For example, the transmission capacity for switched network services can be used also for dedicated services such as leased lines. The result is that shared network costs and fixed and common costs can be recovered over a greater service base and be lower on a unit basis as a result. The example of a sub-2 Mbit/s requirement already mentioned means that Omantel and Nawras are price competitive against smaller scale competitors, including some self-providers.

*Vertical integration*

Omantel and Nawras operate the network and infrastructure as well as provide services at retail level. This vertical integration gives them substantial advantages over resellers and self-providers.

The current lack of regulation at wholesale level and the market position enjoyed by Omantel in the corresponding wholesale markets for terminating segments adds further risk of harm to customers and competition in the retail market.

*Ease of market entry*

Licensing and investment requirements constitute substantial barriers to entry. Market entry is not easy.

*Absence of potential competition*

There is no realistic opportunity for new competitors to enter this market in the time frame of this review. Nawras has established an alternative backbone access network, this will not be of the same scope of Omantel's' s network because it will not include the ready availability on a ubiquitous basis of terminating segments needed to complete the dedicated transmission associated with the leased line service between customer locations. Nawras's backbone is based on IP/MPLS technology and will not therefore be an appropriate choice for leased line services in all circumstances.

TRA notes that Nawras's core network will mainly be NGN with a number of shared elements with the mobile network. To complement the national backbone Nawras is also developing metro rings and has started connecting enterprise customers with FTTB. Nawras is also deploying FTTH to green field residential developments and infra residential areas. In time NAWRAS will be able to compete effectively in the end-to-end leased line services market, but that is unlikely to occur in the time horizon of this review, even allowing for the effective regulation of terminating segment supply at the wholesale level.

*Barriers to switching*

As already noted, in many locations and in many situations involving low capacity services, there is no alternative to Omantel, and switching to alternative suppliers is not an option that customers have. Omantel's leased lines discount scheme could also become a potential barrier to switching. Under the scheme a customer can obtain a significant price discount by making volume and contract duration (from one to three years) commitments. These together with the high upfront set-up fees constitute a barrier to switching for consumers and a constraint on competition in the market. The scheme also augments the advantage derived from Omantel's ubiquity in the market. Customers are unlikely to want multiple sourcing if the result is a reduced discount and increased supplier management in the customer's organisation.

Figure 4.12: Omantel's retail leased line current tariffs

| Speed | Set up Fees | 1 Year Plan | 2 Year Plan | 3 year Plan |
|---|---|---|---|---|
| | (RO) | (Monthly fees) | (Monthly fees) | (Monthly fees) |
| 64KB | 200 | 257 | 218 | 193 |
| 128 KB | 200 | 310 | 263 | 232 |
| 256 KB | 200 | 561 | 476 | 420 |
| 512 KB | 200 | 944 | 802 | 708 |
| 1 MB | 400 | 1,725 | 1,466 | 1,294 |
| 2 MB | 400 | 3,105 | 2,639 | 2,329 |

SOURCE: TRA

### (c) Conclusion on single dominance

Omantel is dominant as a single service provider in this market. No other service provider is dominant in this market.

### (d) Relevance of joint dominance

Under the circumstances Omantel is dominant as a single operator for the time horizon if this study. It follows that, absent regulation, Omantel is able to operate independently of customers and competitors to an appreciable extent, and that this precludes the need to consider joint dominance in this market.

**Box 4.7**

**Question 1:** Do you agree with TRA's assessment that during the time frame of this review Omantel is singly dominant in the market for national leased line services? Please provide reasons and relevant evidence to support your views.

## Market 8: Retail international leased line services

### (a) Criteria for single dominance

Figure 4.13: Criteria for single dominance (Market 8)

| Criterion | Relevance and Importance to this Market | Comments |
|---|---|---|
| A.1 Market share | Relevant and important. | Market share is an indication of many factors that may be indicative of market power, although it is not determinative by itself. |
| A.2 Overall size of the undertaking | Not relevant | The overall size of Omantel is not considered to be relevant in this market beyond the aspects that are covered under scope economies. Business customers in this market are more responsive to service continuity and reliability rather than to the size of an undertaking. |
| A.3 Control of infrastructure not easily duplicated | Relevant and important. | The underlying technology used to supply retail this market requires substantial investment in fixed network infrastructures which provides a significant advantage to Omantel. |
| A.4 Sunk costs | Relevant and important | A high proportion of fixed network costs are sunk thereby acting as a deterrent to new entrants. |
| A.5 Network effects | Not relevant | Additional international least line customers will not benefit existing international leased line customers in any appreciable way. |
| A.6 Technological advantages and superiority | Not relevant | Compression and other provision techniques and related technologies applying to dedicated transmission services are mature and available to all network service providers from a number of global vendors. |
| A.7 Absence of or low countervailing buying power | Relevant but not important | Most business customers who require international leased line networks have limited choices and, despite their |

| Criterion | Relevance and Importance to this Market | Comments |
|---|---|---|
| | | size, have little countervailing buying power to leverage. There are undoubtedly a relatively small number of multi-national corporations who are able to leverage better deals on a global or regional basis, but they usually have uniform requirements for each location satisfied through a global service provider – rather than being retail customers directly of national operators like Omantel. |
| A.8 Easy or privileged access to capital markets / financial resources | Not relevant | Clearly this market requires substantial capital investment. However there is no evidence that Omantel has privileged access to capital or financial resources compared to potential competitors, such as Nawras. |
| A.9 Product / services diversification | Not relevant | The business customers who require international leased lines often have access to their own sources of technical expertise capable of designing their own solutions from standard leased line inputs from Omantel. The scope for service diversification in international leased lines is limited in any case. |
| A.10 Economies of scale | Relevant and important. | Omantel's economies of scale arise because of its coverage and from retail operational unit cost savings compared to other smaller operators |
| A.11 Economies of scope | Relevant and important. | Omantel's economies of scope arise because of its widespread access but also from retail operational unit cost savings from a large scope of businesses in its portfolio. |
| A.12 Vertical integration | Relevant and important. | Omantel operates in both the retail and wholesale market creating a leveraging opportunity and a source of market power. |
| A.13 A highly developed distribution and sales network | Not relevant | Omantel has not developed a sales network that would exclude others in this market from doing the same or from using other organisations as |

| Criterion | Relevance and Importance to this Market | Comments |
|---|---|---|
| | | sales agents. |
| A.14 Absence of potential competition | Relevant and potentially important | There are no potential competitors or new competitors that will be operational and effective in this market in the time frame of this review. |
| A.15 Barriers to expansion | Not relevant | There is no evidence that the international leased line market is saturated or has no scope for expansion. |
| A.16 Ease of market entry | Relevant and important | Entry into this market is not easy. |
| A.17 Excess pricing and profitability | Relevant and potentially important | Absent regulation Omantel has the potential to earn above normal profits in this market. There is no evidence of excess pricing and profitability available to the TRA. |
| A.18 Lack of active competition on non-price factors | Not relevant | International leased lines are business services that are essentially priced on capacity and distance. Service availability is important to business customers. Beyond that there is no room for non-price factors. |
| A.19 Switching barriers | Relevant and potentially important | Discount schemes constitute a potential barrier to switching. However lack of alternative supply means that switching is not an option in most cases at this stage. |
| A.20 Customers ability to access and use information | Not relevant | There is no evidence that these are issues for competition in the market. |

| Criterion | Relevance and Importance to this Market | Comments |
|---|---|---|
| | | |

SOURCE: TRA

**(b) Discussion on single dominance**

*Market share*

Omantel has, technically, 100% market share of international leased lines. The TRA does not expect this to reduce to any significant extent in the time period of this review. However, Nawras now has the capacity to enter the market. It has sought and received permission to provide a full private circuit service to a major bank headquartered in Qatar. Although the service provided is a high capacity service it remains to be seen how Nawras intends to compete in this market.

*Control of infrastructure not easily duplicated*

The underlying technology used to supply retail leased lines requires substantial investment in fixed network infrastructure. This provides a significant advantage to Omantel as first mover into this market. Omantel's network and leased line capability, together with its arrangements with international counterparts, is not readily duplicated. Nawras has made significant relevant investments appears to be in a position to enter the market in a general manner if it wishes. The position of both operators, viewed collectively, would constitute a major barrier to new entrants and may well dissuade them from further considering the market.

*Economies of scale and scope*

There are real advantages to Omantel in this market in terms of economic efficiencies resulting from both economies of both scale and scope in supplying retail international leased lines services. The economies arise from Omantel's multi-service network and businesses. For example, the transmission capacity for international call services can be used also for dedicated services such as international leased lines. The result is that shared network costs and fixed and common costs can be recovered over a greater service base and be lower on a unit basis as a result. Nawras also has economies of these kinds.

*Vertical integration*

Omantel operates the network and infrastructure as well as provides international leased line services at retail level. This vertical integration gives it substantial advantages over potential competitors who may seek to enter the market as resellers. Nawras has the capacity to enter the market as a vertically integrated operator in the same manner as Omantel.

The current lack of regulation at wholesale level and the market position enjoyed by Omantel in the corresponding wholesale market for international capacity adds further risk of harm to customers and competition in the retail market.

*Ease of market entry*

Licensing and investment requirements constitute substantial barriers to entry. The provision of international services on a half circuit basis requires the development of a range of correspondent relationships with overseas operators. This is not easily or quickly done. As noted Nawras has the requisite capacity and infrastructure to enter the market, but it is not clear that it intends to do so. The well entrenched position of Omantel and the clear capabilities of Nawras act as barriers to entry by third operators.

*Absence of potential competition*

There is no realistic potential for new competitors to enter and make significant gains in this market within the time frame of this review leaving aside Nawras whose position and capability has already been described above.

**(c) Conclusion on single dominance**

Omantel is dominant as a single service provider in this market. No other service provider is dominant in this market. This is an on-balance conclusion. The capabilities of Nawras have been demonstrated in its limited involvement in the market. Nawras is positioned to fully enter the market if it wishes to do so, but its intentions are yet to become clear. The existing uncertainty would therefore provide some constraint on Omantel. If it were to increase its prices or reduce its outputs to an extreme degree the opportunity for Nawras may become too attractive to refuse. However in the normal course Omantel can act independently, short of extremes. In particular, it would seem that Omantel can maintain current prices and not pass on cost savings to customers.

**(d) Relevance of joint dominance**

Under the circumstances Omantel is dominant as a single operator. It follows that, absent regulation, it is able to operate independently of customers and competitors to an appreciable extent, and that this precludes the need to consider joint dominance in this market.

**Box 4.8**

**Question 1:** Do you agree with TRA’s assessment that during the time frame of this review, Omantel is singly dominant operator in international leased line services market? Please provide reasons and relevant evidence to support your view.

# 4.3 Wholesale markets

## Market 10: Wholesale voice call origination on the public telephone network provided at a fixed location

**(a) Criteria for single dominance**

Figure 4.14: Criteria for single dominance (Market 10)

| Criterion | Relevance and Importance to this Market | Comments |
|---|---|---|
| A.1 Market share | Relevant and important. | Omantel has over 85% market share at present. However this share is reducing as Nawras provides fixed services to the market based on wireless technology. |
| A.2 Overall size of the undertaking | Relevant | Omantel is a major multi-service and multi-network undertaking and this is important for its overall presence in the whole market place. However so is Nawras. |
| A.3 Control of infrastructure not easily duplicated | No longer relevant or important. | Nawras has a ubiquitous WiMAX network that enables it to complete effectively with Omantel's fixed network. The issue of duplication has been overtaken by the reality of Nawras's rollout. |
| A.4 Sunk costs | Potentially relevant and important | A substantial part of the capital invested in the network is sunk, which, in the absence of effective access regulation, gives Omantel and Nawras significant market advantage over potential entrants. |
| A.5 Network effects | Not relevant | Not relevant to wholesale markets for dedicated transmission service. |
| A.6 Technological advantages and superiority | Not relevant | No service provider in this market has exclusive access to superior technology or other technological advantages. The relevant technological solutions are available to all from a number of global equipment vendors. |
| A.7 Absence of or low countervailing buying power | Not relevant | There is a current lack of countervailing buyer power due to Omantel's control over access and the lack of alternative operators offering the same service with the same ubiquity. In time Nawras will be able to offer an effective alternative based on its WiMAX network. |
| A.8 Easy or privileged access to capital markets / | Not relevant | There is no evidence that any operator has privileged access to |

| Criterion | Relevance and Importance to this Market | Comments |
|---|---|---|
| financial resources | | capital or financial resources compared to potential competitors. |
| A.9 Product / services diversification | Not relevant | There is little scope for service diversification in this wholesale service market. The service is a commodity. |
| A.10 Economies of scale | Relevant and important. | The high fixed costs for the network platform needed to provide this service generates economies of scale. Omantel's relatively large scale is source of major advantage over smaller entrants and competitors as a result. |
| A.11 Economies of scope | Relevant and important. | The large investments in multi-service networks provide advantages from scope for Omantel. |
| A.12 Vertical integration | Relevant and important. | Omantel operates in both wholesale and related retail markets for call origination. |
| A.13 A highly developed distribution and sales network | Not relevant | Sales and marketing is not important for wholesale markets where the service provider is a reluctant seller in the first place. |
| A.14 Absence of potential competition | Relevant and important. | Omantel is the only operator of sufficient scale which is potentially able to provide wholesale call termination to third parties over the period of this review. |
| A.15 Barriers to expansion | Relevant and important | Wholesale customers want access to Omantel's fixed customer base. That base is not growing. This will discourage potential entrants to the market. |
| A.16 Ease of market entry | Relevant and important. | The capital and regulatory (licence) barriers to entry into this market are significant. |
| A.17 Excess pricing and profitability | Relevant and potentially important. | Absent regulation, Omantel has the potential to earn above normal profits in this market. However the TRA has no evidence of excessive prices and profits at this time. |

| Criterion | Relevance and Importance to this Market | Comments |
|---|---|---|
| A.18 Lack of active competition on non-price factors | Not relevant | Fixed access services have commodity characteristics and there is little room for non-price competition. |
| A.19 Switching barriers | Potentially relevant. | There are no current arrangements specifically designed to deter switching because there is no opportunity for customers to switch fixed access suppliers in the first place. |
| A.20 Customers ability to access and use information | Not relevant | There is no evidence that these are issues for competition in the market. |

SOURCE: TRA

**(b) Discussion on single dominance**

*Market share*

Omantel retains a share of the voice call origination market that exceeds 80%. Omantel's own published data indicates that it has 96.8% of the fixed market share by services and 85.8% share by revenue.[12]

*Control of infrastructure not easily duplicated*

Control over local access is an essential factor for the provision of call origination services. Omantel's ownership over access network confers a significant advantage over alternative operators. As highlighted in the analysis of the narrowband access market there is little substitution with other forms of access. The access market is not economically duplicable. Some alternatives such as wireless access might be considered in high density locations, but these exceptions will likely have little impact on Omantel's position in the short to medium term.

*Sunk costs*

Alternative service providers who would like to enter this market would need to invest significant resources which are not recoverable if the entrant decides to exit from the market. The high level of Omantel's sunk costs is also an important factor in considering its ability to compete on price if required to.

*Economies of scale and scope*

The high level of fixed and common costs associated with the access network platform that supports the provision of this service generates significant economies of scale. The use of a number of platforms for even larger numbers of services and business operations

[12] *Omantel Performance 2011 Q4* (May 2012) pdf on Omantel website

is a basis for scope economies, especially in the recovery of joint and overhead costs. These provide substantial advantage to Omantel over competitors with smaller scale and lesser scope.

*Vertical integration*

Omantel is a vertically integrated operator providing services for this market at different level of the value chain both at upstream and downstream level. In the absence of effective regulation, this provides opportunities for Omantel to leverage its power in the wholesale market to gain advantage in the retail market. However Nawras is also vertically integrated and this weakens the power possessed by Omantel relative to Nawras. Both Omantel and Nawras have integration advantages compared to potential new entrants.

*Absence of potential competition*

Omantel is the only operator that is able to provide ubiquitous wholesale call origination services to other service providers during the period covered by this review. Nawras will be only able to offer limited wholesale call origination services based on the take-up on its own network. Omantel will continue to be the price leader for call origination, and is unlikely to be unduly constrained by Nawras in this respect.

**(c) Conclusion on single dominance**

Omantel is dominant as a single service provider in this market. No other service provider is dominant in this market.

**(d) Relevance of joint dominance**

Under the circumstances Omantel is dominant as a single operator. It follows that, absent regulation, it is able to operate independently of customers and competitors to an appreciable extent, and that this precludes the need to consider joint dominance in this market.

**Box 4.9**

**Question 1:** Do you agree with TRA's assessment that during the time frame of this review, Omantel is singly dominant in the market for wholesale fixed voice call origination services? Please provide reasons and relevant evidence to support your view.

## Market 11: Wholesale voice call termination on individual public telephone networks provided at a fixed location

**(a) Criteria for single dominance**

Figure 4.15: Criteria for single dominance (Market 11)

| Criterion | Relevance and Importance to this Market | Comments |
|---|---|---|
| A.1 Market share | Relevant and important | Each service provider that operates a network has 100% share of the market for call termination on its own fixed network, irrespective of its share in other markets, including retail markets. |
| A.2 Overall size of the undertaking | Not relevant | |
| A.3 Control of infrastructure not easily duplicated | Relevant and important | Wholesale fixed termination involves transmission from a point of interconnection to the called service and this is not duplicable at all. |
| A.4 Sunk costs | Not relevant | |
| A.5 Network effects | Not relevant | |
| A.6 Technological advantages and superiority | Not relevant | |
| A.7 Absence of or low countervailing buying power | Relevant and important | If there is countervailing buying power it may serve to lessen the risk of harm from dominance in this market. |
| A.8 Easy or privileged access to capital markets / financial resources | Not relevant | |
| A.9 Product / services diversification | Not relevant | Voice call termination is a commodity service. |
| A.10 Economies of scale | Not relevant | |
| A.11 Economies of scope | Not relevant | |
| A.12 Vertical integration | Presumed to be the case | Vertical integration is unavoidable in this market because the provision of the service is dependent on the operator having retail customers with services directly connected to its network and a wholesale service capability by virtue of access to those retail customers. |
| A.13 A highly developed distribution and sales network | Not relevant | Distribution and sales networks are irrelevant in wholesale service markets such as this. |

| Criterion | Relevance and Importance to this Market | Comments |
|---|---|---|
| A.14 Absence of potential competition | Logically must be the case. | There is no possibility of any competitor providing a competing service. |
| A.15 Barriers to expansion | Not relevant | |
| A.16 Ease of market entry | Not relevant | |
| A.17 Excess pricing and profitability | Not relevant | In the absence of regulation there is a strong incentive for the operators to negotiate the highest possible termination rates. However the issue of dominance can be decided without any evidence of prices charges or sought. |
| A.18 Lack of active competition on non-price factors | Not relevant | This is a commodity wholesale service market, so a lack of such factors is to be expected. |
| A.19 Switching barriers | Not relevant | Switching is impossible. |
| A.20 Customers ability to access and use information | Not relevant | |

SOURCE: TRA

**(b) Discussion on single dominance**

*Market share*

Each service provider that operates a fixed network has 100% share of the market for call termination on its own network, irrespective of its share in other markets, including retail markets. The only way to access a customer via a service directly connected to the operator's network is via the operator's network. Logically there can be no competition.

*Control of infrastructure not easily duplicated*

The transmission path between a point of interconnect (POI) on the terminating network and the called service cannot be duplicated by any other operator as a matter of logic.

*Countervailing buyer power*

Countervailing buyer power exists when a particular purchaser (or group of purchasers) of a good or service is sufficiently important to its supplier to influence the price charged for that good or service.

Interconnection and the termination of calls is a two-way process and this fact might cause an operator to exercise restraintin the terms and conditions, particularly price, that it seeks to apply to the service. However, the history of terminating interconnection strongly suggests that incumbent fixed operators see themselves as access providers (that is providers of call termination and other access services) rather than as access seekers. In all likelihood the countervailing buying power is not seen to exist where smaller and new entrant firms are concerned. Small and new entrant service providers rely on interconnection to be able to market their services and to gain traction in the market. Without the amenity of being able to call all subscribers including those on other networks it is unlikely that small and new entrant service providers could market their services and gain a customer base from which to operate and grow. Under these circumstances they may well accept terms that are unfavourable in order to commence operations earlier. Such cases are well documented and indicate that countervailing buying power may be more theoretical than real in many situations that occur in this market.

### (c) Conclusion on single dominance

Both Omantel and Nawras are dominants single operators in this market, because the network of each constitutes a separate market. Strictly speaking there are two markets of the same kind, rather than one.

### (d) Relevance of joint dominance

Under the circumstances both Omantel and Nawras are dominant as single operators. It follows that, absent regulation, they are both able to operate independently of customers and competitors to an appreciable extent, and that this precludes the need to consider joint dominance in this market. Indeed, given the discussion above, the notion of joint dominance makes no sense in this market.

**Box 4.10**

**Question 1:** Do you agree with TRA's assessment that during the time frame of this review, Omantel and Nawras are each singly dominant operator in the market for wholesale fixed voice call termination services on their own networks? Please provide reasons and relevant evidence to support your view.

## Market 12: Wholesale network infrastructure access at a fixed location

### (a) Criteria for single dominance

Figure 4.16: Criteria for single dominance (Market 12)

| Criterion | Relevance and Importance to this Market | Comments |
|---|---|---|
| A.1 Market share | Relevant and important | Omantel has a very large market share of relevant infrastructure. |
| A.2 Overall size of the undertaking | Not relevant | It is the extent and ubiquity of the infrastructure rather than the overall size of the undertaking that counts for dominance. |

| Criterion | Relevance and Importance to this Market | Comments |
|---|---|---|
| A.3 Control of infrastructure not easily duplicated | Relevant and important | Relevant because the copper local loop and other fixed access infrastructure is not easily duplicated. Important because there are no other local loop alternatives available that can be unbundled and used by alternative networks to provide direct access to end users. |
| A.4 Sunk costs | Relevant and important | Network infrastructure involves substantial sunk costs that provide advantages for the network operator. |
| A.5 Network effects | Not relevant | Network effects are not particularly relevant at wholesale level. Access seekers using wholesale services do not see greater value in these services if other alternative networks take up the same wholesale service. |
| A.6 Technological advantages and superiority | Not relevant | In Oman, at present, there is only one potential option of unbundled local loop at national level, copper lines. In the future, large scale deployment of Fibre to the Home might create another alternative if fibre is deployed in a way which allows unbundling and, if so, the relevance of this criterion might be then reassessed. |
| A.7 Absence of or low countervailing buying power | Not relevant | Currently the wholesale market for telecommunication services is not well developed in Oman and access seekers are not able to leverage their position as users of wholesale services. |
| A.8 Easy or privileged access to capital markets / financial resources | Not relevant | No evidence of this being an issue in this market in Oman. |
| A.9 Product / services diversification | Not relevant | Service diversification at wholesale level does not enable the incumbent to leverage its position of market power in relation to ULL access seekers. |
| A.10 Economies of scale | Relevant but not important | The incumbent has relevant economies of scale in relation to provision of local loop access to both its retail division and to access seekers. Not important because at present there are no other providers of |

| Criterion | Relevance and Importance to this Market | Comments |
|---|---|---|
| | | ULL to compete with the incumbent. This may become an important criterion to assess if, in the future, other infrastructure providers start to offer unbundled local loop (e.g. through fibre). |
| A.11 Economies of scope | Not relevant | There are no significant economies of scope associated with wholesale provision of unbundled local loops which would allow the incumbent to leverage its market power in relation to competitors (besides, there are no competitors providing wholesale ULL services). |
| A.12 Vertical integration | Relevant and important | Relevant because vertical integration gives the retail division of the incumbent access to infrastructure not easily duplicated (e.g. the copper access network). Important because this infrastructure is not available to other service providers on a competitive basis at present. |
| A.13 A highly developed distribution and sales network | Not relevant | This criterion is not applicable for wholesale services. |
| A.14 Absence of potential competition | Relevant and important | In Oman, at present, there is only one potential provider of unbundled local loop at national level, copper lines. This allows the incumbent to leverage its position of market power. In the future, large scale deployment of Fibre to the Home might create another alternative if fibre is deployed in a way which allows unbundling. |
| A.15 Barriers to expansion | Relevant but not important | Relevant because there are important barriers to extending local loop services to a national level (as provided by the incumbent). Not important at the moment because there are no competitors facing such barriers. This criterion may become important in the future if other providers of local loop services (e.g. through fibre) are limited in their ability to expand at a national level. (i.e. competition may be restricted to a regional level) |

| Criterion | Relevance and Importance to this Market | Comments |
|---|---|---|
| A.16 Ease of market entry | Relevant and important | Relevant because market entry for provision of local loop services is a lengthy process which involves a large amount of sunk costs. Important because the incumbent can take advantage of these barriers to leverage its position of market power. |
| A.17 Excess pricing and profitability | Not relevant currently | This service is not currently offered, and excess pricing is not currently an issue. |
| A.18 Lack of active competition on non-price factors | Not relevant | There is no possibility of competition in the provision of unbundled local loop in Oman at the moment. This may become important in the future if other infrastructure providers start to offer unbundled local loop (e.g. through fibre). |
| A.19 Switching barriers | Potentially relevant but not important | Relevant because contract duration and/or investment in unbundling equipment can work as barriers to switch. Not important at the moment because ULL is not offered at all. |
| A.20 Customers ability to access and use information | Relevant but not important | ULL is not part of the incumbent's RAO. As such, the only way access seekers could be able to negotiate access to local loop is through commercial negotiation. Lack of transparency in respect to terms and conditions would give the incumbent the ability to leverage its market power. Not important at the moment as ULL is not offered at all. |

SOURCE: TRA

**(b) Discussion on single dominance**

*Market share*

The infrastructure to which access is being considered comprises towers, ducts and rights of way, as well as passive infrastructure such as copper or other electronically inactive infrastructure. A substantial part of these assets are in the hands of Omantel, although Nawras has also established substantial assets in recent times. It is difficult to measure common market share of such a diversity of infrastructure assets. The focus is therefore on those infrastructural assets that were established under conditions of privilege the circumstance so which cannot be replicated by new or recent entrants to the market. In these assets Omantel has a high market share.

### *Control of infrastructure not easily duplicated*

In developing its copper access network, Omantel has obtained rights of way and planning permission to build physical infrastructure (e.g. trenches and ducts) up to user premises. This was done on a national level and this infrastructure is not easily duplicated. Although there are plans for regional fibre deployment in Oman, it is unlikely that even on a regional basis the coverage of the fibre access network will match that of the copper access network within the time period of this review.

### *Vertical integration*

Because Omantel is a vertically integrated company it has the ability and the incentive to refuse to provide access to unbundled local loops on reasonable terms. By doing so it would deter entry at retail level and protect its dominant position in the retail market.

### *Absence of potential competition*

There is no potential competition for the provision of access to unbundled local loops in Oman. The plans for regional fibre deployment in Oman will not yield competitive pressure in the short to medium term. Because Omantel has no potential competition in this market, it can leverage its market power and refuse to supply access to unbundled local loops on reasonable terms.

### *Ease of market entry*

Even though market entry is possible, as attested by Haya Water's initiative to develop a wholesale access network based on fibre, development of the access network is a lengthy process and coverage is unlikely to be extended beyond a regional level in the time period relevant to this review. Haya Water is in a unique position of being able to leverage its sewage network and avoid most of the sunk costs that other potential competitors would have digging trenches and laying ducts. Omantel benefits from this situation and is not faced by competitive constraints forcing it to offer access to unbundled local loops on reasonable terms.

### *Other issues*

It has been noted by Omantel in its response to the First Public Consultation Document of 23 October 2010 relating to dominance regulation and guidelines that there is a tension between access regulation and new investment. In particular, Omantel is currently undergoing a major upgrade of its fixed investment and is replacing many street cabinets with multi-service units connected to higher levels in the network via optic fibre cabling.

In addition it is unlikely that potential competitors would seek access to ULL at smaller exchanges. At those locations there may not be the potential demand to provide a return on DSLAM and backhaul investment or lease. However there are a number of large exchanges where this is not the case, and where competition based on ULL access could well be viable.

The purpose of this section of the report is not to determine complex issues such as the trade-offs that exist between regulation and investment or whether the commercial viability of competing business cases ought to be determined by the regulator or the market. The purpose of this section of the report is to determine if Omantel is dominant in this market. Appropriate remedies that are sensitive to trade-off conditions are matters for later consideration.

**(c) Conclusion on single dominance**

Omantel is dominant as a single service provider in this market. No other service provider is dominant in this market.

It is a matter for Omantel to argue that access should not be permitted to *specific* infrastructure and to raise the matter for TRA determination on a case by case basis.

Other service providers may have a dominant position in relation to access to *specific* infrastructure, such as, for example, specific towers and masts, and that position will be determined by TRA on a case by case basis.

**(d) Relevance of joint dominance**

Given the discussion above in relation to single dominance at a market level, issues associated with joint dominance need not be pursued at a market level. If two or more operators have joined together to establish infrastructure that they both use, then issues associated with access by third party operators may arise. TRA intends for the time being to deal with such matters on a case by case basis as they arise.

**Box 4.11**

**Question 1:** Do you agree with TRA's assessment that during the time frame of this review, Omantel is singly dominant operator in the market for wholesale fixed network infrastructure services? Please provide reasons and relevant evidence to support your view.

**Question 2**: Given the diversity of infrastructure types and the circumstances of specific infrastructure assets, do you agree with the approaches outlined in paragraphs © and (d) above? Please provide reasons to support your view.

## Market 13: Wholesale broadband access (including bit-stream)

**(a) Criteria for single dominance**

Figure 4.17: Criteria for single dominance (Market 13)

| Criterion | Relevance and Importance to this Market | Comments |
|---|---|---|
| A.1 Market share | Relevant and important | Omantel and Nawras have virtually all of this market between them. |

| Criterion | Relevance and Importance to this Market | Comments |
|---|---|---|
| | | |
| A.2 Overall size of the undertaking | Not relevant | |
| A.3 Control of infrastructure not easily duplicated | Relevant and important | Access to end users for provision of broadband services requires infrastructure – whether wireline or wireless - that is not easily or economically duplicated. |
| A.4 Sunk costs | Relevant and important | The high level of sunk costs will deter entry and new investors to this market. |
| A.5 Network effects | Not relevant | Network effects are not particularly relevant at wholesale level. For example, ISPs using the incumbent's bit stream services to provide access to end users will not necessarily benefit if other ISPs also use bit stream services from the incumbent. |
| A.6 Technological advantages and superiority | Not important | The relevant technologies are available from global vendors to all potential competitors. |
| A.7 Absence of or low countervailing buying power | Not relevant | Currently, the wholesale market for telecommunication services is not well developed in Oman and ISPs are not able to leverage their position as consumers of wholesale services. |
| A.8 Easy or privileged access to capital markets / financial resources | Not relevant | There is no evidence that any wholesale service provider has advantage over potential competitors in relation to access to capital or financial resources. |
| A.9 Product / services diversification | Not relevant | This is a wholesale commodity services market and product differentiation is not relevant. |
| A.10 Economies of scale | Relevant and important | |
| A.11 Economies of scope | Not relevant | There are no significant economies of scope associated with service provision at the wholesale level which would allow any service provider to |

| Criterion | Relevance and Importance to this Market | Comments |
| --- | --- | --- |
| | | leverage its market power in relation to competitors. |
| A.12 Vertical integration | Relevant and important | Relevant because vertical integration gives the retail division of the incumbent access to infrastructure not easily duplicated (e.g. the copper access network and ubiquitous backhaul). Important because this infrastructure is not available to other service providers on the same terms at present. |
| A.13 A highly developed distribution and sales network | Not relevant | This criterion is not relevant for wholesale services. |
| A.14 Absence of potential competition | Relevant and important | Omantel and Nawras are the only competitors in the wholesale broadband services market, and they are set up to compete directly on backhaul services and inter-modally for broadband resale. There are no third party competitors on the horizon. |
| A.15 Barriers to expansion | Relevant and important | Relevant because there are important cost barriers to extend wholesale broadband services on a national scale. Important because the existing national reach and ubiquitous presence of Omantel and Nawras will remain an important advantage in enabling wholesale customers to have the services nationally. |
| A.16 Ease of market entry | Relevant and important | The barriers to entry are high – mainly because of the pre-eminent position of Omantel and Nawras considered collectively. |
| A.17 Excess pricing and profitability | Relevant and important | There is no evidence of excessive pricing, but the position of established operators provides the opportunity and the incentive to seek prices that exceed cost from its retail competitors. |
| A.18 Lack of active competition on non-price | Not relevant | Bit stream services are wholesale commodity services in which price is |

| Criterion | Relevance and Importance to this Market | Comments |
|---|---|---|
| factors | | expected to be the main factor in competition. |
| A.19 Switching barriers | Relevant but not important | Relevant because contract duration and/or investment in co-location and dedicated equipment can work as barriers to switching. |
| A.20 Customers ability to access and use information | Relevant and important | These services are included in the Incumbent's Reference Access Offer; the offer is restricted to the ADSL reseller model. |

SOURCE: TRA

**(b) Discussion on single dominance**

*Market share*

Omantel has a majority but declining share of the fixed access market in Oman. Omantel and Nawras both have the capacity to offer bit stream services nationally and other wholesale broadband services such as on a complete resale basis. Only Omantel is positioned to offer the alternative of ULL (unbundled local loop), but its ability to extract monopoly profits from doing so would appear now to be constrained by the availability of bit stream services from Nawras and the position of bit stream as a preferred wholesale option in the longer term.

Overall growth of the market in which this share redistribution is occurring has been high (and accelerating) in recent years:

Figure 4-18: Growth in Oman fixed broadband services – 2009 to 2011

| Date | Services | % Growth – year on year | Comment |
|---|---|---|---|
| December 2009 | 40,701 | - | Includes services with dial-up features |
| December 2010 | 52,630 | 29% | |
| December 2011 | 78,223 | 49% | |

Source TRA Telecom Market Indicator Reports

The market described above is the retail market for broadband services. However, at the wholesale level there will have been a commensurate increase in service input. At the wholesale level there is no evidence of any activity other than self-supply by Omantel and Nawras to provide service capacity to their respective retail operations.

*Control of infrastructure not easily duplicated*

In developing its access network, Omantel has obtained rights of way and planning permission to build physical infrastructure (e.g. trenches and ducts) up to user premises. This was done on a national level and this infrastructure is not easily duplicated. Nawras has based its presence in this market on a national WiMAX platform which also represents a significant investment.

*Technological advantages and superiority*

Omantel is progressively transforming its network to NGN and, in this process, is installing MSANs in cabinets closer to end users and connecting these MSANs with fibre (FTTC). This will enable Omantel to provide broadband access services at higher speeds and with better control over quality of services. These improvements will result in more advanced services being provided to end users. Optic fibre deployment by Nawras has also been significant during 2011.

Both Omantel and Nawras are deploying fibre networks for their own use, not for wholesale service supply to each other or to third party operators and service providers. The existence of self-supply indicates that there is a market however.

Market positioning and advantage, particularly in terms of first mover status, gives Omantel and Nawras the opportunity to impose terms and conditions for access to advanced bit stream services that would be more advantageous to them than in a fully competitive wholesale market. It also gives the incentive for both to offer only standard bit stream and other wholesale broadband services which would not enable ISPs to compete on a par with their retail broadband offers.

*Vertical integration*

Both Omantel and Nawras are vertically integrated operators that have the ability and the incentive to refuse to provide access to the various types of bit stream services on reasonable terms. By doing they deter entry at retail level and protect their own interests and position in the retail market.

*Absence of potential competition*

Neither Omantel nor Nawras face new competition in this market in the period of this study. No significant third entrant to the market can be identified at this stage.

*Ease of market entry*

Even though market entry is possible, as attested by Haya Water’s initiative to develop a wholesale access network based on fibre, development of the access network is a lengthy process and coverage is unlikely to be extended beyond a local or regional level. Omantel and Nawras benefit from this situation and are not faced by competitive constraints forcing them to offer the various types of wholesale broadband service on competitively reasonable terms. In the first instance the major issue is whether they would in the absence of ex ante regulation provide a full range of wholesale broadband services at all.

**(c) Conclusion on single dominance**

Neither Omantel nor Nawras is dominant as a single service provider in this market. Both must have regard to the market behaviour of the other and neither can take independent action on price, performance or other dimension of service provision with little or no concern about the potential response of the other.

**(d) Discussion of joint dominance**

Some of the key requirements that accompany joint dominance are not present in this market. For example, the market shares (in terms of self-supply) are still significantly different, and the benefits from non-competition may not be proportionately shared in the short term in the market development.

The second characteristic of the market at this stage of its development is its high growth rate. This is not the stagnant or moderately growing market that would normally attract joint dominance concerns.

If there are no more entrants into the market at the wholesale level, then over time, equilibrium might develop that creates a market structure more conducive to being characterised as joint dominance.

He above discussion is about the prospect of the kind of interdependent position that develops in mature, low growth oligopolistic markets. However, there are other aspects of this market that suggest that joint dominance is the most appropriate description. The market is highly concentrated and the position of the established operators constitutes a high entry barrier for any new entrants.

**(e) Conclusion on joint dominance**

Some, but not all, important market characteristics that support an overall conclusion of joint dominance are not present in this market. The TRA concludes that, on balance, Omantel and Nawras are jointly dominant in this market.

The TRA will monitor the market to determine if earlier review or ex post action is warranted. Evidence that both operators refuse to supply third party competitors would be an important matter that could trigger such a review.

**Box 4.12**

**Question 1:** Do you agree with TRA’s assessment that during the time frame of this review, neither Omantel nor Nawras is singly dominant operator in the market for wholesale broadband access services?

**Question 2:** Do you agree that Omantel and Nawras are jointly dominant in the market for wholesale broadband access services??Please provide reasons and relevant evidence to support your view.

## Market 14: Wholesale terminating segments of leased lines

**(a) Criteria for single dominance**

Figure 4.19: Criteria for single dominance (Market 14)

| Criterion | Relevance and Importance to this Market | Comments |
|---|---|---|
| A.1 Market share | Relevant and important. | Market share is an indication of many factors that may be indicative of market power, although it is not determinative by itself. |
| A.2 Overall size of the undertaking | Not relevant | Wholesale customers are unlikely to be affected or influenced by the overall size of a wholesaler's business. |
| A.3 Control of infrastructure not easily duplicated | Relevant and important. | The underlying access network infrastructure used to supply this service requires substantial investment in fixed network infrastructures resulting in a significant advantage to Omantel. T |
| A.4 Sunk costs | Relevant and important | A high proportion of fixed network costs are sunk thereby acting as a deterrent to new entrants. |
| A.5 Network effects | Not relevant | Network effects are not relevant in this type of wholesale services market. |
| A.6 Technological advantages and superiority | Not relevant | Self-provision is a source of potential competition and may be limited to single hop microwave solutions. In addition, the technologies used by Omantel are available to all potential competitors. |
| A.7 Absence of or low countervailing buying power | Not relevant | Wholesale customers who require leased line terminating segments have limited choices and have little or no countervailing buying power to leverage. |
| A.8 Easy or privileged access to capital markets / financial resources | Not relevant | Clearly this market requires substantial capital investment. However there is no evidence that Omantel has privileged access to capital or financial resources compared to identifiable, potential competitors. |
| A.9 Product / services diversification | Not relevant | Leased line terminating segment services are homogenous wholesale services. |

| Criterion | Relevance and Importance to this Market | Comments |
|---|---|---|
| A.10 Economies of scale | Relevant and important. | Omantel has network scale economies. This is an important source of advantage against new entrants. |
| A.11 Economies of scope | Relevant and important. | Omantel uses the same access network infrastructure to provide both subscriber access lines and terminating segments for leased lines, in both cases at retail and wholesale levels. Fixed and common costs are spread over multiple service types as a result. |
| A.12 Vertical integration | Relevant and important. | Omantel operates in both the retail and wholesale market creating a leveraging opportunity and a source of market power. |
| A.13 A highly developed distribution and sales network | Not relevant | Not relevant in wholesale markets such as this. |
| A.14 Absence of potential competition | Relevant and important | There are no potential competitors or new competitors that will provide effective and significant competition in this market in the time frame of this review |
| A.15 Barriers to expansion | Not relevant | TRA has no evidence of any such barriers or of market saturation. |
| A.16 Ease of market entry | Relevant and important | Relevant because market entry for provision of access networks is a lengthy process which involves significant investment. Important because the incumbent can take advantage of this to leverage its position of market power. |
| A.17 Excess pricing and profitability | Relevant and potentially important | Absent regulation, Omantel has the potential to earn above normal profits in this market. |
| A.18 Lack of active competition on non-price factors | Not relevant | The wholesale market for terminating segments of leased lines is a commodity market in which price is the overwhelming factor. |
| A.19 Switching barriers | Not relevant | Lack of alternative supply means that |

| Criterion | Relevance and Importance to this Market | Comments |
|---|---|---|
| | | switching is not an option in most cases at this stage. |
| A.20 Customers ability to access and use information | Not relevant | There is no evidence that these are issues for competition in the market. |

SOURCE: TRA

**(b) Discussion on single dominance**

*Market share*

Omantel has close to 100% market share and this has not been impacted by Nawras's recent rollout of a fibre backbone network of over 5,200 km or Nawras's recent rollout out of an extensive WiMAX platform. Although Nawras now has the infrastructure to provide substitutes for certain fixed services (such as retail fixed and broadband services) it is not equally well placed to provide the terminating segments of leased lines to the wholesale market.

*Control of infrastructure not easily duplicated*

The underlying technology used to support leased lines terminating segments requires substantial investment in fixed network infrastructure. A competitor could conceivably seek to cherry pick the wholesale market in low cost, high density major locations, but it would have to arrange for duct and customer premises entry. It is yet to be revealed whether Nawras intends to adopt such a strategy, and, if so, the intensity with which it will be pursued.

*Economies of scale and scope*

There are real advantages to Omantel in this market in terms of efficiencies resulting from both economies of both scale and scope in supplying leased line terminating segment services. The economies arise from Omantel's multi-service access network and from the scope of the services that it provides. For example, the transmission capacity for switched network access services can be used also for dedicated services such as leased line terminating segments. The result is that shared network costs and fixed and common costs can be recovered over a greater service base and be lower on a unit basis as a result. New entrant competitors do not have these scale and scope economies and would likely take some time to achieve them, if at all.

*Vertical integration*

Omantel operates the network and infrastructure as well as provides leased line services at retail level. This vertical integration gives it substantial advantages over resellers who operate only in the retail market.

*Ease of market entry*

Capital investment requirements constitute substantial barriers to entry. Market entry is difficult. However, given its position in associated and adjacent markets, it would be much easier for Nawras to enter this market than for other operators without those advantages. Given Nawras's situation, this factor is not significant in this market.

*Absence of potential competition*

There is no realistic potential for brand new competitors to enter this market in the time frame of this review. Nawras may be inclined to enter the market if its sees advantage in doing so to support leased line services to its own retail customers. Evidence of this on a scale that amounts to significant, continuing and widely-based competition is yet to emerge.

**(c) Conclusion on single dominance**

Omantel is dominant as a single service provider in this market. No other service provider is dominant in this market.

**(d) Relevance of joint dominance**

Under the circumstances Omantel is dominant as a single operator. There are no other providers in the market at present nor will there be for the time period of this review. Therefore joint dominance is not an issue at this time.

**Box 4.13**

**Question 1:** Do you agree with TRA's assessment that during the time frame of this review, Omantel is singly dominant in the wholesale market for terminating segments of leased line services?

## Market 15: Wholesale trunk segments of leased lines

**(a) Criteria for single dominance**

Figure 4.20: Criteria for single dominance (Market 15)

| Criterion | Relevance and Importance to this Market | Comments |
|---|---|---|
| A.1 Market share | Relevant and important. | Market share is an indication of many factors that may be indicative of market power, although it is not determinative by itself. |
| A.2 Overall size of the undertaking | Not relevant | Wholesale customers are unlikely to be affected or influenced by the overall size of a wholesaler's business. |
| A.3 Control of infrastructure not easily duplicated | Relevant and important. | The underlying technology and infrastructure used to supply this service requires substantial |

| Criterion | Relevance and Importance to this Market | Comments |
|---|---|---|
| | | investment in fixed network infrastructure which provides a significant advantage to Omantel. |
| A.4 Sunk costs | Relevant and important | A high proportion of fixed network costs are sunk thereby acting as a deterrent to new entrants. |
| A.5 Network effects | Not relevant | Network effects are not relevant in this type of wholesale services market. |
| A.6 Technological advantages and superiority | Relevant but not important | Self-provision is a source of potential competition and may be limited to single hop microwave solutions. Compared with a meshed fibre network with substantial capacity a single hop microwave may have price and performance limitations, depending on the application. |
| A.7 Absence of or low countervailing buying power | Relevant but not important | Wholesale customers who require leased line trunk segments have limited choices and have little or no countervailing buying power to leverage. |
| A.8 Easy or privileged access to capital markets / financial resources | Not relevant | Clearly this market requires substantial capital investment. However there is no evidence that Omantel has privileged access to capital or financial resources compared to identifiable, potential competitors. |
| A.9 Product / services diversification | Not relevant | Leased line trunk segments are homogenous wholesale services. |
| A.10 Economies of scale | Relevant and important. | Omantel has network scale economies because of its market share. This is an important source of advantage against new entrants. |
| A.11 Economies of scope | Relevant and important. | Omantel has an inter-exchange meshed network that has substantial national coverage that benefits from the scope of its services. This means that unit costs for leased line trunk segments are lower as a result. However Nawras also has a new optic |

| Criterion | Relevance and Importance to this Market | Comments |
|---|---|---|
| | | fibre network of significant coverage and which also has significant multi-service potential. |
| A.12 Vertical integration | Relevant and important. | Omantel and Nawras operate in both the retail and wholesale market creating a leveraging opportunity and a source of market power. |
| A.13 A highly developed distribution and sales network | Not relevant | Not relevant in wholesale markets such as this. |
| A.14 Absence of potential competition | Relevant and important | There are no potential competitors or new competitors that will provide effective and significant competition in this market in the time frame of this review |
| A.15 Barriers to expansion | Not relevant | TRA has no evidence of any such barriers or of market saturation. |
| A.16 Ease of market entry | Relevant and important | Relevant because market entry for provision of national transmission networks is a lengthy process which involves significant investment. Important because the incumbent can take advantage of this to leverage its position of market power. |
| A.17 Excess pricing and profitability | Relevant and potentially important | Absent regulation, Omantel and Nawras have the potential to earn above normal profits in this market. |
| A.18 Lack of active competition on non-price factors | Not relevant | The wholesale market for trunk segments of leased lines is a commodity market in which price is the overwhelming factor. |
| A.19 Switching barriers | Not relevant | Lack of alternative supply means that switching is not an option in most cases at this stage. |
| A.20 Customers ability to access and use information | Not relevant | There is no evidence that these are issues for competition in the market. |

SOURCE: TRA

**(b) Discussion on single dominance**

*Market share*

Omantel has effectively 100% market share of third party services at present. However this market share reduces if self-supply is taken into account. As a potential large user of wholesale trunk segments Nawras can now largely self-supply from the 5,200 km optic fibre cable network that it has completed during 2011.

*Control of infrastructure not easily duplicated*

The underlying technology used to support leased lines trunk segments requires substantial investment in fixed network infrastructure. Meshed transmission networks are required for an effective national coverage. This provides a significant advantage to Omantel and Nawras because they have effectively deployed the infrastructure required.

*Economies of scale and scope*

There are real advantages to both Omantel and Nawras in this market in terms of economic efficiencies resulting from both economies of both scale and scope in supplying leased line trunk segment services. The economies arise from their multi-service network and businesses. For example, the transmission capacity for switched network services can be used also for dedicated services such as leased lines. The result is that shared network costs and fixed and common costs can be recovered over a greater service base and be lower on a unit basis as a result. New entrant competitors do not have these scale and scope economies and would likely take some time to achieve them, if at all. TRA has no evidence of the advantages that economies of scale and scope might give Omantel and Nawras, relative to each other.

*Vertical integration*

Both Omantel and Nawras are vertically integrated operators with wholesale and retail operations. Self-supply ensures that a wholesale element exists within each business. This vertical integration gives them substantial advantages over service providers who operate only in the retail market.

*Ease of market entry*

Capital investment requirements constitute substantial barriers to entry. Market entry is difficult.

*Absence of potential competition*

There is no realistic potential for new competitors to enter this market in the time frame of this review. Nawras is an actual not a potential competitor in this market. Nawras's backbone is based on IP/MPLS technology and will not likely provide an effective price constraint on leased line trunk segment wholesale services.

**(c) Conclusion on single dominance**

Omantel is dominant as a single service provider in this market. TRA bases this conclusion on its expectation that Nawras will not be able to provide an effective price constraint on Omantel in this market, given the technologies that Nawras itself is employing. There is a separate matter of how interested is Nawras in pursuing this market in a systematic and robustly competitive manner. No other service provider is dominant in this market.

**(d) Relevance of joint dominance**

Under the circumstances Omantel is dominant as a single operator. There are no other providers in the market at present nor will there be for the time period of this review. Therefore joint dominance is not an issue.

**Box 4.14**

**Question 1:** Do you agree with TRA's assessment that during the time frame of this review, Omantel is singly dominant operator in the market for wholesale trunk segments of leased line services? Please provide reasons and relevant evidence to support your view.

## Market 16: Wholesale international capacity (Bandwidth)

**(a) Criteria for single dominance**

Figure 4.21: Criteria for single dominance (Market 16)

| Criterion | Relevance and Importance to this Market | Comments |
|---|---|---|
| A.1 Market share | Relevant and important | International capacity is a major bottleneck in Oman as there are few alternatives for international connectivity and capacity is limited. Market share of international capacity can be used to advantage in the market. |
| A.2 Overall size of the undertaking | Not relevant | Users of international capacity gain no appreciable benefit from the size of the undertaking providing international capacity. They are unlikely to be influenced by it. |
| A.3 Control of infrastructure not easily duplicated | Relevant and important | There are few alternatives for the development of international capacity serving Oman. The major alternative is through either submarine cables or satellite. Both require extensive investment in landing / earth stations. Both Omantel and Nawras now have international gateway facilities operational and arrangements with international submarine cable consortia for capacity and access. |
| A.4 Sunk costs | Relevant and important | Investments in submarine cable and satellite capacity are largely sunk, giving advantage over new entrants |

| Criterion | Relevance and Importance to this Market | Comments |
|---|---|---|
| | | forced to make broadly similar investments. |
| A.5 Network effects | Not relevant | Users of international capacity do not benefit if there are other users of internet capacity with the same provider – in fact, the reverse applies if there is a scarcity. |
| A.6 Technological advantages and superiority | Not relevant | The technologies used by Omantel and Nawras are those employed by the submarine cable and other consortia with which they are affiliated. There is no advantage for wither operator. |
| A.7 Absence of or low countervailing buying power | Not relevant | Currently, the wholesale market for telecommunication services is not well developed in Oman and ISPs are not able to leverage their position as consumers of wholesale services. |
| A.8 Easy or privileged access to capital markets / financial resources | Not relevant | TRA has no evidence that Omantel has advantages in these areas relative to its potential rivals. |
| A.9 Product / services diversification | Not relevant | The scope for product / service diversification with wholesale international capacity services is very limited. |
| A.10 Economies of scale | Relevant and important | Nawras and Omantel have scale advantages derived from self-supply in their vertically integrated operations. A new entrant would not have this source of scale in the international capacity market. |
| A.11 Economies of scope | Not relevant | The market is for all international capacity wholesale services and is unlikely to be influenced by scope economies from other businesses. The market is sufficiently broadly defined to rule out further scope issues as irrelevant. |
| A.12 Vertical integration | Relevant and important | Relevant because vertical integration gives the retail division of the incumbent access to international capacity. Important because the |

| Criterion | Relevance and Importance to this Market | Comments |
|---|---|---|
| | | incumbents can leverage market power at upstream level (international capacity) to limit competition at the retail level. |
| A.13 A highly developed distribution and sales network | Not relevant | This criterion is not applicable for wholesale services. |
| A.14 Absence of potential competition | Relevant and important | A third operator may enter this market, but the intentions of that operator are unclear at present. Apart from the third operator no other potential operators are currently visible. |
| A.15 Barriers to expansion | Relevant and potentially important | There is no evidence of barriers to expansion, such as market saturation, being an issue in the time scale of this report. |
| A.16 Ease of market entry | Relevant and important | Entry into the market for provision of international capacity is a lengthy process which involves large investments and the establishment of relationships with international partners. |
| A.17 Excess pricing and profitability | Relevant and potentially important | Although relevant and incentives exist, TRA has no evidence that of excess pricing in this market. |
| A.18 Lack of active competition on non-price factors | Not relevant | This is a wholesale commodity market, and price is the main factor in competition. |
| A.19 Switching barriers | Relevant and important | Relevant because contract duration and/or investment in co-location and dedicated equipment can work as barriers to switch in case other companies develop international capacity services in Oman. |
| A.20 Customers ability to access and use information | Relevant but not an important issue at present in Oman | |

SOURCE: TRA

**(b) Discussion on single dominance**

*Market share*

At present Omantel and Nawras are the only operators able to provide international capacity. Omantel has signed exclusive deals, in some occasions through acquisition of shareholding, for the following submarine cables:

- TWA-1
- FLAG Falcon
- MENA
- EIG

In November 2009 Nawras announced an exclusive deal to land a cable connecting to Tata Global Network (TGN-Gulf) in Oman. This international connectivity became operational in 2011.

At present Omantel and Nawras have 100% of the international cable capacity into and out of Oman between them.

*Control of infrastructure not easily duplicated*

Arrangements such as those entered into by Omantel and Nawras are costly and may take many years to come into operation – as in the case of the Tata Gulf cable consortium with which Nawras is affiliated. The TRA notes that there are no plans for similar levels of investment to Omantel and Nawras announced by other operators. Even if this changes the timescales involved may leave any operational impact outside the time horizon of this report.

*Economies of scale and scope*

Omantel and Nawras need international capacity for their own telecommunications services, and for expected growth. Additional capacity which is not used by Omantel and Nawras retail divisions has a relatively low marginal cost. International capacity costs to Omantel and Nawras reflect scale and commitment. These operators therefore have a relative scale advantage over new entrants.

*Vertical integration*

International capacity is required for both international telecommunications services and for internet services. By controlling the terms of supply to competitors for international capacity Omantel and Nawras the opportunity, subject only to each other,to take profits at wholesale level and to squeeze the margins available for service providers for provision of competing services to end users in the retail market.

*Absence of potential competition*

Samatel is a potential entrant and is licensed to operate in the international capacity market. However its ability to enter the market, and to do so on anyfast timetable, must be questioned. Apart from Samatel, there are no other potential entrants on the horizon in the timescale of this report.

The question arises as to whether Samatel's potential entry might be reasonably expected to act as a constraint on Omantel and Nawras. The TRA has concluded based on all the information available to it that the constraint is limited given all of the circumstances.

*Ease of market entry*

Key barriers to entry are the ability to negotiate with cable companies (as both Omantel and Nawras have secured exclusive deals) and the amount of investment required to develop submarine cable systems and to build landing stations.

*Switching barriers*

The only barrier would be the contractual terms and commitments that ISPs and others have signed up for with Omantel (or now Nawras). These matters would likely be transient issues, and there should be no long term switching barriers, or limitations ion using services of both Omantel and Nawras.

*Customers' ability to access and use information*

At present, international capacity services are not part of the Reference Offers available from Omantel. As such, wholesale customers do not benefit from transparency and clarity of conditions.

**(c) Conclusion on single dominance**

Neither Omantel nor Nawras is dominant as a single service provider in this market, given the effective constraint that they are able to impose on each other in terms of price and performance. No other service provider is dominant in this market.

**(d) Relevance of joint dominance**

Many of the factors that have been considered in relation to single dominance are equally relevant for joint dominance, and will therefore notbe repeated.The argument for joint dominance is that in this market there are only two operators and that the market is highly concentrated. Because of the vertical integration of the international capacity service providers on their own retail outgoing traffic and that of their mobile resellers, we know that the capacity utilisation is approximately equal, notwithstanding Nawras's recent entry into the market.

Samatel has a licence to enter this market but has not done so to date. If it does so it will need to commit to substantial capital investment and will need to overcome the effects of a series of exclusive agreements entered into between Omantel and Nawras on the one hand and many submarine cable operators on the other. If it becomes a member of a new consortium it will need to have a long lead time for its operating plans, given the experience of others in the region. This is to say that there is little chance of any third party entering the market in the time horizon of this report.

If the outcomes for Omantel and Nawras in the fluid and emerging broadband services market are markedly different for one compared to the other, this would tend to undermine the tendency of this market (Market 16) structure to translate into non-competitive behaviour. However, those outcomes are in the future at this stage and cannot be anticipated.

**(d) Conclusion on joint dominance**

The TRA concludes that Omantel and Nawras are jointly dominant in the market for wholesale international capacity.

| |
|---|
| **Box 4.15**<br><br>**Question 1:** Do you agree with TRA's assessment that during the time frame of this review, Omantel and Nawras are jointly dominant in the wholesale international capacity services market? Please provide reasons and relevant evidence to support your view. |

## Market 17: Wholesale voice call termination on individual mobile networks

### (a) Criteria for single dominance

Figure 4.22: Criteria for single dominance (Market 17)

| Criterion | Relevance and Importance to this Market | Comments |
|---|---|---|
| A.1 Market share | Relevant and important | Each service provider that operates a network has 100% share of the market for call termination on its own mobile network, irrespective of its share in other markets, including retail markets. |
| A.2 Overall size of the undertaking | Not relevant | Termination markets are not dependent on size |
| A.3 Control of infrastructure not easily duplicated | Relevant and important | Wholesale mobile termination has a complete bottleneck nature that makes the service not duplicable |
| A.4 Sunk costs | Not relevant | There is no investment issue for the wholesale customer. |
| A.5 Network effects | Not relevant | |
| A.6 Technological advantages and superiority | Not relevant | |
| A.7 Absence of or low countervailing buying power | Relevant and important | If there is countervailing buying power it may serve to lessen the risk of harm from dominance in this market. |
| A.8 Easy or privileged access to capital markets / financial resources | Not relevant | |
| A.9 Product / services | Not relevant | This service is a commodity wholesale |

| Criterion | Relevance and Importance to this Market | Comments |
|---|---|---|
| diversification | | one involving a homogeneous service. |
| A.10 Economies of scale | Not relevant | Scale is not the basis of dominance in this market |
| A.11 Economies of scope | Not relevant | Scope does not lead to or affect dominance in this market |
| A.12 Vertical integration | Not relevant | Suppliers of this service will always be vertical integrated. Termination is a service that without vertical integration is not technically or logically possible |
| A.13 A highly developed distribution and sales network | Not relevant | Sales and distribution networks are not relevant for wholesale services |
| A.14 Absence of potential competition | Not relevant | There can be no actual or potential competition |
| A.15 Barriers to expansion | Not relevant | |
| A.16 Ease of market entry | Not relevant | The market is defined by each separate network and no market entry is possible |
| A.17 Excess pricing and profitability | Not relevant | With CPP excessive price and profitability is always an issue but this is not relevant to demonstrate dominance. |
| A.18 Lack of active competition on non-price factors | Not relevant | |
| A.19 Switching barriers | Not relevant | There is no scope for switching behaviour |
| A.20 Customers ability to access and use information | Not relevant | Dominance is not influenced by customer access to information. |

SOURCE: TRA

### (b) Discussion on single dominance

*Market share*

Each service provider that operates a mobile network has 100% share of the market for call termination on its own network, irrespective of its share in other markets, including retail markets. The only way to access a customer via a service directly connected to the operator's network is via the operator's network. Logically there can be no competition.

*Control of infrastructure not easily duplicated*

The transmission path between a point of interconnect on the terminating network and the called service cannot be duplicated by any other operator as a matter of logic.

*Countervailing buyer power*

Countervailing buyer power exists when a particular purchaser (or group of purchasers) of a good or service is sufficiently important to its supplier to influence the price charged for that good or service.

Interconnection and the termination of calls is a two-way process and this fact might cause an operator to exercise constraint in the terms and conditions, particularly price terms, that it seeks to apply to the service. However, the history of terminating interconnection strongly suggests that incumbent and established mobile operators see themselves as access providers (that is providers of call termination and other access services) rather than as access seekers. In all likelihood the countervailing buying power is not seen to exist where smaller and new entrant firms are concerned. Small and new entrant service providers rely on interconnection to be able to market their services and to gain traction in the market. Without the amenity of being able to call all subscribers including those on other networks it is unlikely that small and new entrant service providers could market their services and gain a customer base from which to operate and grow. Under these circumstances they may well accept terms that are unfavourable in order to commence operations earlier. Such cases are well documented and indicate that countervailing buying power may be more theoretical than real in many situations that occur in this market.

### (e) Conclusion on single dominance

Both Omantel and Nawras are dominant as single operators in this market, because the network of each constitutes a separate market. Strictly speaking there are two markets of the same kind, rather than one.

### (f) Relevance of joint dominance

Under the circumstances both Omantel and Nawras are dominant as single operators. It follows that, absent regulation, they are both able to operate independently of customers and competitors to an appreciable extent, and that this precludes the need to consider joint dominance in this market. Indeed, given the discussion above, the notion of joint dominance makes no sense in this market.

**Box 4.16**

**Question 1:** Do you agree with TRA's assessment that during the time frame of this review, both Omantel and Nawras are singly dominant in the markets for wholesale mobile termination serviceson their own respective networks?Please provide reasons and relevant evidence to support your view.

## Market 18: Wholesale access and call origination on public mobile telephone networks

### (a) Criteria for single dominance

Figure 4.23: Criteria for single dominance (Market 18)

| Criterion | Relevance and Importance to this Market | Comments |
|---|---|---|
| A.1 Market share | Relevant and important | MNOs with high market share in this wholesale market can use it to leverage a position of market power, including by preferring their own position in downstream retail markets. |
| A.2 Overall size of the undertaking | Not relevant | Size of the wholesale provider (as in volume of revenues) is not likely to be a factor that will be considered by service providers interested in MACO services. In contrast, network coverage and capacity is important rather than the size of the organisation that owns the network. |
| A.3 Control of infrastructure not easily duplicated | Relevant and important | Mobile access services are dependent on spectrum (which is not readily available) and on heavy investments in 2G/3G radio access networks. Established mobile operators can use their existing infrastructure and spectrum license to leverage their position of market power. |
| A.4 Sunk costs | Relevant and important | The existing level of sunk costs act as a deterrent to new facilities based entrants. However they would not have that effect on entrants who seek to be MVNOs / mobile resellers. |
| A.5 Network effects | Not relevant | Network effects, if applicable, impact retail markets rather than wholesale |

| Criterion | Relevance and Importance to this Market | Comments |
|---|---|---|
| | | markets such as this market. |
| A.6 Technological advantages and superiority | Not relevant | All mobile operators have access to the same global suppliers and technology. It is reasonable to assume that any temporary technological advantage from one operator will likely be quickly matched by other operator(s) in the market. |
| A.7 Absence of or low countervailing buying power | Relevant and important | Individual service providers currently using MACO services (the mobile resellers) have limited bargaining power due to their small size, contractual constraints and low levels of regulatory intervention. The history of the resale contract negotiations strongly suggests little countervailing power and considerable power imbalance in favour of the Class Ioperators. These limitations give MACO providers a position of market power. |
| A.8 Easy or privileged access to capital markets / financial resources | Not relevant | There is no evidence available to the TRA that any operators have privileged access to capital and financial resources. |
| A.9 Product / services diversification | Not relevant | In this wholesale market one would not expect service differentiation, so its absence does not necessarily mean that the MACO market is uncompetitive. |
| A.10 Economies of scale | Relevant and important | MNOs enjoy economies of scale and scope that give them cost advantages relative to resellers and to potential new entrants. |
| A.11 Economies of scope | Relevant and important | Provision of MACO services to wholesale customers the same or similar facilities as downstream provision of access and call origination to retail customers. Economies of scope give the MNOs a cost advantage in relation to resellers and to potential new entrants. |
| A.12 Vertical integration | Relevant and | Relevant because vertical integration |

| Criterion | Relevance and Importance to this Market | Comments |
|---|---|---|
| | important | gives the retail division of the MNOs access to radio network and core network capabilities. Important because the MNOs can, in the absence of targeted regulation, leverage market power at upstream level to limit competition at retail level. |
| A.13 A highly developed distribution and sales network | Not relevant | This criterion is not applicable for wholesale services. |
| A.14 Absence of potential competition | Relevant and important | In the absence of potential competition, MNOs are able to foreclose market entry for resellers and potential MVNOs by means of margin squeeze and/or imposing other limiting terms and conditions. |
| A.15 Barriers to expansion | Not relevant | |
| A.16 Ease of market entry | Relevant and important | Market entry is restricted due to limited availability of spectrum licenses and high investments to deploy a mobile network, as well as the need to obtain a Class I licence. Established MNOs can use these barriers to entry to leverage and maintain a position of market power. |
| A.17 Excess pricing and profitability | Relevant and important | Excess pricing and profitability are a clear indication of lack of competitive constraints allowing operators to act independently of competition or customers (i.e. exercise market power). In this market the immediate issue is not excessive pricing but non-provision of a full range of reseller and MVNO services in the first instance at cost-based prices. |
| A.18 Lack of active competition on non-price factors | Relevant and important | MACO wholesale services are essentially homogenous and competition will be on price once quality and performance thresholds become standard. |

| Criterion | Relevance and Importance to this Market | Comments |
|---|---|---|
| | | |
| A.19 Switching barriers | Relevant and potentially important | Potential switching barriers for service providers using MACO exist at two levels. The first level is contractual and the second relates to the partnership aspects of the commercial relationship between MACO service users and providers (non-contractual) which take time to be replicated. Established mobile operators can use these switching barriers to leverage a position of market power. |
| A.20 Customers ability to access and use information | Relevant and important | Regulatory mechanisms are needed to ensure that wholesale customers have information symmetry with providers in this market. |

SOURCE: TRA

**(b) Discussion on single dominance**

*Market share*

Oman Mobile and Nawras have similar market shares in the retail mobile services market. As noted earlier in this report, as at the end of 2011, Omantel had 47.4% share of subscribers, Nawras had 40.2% and mobile resellers collectively had 12.4%. There is no call selection service available for mobile customers, so retail market share reflects very closely into call origination market share.

The equivalence of market shares supports the view that neither of the Class I operators is singly dominant in retail mobile markets, because each will need to act with substantial regard to the other. The same constraints would seem not to apply at wholesale level, where the risk of their resellers moving to the other is low or non-existent because of the nature of their contracts, the contract duration and the need for the resellers to foster a partnership with the host MNO.

Additionally, the market share and customer base of its own resellers is entirely known to each MNO through billing records. This knowledge potentially places both MNOs in a position of market power and enables them to influence the way downstream market shares might move in future.

*Control of infrastructure not easily duplicated*

The radio access network of mobile operators is not easily duplicated because it requires spectrum licensing and heavy investments in base stations and backhaul links. Nawras, the second mobile operator in Oman, has over time replicated the infrastructure of Oman Mobile.

In terms of control of infrastructure that is not easily duplicated it can be said that Oman Mobile and Nawras are competing on an equal footing and there is no basis to believe that either of these operators is able to leverage control of infrastructure to act independently of competition or customers (i.e. service providers using MACO services).

*Absence of or low countervailing buying power*

TRA conducted interviews with all operating mobile resellers. A common concern raised was that commercial negotiations were dominated by the MNOs and that mobile resellers, as new entrants, did not have the bargaining power to negotiate more beneficial terms for themselves. In part this is reflected in the protracted period that most negotiations took. Resellers considered that they had to compromise in order for their entry to the market not to be further delayed.

In this scenario, both Nawras and Oman Mobile could, in theory, act with little regard of competition from their respective wholesale customers (i.e. service providers using MACO services). Were both to do so, this might constitute coordinated behaviour which should be further examined in an assessment of joint dominance

*Product/services diversification*

The MACO services available from Oman Mobile and from Nawras are very similar in respect to products and functionality. In both cases, the maximum level of functionality enabled to resellers is that of an Enhanced Service Provider, a service provider that has its own IN platform but is not able to manage its own users directly (through its own HLR function) or have its own interconnection with other national/international carriers (which would configure a full MVNO / mobile resale model).

Both Oman Mobile and Nawras benefit from such a situation as this gives them greater power and control over what the resellers are able to offer to end users and the level of differentiation they can offer in respect to the services they provide.

The limitations in the level of functionality offered to mobile resellers are, to a certain extent, the result of the licensing framework. The specific terms of the Class II license for mobile resellers which states that:

"The licensee activities shall not include the right to own, operate, manage or control the following:-

- Radio network
- Switches
- Transmission facilities
- MSC, SMSC, MMSC
- HLR
- International gateway"

These terms limit what resellers may do and enable the MNOs to act independently of the wholesale customers. However the MNOs do not have the same independence of action vis-à-vis each other.

*Economies of scale and scope*

Both Oman Mobile and Nawras have developed mobile radio access and core networks to provide services to their own subscribers. These networks are sensibly dimensioned to cater for growth and peaks of usage. Provision of “spare” capacity to mobile resellers represents a marginal cost to both Oman Mobile and Nawras.

The mobile resellers expressed the view that, as MACO services are priced on a *retail minus* basis (in contrast to *cost plus*), Oman Mobile and Nawras are able to control the extent of the competition by limiting the level of discounts that they agree with resellers. By doing so, they can also potentially ensure supra-normal margins on the wholesale services provided to resellers.

The ability to charge wholesale prices that are above the level which would be achieved in a competitive situation is an indication of market power.

*Vertical integration*

Both Oman Mobile and Nawras are vertically integrated and thus have potentially an incentive to exploit market power at wholesale level to protect their businesses at retail level. They also have an incentive to keep new entrants out of the wholesale market itself.

However, in many markets in which MVNO mobile resellers have thrived, the segmented approach used by MVNO / mobile resellers is beneficial to the host MNOs because it attracts customers from rival MNOs. In such a case there is an incentive for MNOs to work with MVNO mobile resellers and the end result is pro-competitive.

Vertical supply chains will not necessarily result in dominance. Any dominance arising in this case will in part arise because the resellers are prevented from becoming full MVNOs or developing the ability to leverage on the value they might bring to their MNO host; but this issue is best examined in the context of joint dominance.

*Absence of potential competition and ease of market entry*

Class I and Class II entry is regulated and requires a licence. There are no potential competitors at wholesale level because the resellers are finite and are locked into resale contractswith one Class I operator or the other. There is no inclination for the MNOs to supply wholesale services on cost-based terms and, most importantly, no competition or clear regulatory measure in the wholesale market for MACO services that might force them to do so.

*Switching barriers*

As mentioned before in the analysis of ‘countervailing buying power, mobile resellers are severely limited in their ability to switch between host MNOs because of minimum duration termsof their contracts. The exclusivity conditions mean that mobile resellers are completely constrained in their ability to switch between providers of MACO services. If the wholesale MACO market was operating in a competitive manner one might expect that one or more reseller might have contracts with both MNOs. None have.

*Customers, ability to access and use information*

Users of wholesale MACO services are subject to confidential contracts. In the case of Oman Mobile, the contracts are negotiated using as a basis the mobile reseller access offer as a basis. Relative to both Omantel and Nawras the mobile resellers are in a weak position to negotiate detailed terms and conditions (for instance, detailing SLAs to be observed by the host MNOs).

This means that there has been a degree of information asymmetry, with a resulting power imbalance between the MNOs and their respective resellers in negotiating contracts, and this would be the case in any future negotiations with the same or additional resellers. The MNOs have the advantage of being the other party in multiple negotiations – the resellers have only their own case to learn from. (This information asymmetry is one of the reasons that regulators require publication of approved reference offers in certain wholesale markets.)

A practical example of information asymmetry and disadvantage raised by a number of mobile resellers in their interviews with the TRA was their inability to benefit from and to respond to the MNOs retail promotional offers. Although the resellers have a need and expectation that they would be informed by the MNOs on future promotions - and by nature of the retail minus arrangements, mobile resellers could in theory be able to benefit from lower MACO rates during the period of the promotions–they consider that notice is insufficient time to enable them to implement their own competitive promotions or to maximise benefit from the reduced rates.

**(c) Conclusion on single dominance**

Oman Mobile and Nawras are unable to proceed without appreciable regard to each other, and the ability to do that is the very essence of single dominance in a market. Consequently the TRA is not prepared to conclude that Oman Mobile or Nawras or both are singly dominant in this market. On the other hand, the circumstances of the market indicate that it is not effectively competitive. There are many aspects that point to possible joint dominance which will be further analysed below.

**(d) Criteria for joint dominance**

Figure 4.24: Criteria for joint dominance (Market 14)

| Criterion | Relevance and Importance to this Market | Comments |
|---|---|---|
| B.1 Market concentration | Relevant and important | In a market with fewer big players it is easier to implement a collusive behaviour. |
| B.2 Transparency | Relevant and important | Transparency makes it possible for members of a collusive arrangement to monitor whether other member deviate from the collusive behaviour. |
| B.3 Mature market | Relevant andimportant | In a mature market the players are inclined to coordinate rather than to fight over shares through pricing.However, the market for |

| | | |
|---|---|---|
| | | wholesale MACO services has just been opened to competition. |
| B.4 Stagnant or moderate growth on the demand side | Not relevant | A market characterised by slow growth is not conducive to competition via new entry. However, this is not the case for wholesale MACO service demand. |
| B.5 Low elasticity of demand | Not relevant | |
| B.6 Homogeneous product | Relevant and important | Lack of product differentiation eliminates justification for price differentiation and makes supply substitution easier. |
| B.7 Similar cost structure | Relevant and important | If one service provider has significant cost advantages it would be likely to exploit them via competition. |
| B.8 Similar market share | Relevant and important | Significant difference in market share may encourage competition as those with small share seek more and those with large share seek to defend their position. |
| B.9 Lack of technical innovation, mature technology | Not relevant | Both MNOs in Oman have access to modern and tested technologies |
| B.10 Absence of excess capacity | Relevant and potentially important | Excess capacity tends to encourage competitive marketing plans, which, if they succeed, will cause the capacity to be utilised. The TRA has no evidence about the levels of excess capacity in either network. |
| B.11 High barriers to entry | Relevant and important | Low entry barriers will facilitate new entry if potential competitors can see opportunities and a lack of robust competition. High barriers provide comfort to those already in the market. |

| | | |
|---|---|---|
| B.12 Lack of countervailing buying power | Relevant and important | Where buyers do not enjoy bargaining power and cannot negotiate lower prices or better terms this impedes competition in the market. |
| B.13 Lack of potential competition | Relevant and important | Where potential competition is non-existent or limited, wholesale MACO service providers may derive comfort that new entry will not be the result of poor service or low levels of competition. |
| B.14 Various kinds of informal and other links between the undertakings concerned | Relevant and important | As in a market with only two wholesale players which are intrinsically related by means of interconnection agreements, there are sufficient links to allow coordination to happen. |
| B.15 Retaliatory mechanisms | Relevant and important | The prospect of price wars is the primary retaliatory mechanism, apprehension of which is a mutual controlling factor. |
| B.16 Lack of or reduced scope for price competition | Relevant and important | The lower the scope of price competition, the easier it is for participants in a market to develop patterns ofcollusive behaviour and to not compete. Note that price is the main dimension of competition in wholesale service markets where the services have commodity characteristics. |
| B.17 Existence of incentives for tacit collusion | Relevant and possibly important | Neither of the Class I operators has any apparent advantage that it might try to exploit in competition against the other.  Therefore incentives exist to improve commercial outcomes other than through competition. |
| B.18 Ability to enforce the terms of a collusive agreement or tacit understanding | Relevant | There is no evidence of any agreement or of any understanding in this case. There is a major risk however that the market structure and context encourages adoption of a |

| | | |
|---|---|---|
| | | common policy that sustains the position that each of the Class I operators has in the market. The ability to enforce the implicit terms lies in the capacity of both parties to cause appreciable commercial damage to both through competition and both recognising that capacity. |

SOURCE: TRA

**(e) Discussion on joint dominance**

*Market concentration*

Market concentration indicates whether a small number of undertakings account for a large share of the relevant market without any single operator being in an individual dominant position. Downstream market concentration in Oman is very high with two vertically integrated mobile operators, Oman Mobile and Nawras, accounting for a 96% of the retail mobile market and 100% of the wholesale MACO market. This reflects in a wholesale MAC market Herfindahl-Hirschman Index score of around 5,000. There are no other wholesale market competitors. This is a very strong consideration in determining whether there is a risk of harm to consumer and competition from joint dominance.[13]

*Transparency*

Oman Mobile and Nawras have a clear ability to monitor each other's activities and offers to mobile resellers. They know each other's business by being able to deduct their own metrics from industry information that is in the public domain. Sales and marketing programmes place much price and other information into the public domain. In addition retail customer feedback will provide a running commentary on the competitor. Information from other sources is readily available and it is reasonable to assume that the two MNOs collect and analyse it.

*Mature Market*

Interviews with the mobile resellers indicate that there is a potential strong demand for wholesale MACO services, such as access to services on MVNO / mobile resale terms. However this demand is not being addressed under the current framework. Demand for wholesale services on a reseller basis is being met, but, apart the negotiations that may have occurred in the course of finalising the reseller contracts, currently there is no competition between wholesale suppliers. The resellers have made their choice, it seems, and have no further opportunity to exploit the competitive possibilities in the market. This would have been different had the resellers had contracts with both MNOs and could have shifted their on-going traffic and business between the MNOs.

Under these circumstances the question arises as to whether the wholesale MACO services market is not so much mature as stillborn.

[13] Case T-102/96, Gencor/Lonrho Ltd vs. Commission

*Homogeneous product*

The wholesale MACO services provided by Oman Mobile and Nawras are very similar. This has two consequences. It makes comparison of offers and monitoring of the market easier than if there had been a complex of characteristics and packaging to consider. It makes it harder for the resellers to differentiate their offerings from their MNOs and from each other than might otherwise have been the case.

*Similar cost structure*

Oman Mobile and Nawras have established similar network coverage and use similar technology. It is reasonable to assume that the cost structure of both operators is broadly similar. Given that the scale of operations is similar, it is unlikely that one or the other would enjoy a cost advantage in the wholesale market, and would consequently not have an incentive to exploit it.

*Similar market share*

As indicated in the assessment of single dominance, the market shares of Oman Mobile and Nawras are now similar.

*Lack of technical innovation, mature technology*

There is no technical advantage or technical innovation that is available to one operator but not the other. The technology being employed by both Oman Mobile and Nawras is mature and available to both through international equipment vendors.

*Absence of excess capacity*

The TRA has insufficient information to draw any conclusions on whether one or both the MNOs have excess capacity.

*High barriers to entry*

As already discussed in the assessment of single dominance there are high barriers to entry. Market entry is restricted because of spectrum limitations and significant investments to build and deploy a mobile network.

*Lack of countervailing buying power*

As already discussed in the assessment of single dominance of the resellers do not have countervailing buying power and therefore no ability to encourage competition for their business between Oman Mobile and Nawras in the wholesale market for MACO services.

*Lack of potential competition*

As of end of May 2012, there were four potential full retailcompetitors to Oman Mobile and Nawras in operation in Oman - namely the mobile resellers who remain operational. If the terms governing their relationship with their partner MNO remain in place these four resellers are likely to remain as resellers only and have no capacity to place a bigger and more significant role in the wholesale market. It is unlikely that one or more of them would seek to enter the market with a full mobile platform like Oman Mobile and Nawras. However, if one or more of them were to become MVNOs with full MVNO entitlements, they could be very important in stimulating greater competition between Oman Mobile and Nawras for their business, and also be able to resell excess capacity and wholesale services to the remaining resellers.

All of the resellers interviewed indicated that they wanted to be MVNO / enhanced mobile resellers or wanted the option to become fully-fledged MVNOs in the retail market. It is not clear whether they would want to be wholesale suppliers of excess MVNO capacity or act as enablers for other resellers. If so, they would effectively create further competition at wholesale level.

*Existence of incentives for tacit collusion between service providers*

Nawras and Oman Mobile have a common interest in protecting their ubiquitous retail operations from too much competition from mobile resellers. Therefore, they do not want to see each other open up the MVNO market by offering more favourable terms to resellers, by increasing their commercial freedom, by allowing them to switch from one Class I provider to another or by allowing them to expand the range of products they may resell. The single reseller-MNO relationships and their dealings with the resellers to date are consistent with maintaining the power imbalance.

*Ability to enforce terms of collusive understanding*

It is not necessary to show any collusive understanding or agreement to exist in order to find that there is joint dominance in a market. However, for there to be a risk of collusive anti-competitive behaviour it is necessary for there to exist a credible means of enforcing the terms of any collusive understanding. As indicated, this is a different matter from showing the existence of a collusive understanding, which is a matter for ex post regulatory enforcement. It is sufficient that the structure of the market and the other factors discussed above create an appreciable risk that such an arrangement might result in the absence of anticipatory ex ante regulation.

In this case there is a clear means of enforcement open to both Oman Mobile and Nawras. If one of these operators were to become competitively pro-active in the wholesale market and seek to encourage resellers and other (future) retail service providers to come to it for all or a larger share of their wholesale MACO service requirements, the other operator would recognise the change in the market situation and inevitably respond. A wholesale price war might well result. It would be difficult to control the extent of such price competition once started. The overall result would be to transfer of wholesale value to the retail level in the market, and, ultimately to end users of mobile services. Both Oman Mobile and Nawras are well aware of this possibility, and it is this knowledge of mutually assured dis benefit that serves to reinforce the approach that is in place now – namely, a common policy that discourages change in the status of resellers and new market entry. This is a rational approach in light of Omantel's and Nawras's commercial interests.

**(f) Conclusion on joint dominance**

The TRA has studied the available economic and legal literature on the subject of joint dominance, much of it from European sources and cases, including the criteria laid down in the *Air tours* case. The TRA notes that the literature mostly deals with the assessment of behaviour and evidence of tacit collusion and of anti-competitive agreements. Apart from *Air tours*, there is little guidance from cases that are concerned with the existence of joint dominance rather than its abuse. However this literature has been considered alongside the relevant Market Definition and Dominance Guidelines already adopted by the

TRA and the TRA is satisfied that the literature, such as there is, supports the TRA's conclusions: there is a high level of market transparency, given problems with market entry and the limitations placed on MVNOs there is an ability to sustain a situation of tacit collusion and no foreseeable counter-reaction from consumers or competitors is likely to undermine the situation in the near future.

The TRA concludes that there is limited and ineffective competition in Market 18. In addition, many factors discussed above show:

- the potential for implicit or explicit collusive behaviour, including market concentration and the existence of high barriers to entry, the transparency of each player's behaviour, the lack of technical innovation and the absence of excess capacity
- an imbalance in the respective powers of the wholesale providers and the retail buyers, including in terms of market behaviour, pricing, the terms of the Reseller Agreements and the absence of other regulatory constraints.

There are clear incentives for tacit collusion in Market 18, and a high potential for harm, not just to resellers but also to consumers.

Ex-post action alone will not, in the opinion of the TRA, be sufficient to help develop a competitive market.

Based on all these factors, and recalling many of the same remarks made in the analysis of joint dominance in Market 6, the TRA considers that Omantel Mobile and Nawras are jointly dominant in Market 18.

The appropriate remedies are considered in the next Chapter.

**Box 4.17**

**Question 1:** Do you agree with TRA's assessment that during the time frame of this review, Omantel and Nawras are jointly dominant in the market for wholesale mobile access and call origination services? Please provide reasons and relevant evidence to support your view.

## Market 20: Wholesale transit

### (a) Criteria for single dominance

Figure 4.25: Criteria for single dominance (Market 20)

| Criterion | Relevance and Importance to this Market | Comments |
|---|---|---|
| A.1 Market share | Potentially relevant and important. | Market share is often an indicator of possible dominance. However the transit market has yet to develop in Oman because the only two potential users of transit, Nawras and Omantel, |

| Criterion | Relevance and Importance to this Market | Comments |
|---|---|---|
| | | self-provide. |
| A.2 Overall size of the undertaking | Not relevant | Wholesale customers are unlikely to be affected or influenced by the overall size of a wholesaler's business. |
| A.3 Control of infrastructure not easily duplicated | Relevant and important. | The underlying technology and infrastructure used to supply this service requires substantial investment in network infrastructure, particularly in transmission and backhaul capacity. |
| A.4 Sunk costs | Relevant and important | A high proportion of fixed network costs are sunk thereby acting as a deterrent to new entrants. |
| A.5 Network effects | Not relevant | Network effects are not relevant in this type of wholesale services market. |
| A.6 Technological advantages and superiority | Relevant but not important | The technologies employed for the transmission infrastructure to provide transit services are readily available from many global equipment vendors. There is no advantage for any existing or potential service provider. |
| A.7 Absence of or low countervailing buying power | Relevant but not important | Wholesale customers who require transit services have limited choices and have little or no countervailing buying power to leverage. If they are also Class 1 licensed operators then self-provision is an alternative. Class I operators have preferred self-provision to taking transit services from others. |
| A.8 Easy or privileged access to capital markets / financial resources | Not relevant | Clearly this market requires substantial capital investment. However there is no evidence that any operator has privileged access to capital or financial resources compared to identifiable, potential competitors. |
| A.9 Product / services diversification | Not relevant | Transit services are homogenous wholesale services. |
| A.10 Economies of scale | Relevant and important. | Omantel has network scale economies because of its market share. This is |

| Criterion | Relevance and Importance to this Market | Comments |
|---|---|---|
| | | an important source of advantage against new entrants. However Nawras also has scale benefits. |
| A.11 Economies of scope | Relevant and important. | Omantel and Nawras have an inter-exchange meshed network that has substantial national coverage and that reflects the scope of its services. This means that unit costs for transit services, if they were provided, would be lower as a result. |
| A.12 Vertical integration | Relevant and important. | Omantel operates in both the retail and wholesale market creating a leveraging opportunity and a source of market power. |
| A.13 A highly developed distribution and sales network | Not relevant | Not relevant in wholesale markets such as this. |
| A.14 Absence of potential competition | Relevant and important | Nawras has the capacity and capability to enter the transit market and is serving the market via self-supply, but no other potential competitors have been identified. |
| A.15 Barriers to expansion | Not relevant | TRA has no evidence of any such barriers or of market saturation. |
| A.16 Ease of market entry | Relevant and important | Relevant because market entry for provision of national transmission networks is a lengthy process which involves significant investment. Important because the incumbent can take advantage of this to leverage its position of market power. |
| A.17 Excess pricing and profitability | Relevant and potentially important | The ability to earn excess profits is relevant, but the recent completion of the Nawras network reduces the ability of Omantel to do this. In particular Nawras is supporting its own retail |

| Criterion | Relevance and Importance to this Market | Comments |
|---|---|---|
| | | operations in this respect. |
| A.18 Lack of active competition on non-price factors | Not relevant | The wholesale market for transit services is a commodity market in which price is the overwhelming factor. |
| A.19 Switching barriers | Not relevant | Lack of alternative supply means that switching is not an option in most cases at this stage. |
| A.20 Customers ability to access and use information | Not relevant | There is no evidence that these are issues for competition in the market. |

SOURCE: TRA

**(b) Discussion on single dominance**

*Initial comment*

The wholesale transit market in Oman is an unusual one because at present there are only two immediate potential customers for the service – Omantel (including Oman Mobile) and Nawras. Also there are only two immediate potential service providers – Omantel and Nawras. To date they have both chosen to provide connections between points of interconnection using their own facilities and therefore it could be said that they have self-provided the services needed. In these circumstances there is a sense in which the market is not actual but conceptual or theoretical, since it is not yet operational.

The question arises about why such a market is worth discussing. The answer, in the TRA's view, is that if other operators are licensed as Class I or equivalent licensees, and become entitled to interconnect with established networks at nominated points of interconnect (POI), they may not have the network capacity or reach to do so, and will need to consider transit services either on a temporary or a continuing basis. It is appropriate to anticipate such requirements now rather than have an avoidable barrier to the commencement of operations at the time.

*Market share*

Not yet relevant. However as the fixed incumbent with ubiquitous network presence, Omantel might be considered to have the major share of this market.

*Control of infrastructure not easily duplicated*

Transit services operate between POIs, and these are typically located with major switching nodes where the interchange of significant amounts of traffic is both technically feasible and likely to be required. There is no policy that constrains the number and location of POIs in the future. The cost of establishing the facility will be a constraint in practice. In any case, small operators with limited coverage will find it challenging to deliver their traffic to remote POIs without a wholesale transit service.

Those who are able to provide such a service will need network infrastructure that has significant national reach. Omantel already has that network and infrastructure in place for delivery of all of its other network services. It would not be economic to duplicate that network for transit services alone.

*Economies of scale and scope*

There are real advantages to Omantel in this market in terms of economic efficiencies resulting from both economies of both scale and scope in supplying transit services. The economies arise from Omantel's multi-service network and businesses. For example, the transmission capacity for switched network services can be used also for carriage of transit traffic. The result is that shared network costs and fixed and common costs can be recovered over a greater service base and be lower on a unit basis as a result. New entrant competitors do not have these scale and scope economies and would likely take some time to achieve them, if at all.

*Vertical integration*

Omantel operates the network and infrastructure as well as provides leased line services at retail level. The retail markets that align with the wholesale transit market are the call service markets.

*Ease of market entry*

Capital investment requirements constitute substantial barriers to entry. Market entry is difficult.

*Absence of potential competition*

There is no realistic potential for new competitors to enter this market in the time frame of this review. Nawras is operational in the market, and it is unlikely that the traffic of the mobile resellers will be put into competitive play in the next few years because the resellers are contractually bound to their respective hosts and to use the networks operated by their respective hosts. In transit terms, it might be said that the reseller traffic is effectively part of the mobile network operator's traffic in any case

**(c) Conclusion on single dominance**

As noted earlier, if there was demand for third party transit services today, neither Omantel nor Nawras could be considered to be singly dominant. Each is constrained by the other in price and performance terms and therefore neither could act independently of the market as would occur if either was singly dominant.

**(d) Discussion on joint dominance**

Some of the elements that are indications of joint dominance are present in relation to wholesale transit. The market has only two operators and they are well-matched. However the growth of traffic in the future and the level of the robustness of competition are unknown given that current demand for transit equivalent services (carriage of traffic to a point of interconnection) appears to be satisfied on a self-provisioning basis. For the reasons outlined below the TRA is not proposing to pursue the issue of joint dominance in this market.

**(e) Overall conclusion**

After considering the question of dominance in a market where there is no effective demand for the relevant services, the TRA has concluded that it should proceed as follows:

(i) refrain from concluding that either Omantel or Nawras is dominant in this market as a single operator or jointly at present; and

(ii) indicate that if there is demand in the time frame of this review from new entrants entitled to interconnect their networks with those of other network operators and if neither Omantel nor Nawras is prepared to meet that demand on fair and reasonable terms, then the TRA will institute a review of the market circumstances expeditiously and to fast track appropriate decisions and remedies at the time.

**Box 4.18**

**Question 1:** Do you agree with TRA's assessment that during the time frame of this review, no operator is singly or jointly dominant in the wholesale market for transit services? Please provide reasons and relevant evidence to support your view.

# 5 Remedies

## 5.1 Introduction

In this chapter we examine the potential risk of harm to competition and consumer welfare that the dominance of each dominant service provider in each relevant market may cause in the absence of *ex ante* regulation.

In light of this assessment, and having considered the potential remedies and their overall impact on the market, we identify the options for *ex-ante* remedies for dominance that TRA may apply having regard to the procedures and principles set forth in the Market Definition and Dominance Guidelines and the Decision on ex ante Rules Governing Market Definition and the Regulation of Dominance. TRA then shapes each of the preferred remedies according to the identified risk of harm and the prevailing market conditions at this time of the review, to ensure that the intensity and appropriateness of the remedies is proportional to the risk and the overall market circumstances.

## 5.2 Retail Markets

### Market 1: Retail fixed narrowband access services at a fixed location

**(a) The risk of harm to competition and consumer welfare**

Only Omantel is dominant in this market. Nawras is rolling out its own fixed platform and, although the TRA does not consider that this will provide significant competition over a wide area during the time period of this review, its existence may provide some constraint on price and performance in the areas in which it operates. In addition Omantel would not necessarily wish to exacerbate the rate of fixed-to-mobile service substitution in those segments of the fixed market that may be at risk of such substitution. These constraints are considered to be insufficient to limit Omantel's independence of action across the whole of Market 1in the near term.

Omantel in this market could gain advantage from its dominant position in the following ways, none of which is related to the merits of the services it is providing:

- Undue non-price discrimination. Omantel might unduly discriminate between end users by providing better quality of service and terms and conditions to large volume end users.
- Price discrimination via cross subsidisation/predation. Omantel, by leveraging its market power into competitive markets, could cross-subsidise retail prices in those markets and gain an unfair advantage.
- Excessive pricing. Omantel, as a dominant operator, has the ability to raise the prices at retail level above its costs, thereby reducing consumer welfare. This risk is greater in segments of the market that have fewer choices in terms of mobile substitution and WiMAX coverage. This may lead to allocative inefficiencies and distorted pricing structures.

**(b) Options for remedies and impact assessment**

The Figure below indicates the potential retail remedies capable of addressing the risks of harm to consumers and competition described above, assesses the overall impacts of each remedy and identifies the preferred option to be imposed on Omantel.

Figure5.1: Risk of harm and potential remedies for Market 1

| **Risk of harm** | **Potential remedy** | **Assessment of potential remedy** |
|---|---|---|
| Undue discrimination in relation to terms of supply | Non- discrimination and transparency obligations | There are two parts to such an obligation both of which need to be shaped to address the risk that Omantel will discriminate between end users. Any proposed discrimination (that is, differences in terms of supply or in service delivery in the provision of fixed access services) will need to be justified. Differences and justification will need to be subject to a transparent process of analysis leading to, if appropriate, approval.<br>**Conclusion**: Appropriate |
| Anti-competitive price discrimination | Tariff notification and approval and transparency obligations | Tariff notification and approval obligations provide certainty that price control arrangements have been complied with before price changes are imposed on customers. A price control mechanism as outlined below will be consistent with this remedy.<br>**Conclusion**: Appropriate |
| Excessive pricing | Price control | The basis on which prices are controlled will need to be set out for the benefit of both Omantel and its retail customers. The TRA should seek to establish either single service or service basket price caps that enable Omantel to determine the limits of acceptable price change. This will work in conjunction with, but not displace, the tariff approvals process referred to above.<br>**Conclusion**: Appropriate |

| | | |
|---|---|---|
| Cross subsidisation/ Predation | Accounting separation (AS) | AS will enable the TRA to monitor profitability at a business unit or service level and assessing for potential discriminatory pricing. Additionally, a regulatory framework for AS has already been formally imposed on Omantel so the one-off establishment costs will already have been committed or borne by Omantel. This is important because AS remedies are potentially costly to establish and regulators need to be very confident that the benefits and reduction in risks associated with dominance will outweigh the costs of compliance.<br>**Conclusion**: Appropriate |

SOURCE: TRA

**(c) Factors affecting the implementation of remedies**

TRA considers that the remedies should be implemented as follows.

*Non-discrimination/Transparency*

A non-discrimination obligation should require Omantel to offer retail fixed access services, including bundling of such services, in equivalent circumstances under equivalent price, terms and conditions. In other words Omantel should not discriminate between end users and should guarantee similar conditions to similar transactions. For example, Omantel is restricted from offering bespoke pricing to a customer without being forced to offer it to all customers; or should be obliged to provide the same provisioning times or service standard to all of its retail customers.

It will be a matter for Omantel to justify in advance any differences or non-equivalent service characteristics that it proposes in terms of criteria that it may propose for TRA approval.

In order to make non-discrimination more effective Omantel should also be required to publish clear and current information on prices, terms and conditions offered for retail access services to all retail customers on its website.

*Tariff Notification and Approval*

Omantel should be subject to a price notification mechanism based on notice to be given to TRA for acceptance of price changes and new tariffs no later than thirty (30) days before the tariff is scheduled to be implemented.

In addition, Omantel should not unreasonably bundle retail fixed access services with other retail services, and to ensure that this does not happen, all proposed bundles involving retail fixed access will need the approval of the TRA before being implemented. Given the potential complexity in assessing the anti-competitive nature of bundles Omantel must provide thirty (30) days' notice to TRA of price changes and new tariffs for bundles. TRA may extend the time to assess bundles as required. Omantel must offer all the unbundled elements of the bundled offering as separate products as well.

*Price control*

The price control regulation should take the form of a RPI-X formula for a basket of narrowband access services provided by Omantel where X is set to reflect the welfare gains that should be transferred to end customers because of available cost reductions in the production of the services and with reference to available productivity gains. The access services will include monthly line rental for:

- Analogue (PSTN) – business and residential
- Fixed Wireless Access (FWA) – business and residential
- ISDN Basic Rate Access (BRA) – small businesses and individuals
- ISDN PRA (Primary Rate Access) – only larger businesses

The application of the new pricing regime and the provisions for pricing information required in relation to Omantel's regulated charges should be contained in the Price Control Regulation already referred to.

*Accounting separation (AS)*

AS is necessary to support the non-discrimination and price control obligations.

Accounting separation refers to the preparation of separate 'sets of financial statements' for different business units, or even by service Its objective is to provide transparency both at *ex ante* and *ex post* levels over the interaction and transactions between different service or business lines by requiring the identification of all elements of revenue, cost, assets and liabilities related to the various activities of Omantel, in order to ensure transparency of internal cost transfers and to identify cross-subsidization between services and businesses.

Compliance will be required by Omantel under conditions defined by TRA. The accounting separation requirements are detailed in the Accounting Separation, Regulatory Accounting & Reporting Requirements published by TRA in December 2009.

**(d) Summary**

TRA concludes that the following remedies are appropriate, proportionate and likely to be adequate to address the risks of harm from dominance in this market:

- Omantel should be subject to obligations of non-discrimination and transparency.
- Omantel should be subject to tariff notification and approval obligations.
- Omantel should be subject to a price control obligation based on a price cap mechanism.
- Omantel should be subject to accounting separation (AS) obligations in relation to all services in this market.

| **Box 5.1** |
|---|

**Question 1**: Do you agree with TRA's assessment of the risks of harm that might result from dominance in this market in the absence of ex ante regulation? Have any types of harm that might result from dominance been overlooked? Please give reasons.

**Question 2:**Do you agree with TRA's assessment of the options for *ex-ante* remedies for dominance in this market and the remedies that TRA concluded were appropriate and should be applied? Please give reasons

**Question 3:**Do you consider that some of the *ex-ante* remedies proposed might be duplicative and should be either held in abeyance or applied more lightly than suggested in the discussion of the market? If so, please identify the remedies, give reasons and suggest, if applicable, how a lighter administration might be achieved.

## Market 2: Retail fixed local and national calls

### a) The risk of harm to competition and consumer welfare

There are appreciable risks of harm from Omantel's dominance in this market and these risks remain, notwithstanding that Omantel needs to ensure that the background trend of fixed to mobile call substitution is not exacerbated. The specific risks are:

- Undue discrimination. Omantel might unduly discriminate between end users by providing better quality of service and terms and conditions, including price terms, to large volume customers beyond a level that is reasonably justified by cost savings or other circumstances.
- Price discrimination via cross subsidisation/predation. Omantel, by leveraging its market power into competitive markets, could cross-subsidise retail prices in those markets and gain an unfair advantage. A specific concern in this regards is the bundling of local and national calls with other services in competitive markets.
- Excessive pricing. Omantel, as the dominant operator, has the theoretical ability to raise the prices at retail level above its costs, thereby reducing consumer welfare. The TRA considers such a possibility to be remote, and that the risk will recede even further as mobile price levels are reduced and as alternative WiMAX-based services from Nawras become more widely available. A higher risk is that the prices of local and national calls from fixed locations will not be reduced as costs fall, in a way that might be expected in a competitive market.

### b) Options for remedies and impact assessment

Figure5.2 below identifies and assesses the potential retail remedies that might be able and sufficient to address the risk of harm to consumers and competition described above.

Figure5.2: Risk of harm and potential remedies for Market 2

| Risk of harm | Potential remedy | Assessment of remedy |
|---|---|---|

| | | |
|---|---|---|
| Undue discrimination in relation to terms of supply | Non-discrimination and transparency obligations | There are two parts to such an obligation both of which need to be put in place to address the risk of Omantel discriminating between end users. Any proposed discrimination will need to be justified. Differences and justification will need to be subject to a transparent process of analysis prior to approval.<br>**Conclusion**: Appropriate |
| Anti-competitive price discrimination | Tariff notification and approval and transparency obligations | Tariff notification and approval obligations provide certainty that price control arrangements have been complied with before price changes are imposed on customers. A price control mechanism as outlined below will be consistent with this remedy.<br>**Conclusion**: Appropriate |
| Excessive pricing | Price control | The basis on which prices are controlled will need to be set out for the benefit of both Omantel and its retail customers. The TRA should establish either single service or service basket price caps that enable Omantel to determine the limits of acceptable price change. This will work in conjunction with, but not displace, the tariff approvals process referred to above.<br>**Conclusion**: Appropriate |
| Cross subsidisation/ Predation | Accounting Separation (AS) | AS will enable the TRA to monitor profitability at a business unit or service level and assessing for potential discriminatory pricing. Additionally, a regulatory framework for AS has already been formally imposed on Omantel so the one-off establishment costs will already have been committed or borne by Omantel. This is important because AS remedies are potentially costly to establish and regulators need to be very confident that the benefits and reduction in risks associated with dominance will outweigh the costs of compliance.<br>**Conclusion**: Appropriate |

SOURCE: TRA

**c) Factors affecting the implementation of remedies**

TRA considers that the remedies should be implemented as follows.

*Non-discrimination/Transparency*

A non-discrimination obligation should require Omantel to offer retail fixed calls, including bundling of services, in equivalent circumstances under equivalent price, terms and conditions. Omantel should not discriminate between end users and any differences must be justified in an objective way.

In order to make non-discrimination more effective, Omantel should also be required to publish clear and up to date information on prices, terms and conditions offered for retail call services on its website.

*Tariff Notification and Approval*

Omantel should be subject to a price notification mechanism based on notice to be given to TRA for acceptance of price changes and new tariffs no later than thirty (30) days before the tariff is scheduled to be implemented.

In addition, Omantel should not unreasonably bundle retail fixed calls with other retail services, and to ensure that this does not happen, all proposed bundles involving retail fixed calls will need the approval ofthe TRA before being implemented. Given the potential complexity in assessing the anti-competitive nature of bundles Omantel must provide thirty (30) days' notice to TRA of price changes and new tariffs for bundles. TRA may extend the time to assess bundles as required. Omantel must offer all the unbundled elements of the bundled offering as separate products as well.

*Retail Price control*

The retail call services will include:

- Fixed to Mobile Calls – business and residential
- Local and National Calls – business and residential
- Calls from Payphones

*Accounting Separation (AS)*

AS is necessary to support the non-discrimination and price control obligations.

Accounting Separation information will enable product profitability to be examined and cross subsidisation to be identified and analysed.

**d) Summary**

TRA concludes that the following remedies are appropriate, proportionate and likely to be adequate to address the risks of harm from dominance in Market 2:

- Omantel should be subject to obligations of non-discrimination and transparency.
- Omantel should be subject to tariff notification and approval obligations.
- Omantel should be subject to a price control obligation based on a price cap mechanism.
- Omantel should be subject to an accounting separation (AS) obligation in relation to all services in this market.

**Box 5.2**

**Question 1**: Do you agree with TRA's assessment of the risks of harm that might result from dominance in this market in the absence of ex ante regulation? Have any types of harm that might result from dominance been overlooked? Please give reasons.

**Question 2:** Do you agree with TRA's assessment of the options for *ex-ante* remedies for dominance in this market and the remedies that TRA concluded were appropriate and should be applied? Please give reasons

**Question 3:** Do you consider that some of the *ex-ante* remedies proposed might be duplicative and should be either held in abeyance or applied more lightly than suggested in the discussion of the market? If so, please identify the remedies, give reasons and suggest, if applicable, how a lighter administration might be achieved.

## Market 3: Retail international (fixed and mobile) calls

### a) The risk of harm to competition and consumer welfare

There are appreciable risks of harm from Omantel's and Nawras's joint dominance in this market as follows:

- Undue discrimination. The operators might unduly discriminate between end users by providing better quality of service and terms and conditions, including price terms, to large volume customers beyond a level that is reasonably justified by cost savings or other circumstances.
- Price discrimination via cross subsidisation/predation. The operators, by leveraging their market power into competitive markets, could cross-subsidise retail prices in those markets and gain an unfair advantage. A specific concern is the bundling of retail international calls with other services in competitive markets.
- Excessive pricing. Omantel and Nawras have the theoretical ability to raise the prices at retail level above cost, thereby reducing consumer welfare. The TRA considers such a possibility to be remote. A higher risk is that the prices of international calls will not be reduced as costs fall, in a way that might be expected in a competitive market.

### b) Options for remedies and impact assessment

The Figure below identifies and assesses the potential retail remedies that might be able and sufficient to address the risk of harm to consumers and competition described above.

Figure5.3: Risk of harm and potential remedies for Market 3

| Risk of harm | Potential remedy | Assessment of remedy |
|---|---|---|
| Undue discrimination in relation to terms of supply | Non-discrimination and transparency obligations | There are two parts to such an obligation both of which need to be put in placeto address the risk that Omantel and Nawras might discriminate between end users. Any proposed discrimination will need to be justified. Differences and justification will need to be subject to a transparent process of analysis leading to, if appropriate, approval.<br><br>**Conclusion**: Appropriate |
| Anti-competitive price discrimination | Tariff notification and approval and transparency obligations | Tariff notification and approval obligations provide an important opportunity for the TRA to examine price changes before they are imposed on customers. In particular, the opportunity to identify and examine any price increases will be afforded. Anti-competitive bundling of international calls with other services will also be identified and examined before being implemented.<br><br>**Conclusion**: Appropriate |
| Excessive pricing | Price control | TRA recognizes that the market for international calls is more open than the national calls market. The risk is not that prices might be increased but that they will not be reduced in line with reductions in cost as they would in a competitive market. However the risk is expected to reduce, even though it is not expected to disappear, in the time frame of the current review.<br><br>TRA therefore considers international retail calls should not be included in a price control regime, because other market developments may occur during the time frame of this review and may sufficiently constrain Omantel's and Nawras's potential to price excessively. The situation will be closely monitored.<br><br>**Conclusion**: It is not considered necessary at this stage to adopt price control measures in addition to the other remedies outlined. |

| | | |
|---|---|---|
| Cross subsidisation/ Predation | Accounting Separation (AS) | AS will enable the TRA to monitor prices, costs and profitability at a business unit or service level and to monitor for potential discriminatory pricing.<br>**Conclusion**: Appropriate. (Note that an AS remedy would likely not have been proportionate or justified if its only focus was international call services. An AS system is in place to enable scrutiny of the costs and profitability of other services, such as local and national calls, and the inclusion of international calls in this regime adds only incremental costs.) |

SOURCE: TRA

### c) Factors affecting the implementation of remedies

TRA considers that the remedies should be implemented as follows.

*Non-discrimination/Transparency*

A non-discrimination obligation should require Omantel and Nawras to offer international calls, including bundling of services, in equivalent circumstances under equivalent price, terms and conditions. Omantel and Nawras should not discriminate between end users and any differences must be justified in an objective way.

In order to make non-discrimination obligations more effective Omantel and Nawras should also be required to publish clear and up to date information on prices, terms and conditions offered for retail call services on its website. .

*Tariff Notification and Approval*

Omantel and Nawras should provide notice to TRA for approval of price changes and new tariffs no later than thirty (30) days before the tariff is scheduled to be implemented.

In addition, Omantel and Nawras should not unreasonably bundle retail international calls with other retail services, and to ensure that this does not happen, all proposed bundles involving retail international calls will need the approval of the TRA before being implemented. Given the potential complexity in assessing the anti-competitive nature of bundles Omantel and Nawras will provide thirty (30) days' notice to TRA of price changes and new tariffs for bundles. TRA may extend the time to assess bundles as required. Omantel and Nawras must offer all the unbundled elements of the bundled offering as separate products as well.

*Cost Accounting (CA) and Accounting Separation (AS)*

Omantel and Nawras should be made liable to provide costing information and participate in costing studies for international fixed calls as may be required from time to time by the TRA. Omantel and Nawras should be subject to an obligation of accounting separation in relation to all retail international call services.

#### d) Summary

TRA concludes that the following remedies are appropriate, proportionate and likely to be adequate to address the risks of harm from dominance in Market 3:

- Omantel and Nawras should be subject to obligations of non-discrimination and transparency.
- Omantel and Nawras should be subject to tariff notification and approval obligations.
- Omantel and Nawras should be subject to accounting separation (AS) obligations in relation to all services in this market.

**Box 5.3**

**Question 1**: Do you agree with TRA's assessment of the risks of harm that might result from dominance in this market in the absence of ex ante regulation? Have any types of harm that might result from dominance been overlooked? Please give reasons.

**Question 2:** Do you agree with TRA's assessment of the options for *ex-ante* remedies for dominance in this market and the remedies that TRA concluded were appropriate and should be applied? Please give reasons

**Question 3:** Do you consider that some of the *ex-ante* remedies proposed might be duplicative and should be either held in abeyance or applied more lightly than suggested in the discussion of the market? If so, please identify the remedies, give reasons and suggest, if applicable, how a lighter administration might be achieved.

## Market 4: Retail broadband Internet access from a fixed location

As a result of its analysis the TRA concludes that at this stage in the development of retail fixed broadband markets in Oman that neither Omantel nor Nawras is dominant either singly or jointly. This is one market in which the TRA expects to see considerable rivalry in the time frame of this report, and hopefully beyond. Therefore there is no opportunity or requirement for the TRA to impose ex ante obligations on the operators. Instead the TRA will monitor the behaviour of operators in the market and the way in which Omani market prices develop compared with similar countries elsewhere.

The allocation of revenues and costs between regulated services and broadband services will also be monitored via the Accounting Separation obligations imposed in relation to services in other defined markets.

Lastly, the TRA has more general powers to gather information that it needs to perform its role and exercise its powers under legislation. As needed, information on broadband services will be collected from time to time to assist overall monitoring.

## Market 6: Retail mobile services market

### a) The risk of harm to competition and consumer welfare

In this market, Omantel and Nawras are jointly dominant and the risk of harm is that they will respond to the incentives that exist in the market situation by implementing a common policy to share the benefits flowing from not competing or from competing ineffectively.

Specifically the risks in this market are as follows:

- Undue discrimination. Omantel and Nawras might unduly discriminate between end users by providing better quality of service and terms and conditions, including price terms, to large volume or higher value customers beyond a level that is reasonably justified by cost savings or other circumstances.
- Excessive pricing. Omantel and Nawras, as the jointly dominant operators, have the ability to raise the prices at retail level above costs, thereby reducing consumer welfare. The more likely risk is that retail prices will be sustained and will not be lowered to reflect reducing costs as would happen in an effectively competitive market. The longer term remedy to reduce this risk is to encourage a competitive wholesale market or, absent competition, to regulate the wholesale market to encourage and foster competition in Market 6. Until such wholesale market arrangements become effective, it is appropriate to directly address price competition via regulation in the retail market.

### b) Options for remedies and impact assessment

The Figure below identifies and assesses the potential retail remedies that might be capable and sufficient to address the risk of harm to consumers and competition described above.

Figure5.4: Risk of harm and potential remedies for Market 6

| Risk of harm | Potential remedy | Assessment of remedy |
|---|---|---|
| Undue discrimination in relation to terms of supply | Non-discrimination and transparency obligations | There are two parts to such an obligation both of which need to be put in place to address the risk that Omantel or Nawras will discriminate between end users. Any proposed discrimination will need to be justified. Differences and justification will need to be subject to a transparent process of analysis and, if appropriate, approval.<br>**Conclusion**: Appropriate |
| Excessive pricing | Price control | TRA will need to examine effective price control mechanisms that ensure that cost reductions are shared with customers in an appropriate time scale. |

| | | |
|---|---|---|
| | | **Conclusion**: Appropriate |

SOURCE: TRA

### c) Factors affecting the implementation of remedies

The remedies listed above would need to be implemented in a similar manner to the same remedies in other retail markets. The emphasis would be on monitoring and identifying the introduction of pricing and other terms of service that are either not justified on cost grounds or constitute evidence of a pattern suggestive of tacit collusion or of implementation of common policies.

### d) Summary

TRA concludes that the following remedies are appropriate and proportionate and likely to be adequate to address the risks of harm from dominance in Market 6 (noting the remedies also planned for Market 18, the corresponding wholesale market):

- Omantel and Nawras should each be subject to obligations of non-discrimination and transparency.
- Omantel and Nawras should each be subject to price control obligations.

**Box 5.4**

**Question 1**: Do you agree with TRA's assessment of the risks of harm that might result from dominance in this market in the absence of ex ante regulation? Have any types of harm that might result from dominance been overlooked? Please give reasons.

**Question 2:** Do you agree with TRA's assessment of the options for *ex-ante* remedies for dominance in this market and the remedies that TRA concluded were appropriate and should be applied? Please give reasons

**Question 3:** Do you consider that some of the *ex-ante* remedies proposed might be duplicative and should be either held in abeyance or applied more lightly than suggested in the discussion of the market? If so, please identify the remedies, give reasons and suggest, if applicable, how a lighter administration might be achieved.

## Market 7: Retail national leased line services

### a) The risk of harm to competition and consumer welfare

There are a number of areas that offer potential for harm from market dominance in Market 7. The extent of that dominance is substantial, and it is unlikely to be tempered to any extent by developments in the market in the near term.

Specifically the risks in this market are as follows:

- Undue discrimination. Omantel might unduly discriminate between end users by providing better quality of service and terms and conditions to large volume or high value end users.
- Price discrimination via cross subsidisation or predation. Omantel could leverage its market power into competitive markets could cross-subsidise retail prices in those markets and gain an unfair advantage.
- Excessive pricing. Omantel has the ability to raise the prices at retail level above its costs, thereby reducing consumer welfare. An alternative is that it may not reduce its prices as costs reduce, which one might expect over time in an effectively competitive market, thereby generating excessive profits.

### b) Options for remedies and impact assessment

The Figure below identifies and assesses the potential retail remedies that might be capable and sufficient to address the risk of harm to consumers and competition described above.

Figure5.5: Risk of harm and potential remedies for Market 7

| Risk of harm | Potential remedy | Assessment of remedy |
|---|---|---|
| Undue discrimination in relation to terms of supply | Non-discrimination and transparency obligations | There are two parts to such an obligation both of which need to be put in place to address the risk that Omantel will discriminate between end users. Any proposed discrimination will need to be justified. Differences and justification will need to be subject to a transparent process of analysis and, if appropriate, approval.<br>**Conclusion**: Appropriate |
| Anti-competitive price discrimination | Tariff notification and approval and transparency obligations | Tariff notification and approval obligations provide an important opportunity for the TRA to examine price changes before they are imposed on customers, and to examine the implementation of the price control regime in relation to retail national leased line services. Anti-competitive bundling of these services with other services will also be identified and examined before being implemented. The procedure will enable the TRA to monitor the extent to which there is parallelism in price changes between Omantel and Nawras.<br>**Conclusion**: Appropriate |
| Excessive pricing | Price control | The basis on which prices are controlled will need to be set out for the guidance and benefit of Omantel and its retail leased line customers. This will work in conjunction with, but not displace, the tariff notification and approvals process referred to above.<br>**Conclusion**: Appropriate |
| Cross | Accounting | AS will enable the TRA to monitor profitability at a |

| | | |
|---|---|---|
| subsidisation/ Predation | Separation (AS) | business unit or service level and assessing for potential discriminatory pricing.<br><br>**Conclusion**: Appropriate |

SOURCE: TRA

#### c) Factors affecting the implementation of remedies

The way in which the remedies are proposed and the intensity of their application in Market 7 will depend on the effectiveness of the remedies proposed for the corresponding wholesale markets (Markets 14 and 15 relating to the terminating and trunk segments of leased lines, respectively). At this stage, the remedies should be implemented as follows:

*Non-discrimination/Transparency*

A non-discrimination obligation should require Omantel to offer retail national leased line services, including bundling of services, in equivalent circumstances subject to equivalent price, terms and conditions. Omantel should not discriminate between end users and any differences must be justified in an objective way.

In order to make non-discrimination more effective Omantel should also be required to publish clear and up to date information on prices, terms and conditions offered for retail national leased line services on its website. Of particular concern to the TRA will be the inclusion or retention of terms that require excessively long contract periods or contract termination charges and other conditions that are not cost justified and may have the effect of creating switching barriers to competitive offerings in anticipation of such offerings becoming available.

*Tariff Notification and Approval*

Omantel should also provide notice to TRA for approval of price changes and new tariffs no later than thirty (30) days before the tariff is scheduled to be implemented.[14] More detail about the provision of pricing information is contained in the Draft Price Control Regulations.

In addition, Omantel should not unreasonably bundle retail national leased line services with other retail services, and to ensure that this does not happen; all proposed bundles involving retail national leased lines will need the approval of the TRA before being implemented. Given the potential complexity of such bundles Omantel will provide thirty (30) days' notice to TRA of price changes and new tariffs for bundles. TRA may extend the time to assess bundles as required. Omantel must offer all the unbundled elements of the bundled offering as separate products as well.

*Retail Price control*

Omantel should be subject to a price control mechanism in accordance with the pricing regime established by TRA in 2004 in relation to all services in Market 7.

[14] This is line with the existing regulatory framework on tariff approval for regulated and non-regulated services in Draft Price Control Regulations 10/02/04

*Accounting Separation (AS)*

AS is necessary to support the non-discrimination and price control obligations.

Accounting Separation information will enable product profitability to be examined and cross subsidisation to be identified and analysed.

### d) Summary

TRA concludes that the following remedies are appropriate, proportionate and likely to be adequate to address the risks of harm from dominance in Market 7:

- Omantel should be subject to obligations of non-discrimination and transparency;
- Omantel should be subject to notification and approval obligations in relation to prices of all retail national leased line services;
- Omantel should be subject to a price control obligation; and
- Omantel should be subject to an accounting separation (AS) obligation in relation to all services in this market.

**Box 5.5**

**Question 1**: Do you agree with TRA's assessment of the risks of harm that might result from dominance in this market in the absence of ex ante regulation? Have any types of harm that might result from dominance been overlooked? Please give reasons.

**Question 2:** Do you agree with TRA's assessment of the options for *ex-ante* remedies for dominance in this market and the remedies that TRA concluded were appropriate and should be applied? Please give reasons

**Question 3:** Do you consider that some of the *ex-ante* remedies proposed might be duplicative and should be either held in abeyance or applied more lightly than suggested in the discussion of the market? If so, please identify the remedies, give reasons and suggest, if applicable, how a lighter administration might be achieved.

## Market 8: Retail international leased line services

### a) The risk of harm to competition and consumer welfare

There are a number of areas that offer potential for harm from market dominance in Market 8. The extent of that dominance is substantial, and it is unlikely to be tempered to any extent by developments in the market in the near term.

Specifically the risks in this market are as follows:

- Undue discrimination.  Omantel might unduly discriminate between end users by providing better quality of service and terms and conditions to large volume or high value end users.
- Price discrimination via cross subsidisation or predation. Omantel could leverage its market power into competitive markets could cross-subsidise retail prices in those markets and gain an unfair advantage.
- Excessive pricing. Omantel has the ability to raise the prices at retail level above its costs, thereby reducing consumer welfare. An alternative is that it may not reduce its prices as costs reduce, which one might expect over time in an effectively competitive market, thereby generating excessive profits.
- Cross subsidisation and price predation.

**b) Options for remedies and impact assessment**

The Figure below identifies and assesses the potential retail remedies that might be capable and sufficient to address the risk of harm to consumers and competition described above.

Figure5.6: Risk of harm and potential remedies for Market 8

| Risk of harm | Potential remedy | Assessment of remedy |
|---|---|---|
| Undue discrimination in relation to terms of supply | Non-discrimination and transparency obligations | There are two parts to such an obligation both of which need to be put in place to address the risk that Omantel will discriminate between end users.  Any proposed discrimination will need to be justified.  Differences and justification will need to be subject to a transparent process of analysis and, if appropriate, approval.<br><br>**Conclusion**: Appropriate |
| Anti-competitive price discrimination | Tariff notification and approval and transparency obligations | Tariff notification and approval obligations provide an important opportunity for the TRA to examine price changes before they are imposed on customers, and to examine the implementation of the price control regime in relation to retail broadband internet access services. Anti-competitive bundling of these services with other services will also be identified and examined before being implemented.<br><br>**Conclusion**: Appropriate |
| Excessive pricing | Price control | The basis on which prices are controlled will need to be set out for the guidance and benefit of Omantel and its retail leased line customers.  In this market Omantel is subject to international market forces and therefore it may not be appropriate to establish a rigid price control principle as discussed below.  This will work in conjunction with, but not displace, the tariff approvals process referred to above.<br><br>**Conclusion**: Appropriate |

| | | |
|---|---|---|
| Cross subsidisation/ Predation | Accounting Separation (AS) | AS will enable the TRA to monitor profitability at a business unit or service level and assessing for potential cross-subsidies and discriminatory pricing.<br>**Conclusion**: Appropriate |

SOURCE: TRA

### c) Factors affecting the implementation of remedies

The way in which the remedies are proposed and the intensity of their application in Market 8 will depend on the effectiveness of the remedies proposed for the corresponding wholesale markets (Market 16 relating to international bandwidth capacity). At this stage, the remedies should be implemented as follows:

*Non-discrimination/Transparency*

A non-discrimination obligation should require Omantel to offer retail international leased line services, including bundling of services, in equivalent circumstances subject to equivalent price, terms and conditions. Omantel should not discriminate between end users and any differences must be justified in an objective way.

In order to make non-discrimination more effective Omantel should also be required to publish clear and up to date information on prices, terms and conditions offered for retail international leased line services on its website. Of particular concern to the TRA will be the inclusion or retention of terms that require excessively long contract periods or contract termination charges and other conditions that are not cost justified and may have the effect of creating switching barriers to competitive offerings in anticipation of such offerings becoming available.

*Tariff Notification and Approval*

Omantel should also provide notice to TRA for approval of price changes and new tariffs no later than thirty (30) days before the tariff is scheduled to be implemented.

In addition, Omantel should not unreasonably bundle retail international leased line services with other retail services, and to ensure that this does not happen; all proposed bundles involving retail international leased lines will need the approval of the TRA before being implemented. Given the potential complexity of such bundles Omantel will provide thirty (30) days' notice to TRA of price changes and new tariffs for bundles. TRA may extend the time to assess bundles as required. Omantel must offer all the unbundled elements of the bundled offering as separate products as well.

*Retail Price control*

Omantel will be made subject to a price control mechanism in accordance with the pricing regime established by TRA in 2004 in relation to all services in Market 7.

*Accounting Separation (AS)*

AS is necessary to support the non-discrimination and price control obligations. Separate accounting information will enable product profitability to be examined and cross subsidisation to be identified and analysed.

#### d) Summary

TRA concludes that the following remedies are appropriate, proportionate and likely to be adequate to address the risks of harm from dominance in Market 8:

- Omantel should be subject to obligations of non-discrimination and transparency;
- Omantel should be subject to notification and approval obligations in relation to prices of all retail international leased line services;
- Omantel should be subject to price control based on a price cap mechanism; and
- Omantel should be subject to an accounting separation (AS) obligation in relation to all services in this market.

**Box 5.6**

**Question 1**: Do you agree with TRA's assessment of the risks of harm that might result from dominance in this market in the absence of ex ante regulation? Have any types of harm that might result from dominance been overlooked? Please give reasons.

**Question 2:** Do you agree with TRA's assessment of the options for *ex-ante* remedies for dominance in this market and the remedies that TRA concluded were appropriate and should be applied? Please give reasons

**Question 3:** Do you consider that some of the *ex-ante* remedies proposed might be duplicative and should be either held in abeyance or applied more lightly than suggested in the discussion of the market? If so, please identify the remedies, give reasons and suggest, if applicable, how a lighter administration might be achieved.

## Market 10: Wholesale voice call origination on the public telephone network provided at a fixed location

#### a) The risk of harm to competition and consumer welfare

There are a number of areas that offer potential for harm from market dominance, both to customers and to competitive entrants now in the process of launching their services. The extent of Omantel's dominance is substantial, and it is unlikely to be tempered to any extent by developments in the market in the near term. The concern for Omantel is that its wholesale originating access services might be devalued if major services cannot be accessed by its customers, but can be accessed by customers of competing fixed networks. Therefore, Omantel's power in this market is related to the continuation of its position in retail Market 1.

The specific risks of harm arising from Omantel's dominance in Market 10 are as follows:

- Refusal to supply. Without ex ante regulation Omantel would be unlikely to offer wholesale voice call origination to third parties on a timely basis in response to a request or on fair and reasonable terms and conditions. Omantel may well have commercial incentives not to do so.

- Undue discrimination. Omantel might unduly discriminate between wholesale customers by providing better quality of service and terms and conditions to some rather than others. In particular it might favour its own downstream retail operation. Indeed, it would have a strong commercial incentive for doing so. The discrimination could take the form of non-price discrimination, for example, of different qualities of service, undue requirements or delaying tactics that are not warranted by cost or other objective factors, and preference in all matters to its own retail operations compared to competitive retail operations.
- Excessive pricing. Omantel is likely to set excessive prices in order to maximize its profit and raise rival's cost by increasing the costs of wholesale voice call services with detrimental effects for downstream competition and consequently to consumers' interests. In practice this risk might be different from discrimination because Omantel might be prepared to apply the same excessive prices to its own retail operations and to take its profits in the wholesale market rather than in the related retail markets.

### b) Options for remedies and impact assessment

The Figure below identifies and assesses the potential retail remedies that might be capable and sufficient to address the risk of harm to consumers and competition described above.

Figure5.7: Risk of harm and potential remedies for Market 10

| Risk of harm | Potential remedy | Assessment of remedy |
|---|---|---|
| Refusal to supply | Obligation to Supply and to publish a Reference Interconnection Offer | The service is for wholesale call origination and is one of a number of types of interconnection service (the others being call termination and transit services). It therefore follows that the appropriate remedy is the imposition of an obligation to provide call origination access services and access to associated facilities, together with an obligation to publish an updated Reference Interconnection Offer containing fair and reasonable terms and conditions that have been approved by the TRA.<br><br>**Conclusion**: Appropriate |
| Undue discrimination in relation to terms of supply | Non-discrimination and transparency obligations | These obligations will be partly addressed by the requirement to publish a Reference Interconnection Offer approved by the TRA, already discussed. However, it may assist as a guide to the future content of that Offer to clarify that the result needs to meet an obligatory standard of non-discrimination and transparency<br><br>**Conclusion**: Appropriate |
| Anti-competitive price | Tariff notification and approval and | In effect, in Market 10, the tariff notification and approval process, and related transparency obligations, is the process for approving changes to an updated Reference |

| | | |
|---|---|---|
| discrimination | transparency obligations | Interconnection Offer. However there is a need for the TRA to make clear the basis or standard on which it will approve tariffs relating to call origination. That standard will be the cost standard nominated by the TRA from time to time as part of the price control mechanism discussed below.<br><br>**Conclusion**: Appropriate |
| Excessive pricing | Price control | The basis on which prices are controlled will need to be set out for the guidance and benefit of Omantel and its wholesale call origination customers. The TRA should establish a cost standard that reflects best practice as applied to the circumstances of Oman.<br><br>**Conclusion**: Appropriate |
| Cross subsidisation/ Predation | Accounting Separation (AS) | AS will enable the TRA to determine the way in which costs and revenues have been allocated amongst various services to identify and assess cross subsidization and its effect on competition in downstream retail markets.<br><br>**Conclusion**: Appropriate |

SOURCE: TRA

### c) Factors affecting the implementation of remedies

As noted already, Omantel has significant dominance in this market and the risk of harm is unlikely to be mitigated in the short to medium term. As a result the full suite of remedies prescribed for dominant service providers of interconnection services, as provided for in the Executive Regulations, should be applied.

*Obligation to Supply and to publish an updated Reference Interconnection Offer*

Omantel should be made subject to obligations to supply wholesale call origination services and associated facilities on reasonable terms and conditions to all eligible service providers who request them. The requirement for a published, approved and updated Reference Interconnection Offer (RIO) containing full and detailed terms is the means of discharging the supply and transparency obligations.

*Non-discrimination/Transparency*

TRA considers that Omantel should be subject to an obligation of non-discrimination, in addition to the obligation to publish a RIO.

This is a necessary remedy to prevent Omantel discriminating in favour of its own retail arm and ensures that competing providers are offered equivalent terms and conditions. The obligation includes non-discrimination in relation to pricing, information, maintenance and fault response associated with service performance, service quality and all aspects of the provision of call origination services.

The updated Riot be proposed by Omantel and submitted tothe TRA for approval should cover at least the following information:

- a clear description of the origination services offered, including service locations and related facilities;
- charges, terms and conditions of the services offered, including billing, provisioning and dispute resolution procedures;
- a minimum set of Service Level Agreements and Key Performance Indicators (KPIs) to monitor access delivery times, fault clearance times and facilities provision times;
- technical interfaces and points of interconnection in order to allow full and effective use of the services offered;
- the availability of co-location services;
- conditions for site access; and
- safety standards and procedures.

*Tariff Notification and Approval*

In order to make non-discrimination more effective Omantel should also be required to notify and seek TRA approval for changes in the charges, terms and conditions as well as all other technical information contained in the RIO in advance of changes being implemented. Omantel should provide notice to TRA for approval of changes and new terms no later than thirty (30) days before[15] the change is scheduled to be implemented. This will ensure more effective competition in downstream retail markets by allowing competitive service providers who are also wholesale customers to adjust their offers in response to changes in the terms and conditions of the wholesale inputs.

*Price control*

Call origination service charges should be cost based and the price control should be in terms of the cost standard determined by the TRA from time to time. Best practice in the circumstances of the Omani market is based on the LRIC+ standard (Long-Run Incremental Cost standard plus a contribution towards joint and common costs). Origination services charges based on LRIC+ are considered to be the most appropriate because:

- It reflects price setting ina competitive market. LRIC closely approximate the costs of an efficient operator employing modern technology.
- It does not transfer inefficient costs from one service provider to its competitors, while allowing efficient operators to recover the forward looking costs of an efficient operation, and
- It provides the operator with the right incentives to invest.

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[15]This is line with the existing regulatory framework on tariff approval for regulated and non-regulated servicesin Draft Price Control Regulations 10/02/04. It is recognised that the Draft Price Control regulations relate only to retail prices; however the point of prior notification is a general one, equally applicable to other prices.

*Accounting separation (AS)*

AS is necessary to ensure that the means are available to the TRA to identify cross subsidization between retail and wholesale services, and between regulated and competitive services.

The accounting separation requirements are detailed in the Accounting Separation, Regulatory Accounting & Reporting Requirements published by TRA in December 2009, and need to be reviewed and if necessary revised to ensure that they remain current.

**d) Summary**

TRA concludes that the following remedies are appropriate, proportionate and likely to be adequate to address the risks of harm from dominance in Market 10:

- Omantel should be obliged to supply call origination services to all eligible service providers who request them;
- Omantel should be obliged to publish an updated Reference Interconnection Offer in relation to the supply of wholesale call origination services in a form and with content approved by the TRA;
- Omantel should be subject to obligations of non-discrimination and transparency;
- Omantel should be subject to notification and approval obligations in relation to all changes to its updated Reference Interconnection Offer, and specifically to changes in prices for call origination services;
- Omantel should be subject to a price control obligation; and
- Omantel should be subject to an accounting separation (AS) obligation in relation to all services in this market.

**Box 5.7**

**Question 1**: Do you agree with TRA's assessment of the risks of harm that might result from dominance in this market in the absence of ex ante regulation? Have any types of harm that might result from dominance been overlooked? Please give reasons.

**Question 2:** Do you agree with TRA's assessment of the options for *ex-ante* remedies for dominance in this market and the remedies that TRA concluded were appropriate and should be applied? Please give reasons

**Question 3:** Do you consider that some of the *ex-ante* remedies proposed might be duplicative and should be either held in abeyance or applied more lightly than suggested in the discussion of the market? If so, please identify the remedies, give reasons and suggest, if applicable, how a lighter administration might be achieved.

# Market 11: Wholesale voice call termination on fixed networks

### a) The risk of harm to competition and consumer welfare

The specific risks of harm arising from Omantel's and Nawras's separate single dominance in Market 11 are as follows:

- Refusal to supply. Without ex ante regulation Omantel and Nawras would be unlikely to offer wholesale fixed voice call termination to eligible service providers on a timely basis in response to a request or on fair and reasonable terms and conditions. Omantel and Nawras would have every commercial incentive not to do so.
- Undue discrimination. Omantel and Nawras might unduly discriminate between wholesale customers by providing better quality of service and terms and conditions to some rather than others. In particular they might favour their own downstream retail operations. Indeed, they would have a strong commercial incentive for doing so. The discrimination could take the form of non-price discrimination, for example, of different qualities of service, undue requirements or delaying tactics that are not warranted by cost or other objective factors, and preference in all matters to their own respective retail operations compared to competitive retail operations.
- Excessive pricing. Omantel and Nawras are likely to set excessive prices in order to maximize its profit and raise rival's cost by increasing the costs of wholesale voice call termination services with detrimental effects for downstream competition and consequently to consumers' interests. In practice this risk might be different from the risk of discrimination because Omantel and Nawras might be prepared to apply the same excessive prices to their own respective retail operations and to take their profits in the wholesale market rather than in the related retail markets.
- Cross subsidization, between wholesale and retail services, to gain advantage or limit downstream retail competition.

### b) Options for remedies and impact assessment

The Figure below identifies and assesses the potential retail remedies that might be able and sufficient to address the risk of harm to consumers and competition described above.

Figure5.8: Risk of harm and potential remedies for Market 11

| Risk of harm | Potential remedy | Assessment of remedy |
|---|---|---|
| Refusal to supply | Obligation to Supply and to publish a Reference Interconnection Offer | The service is for wholesale call termination and is one of a number of types of interconnection service (the others being call origination and transit services). It therefore follows that the appropriate remedy is the imposition of an obligation to provide call termination services and access to associated facilities, together with an obligation to publish an updated Reference |

| | | |
|---|---|---|
| | | Interconnection Offer containing fair and reasonable terms and conditions that have been approved by the TRA.<br><br>**Conclusion**: Appropriate |
| Undue discrimination in relation to terms of supply | Non-discrimination and transparency obligations | These obligations may be partly addressed by the requirement to publish an updated Reference Interconnection Offer approved by the TRA, already discussed. However, it may assist as a guide to the content of that Offer to clarify that the result needs to meet an obligatory standard of non-discrimination and transparency<br><br>**Conclusion**: Appropriate |
| Anti-competitive price discrimination | Tariff notification and approval and transparency obligations | In effect, in Market 11, the tariff notification and approval process, and related transparency obligations, is the process for approving changes to an updated Reference Interconnection Offer. However there is a need for the TRA to make clear the basis or standard on which it will approve tariffs relating to call termination. That standard will be the cost standard nominated by the TRA from time to time as part of the price control mechanism discussed below.<br><br>**Conclusion**: Appropriate |
| Excessive pricing | Price control | The basis on which prices are controlled will need to be set out for the guidance and benefit of Omantel and Nawras and their wholesale call termination customers. The TRA should be seeking to establish a cost standard that reflects best practice as applied to the circumstances of Oman.<br><br>**Conclusion**: Appropriate |
| Cross subsidisation/ Predation | Accounting Separation (AS) | AS will enable the TRA to determine the way in which costs and revenues have been allocated amongst various services to identify and assess cross subsidization and its effect on competition in downstream retail markets.<br><br>**Conclusion**: Appropriate |

SOURCE: TRA

### c) Factors affecting the implementation of remedies

As noted already, Omantel and Nawras have complete dominance in this market – with each fixed services network being considered as a separate sub-market - and the risk of harm is unlikely to be mitigated because, by definition, Omantel and Nawras will always have a complete monopoly for the termination of calls on their own respective fixed networks. As a result the full suite of remedies prescribed for dominant service providers of interconnection services, as provided for in the Executive Regulations, should be applied. These are outlined below.

*Obligation to Supply and to publish a Reference Interconnection Offer*

Omantel and Nawras should be subject to obligations to supply call termination services on reasonable terms and conditions to all eligible service providers who request them. The requirement for a published, approved and updated Reference Interconnection Offer (RIO) containing complete terms is the means of discharging the supply and transparency obligations.

*Non-discrimination/Transparency*

Omantel and Nawras should be subject to an obligation of non-discrimination, in addition to the obligation to publish an updated RIO.

This is a necessary remedy to prevent Omantel and Nawras discriminating in favour of their own respective retail arms and ensures that competing providers are offered equivalent terms and conditions. The obligation includes non-discrimination in relation to pricing, information, maintenance and fault response associated with service performance, service quality and all aspects of the provision of call termination services.

The updated RIOsto be proposed by Omantel and Nawras and submitted for TRA approval should cover at least the following information:

- a clear description of the call termination services offered, including service locations and related facilities;
- charges, terms and conditions of the services offered, including billing, provisioning and dispute resolution procedures;
- a minimum set of Service Level Agreements and Key Performance Indicators (KPIs) to monitor access delivery times, fault clearance times and facilities provision times;
- technical interfaces and points of interconnection in order to allow full and effective use of the services offered;
- the availability of co-location services;
- conditions for site access; and
- safety standards and procedures.

*Tariff Notification and Approval*

In order to make non-discrimination more effective Omantel and Nawras should also be required to notify and seek TRA approval for changes in the charges, terms and conditions as well as all other technical information contained in the updated RIO in advance of changes being implemented. Omantel and Nawras should provide notice to TRA for approval of changes and new terms no later than thirty (30) days before the change is scheduled to be implemented. In addition wholesale customers should be provided with notice of significant changes to enable them to adjust their offers in response to changes in the terms and conditions of the wholesale inputs. For example, they may need time to change their own retail prices and to provide their retail customers with notice of the change. Clearly TRA will need to have power to defer the proposed implementation date, if necessary, to ensure that adequate notice and adjustment time is afforded.

*Price control*

Call termination charges will be cost based and the price control will be in terms of the cost standard determined by the TRA from time to time. Best practice in the circumstances of the Omani market is based on the LRIC+ standard (Long-Run Incremental Cost standard plus a contribution towards joint and common costs). Origination services charges based on LRIC+ are considered to be the most appropriate because:

- It reflects price setting in a competitive market. LRIC closely approximate the costs of an efficient operator employing modern technology.
- It does not transfer inefficient costs from one service provider to its competitors, while allowing efficient operators to recover the forward looking costs of an efficient operation, and
- It provides the operator with the right incentives to invest.

*Accounting separation (AS)*

In order to ensure compliance with price control and non-discrimination obligations by Omantel and Nawras, imposition of an AS obligation is required to ensure that the means are available to the TRA to identify cross subsidization between retail and wholesale services, and between regulated and competitive services.

The accounting separation requirements are detailed in the Accounting Separation, Regulatory Accounting & Reporting Requirements published by TRA in December 2009.

**e) Summary**

TRA concludes that the following remedies are appropriate, proportionate and likely to be adequate to address the risks of harm from dominance in Market 11:

- Omantel and Nawras should be obliged to supply call termination services to all eligible service providers who request them;
- Omantel and Nawras should be obliged to publish respective updated Reference Interconnection Offers in relation to the supply of wholesale call termination services in a form and with content approved by the TRA;
- Omantel and Nawras should be subject to obligations of non-discrimination and transparency;
- Omantel and Nawras should be subject to notification and approval obligations in relation to all changes to its updated Reference Interconnection Offer, and specifically to changes in prices for call termination services;
- Omantel and Nawras should be subject to price control based on a LRIC+ cost standard or such other cost standard as determined by the TRA from time to time; and
- Omantel and Nawras should be subject to accounting separation (AS) obligations in relation to all services in this market.

**Box 5.8**

**Question 1**: Do you agree with TRA's assessment of the risks of harm that might result from dominance in this market in the absence of ex ante regulation? Have any types of harm that might result from dominance been overlooked? Please give reasons.

**Question 2:** Do you agree with TRA's assessment of the options for *ex-ante* remedies for dominance in this market and the remedies that TRA concluded were appropriate and should be applied? Please give reasons

**Question 3:** Do you consider that some of the *ex-ante* remedies proposed might be duplicative and should be either held in abeyance or applied more lightly than suggested in the discussion of the market? If so, please identify the remedies, give reasons and suggest, if applicable, how a lighter administration might be achieved.

## Market 12: Wholesale network infrastructure access at a fixed location

### a) The risk of harm to competition and consumer welfare

At present, no operators in Oman offer wholesale network infrastructure access, and therefore a market with transactions either for shared line service or for full local loop unbundling does not exist. Nevertheless, a notional market can be constructed on the basis of self-supplied local access that Omantel provides to itself. The extent of Omantel's dominance is substantial, and it is unlikely to be tempered to any extent by developments in the market in the near term.

The specific risks of harm resulting from Omantel's dominance in this market are:

- Refusal to supply. Without ex ante regulation Omantel would be unlikely to offer wholesale access to third parties on fair and reasonable terms in response to a request from other eligible service providers.
- Non price discriminatory treatment in the provision of access services to external access seekers in favour of its own retail arm. The discrimination could take the form of non-price discrimination, for example, of different qualities of service, undue requirements that are not warranted by cost or other objective factors, and preference in all matters to its own retail operations compared to competitive retail operations.
- Anti-competitive price discrimination. By differentiating prices in favour of own retail operations or applying a margin squeeze strategy to access seekers in order to foreclose or exclude an efficient competitor to profitably compete against Omantel.
- Excessive pricing. Omantel is in a position to set excessive prices in order to maximize its profit and raise rival's cost by increasing the costs of wholesale

network infrastructure services with detrimental effects for downstream competition and consequently to consumers' interests.

- Cross subsidization, from wholesale service revenues to retail service costs.

**b) Options for remedies and impact assessment**

The Figure below identifies and assesses the potential remedies capable of addressing the risk of harm set out above.

Figure5.9: Risk of harm and potential remedies for Market 12

| Risk of harm | Potential remedy | Assessment of remedy |
|---|---|---|
| Refusal to supply | Obligation to Supplyand to publish a Reference Access Offer | The service is for wholesale facilities access which may cover a range of facilities or facility services which it is not economic to duplicate but which are needed by wholesale customers as input into the services they offer at retail level. This review concentrates on unbundled local loop services but the facilities may include tower, duct and co-location access as well as determined by the TRA from time to time. In these cases where Omantel is dominant it is unrealistic to expect Omantel to provide access on fair and reasonable terms to its own competitors in an acceptable timeframe. Omantel has no commercial incentive to do this. It therefore follows that the appropriate remedy is the imposition of an obligation to provide such facility access services, together with an obligation to publish a Reference Access Offer containing fair and reasonable terms and conditions that have been approved by the TRA.<br><br>**Conclusion**: Appropriate |
| Undue discrimination in relation to terms of supply | Non-discrimination and transparency obligations | These obligations may be partly addressed by the requirement to publish an updated Reference Access Offer approved by the TRA, as already discussed above. However, it may assist as a guide to the content of that Offer to clarify that the result needs to meet an obligatory standard of non-discrimination and transparency<br><br>**Conclusion**: Appropriate |
| Anti-competitive price discrimination | Tariff notification and approval and transparency obligations | In Market 12 the tariff notification and approval process, and related transparency obligations, is part of the process for approving changes to a Reference Access Offer. However there is a need for the TRA to make clear the basis or standard on which it will approve tariffs relating to facilities access. That standard will be the cost standard nominated by the TRA from time to |

| | | |
|---|---|---|
| | | time as part of the price control mechanism discussed below.<br><br>**Conclusion**: Appropriate |
| Excessive pricing | Price control | The basis on which prices are controlled will need to be set out for the guidance and benefit of Omantel and its wholesale facilities access customers. The TRA should be seeking to establish a cost standard that reflects best practice as applied to the circumstances of Oman. This is discussed later in this section of the report.<br><br>**Conclusion**: Appropriate |
| Cross subsidisation/ Predation | Accounting Separation (AS) | AS will enable the TRA to determine the way in which costs and revenues have been allocated amongst various services to identify and assess cross subsidization and its effect on competition in downstream retail markets.<br><br>**Conclusion**: Appropriate |

SOURCE: TRA

### c) Factors affecting the implementation of remedies

TRA considers that the remedies should be implemented as follows:

*Obligation to Supply and to publish a Reference Access Offer*

Omantel should be obliged to supply unbundled local loop and other nominated facility access services under reasonable terms and conditions on request from an eligible service provider. This obligation will help to facilitate investments and promote competition in the downstream retail markets. Without this obligation Omantel would be unlikely to provide access to its network facilities on fair and reasonable terms.

A requirement for a published, approved Reference Access Offer (RAO) containing complete terms is the means of discharging this obligation.

TRA notes that in the case of loop access there are a range of specific services that may be required, namely:

- fully unbundled local loops, where the provision of access to the copper wires to third parties is provided from the customer premises to an Omantel's Main Distribution Frame (MDF) covering the full range of available frequencies, enabling the alternative operator to offer both voice services and/or data services.
- partially unbundled local loop, where the provision of access to the copper wires to third parties is provided from the customer premises to an Omantel's MDF, enabling the alternative operator only to offer xDSL based broadband services;
- sub-loop unbundling (SLU), where the provision of access to the copper wires to third parties is provided from the customer premises to an intermediate access

point prior to the MDF, enabling the alternative operator to provide the customer with voice and/or data services.

Omantel should also provide access to ancillary services required for a reasonable provision of ULL services, including:

- internal and external tie cables that connect third parties' equipment to the local loop within and outside the Omantel's MDF sites;
- site access and co-location to allow the installation and operation of third's parties equipment to the Omantel's MDF sites; and
- the provision of power supply to enable third parties equipment to run at the MDF sites.

Finally, Omantel should provide co-mingling services and avoid harmful interference between narrowband and broadband services by implementing an interference management plan and ensure flexibility to third parties allowing them to differentiate their retail offers to end users.

TRA understands that there are substantial investments plans that Omantel and Nawras are currently undertaking for the deployment of Next Generation Networks. It is not likely that the current regional implementation plans of fibre access networks, which may potentially provide wholesale services similar to ULL (e.g. unbundled fibres or unbundled wavelength), will be able to provide a sustainable competition to current generation networks in the time horizon of this report. If this forecast turns out to be incorrect, the TRA will undertake a further market analysis on the matter.

However, a current issue for the ULL remedy being proposed in this report is whether the remedy should be shaped to avoid significant impact on Next Generation Network and fibre rollout investments and plans. These are complicated matters and depend on location-specific circumstances relating to duct utilisation and available capacity, as well as the detailed fibre deployment plans of Omantel and others. The TRA is supportive of investments in fibre-based NGA infrastructure to sustain the national broadband services Oman requires for the future. On the other hand, service providers who deploy DSL services based upon access to ULL and other Omantel facilities cannot be denied a reasonable opportunity to obtain a return on their investment by disconnection or recovery of copper. These issues have been addressed in many other jurisdictions and the solutions invariably involve notice and other processes. It would be inappropriate for the TRA to propose a solution as part of this review. It will address the issue if and when it is raised by the stakeholders involved.

*Non-discrimination/Transparency*

TRA considers that Omantel should be subject to an obligation of non-discrimination, in addition to the obligation to publish a RAO.

This is a necessary remedy to prevent Omantel discriminating in favour of its own retail arm and ensures that competing providers are offered equivalent terms and conditions. The obligation includes non-discrimination in relation to pricing, information, maintenance and fault response associated with service performance, service quality and all aspects of the provision of wholesale facility access services.

The RAO to be proposed by Omantel and submitted for TRA approval should cover at least the following information:

- a clear description of the facility access services offered, including service locations and related facilities;
- charges, terms and conditions of the services offered, including billing, provisioning and dispute resolution procedures;
- a minimum set of Service Level Agreements and Key Performance Indicators (KPIs) to monitor access delivery times, fault clearance times and facilities provision times;
- technical interfaces in order to allow full and effective use of the services offered;
- the availability of related co-location services;
- conditions for site access; and
- safety standards and procedures.

*Tariff notification and Approval*

Omantel should also be required to notify and seek TRA approval for changes in the charges, terms and conditions as well as all other technical information contained in the RAO in advance of changes being implemented. Omantel should provide notice to TRA for approval of changes and new terms no later than thirty (30) days before the change is scheduled to be implemented. This will ensure more effective competition in downstream retail markets by allowing competitive service providers who are also wholesale customers to adjust their offers in response to changes in the terms and conditions of the wholesale service inputs.

*Price control*

Wholesale network infrastructure access charges should be cost based and the price control should be in terms of the cost standard determined by the TRA from time to time. The TRA will examine the cost standard and the charges proposed by Omantel in the case of each facility service type and in the absence of an acceptable price application will determine these matters without a proposal from Omantel. It is important to note that the cost standard may need to differ between facility categories to take account of the various policy goals sought to be achieved.

For example, in the case of ULL, the cost standards that the TRA would examine and consider are:

- For once-only inspection and necessary conditioning, reasonable incremental operating expenses incurred by an efficient operator.
- For on-going ULL rental, long run incremental costs based on forward looking network design together with a contribution to the joint and common costs of an efficient operator (LRIC+ standard).

*Accounting Separation (AS)*

In order to ensure compliance with price control and non-discrimination obligations by Omantel, it is critical that the TRA has access to cost information about the structure, level and allocation of Omantel’s costs affecting facility access services. AS is necessary to ensure that the means are available to the TRA to identify cross subsidization between retail and wholesale services, and between regulated and competitive services.

The accounting separation requirements are detailed in the Accounting Separation, Regulatory Accounting & Reporting Requirements published by TRA in December 2009.

**d) Summary**

TRA concludes that the following remedies are appropriate, proportionate and likely to be adequate to address the risks of harm from dominance in Market 12:

- Omantel should be obliged to supply nominated facility access services to all eligible service providers who request them;
- Omantel should be obliged to publish a Reference Access Offer in relation to the supply of wholesale facility access services in a form and with content approved by the TRA;
- Omantel should be subject to obligations of non-discrimination and transparency;
- Omantel should be subject to notification and approval obligations in relation to all changes to its Reference Access Offer, and specifically to prices for wholesale facility access services;
- Omantel should be subject to price control based on cost standards as determined by the TRA from time to time in relation to specific categories of facility access; and
- Omantel should be subject to an accounting separation (AS) obligation in relation to all services in this market.

**Box 5.9**

**Question 1**: Do you agree with TRA's assessment of the risks of harm that might result from dominance in this market in the absence of ex ante regulation? Have any types of harm that might result from dominance been overlooked? Please give reasons.

**Question 2:** Do you agree with TRA's assessment of the options for *ex-ante* remedies for dominance in this market and the remedies that TRA concluded were appropriate and should be applied? Please give reasons

**Question 3:** Do you consider that some of the *ex-ante* remedies proposed might be duplicative and should be either held in abeyance or applied more lightly than suggested in the discussion of the market? If so, please identify the remedies, give reasons and suggest, if applicable, how a lighter administration might be achieved.

# Market 13: Wholesale broadband access

### a) The risk of harm to competition and consumer welfare

There are a number of areas that offer potential for harm from Omantel's and Nawras' dominance in this market, both to customers and to competitive entrants now in the course of launching their services.

At present, there are no operators in Oman that offer wholesale network infrastructure access, therefore a market for wholesale broadband access is not fully operational. Nevertheless, a notional market can be constructed on the basis of self-supplied broadband access that Omantel and Nawras provide to their own respective retail businesses.

Omantel and Nawras could gain advantage in this market from their dominant position in the following specific ways:

- Refusal to supply. Without ex ante regulation Omantel and Nawras could potentially decline to provide wholesale broadband access (such as bit stream unbundling or wholesale broadband services) at fair and reasonable prices to enable retail competition by wholesale customers (ISPs).
- Discriminatory treatment in the provision of wholesale broadband services. When operators are vertically integrated, as are both Omantel and Nawras, the discrimination could take the form of non-price discrimination, for example, of different qualities of service, undue requirements that are not warranted by cost or other objective factors, and preference in all matters to its own retail operations compared to competitive retail operations.
- Anti-competitive price discrimination. By differentiating prices in favour of own retail operations or applying a margin squeeze strategy to access seekers in order to foreclose or exclude an efficient competitor to profitably compete against the incumbent operators.
- Excessive pricing. Absent regulation, Omantel and Nawras will have the incentive and opportunity to set excessive prices in order to maximize profit and raise third party rival's cost by increasing the costs of wholesale access services with detrimental effects for downstream competition and consequently to consumers' interests.

### b) Options for remedies and impact assessment

The Figure below identifies and assesses the potential remedies for addressing the risk of harm to consumers and competition described above.

Figure5.10: Risk of harm and potential remedies for Market 13

| Risk of harm | Potential remedy | Assessment of remedy |
|---|---|---|
| Refusal to supply | Obligation to Supply and to publish a Reference Access Offer | Omantel and Nawras are reluctant wholesalers, and may regard their best interests as being served by not supplying the wholesale market Consequently a supply obligation and an obligation to publish an approved Reference Access Offer are appropriate. |

| | | |
|---|---|---|
| | | **Conclusion**: Appropriate |
| Undue discrimination in relation to terms of supply | Non-discrimination and transparency obligations | These obligations may be partly addressed by the requirement to publish a Reference Access Offer approved by the TRA, as already discussed above. However, it would assist as a guide to the content of that Offer to clarify that the result needs to meet an obligatory standard of non-discrimination and transparency<br><br>**Conclusion**: Appropriate |
| Anti-competitive price discrimination | Tariff notification and approval and transparency obligations | In Market 13 the tariff notification and approval process, and related transparency obligations, are part of the process for approving changes to a Reference Access Offer. However there is a need for the TRA to make clear the basis or standard on which it will approve tariffs relating to bitstream access. That standard will be the cost standard nominated by the TRA from time to time as part of the price control mechanism discussed below.<br><br>**Conclusion**: Appropriate |
| Excessive pricing | Price control | The basis on which prices are controlled will need to be set out for the guidance and benefit of Omantel, Nawras and their wholesale broadband access customers. The TRA should be seeking to establish a price control standard that reflects best practice as applied to the circumstances of Oman. This may not be a cost standard. This is discussed later in this section of the report.<br><br>**Conclusion**: Appropriate |
| Cross subsidisation/ Predation | Accounting Separation (AS) | AS will enable the TRA to determine the way in which costs and revenues have been allocated amongst various services to identify and assess cross subsidization and its effect on competition in downstream retail broadband markets.<br><br>**Conclusion**: Appropriate |

SOURCE: TRA

### c) Factors affecting the implementation of remedies

The discussion below adds detail on how the appropriate remedies should be shaped and implemented.

*Obligation to Supply and to publish a Reference Access Offer*

Wholesale broadband access focuses on the wholesale services that allow the alternative service provider to have connectivity with broadband users from a remote location. This remote connectivity can be provided in many ways including:

- at the level of concentration node (e.g. immediately after a DSLAM),
- at the level of a layer 2 switch (e.g. at an ATM or Ethernet switch),
- at one or more points in the IP network of the player with SMP, or
- through provision of complete broadband access services on a wholesale basis, whether the services are based on xDSL technologies, WiMAX technology or some other means.

Omantel and Nawras should be subject to an obligation to supply wholesale broadband access and also be required to provide access to the ancillary services required to provide the services including co-location, power supply and internal and external ties cables, if relevant. The obligation to supply should be on request from an eligible service provider and under reasonable terms and conditions. The requirement for a published, approved Reference Access Offer (RAO) containing complete terms is the means of discharging this obligation.

*Non-discrimination/Transparency obligations*

These are necessary remedies to prevent Omantel and Nawras discriminating in favour of its own retail broadband business and ensure that competing providers are offered equivalent terms and conditions. The obligation includes non-discrimination and equivalence in relation to all service provision including information, provisioning times and the conditions of service management.

The obligation of transparency includes a requirement for Omantel and Nawras to publish charges, terms and conditions to both their respective downstream retail businesses and to third parties seeking access to wholesale broadband inputs in the same manner and at the same time. The requirement to publish a RAO, already discussed, will be a means of discharging that obligation.

The RAO will be proposed by Omantel and Nawras should cover at least the following information:

- a clear description of the bit stream access service and related facility access services offered;
- charges, terms and conditions of the services offered, including billing, provisioning and dispute resolution procedures;
- A minimum set of Service Level Agreements and Key Performance Indicators (KPIs) to monitor access delivery times, fault clearance times and facilities provision times;
- technical interfaces and points of interconnection in order to allow full and effective use of the services involved; and
- information regarding technical characteristics and technical standards for network access.

*Tariff notification and Approval*

Omantel and Nawras should also be required to notify changes in the charges, terms and conditions as well as all other technical information contained in the RAO in advance of changes taking place. Omantel and Nawras should provide notice to TRA for approval of changes and new tariffs no later than thirty (30) days before the change is scheduled to be implemented. This will ensure more effective competition at downstream level by allowing alternative operators to adjust their offers in response to an increase in the wholesale price of their inputs and/or a modification to Omantel's technical network access configuration. The approval process will be light-handed as indicated in the next section.

*Price control*

A price control obligation based on cost oriented charging for wholesale access services and associated facilities is required, i.e., set prices that reflect the economic costs of the provision of wholesale broadband access. However, TRA must ensure that the cost standard adopted is consistent with other national goals such as the provision of national fibre infrastructure for broadband provision. Other regulators have recognised the difficulty of getting the balance right, and in some cases have refrained from ex ante price controls for that reason.

Bearing in mind the risks of regulatory distortion of development of broadband services markets and the risks of unintended disincentives that may be generated by ex-ante regulation for new broadband network investment, the TRA intends to adopt a light-handed approach to price control. One aspect of this is to encourage diversification and experimentation in price packaging by no adopting pricing principles that require demonstration of cost movements, etc. To ensure that the consumers' interests are protected, it may be appropriate to establish the affordable price of a basic service package and leave higher speed packages to market pricing. At the wholesale level this translates as requiring wholesale service pricing to support the retail entry level offering and to leave a margin for resellers.

*Accounting Separation (AS)*

AS remedies are needed to ensure that the allocation of costs and revenues between wholesale and retail services and businesses is appropriate for both Omantel and Nawras, and that there is no undue cross subsidising of retail costs by wholesale revenues.

**d) Summary**

TRA concludes that the following remedies are appropriate, proportionate and likely to be adequate to address the risks of harm from dominance in Market 13:

- Omantel and Nawras should be obliged to supply wholesale broadband access services and related facility access services to all eligible service providers who request them;
- Omantel and Nawras should be obliged to publish respective Reference Access Offers in relation to the supply of wholesale broadband access services in a form and with content approved by the TRA;
- Omantel and Nawras should be subject to obligations of non-discrimination and transparency;

- Omantel and Nawras should be subject to notification and approval obligations in relation to all changes to its Reference Access Offer;
- Omantel and Nawras should be subject to price control for wholesale broadband access services but the principles that apply will be determined by the TRA from time to time and will be consistent with national imperatives for investment in broadband networks; and
- Omantel and Nawras should be subject to accounting separation (AS) obligations in relation to wholesale broadband access services.

**Box 5.10**

**Question 1**: Do you agree with TRA's assessment of the risks of harm that might result from dominance in this market in the absence of ex ante regulation? Have any types of harm that might result from dominance been overlooked? Please give reasons.

**Question 2:** Do you agree with TRA's assessment of the options for *ex-ante* remedies for dominance in this market and the remedies that TRA concluded were appropriate and should be applied? Please give reasons

**Question 3:** Do you consider that some of the *ex-ante* remedies proposed might be duplicative and should be either held in abeyance or applied more lightly than suggested in the discussion of the market? If so, please identify the remedies, give reasons and suggest, if applicable, how a lighter administration might be achieved.

## Markets 14 and 15: Wholesale terminating segments and trunk segments, respectively, of leased lines

### a) The risk of harm to competition and consumer welfare

The risks of harm to consumer interests and to competition from Omantel's dominance in the wholesale markets for terminating segments and trunk segments of leased lines are essentially the same and for convenience they will be discussed together. In both cases the specific risks are:

- Refusal to supply. Without ex ante regulation Omantel would be unlikely to offer wholesale access to third parties on fair and reasonable terms in response to a request from other eligible service providers. Indeed it would have no commercial reason for doing so.
- Discrimination in the provision of access services to external access seekers in favour of its own retail arm. The discrimination could take the form of non-price discrimination, for example, of different qualities of service, undue requirements that are not warranted by cost or other objective factors, and preference in all matters to its own retail operations compared to competitive retail operations.

- Anti-competitive price discrimination. By differentiating prices in favour of own retail operations or applying a margin squeeze strategy to access seekers in order to foreclose or exclude an efficient competitor from competing against Omantel.
- Excessive pricing. Omantel is in a position to set excessive prices in order to maximize its profits and raise rivals' cost by increasing the costs of wholesale segments of leased lines with detrimental effects for downstream competition and consequently to consumers' interests.
- Cross subsidization, from wholesale service revenues to retail service costs.

**b) Options for remedies and impact assessment**

The Figure below identifies and assesses the potential remedies for addressing the risk of harm to consumers and competition described above

Figure5.11: Risk of harm and potential remedies for Markets 14 and 15

| Risk of harm | Potential remedy | Assessment of remedy |
|---|---|---|
| Refusal to supply | Obligation to Supply and to publish a Reference Access Offer | Omantel has no commercial incentive to supply wholesale trunk and terminating segments of leased lines on fair and reasonable terms to its retail competitors. Consequently a supply obligation and an obligation to publish an approved Reference Access Offer RAO) are appropriate. There are detailed aspects of the supply obligation that are discussed further in this section.<br>**Conclusion**: Appropriate |
| Undue discrimination in relation to terms of supply | Non-discrimination and transparency obligations | These obligations may be partly addressed by the requirement to publish a Reference Access Offer approved by the TRA. However, it would assist as a guide to the content of that Offer to clarify that the result needs to meet an obligatory standard of non-discrimination and transparency<br>**Conclusion**: Appropriate |
| Anti-competitive price discrimination | Tariff notification and approval and transparency obligations | In Markets 14 and 15 the tariff notification and approval process, and related transparency obligations, are part of the process for approving changes to a Reference Access Offer. However there is a need for the TRA to make clear the basis or standard on which it will approve tariffs relating to these services. That standard will be the cost standard nominated by the TRA from time to time as part of the price control mechanism discussed below.<br>**Conclusion**: Appropriate |
| Excessive pricing | Price control | The basis on which prices are controlled will need to be set out for the guidance and benefit of Omantel and its wholesale leased line segment customers. The TRA should be seeking to establish a price control principle |

| | | |
|---|---|---|
| | | and cost standard that reflects best practice as applied to the circumstances of Oman. This is discussed later in this section of the report.<br><br>**Conclusion**: Appropriate |
| Cross subsidisation/ Predation | Accounting Separation (AS) | AS will enable the TRA to determine the way in which costs and revenues have been allocated amongst various services to identify and assess cross subsidization and its effect on competition in downstream retail broadband markets.<br><br>**Conclusion**: Appropriate |

SOURCE: TRA

### c) Factors affecting the implementation of remedies

The discussion below adds detail on how the appropriate remedies should be shaped and implemented.

*Obligation to Supply and to publish a Reference Access offer*

Omantel should be subject to an obligation to supply wholesale leased line segments under reasonable terms and conditions to eligible service providers who request them. The services should not be left to Omantel to determine, nor should they be specified in a way that enables ready regulatory gaming. Taking these considerations into account, Omantel the supply obligation should entail:

- Provision at a wholesale level of any leased line segment service offered at retail by Omantel on a nominated past date
- The services to be provided at the same bandwidth capacity and locations and subject to service level agreements and performance conditions that were offered by Omantel on a nominated past date
- Provision of any additional category wholesale leased line segment service offered at retail level by Omantel after a nominated past date

The requirement for a published, approved Reference Access Offer (RAO) containing complete terms is the means of discharging this obligation in a transparent manner.

*Non-discrimination/Transparency obligations*

These are necessary remedies to prevent Omantel discriminating in favour of its own retail leased line and other businesses and ensure that competing providers are offered equivalent terms and conditions. The obligation includes non-discrimination and equivalence in relation to all service provision including information, provisioning times and the conditions of service management.

The obligation of transparency includes a requirement for Omantel to publish charges, terms and conditions to both its downstream retail division and third parties seeking access to wholesale broadband inputs in the same manner and at the same time. The requirement to publish a RAO, already discussed, will be a means of discharging that obligation.

The RAO will be proposed by Omantel should cover at least the following information:

- a clear description of the wholesale leased line segment services offered;
- charges, terms and conditions of the services offered, including billing, provisioning and dispute resolution procedures.
- a minimum set of Service Level Agreements and Key Performance Indicators (KPIs) to monitor access delivery times, fault clearance times and facilities provision times.
- technical interfaces and points of interconnection in order to allow full and effective use of the services involved.
- information regarding technical characteristics and technical standards for network access.

*Tariff notification and Approval*

Omantel should also be required to notify changes in the charges, terms and conditions as well as all other technical information contained in the RAO in advance of changes taking place. Omantel should provide notice to TRA for approval of changes and new tariffs no later than thirty (30) days before[16] the change is scheduled to be implemented. This will ensure more effective competition at downstream level by allowing alternative operators to adjust their offers in response to an increase in the wholesale price of their inputs and/or a modification to Omantel's technical network access configuration.

*Price control*

A price control obligation should be established to ensure that wholesale leased line services are offered on fair and reasonable terms to wholesale customers – who are also competitors..

As an interim approach, the TRA may establish a wholesale price regime based on retail price minus avoidable costs for wholesale leased line segments. This may require some work to establish the equivalent retail price where the leased line service is offered to retail customers as an end-to-end service rather than as a collection of trunk and terminating segments. The avoidable costs associated with retail provision will be subject to an examination of the costs claimed by.

*Retail minus avoidable costs* is not a means of constraining the overall level of prices in the absence of competition. It merely ensures that there is no undue discrimination in the wholesale prices charged to wholesale customers. The TRA will specify various other measures to ensure that leased line prices are cost reflective including benchmarking cost-based prices in other countries with similar cost structures and cost modelling. Of particular importance is to ensure that prices for higher bandwidth leased line services are not, in either the wholesale or the retail market, multipliers of lower bandwidth leased line prices when the costs are differently structured.

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[16] This is line with the existing regulatory framework on tariff approval for regulated and non-regulated services per Draft Price Control Regulations 10/02/04. It is recognised that the Draft Price Control regulations relate only to retail prices; however the point of prior notification is a general one, equally applicable to other prices.

*Accounting Separation (AS)*

AS is needed to ensure that the allocation of costs and revenues between wholesale and retail services and businesses is appropriate and that there is no undue cross subsidising of retail costs by wholesale revenues, and specifically by bitstream access revenues.

**d) Summary**

TRA concludes that the following remedies are appropriate, proportionate and likely to be adequate to address the risks of harm from dominance in Markets 14 and 15:

- Omantel should be obliged to supply wholesale terminating segments and trunk segments of leased lines to all eligible service providers who request them;
- Omantel should be obliged to publish a Reference Access Offer in relation to the supply of wholesale leased line segments in a form and with content approved by the TRA;
- Omantel should be subject to obligations of non-discrimination and transparency;
- Omantel should be subject to notification and approval obligations in relation to all changes to its Reference Access Offer, and specifically to prices for wholesale leased line segments;
- Omantel should be subject to price control for wholesale leased line segments on the basis of appropriate principles that may include retail minus avoidable costs, benchmarking and cost modelling, as determined by the TRA from time to time; and
- Omantel should be subject to an accounting separation (AS) obligation in relation to wholesale leased line segments.

**Box 5.11**

**Question 1**: Do you agree with TRA's assessment of the risks of harm that might result from dominance in this market in the absence of ex ante regulation? Have any types of harm that might result from dominance been overlooked? Please give reasons.

**Question 2:** Do you agree with TRA's assessment of the options for *ex-ante* remedies for dominance in this market and the remedies that TRA concluded were appropriate and should be applied? Please give reasons

**Question 3:** Do you consider that some of the *ex-ante* remedies proposed might be duplicative and should be either held in abeyance or applied more lightly than suggested in the discussion of the market? If so, please identify the remedies, give reasons and suggest, if applicable, how a lighter administration might be achieved.

# Market 16: Wholesale international capacity (Bandwidth)

### a) The risk of harm to competition and consumer welfare

The riskof harm to consumer interests and to competition from Omantel's and Nawras' dominance in the wholesale market for international capacity involves the following specific risks:

- Refusal to supply. Without ex ante regulation Omantel and Nawras would be unlikely to offer wholesale access to third parties on fair and reasonable terms in response to a request from other eligible service providers.
- Discrimination in the provision of access services to external access seekers in favour of its own retail arm. The discrimination could take the form of non-price discrimination, for example, of different qualities of service, undue requirements that are not warranted by cost or other objective factors, and preference in all matters to their own retail operations compared to competitive retail operations.
- Anti-competitive price discrimination. By differentiating prices in favour of their own retail operations or applying a margin squeeze strategy to access seekers in order to foreclose or exclude an efficient competitor from competing against Omantel and Nawras.
- Excessive pricing. Omantel and Nawras are in a position to set excessive prices in order to maximize its profits and raise rivals' cost by increasing the costs of international capacity with detrimental effects for downstream competition and consequently to consumers' interests.
- Cross subsidization, from wholesale service revenues to retail service costs.

### b) Options for remedies and impact assessment

The Figure below identifies and assesses the potential remedies for addressing the risk of harm to consumers and competition described above.

Figure5.12: Risk of harm and potential remedies for Market 16

| Risk of harm | Potential remedy | Assessment of remedy |
|---|---|---|
| Refusal to supply | Obligation to Supply | Omantel and Nawras have little commercial incentive to supply wholesale trunk and terminating segments of leased lines on fair and reasonable terms to their retail competitors. Consequently a supply obligation is appropriate. There are detailed aspects of the supply obligation that are discussed further in this section.<br>**Conclusion**: Appropriate |
| Undue discrimination in relation to terms of supply | Non-discrimination and transparency obligations | It would add to certainty within the industry if Omantel and Nawras were to be subject to formal obligations concerning non-discrimination and transparency in this market.<br>**Conclusion**: Appropriate |

| | | |
|---|---|---|
| Anti-competitive price discrimination | Tariff notification and approval and transparency obligations | A tariff notification and approval process is needed if the TRA is to be able to ensure that the terms associated with the provision of international capacity are fair and reasonable. It will be a matter for Omantel and Nawras to provide justification for changes that they respectively seek. It is inappropriate for the TRA to impose a cost standard in this case because the significant part of the price charged are determined by global conditions associated with international transmission capacity.<br>**Conclusion**: Appropriate |
| Excessive pricing | Price control | The basis of price control in this market should be in terms of the cost or other justification put forward by Omantel and Nawras in their respective proposals for price variation.<br>**Conclusion**: Appropriate |
| Cross subsidisation/ Predation | Accounting Separation (AS) | AS will enable the TRA to determine the way in which costs and revenues have been allocated amongst various services to identify and assess cross subsidization and its effect on competition in downstream retail broadband markets.<br>**Conclusion**: Appropriate |

SOURCE: TRA

### c) Factors affecting the implementation of remedies

The discussion below adds detail on how the appropriate remedies should be shaped and implemented.

*Obligation to Supply*

Omantel and Nawras should be subject to an obligation to supply wholesale international bandwidth to eligible service providers who request them. The precise services and capacity categories should include E1, E2, STM-1 and STM-4 services and other services determined by TRA from time to time.

Current prices and ordering procedures should be published to all eligible service providers.

*Non-discrimination/Transparency obligations*

These are necessary remedies to prevent Omantel and Nawras discriminating in favour of their own retail leased line and other businesses and ensure that competing providers are offered equivalent terms and conditions. The obligation includes non-discrimination and equivalence in relation to all service provision including information, provisioning times and the conditions of service management.

The obligation of transparency includes a requirement for Omantel and Nawras to publish charges, terms and conditions

*Tariff notification and Approval*

Omantel and Nawras should also be required to notify changes in the charges, and terms and conditions in advance of changes taking place. Omantel and Nawras should provide notice to TRA for approval of changes and new tariffs no later than thirty (30) days before the change is scheduled to be implemented. This will ensure more effective competition at downstream level by allowing alternative operators to adjust their offers in response to an increase in the wholesale price of their inputs and/or a modification to Omantel's and/or Nawras' technical network access configuration. If the circumstances in which Omantel or Nawras operates with international transmission capacity suppliers or with overseas partners suggests that a lesser period than 30 days should apply in any given case, Omantel or Nawras can seek an expedited process from the TRA and the TRA may approve taking account of the interests of other stakeholders.

*Price control*

It is inappropriate for the TRA to specify a cost or price principle that should apply to wholesale international capacity prices. It will be a matter for Omantel or Nawras to justify proposed changes to terms and conditions and to provide, where appropriate, a cost justification based on the terms of supply to which it is subject in the international market.

*Accounting Separation (AS)*

AS is needed to ensure that the allocation of costs and revenues between wholesale and retail services and businesses is appropriate and that there is no undue cross subsidising of retail costs by wholesale revenues.

**d) Summary**

TRA concludes that the following remedies are appropriate, proportionate and likely to be adequate to address the risks of harm from dominance in Market 16:

- Omantel and Nawras should be obliged to supply wholesale international capacity to all eligible service providers who request them;
- Omantel and Nawras should be subject to obligations of non-discrimination and transparency;
- Omantel and Nawras should be subject to tariff notification and approval obligations for wholesale international bandwidth prices;
- Omantel and Nawras should be subject to price control for wholesale international capacity on the basis of assessment of the justification provided by Omantel and Nawras to support applications for change; and
- Omantel and Nawras should be subject to accounting separation (AS) obligations in relation to wholesale international capacity.

**Box 5.12**

**Question 1**: Do you agree with TRA's assessment of the risks of harm that might result from dominance in this market in the absence of ex ante regulation? Have any types of harm that might result from dominance been overlooked? Please give reasons.

**Question 2:** Do you agree with TRA's assessment of the options for *ex-ante* remedies for dominance in this market and the remedies that TRA concluded were appropriate and should be applied? Please give reasons

**Question 3:** Do you consider that some of the *ex-ante* remedies proposed might be duplicative and should be either held in abeyance or applied more lightly than suggested in the discussion of the market? If so, please identify the remedies, give reasons and suggest, if applicable, how a lighter administration might be achieved.

## Market 17: Wholesale voice call termination on mobile networks

### a) The risk of harm to competition and consumer welfare

The specific risks of harm arising from Omantel's and Nawras's separate dominance in Market 11 are as follows:

- Refusal to supply. Without ex ante regulation Omantel and Nawras would be unlikely to offer wholesale voice call termination to eligible service providers on a timely basis in response to a request or on fair and reasonable terms and conditions. Omantel and Nawras would have every commercial incentive not to do so.
- Undue discrimination. Omantel and Nawras might unduly discriminate between wholesale customers by providing better quality of service and terms and conditions to some rather than others. In particular they might favour their own respective downstream retail operations. Indeed, they would have a strong commercial incentive for doing so. The discrimination could take the form of non-price discrimination, for example, of different qualities of service, undue requirements or delaying tactics that are not warranted by cost or other objective factors, and preference in all matters to their own retail operations compared to competitive retail operations.
- Excessive pricing. Omantel and Nawras are likely to set excessive prices in order to maximize their profits and raise rivals' cost by increasing the costs of wholesale voice call termination services with detrimental effects for downstream competition and consequently to consumers' interests. In practice this risk might be different from discrimination because Omantel and Nawras might be prepared to apply the same excessive prices to their own retail operations and to take their profits in the wholesale market rather than in the related retail markets.[17]

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[17]TRA understands that excessive profitability arising from excessive pricing in mobile termination markets might potentially be competed away by mobile operators, if retail mobile access and

- Cross subsidization, between wholesale and retail services, to gain advantage or limit downstream retail competition. More specifically, an additional risk that potentially harms consumers and competition is a distortion in prices between on-net and off-net tariffs with much higher termination charges for off net calls than on net. This is exacerbated when operators differ in size.

**b) Options for remedies and impact assessment**

The Figure below identifies and assesses the potential retail remedies that might be capable and sufficient to address the risk of harm to consumers and competition described above.

Figure5.13: Risk of harm and potential remedies for Market 17

| Risk of harm | Potential remedy | Assessment of remedy |
|---|---|---|
| Refusal to supply | Obligation to Supply and to publish a Reference Interconnection Offer | The appropriate remedy is the imposition of an obligation to provide call termination services on mobile networks and access to associated facilities, together with an obligation to publish a Reference Interconnection Offer containing fair and reasonable terms and conditions that have been approved by the TRA.<br>**Conclusion**: Appropriate |
| Undue discrimination in relation to terms of supply | Non-discrimination and transparency obligations | These obligations may be partly addressed by the requirement to publish a Reference Interconnection Offer approved by the TRA, already discussed. However, it may assist as a guide to the content of that Offer to clarify that the result needs to meet an obligatory standard of non-discrimination and transparency<br>**Conclusion**: Appropriate |
| Anti-competitive price discrimination | Tariff notification and approval and transparency obligations | In effect, in Market 17, the tariff notification and approval process, and related transparency obligations, is the process for approving changes to a Reference Interconnection Offer. However there is a need for the TRA to make clear the basis or standard on which it will approve tariffs relating to call termination. That standard will be the cost standard nominated by the TRA from time to time as part of the price control mechanism discussed below.<br>**Conclusion**: Appropriate |

origination services were effectively competitive. However, given this is not the case in the Omani market current circumstances TRA concludes that the risk of excessive price is considered to be existent and should be taken into account in this review.

| | | |
|---|---|---|
| Excessive pricing | Price control | The basis on which prices are controlled will need to be set out for the guidance and benefit of Omantel and Nawras and their wholesale call termination customers. The TRA should be seeking to establish a cost standard that reflects best practice as applied to the circumstances of Oman.<br><br>**Conclusion**: Appropriate |
| Cross subsidisation/ Predation | Accounting Separation (AS) | AS will enable the TRA to determine the way in which costs and revenues have been allocated amongst various services to identify and assess cross subsidization and its effect on competition in downstream retail markets.<br><br>**Conclusion**: Appropriate |

SOURCE: TRA

### c) Factors affecting the implementation of remedies

As noted already, Omantel and Nawras have complete dominance in this market and the risk of harm is unlikely to be mitigated because, by definition, Omantel and Nawras will each always have a complete monopoly for the termination of calls on their own respective mobile networks. As a result the full suite of remedies prescribed for dominant service providers of interconnection services, as provided for in the Executive Regulations, should be applied. These are outlined below.

*Obligation to Supply and to publish a Reference Interconnection Offer*

Omantel and Nawras should be subject to obligations to supply call termination services and to transparency. The requirement for a published, approved Reference Interconnection Offer (RIO) containing complete terms is the means of discharging the supply and transparency obligations.

*Non-discrimination/Transparency*

Omantel and Nawras should be subject to an obligation of non-discrimination, in addition to the obligation to publish a RIO.

This is a necessary remedy to prevent Omantel and Nawras discriminating in favour of their own retail arms and ensures that competing providers are offered equivalent terms and conditions. The obligation includes non-discrimination in relation to pricing, information, maintenance and fault response associated with service performance, service quality and all aspects of the provision of mobile call termination services.

The RIOto be proposed by Omantel and Nawras and submitted for TRA approval should cover at least the following information:

- a clear description of the mobile call termination services offered, including service locations and related facilities;

- charges, terms and conditions of the services offered, including billing, provisioning and dispute resolution procedures;
- a minimum set of Service Level Agreements and Key Performance Indicators (KPIs) to monitor access delivery times, fault clearance times and facilities provision times;
- technical interfaces and points of interconnection in order to allow full and effective use of the services offered;
- the availability of co-location services;
- conditions for site access; and
- safety standards and procedures.

*Tariff notification and Approval*

In order to make non-discrimination more effective Omantel and Nawras should also be required to notify and seek TRA approval for changes in the charges, terms and conditions as well as all other technical information contained in their respective RIO in advance of changes being implemented. Omantel and Nawras should provide notice to TRA for approval of changes and new terms no later than thirty (30) days before[18] the change is scheduled to be implemented. This will ensure more effective competition in downstream retail markets by allowing competitive service providers who are also wholesale customers to adjust their offers in response to changes in the terms and conditions of the wholesale inputs.

*Price control*

Call termination charges will be cost based and the price control will be in terms of the cost standard determined by the TRA from time to time. Best practice in the circumstances of the Omani market is based on the LRIC+ standard (Long-Run Incremental Cost standard plus a contribution towards joint and common costs). Termination service charges based on LRIC+ are considered to be the most appropriate because:

- It reflects price setting in a competitive market. LRIC closely approximate the costs of an efficient operator employing modern technology.
- It does not transfer inefficient costs between from one service provider to its competitors, while allowing efficient operators to recover the forward looking costs of an efficient operation, and
- It provides the operator with the right incentives to invest.

[18] This is line with the existing regulatory framework on tariff approval for regulated and non-regulated servicesin Draft Price Control Regulations 10/02/04. It is recognised that the Draft Price Control regulations relate only to retail prices; however the point of prior notification is a general one, equally applicable to other prices.

*Accounting separation (AS)*

In order to ensure compliance with price control and non-discrimination obligations by Omantel, it is critical that the TRA has access to information about the structure, level and allocation of Omantel's and Nawras' costs affecting mobile call termination service. AS is also necessary to ensure that the means are available to the TRA to identify cross subsidization between retail and wholesale services, and between regulated and competitive services.

The accounting separation requirements are detailed in the Accounting Separation, Regulatory Accounting & Reporting Requirements published by TRA in December 2009.

**d) Summary**

TRA concludes that the following remedies are appropriate, proportionate and likely to be adequate to address the risks of harm from dominance in Market 17:

- Omantel and Nawras should be obliged to supply call termination services to all eligible service providers who request them;
- Omantel and Nawras should be obliged to publish Reference Interconnection Offers in relation to the supply of wholesale mobile call termination services in a form and with content approved by the TRA;
- Omantel and Nawras should be subject to obligations of non-discrimination and transparency;
- Omantel and Nawras should be subject to notification and approval obligations in relation to all changes to their Reference Interconnection Offers, and specifically to prices for mobile call termination services;
- Omantel and Nawras should be subject to price control obligations based on a LRIC+ cost standard or such other cost standard as determined by the TRA from time to time; and
- Omantel and Nawras should be subject to accounting separation (AS) obligations in relation to all services in this market.

**Box 5.13**

**Question 1**: Do you agree with TRA's assessment of the risks of harm that might result from dominance in this market in the absence of ex ante regulation? Have any types of harm that might result from dominance been overlooked? Please give reasons.

**Question 2:** Do you agree with TRA's assessment of the options for *ex-ante* remedies for dominance in this market and the remedies that TRA concluded were appropriate and should be applied? Please give reasons

**Question 3:** Do you consider that some of the *ex-ante* remedies proposed might be duplicative and should be either held in abeyance or applied more lightly than suggested in the discussion of the market? If so, please identify the remedies, give reasons and suggest, if applicable, how a lighter administration might be achieved.

# Market 18: Wholesale access and call origination on public mobile telephone networks (MACO)

### a) The risk of harm to competition and consumer welfare

There are a number of areas that offer potential for harm from market dominance, both to customers and to competitive entrants now in the course of launching their services. Omantel Mobile and Nawras are jointly dominant in this market.

Omantel Mobile and Nawras could gain advantage by the following actions:

- Refusal to supply. The major competition problem that needs to be addressed ex ante is the likely refusal from Omantel Mobile and Nawras to provide MACO services in response to requests from new entrants who are eligible to receive such services.

- Undue discrimination via discriminatory treatment in the provision of access services. The discrimination could take the form of different quality of service, undue requirements that are not warranted by cost or other objective factors, and preference in all matters to their own retail operations over competitive retail operations.

- Excessive pricing. Under the current retail minus arrangements that apply to resellers, both Omantel Mobile and Nawras, as jointly dominant operators, have the ability to raise wholesale prices above their costs in order to lower the competitiveness of mobile resellers, while permitting their own retail operations to offer special rates and discounts to users. Omantel Mobile and Nawras also have the ability to keep underlying prices high notwithstanding reductions in cost. This has the same effect in terms of prices remaining above competitive levels. The mobile resellers have limited capacity to compete on price. Based on interviews with each of them it appears that they are struggling to gain a foothold in the market and to cover their costs from the current scale of operations. This means that they are unlikely to be a source of price competition in the time scale of this review.

- Anti-competitive price discrimination, for example by differentiating prices in favour of their own retail operations.

### b) Options for remedies and impact assessment

The Figure below identifies and assesses the potential remedies capable of addressing the risk of harm to consumers and competition described above.

Figure5.14: Risk of harm and potential remedies for Market 18

| Risk of harm | Potential remedy | Assessment of remedy |
|---|---|---|
| Refusal to supply | (1) Indirect access via CS or CPS; (2) Reference Offer; and (3) and MVNO / mobile reseller access entitlements and obligation to supply | Remedy (1) by itself would be ineffectivewhere there is no other service to select or preselect. Remedy (2) is appropriate only if there is an obligation to supply and a related entitlement to MVNO / mobile resale services at reasonable (cost-based) prices (Remedy (3)). All three remedies are mutually reinforcing.<br>**Conclusion**: Appropriate as a set of remedies |
| Discrimination | Non-discrimination and Transparency obligations | The Reference Offer (RO) outlined above will require prior approval by the TRA before being implemented, and this will ensure that the arrangements and procedures are non-discriminatory. Separately the dominant operators will be formally required to act in a non-discriminatory manner in the provision of the services in this market.<br>**Conclusion**: Appropriate |
| Excessive pricing and price discrimination | Price control | Price control needs to be specified on the basis of a cost principle or principles determined by the TRA from time to time.<br>**Conclusion**: Appropriate |
| Cross subsidisation | Accounting separation (AS) | AS is necessary to enable the TRA to identify cost and revenue allocation between regulated and unregulated services and between retail and wholesale services.<br>**Conclusion**: Appropriate |

SOURCE: TRA

### c) Factors affecting the implementation of remedies

The remedies set out above should be implemented in the following manner:

*Obligation to Supply and to publish a Reference Offer*

The benefits for long term and sustainable competition from simple resale are limited in nature and duration. The resellers themselves argue that they are constrained by pricing on a *retail-minus-discount* basis. None is a reseller for more than one of the Class I operators. Additional obligations need to be imposed to ensure that the market opens up to greater competition:

- Carrier Selection and Carrier Pre-Selection and wholesale call origination of international calls on reasonable request. A substantial amount of work will be required by the TRA and the industry to establish the systems and procedures of suitable CS/CPS arrangements. The important point at this stage is to indicate the TRA's intention, which itself may assist in the development of increased pro-competitive orientation by current market participants.
- An obligation on Omantel Mobile and Nawras to negotiate access to MVNO / mobile resellers in good faith and in a reasonable time specified by the TRA. As a supporting remedy, access seekers will be encouraged to submit their business plans to the TRA in order to establish their case for seeking access. This is because MVNO / mobile resellers can take many different forms and TRA will need to verify Omantel Mobile and Nawras network capacity to host MVNO / mobile resale services. At the time of this review there are no limits as such.
- Confirmation, if necessary through changes in regulations or licences, that existing resellers and other retail service providers are entitled to mobile facilities and services priced on the basis of cost and that they may obtain wholesale services from either or both of the existing Class I MNOs.

Existing mobile resellers have entered into contracts with their respective Class I MNO partners. Nothing in the arrangements proposed by the TRA will affect the ability of the resellers to continue operating under those contracts and nothing will affect the ability of Omantel Mobile or Nawras to provide services under those contracts if both parties wish to do so. Resellers who seek change will have an alternative entitlement to cost-based access as fully-fledged MVNOs, and it will be their choice as to the proportion of their business that is conducted on that basis. All licensees will be expected to ensure that their existing contracts are made consistent with the new arrangements when those arrangements come into effect. Any exclusivity clauses in the contracts, for example, will not be compliant.

*Non-discrimination/Transparency obligations*

Non-discrimination requires Omantel Mobile and Nawras to offer MACO services in equivalent circumstances at equivalent prices, and under equivalent other terms and conditions.

In particular, Omantel Mobile and Nawras should not discriminate between wholesale access seekers and their own retail arms. For example, Omantel Mobile and Nawras should be permitted to offer bespoke pricing to their own retail arms provided they offer the same offer the same services, at the same tariffs, terms and conditions also to the other wholesale customers at the same time.

In order to make non-discrimination more effective Omantel Mobile and Nawras should also be subject to an obligation of transparency, compliance with which will be by publishing suitable, approved Reference Offers.

*Price controls*

Resellers are current paying for wholesale services on the basis of retail prices less a discount. This arrangement constrains the ability of resellers to compete effectively on price and price structures. They are each effectively locked into the pricing and billing systems of their Class I MNO partner. With cost oriented prices, dominant operators are allowed to make a normal profit without restricting the service providers' ability to compete in the retail markets.

TRA therefore believes that on balance an appropriate approach is to offer MACO services for wholesale airtime resellers at a cost-oriented price on the basis of actual costs in order to encourage reseller market penetration on an independent basis and to allow them to climb the ladder of investment as progressively more facilities-based MVNOs. The cost standard is a matter for more detailed analysis, but in principle the standard should be LRIC+ with particular attention to the risk-adjusted cost of capital to ensure that investment risks in the mobile segment of the Omani market are fully captured.

*Accounting Separation (AS)*

In order to ensure compliance with price control and non-discrimination obligations by Omantel and Nawras, it is critical that the TRA has access to cost accounting and cost study information about the structure, level and allocation of Omantel's and Nawras' costs for mobile services. AS is also necessary to ensure that the means are available to the TRA to identify cross subsidization between retail and wholesale services, and between regulated and competitive services.

The accounting separation requirements are detailed in the Accounting Separation, Regulatory Accounting & Reporting Requirements published by TRA in December 2009.

**d) Summary**

TRA concludes that the following remedies are appropriate, proportionate and likely to be adequate to address the risks of harm from dominance in Market 18:

- Omantel and Nawras should be obliged to provide access to mobile voice call origination services and associated facilities available on a reasonable request basis by eligible service providers, including CS and CPS and an obligation to negotiate access to MVNO/ mobile reseller access seekers in good faith, on reasonable terms and conditions and in a reasonable time specified as by the TRA;
- Omantel and Nawras should have obligations in respect of non- discrimination and transparency;
- Omantel and Nawras should be required to publish Reference Offers (RO) in a form and with contents approved by the TRA setting out the terms of access they are providing to the services in the wholesale MACO market;
- Omantel and Nawras should provide wholesale MACO service with prices that comply with cost standards determined by the TRA from time to time;

- Omantel and Nawras should be required to amend their contracts with mobile resellers to meet requirements for fairness and non-exclusivity determined by the TRA from time to time; and
- Omantel and Nawras should be subject to accounting separation (AS) obligations in relation to all services in this market.

**Box 5.14**

**Question 1**: Do you agree with TRA's assessment of the risks of harm that might result from dominance in this market in the absence of ex ante regulation? Have any types of harm that might result from dominance been overlooked? Please give reasons.

**Question 2:** Do you agree with TRA's assessment of the options for *ex-ante* remedies for dominance in this market and the remedies that TRA concluded were appropriate and should be applied? Please give reasons

**Question 3:** Do you consider that some of the *ex-ante* remedies proposed might be duplicative and should be either held in abeyance or applied more lightly than suggested in the discussion of the market? If so, please identify the remedies, give reasons and suggest, if applicable, how a lighter administration might be achieved.

**Question 4:** Do you favour a transition to an arms-length cost based arrangement between Class I mobile operators and MVNO / mobile resellers? If so, please indicate the process and the end-agreement that you prefer together with arguments in favour of your view.

# 6. Proposed Means of Implementation of Decisions

This section sets out the proposed decisions by the TRA as a result of this Review, restated with details of the proposed means of implementation.

The TRA has already adopted the Executive Regulations and a number of further Regulations imposing obligations on Dominant operators. In addition, some provisions of the law and of licences issued to Omantel and Nawras already impose relevant obligations on those operators.

The Table below is based on the Table seen earlier in paragraph 1.4 of this Report but includes an additional column describing the obligations (or remedies) already included within the regulatory framework for telecommunications in Oman.

It can quickly be seen that, in the vast majority of cases, the remedies that the TRA has determined to be appropriate are already included in the existing regulatory framework.

In order to implement the recommended remedies, the TRA therefore proposes to declare and reaffirm that the obligations or remedies referred to in column 5 of the Table below will be imposed on the operator or operators determined to be singly or jointly dominant in each relevant market. In cases where there are no apparent existing obligations or remedies the TRA will include appropriate provisions in its decision.

**Box 6.1**

**Question 1**: Do you agree with this approach to implementation?

**Question 2:**Do you consider that any of the obligations in existing Licence conditions, or in the Executive Regulation or other Regulations referred to in this Table are insufficient? If so, please provide arguments to support your view.

## Table of Remedies and Implementation

| Market | Susceptible to ex ante dominance regulation | Singly Dominant | Jointly Dominant | Remedies | Implementation |
|---|---|---|---|---|---|
| Market 1: Retail access to the public telephone network at a fixed location | Yes | Omantel | | • Omantel to be subject to obligations of non-discrimination and transparency.<br>• Omantel to be subject to tariff notification and approval obligations<br>• Omantel to be subject to a price control obligation based on a price cap mechanism.<br>• Omantel to be subject to an accounting separation (AS) obligation in relation to all services in this market | • Articles 25, 27, 40 and 46 and 46 *bis* of the Law; Articles 14-17 and 25-26 of the Omantel Licence; Articles 20, 83, 91-94 of the Executive Regulation<br>• Article 13 of the Omantel Licence<br>• Article 13 of the Omantel Licence<br>• Accounting Separation, Regulatory Accounting and Reporting Requirements Framework Document, and Regulations |
| Market 2: Retail local, national voice call service | Yes | Omantel | | • Omantel to be subject to obligations of non-discrimination and transparency.<br>• Omantel to be subject to tariff notification and approval obligations.<br>• Omantel to be subject to a price control obligation based on a price cap mechanism.<br>• Omantel to be subject to an accounting separation (AS) obligation in relation to all | • Articles 25, 27, 40 and 46 and 46 *bis* of the Law; Articles 14-17 and 25-26 of the Omantel Licence; Articles 20, 83, 91-94 of the Executive Regulation<br>• Article 13 of the Omantel Licence<br>• Article 13 of the Omantel Licence<br>• Accounting Separation, Regulatory Accounting and Reporting Requirements Framework Document, and |

| Market | Susceptible to ex ante dominance regulation | Singly Dominant | Jointly Dominant | Remedies | Implementation |
|---|---|---|---|---|---|
| | | | | services in this market. | Regulations |
| Market 3: Retail international voice call service | Yes | | Omantel Nawras | • Omantel and Nawras each to be subject to obligations of non-discrimination and transparency.<br>• Omantel and Nawras each to be subject to tariff notification and approval obligations.<br>• Omantel and Nawras each to be subject to and accounting separation (AS) obligations in relation to all services in this market. | • Articles 25, 27, 40 and 46 and 46 *bis* of the Law; Articles 14-17 and 25-26 of the Omantel Licence; Articles 20, 83, 91-94 of the Executive Regulation<br>• Article 13 of the Omantel Licence<br>• Accounting Separation, Regulatory Accounting and Reporting Requirements Framework Document, and Regulations |
| Market 4: Retail broadband Internet access from a fixed location | Yes | - | - | | |
| Market 5: Retail dial-up Internet access from a fixed location | No | | | | |
| Market 6: Retail mobile services market | Yes | | Omantel Mobile<br>Nawras | • Omantel and Nawras each to be subject to obligations of non-discrimination and transparency.<br>• Omantel and Nawras each to be subject to a price control obligations based on a price cap regime. | • Articles 25, 27, 40 and 46 and 46 *bis* of the Law; Articles 14-17 and 25-26 of the Omantel Licence; Articles 20, 83, 91-94 of the Executive Regulation<br>• Article 13 of the Omantel Licence and Article [ ] of the Nawras Licence |

| Market | Susceptible to ex ante dominance regulation | Singly Dominant | Jointly Dominant | Remedies | Implementation |
|---|---|---|---|---|---|
| Market 7: Retail national leased line services | Yes | Omantel | | • Omantel to be subject to obligations of non-discrimination and transparency;<br>• Omantel to be subject to notification and approval obligations in relation to prices of all retail leased line services;<br>• Omantel to be subject to price control based on a price cap regime; and<br>• Omantel to be subject to an accounting separation (AS) obligation in relation to all services in this market. | • Articles 25, 27, 40 and 46 and 46 *bis* of the Law; Articles 14-17 and 25-26 of the Omantel Licence; Articles 20, 83, 91-94 of the Executive Regulation<br>• Article 13 of the Omantel Licence<br>• Article 13 of the Omantel Licence<br>• Accounting Separation, Regulatory Accounting and Reporting Requirements Framework Document, and Regulations |
| Market 8: Retail international leased lines | Yes | Omantel | | • Omantel to be subject to obligations of non-discrimination and transparency;<br>• Omantel to be subject to notification and approval obligations in relation to prices of all retail leased line services;<br>• Omantel to be subject to price control based on a price cap mechanism; and<br>• Omantel to be subject to an accounting separation (AS) obligation in relation to all | • Articles 25, 27, 40 and 46 and 46 *bis* of the Law; Articles 14-17 and 25-26 of the Omantel Licence; Articles 20, 83, 91-94 of the Executive Regulation<br>• Article 13 of the Omantel Licence<br>• Article 13 of the Omantel Licence<br>• Accounting Separation, Regulatory Accounting and Reporting Requirements Framework Document, and Regulations |

| Market | Susceptible to ex ante dominance regulation | Singly Dominant | Jointly Dominant | Remedies | Implementation |
|---|---|---|---|---|---|
| | | | | services in this market. | |
| Market 9: Retail business data services provided from a fixed location | No | | | | |
| Market 10: Wholesale voice call origination on the public telephone network provided at a fixed location | Yes | Omantel | | • Omantel to be obliged to supply call origination services to all eligible service providers who request them;<br>• Omantel to be obliged to publish a Reference Interconnection Offer in relation to the supply of wholesale call origination services in a form and with content approved by the TRA;<br>• Omantel to be subject to obligations of non-discrimination and transparency;<br>• Omantel to be subject to notification and approval obligations in relation to all changes to its Reference Interconnection Offer, and specifically to prices for call origination services;<br>• Omantel to be subject to a price control obligation;based on a price justification | • Article 46 *bis* of the Law; and Articles 91&92 of the Executive Regulations<br>• Articles 91&92 of the Executive Regulations<br>• Articles 25, 27, 40 and 46 and 46 *bis* of the Law; Articles 14-17 and 25-26 of the Omantel Licence; Articles 20, 83, 91-94 of the Executive Regulation<br>• Article 46 *bis* of the Law; and Articles 91&92 of the Executive Regulations<br>• Article 13 of the Omantel Licence |

| Market | Susceptible to ex ante dominance regulation | Singly Dominant | Jointly Dominant | Remedies | Implementation |
|---|---|---|---|---|---|
| | | | | regime; and<br><br>• Omantel to be subject to an accounting separation (AS) obligation in relation to all services in this market. | • Accounting Separation, Regulatory Accounting and Reporting Requirements Framework Document, and Regulations |
| Market 11: Wholesale voice call termination on individual public telephone networks provided at a fixed location | Yes | Omantel Nawras | | • Omantel and Nawras to be obliged to supply call termination services to all eligible service providers who request them;<br><br>• Omantel and Nawras to be obliged to publish respectively updated Reference Interconnection Offer in relation to the supply of wholesale call termination services in a form and with content approved by the TRA;<br><br>• Omantel and Nawras to be subject to obligations of non-discrimination and transparency;<br><br>• Omantel and Nawras to be subject to notification and approval obligations in relation to all changes to its Reference Interconnection Offer, and specifically to | • Article 46 *bis* of the Law; and Articles 91&92 of the Executive Regulations<br><br>• Article 46 *bis* of the Law; and Articles 91&92 of the Executive Regulations<br><br>• Articles 25, 27, 40 and 46 and 46 *bis* of the Law; Articles 14-17 and 25-26 of the Omantel Licence; Articles 20, 83, 91-94 of the Executive Regulation<br><br>• Articles 91&92 of the Executive Regulations, and provisions of RIO<br><br>• Article 13 of the Omantel Licence |

| Market | Susceptible to ex ante dominance regulation | Singly Dominant | Jointly Dominant | Remedies | Implementation |
|---|---|---|---|---|---|
| | | | | prices for call termination services;<br>• Omantel and Nawras to be subject to price control based on a LRIC+ cost standard or such other cost standard as determined by the TRA from time to time; and<br>• Omantel and Nawras to be subject to an accounting separation (AS) obligation in relation to all services in this market. | • Accounting Separation, Regulatory Accounting and Reporting Requirements Framework Document, and Regulations |
| Market 12: Wholesale network infrastructure access at a fixed location | Yes | Omantel | | • Omantel to be obliged to supply nominated facility access services to all eligible service providers who request them;<br>• Omantel to be obliged to publish a Reference Access Offer in relation to the supply of wholesale facility access services in a form and with content approved by the TRA;<br>• Omantel to be subject to obligations of non-discrimination and transparency;<br>• Omantel to be subject to notification and approval obligations in relation to all changes to its Reference Access Offer, and specifically to prices for wholesale facility access services; | • Article 46 *bis* of the Law; and Articles 91&92 of the Executive Regulations, and provisions of RIO<br>• Article 46 *bis* of the Law; and Articles 91&92 of the Executive Regulations<br>• Articles 25, 27, 40 and 46 and 46 *bis* of the Law; Articles 14-17 and 25-26 of the Omantel Licence; Articles 20, 83, 91-94 of the Executive Regulation<br>• Articles 91&92 of the Executive Regulations, and provisions of RIO<br>• Articles 91&92 of the Executive Regulations, and |

| Market | Susceptible to ex ante dominance regulation | Singly Dominant | Jointly Dominant | Remedies | Implementation |
|---|---|---|---|---|---|
| | | | | • Omantel to be subject to price control based on cost standards as determined by the TRA from time to time in relation to specific categories of facility access; and<br>• Omantel to be subject to an accounting separation (AS) obligation in relation to all services in this market. | provisions of RIO<br>• Accounting Separation, Regulatory Accounting and Reporting Requirements Framework Document, and Regulations |
| Market 13: Wholesale broadband access (including bit-stream and WLR) | Yes | | Omantel<br>Nawras | • Omantel and Nawras each to be obliged to supply wholesale broadband access services and related facility access services to all eligible service providers who request them;<br>• Omantel and Nawras each to be obliged to publish respective Reference Access Offers in relation to the supply of wholesale broadband access services in a form and with content approved by the TRA;<br>• Omantel and Nawras each to be subject to obligations of non-discrimination and transparency;<br>• Omantel and Nawras each to be subject to notification and approval obligations in relation to all changes to its Reference Access Offer; | • Articles 25, 27, 40 and 46 and 46 *bis* of the Law; Articles 14-17 of the Omantel Licence; Articles 25, 27 and 40 of the Law; Articles 20, 83, 91-94 of the Executive Regulation<br>• Articles 91&92 of the Executive Regulations, and provisions of RIO<br>• Articles 25, 27, 40 and 46 and 46 *bis* of the Law; Articles 14-17 and 25-26 of the Omantel Licence; Articles 20, 83, 91-94 of the Executive Regulation<br>• Articles 91&92 of the Executive Regulations, and provisions of RIO |

| Market | Susceptible to ex ante dominance regulation | Singly Dominant | Jointly Dominant | Remedies | Implementation |
|---|---|---|---|---|---|
| | | | | • Omantel and Nawras each to be subject to price control for wholesale broadband access services but the principles that apply will be determined by the TRA from time to time and will be consistent with national imperatives for investment in broadband networks; and<br>• Omantel to be subject to accounting separation (AS) obligations in relation to wholesale broadband access services. | • Articles 91&92 of the Executive Regulations, and provisions of RIO<br>• [Draft] Accounting Separation, Regulatory Accounting and Reporting Requirements Framework Document, and Regulations |
| Market 14: Wholesale terminating segments of leased lines | Yes | Omantel | | • Omantel to be obliged to supply wholesale terminating segments of leased lines to all eligible service providers who request them;<br>• Omantel to be obliged to publish a Reference Access Offer in relation to the supply of wholesale leased line terminating segments in a form and with content approved by the TRA;<br>• Omantel to be subject to obligations of non-discrimination and transparency;<br>• Omantel to be subject to notification and approval obligations in relation to all changes to its Reference Access Offer, and | • Articles 91&92 of the Executive Regulations, and provisions of RIO<br>• Articles 91&92 of the Executive Regulations, and provisions of RIO<br>• Articles 25, 27, 40 and 46 and 46 *bis* of the Law; Articles 14-17 and 25-26 of the Omantel Licence; Articles 20, 83, 91-94 of the Executive Regulation<br>• Articles 91&92 of the Executive Regulations, and provisions of RIO |

| Market | Susceptible to ex ante dominance regulation | Singly Dominant | Jointly Dominant | Remedies | Implementation |
|---|---|---|---|---|---|
| | | | | specifically to prices for wholesale leased line terminating segments;<br>• Omantel to be subject to price control for wholesale leased line segments on the basis of appropriate principles that may include retail minus avoidable costs, benchmarking and cost modelling, as determined by the TRA from time to time; and<br>• Omantel to be subject to an accounting separation (AS) obligation in relation to wholesale leased line segments. | • Articles 91and 92 of the Executive Regulations, and provisions of RIO<br>• Accounting Separation, Regulatory Accounting and Reporting Requirements Framework Document, and Regulations |
| Market 15: Wholesale trunk segments of leased lines | Yes | Omantel | | • Omantel to be obliged to supply wholesale trunk segments of leased lines to all eligible service providers who request them;<br>• Omantel to be obliged to publish a Reference Access Offer in relation to the supply of wholesale leased line trunk segments in a form and with content approved by the TRA;<br>• Omantel to be subject to obligations of non-discrimination and transparency; | • Articles 91&92 of the Executive Regulations, and provisions of RIO<br>• Articles 91&92 of the Executive Regulations, and provisions of RIO<br>• Articles 25, 27, 40 and 46 and 46 *bis* of the Law; Articles 14-17 and 25-26 of the Omantel Licence; Articles 20, 83, 91-94 of the Executive Regulation |

| Market | Susceptible to ex ante dominance regulation | Singly Dominant | Jointly Dominant | Remedies | Implementation |
|---|---|---|---|---|---|
| | | | | • Omantel to be subject to notification and approval obligations in relation to all changes to its Reference Access Offer, and specifically to prices for wholesale leased line trunk segments;<br>• Omantel to be subject to price control for wholesale leased line segments on the basis of appropriate principles that may include retail minus avoidable costs, benchmarking and cost modelling, as determined by the TRA from time to time; and<br>• Omantel to be subject to an accounting separation (AS) obligation in relation to wholesale leased line segments. | • Articles 91&92 of the Executive Regulations, and provisions of RIO<br>• Articles 91 and 92 of the Executive Regulations, and provisions of RIO<br>• Accounting Separation, Regulatory Accounting and Reporting Requirements Framework Document, and Regulations |
| Market 16: Wholesale international capacity (Bandwidth) | Yes | | Omantel Nawras | • Omantel and Nawras each to be obliged to supply wholesale international capacity to all eligible service providers who request them;<br>• Omantel and Nawras each to be subject to obligations of non-discrimination and transparency;<br>• Omantel and Nawras each to be subject to | • Articles 91&92 of the Executive Regulations, and provisions of RIO<br>• Articles 25, 27, 40 and 46 and 46 *bis* of the Law; Articles 14-17 and 25-26 of the Omantel Licence; Articles 20, 83, 91-94 of the Executive Regulation |

| Market | Susceptible to ex ante dominance regulation | Singly Dominant | Jointly Dominant | Remedies | Implementation |
|---|---|---|---|---|---|
| | | | | tariff notification and approval obligations for wholesale international bandwidth prices;<br>• Omantel and Nawras each to be subject to price control for wholesale international capacity on the basis of assessment of the justification provided by Omantel to support applications for change; and<br>• Omantel and Nawras each to be subject to accounting separation (AS) obligations in relation to wholesale international capacity. | • Articles 91&92 of the Executive Regulations, and provisions of RIO<br>• Articles 91&92 of the Executive Regulations, and provisions of RIO<br>• Accounting Separation, Regulatory Accounting and Reporting Requirements Framework Document, and Regulations |
| Market 17: Wholesale voice call termination on individual mobile networks | Yes | Omantel Mobile<br><br>Nawras | | • Omantel Mobile and Nawras each to be obliged to supply call termination services to all eligible service providers who request them;<br>• Omantel Mobile and Nawras each to be obliged to publish Reference Interconnection Offers in relation to the supply of wholesale mobile call termination services in a form and with content approved by the TRA;<br>• Omantel Mobile and Nawras each to be subject to obligations of non-discrimination | • Articles 91&92 of the Executive Regulations, and provisions of RIO<br>• Articles 91&92 of the Executive Regulations, and provisions of RIO<br>• Articles 25, 27, 40 and 46 and 46 *bis* of the Law; Articles 14-17 and 25-26 of the Omantel Licence; Articles 20, 83, 91-94 of the Executive Regulation |

| Market | Susceptible to ex ante dominance regulation | Singly Dominant | Jointly Dominant | Remedies | Implementation |
|---|---|---|---|---|---|
| | | | | and transparency;<br>• Omantel Mobile and Nawras each to be subject to notification and approval obligations in relation to all changes to their Reference Interconnection Offers, and specifically to prices for mobile call termination services;<br>• Omantel Mobile and Nawras each to be subject to price control based on a LRIC+ cost standard or such other cost standard as determined by the TRA from time to time; and<br>• Omantel Mobile and Nawras each to be subject to accounting separation (AS) obligations in relation to all services in this market. | • Articles 91&92 of the Executive Regulations, and provisions of RIO<br>• Articles 91&92 of the Executive Regulations, and provisions of RIO<br>• Accounting Separation, Regulatory Accounting and Reporting Requirements Framework Document, and Regulations |
| Market 18: Wholesale access and call origination on public mobile telephone networks | Yes | | Omantel Mobile<br>Nawras | • Omantel and Nawras each to be obliged to provide access to mobile voice call origination services and associated facilities available on a reasonable request basis by eligible service providers, PS and to negotiate access to MVNO / mobile reseller access seekers in good faith, on reasonable terms and conditions and in a reasonable time specified as by the TRA; | • A new means of implementation may need to be set out in the decision. |

| Market | Susceptible to ex ante dominance regulation | Singly Dominant | Jointly Dominant | Remedies | Implementation |
|---|---|---|---|---|---|
| | | | | • Omantel and Nawras each to have obligations in respect of non-discrimination and transparency;<br>• Omantel and Nawras each to be required to publish Reference Offers (RO) in a form and with contents approved by the TRA setting out the terms of access they are providing to the services in the wholesale MACO market;<br>• Omantel and Nawras each to provide wholesale MACO service with prices that comply with cost standards determined by the TRA from time to time;<br>• Omantel and Nawras each to be subject to accounting separation (AS) obligations in relation to all services in this market. | • Articles 25, 27, 40 and 46 and 46 *bis* of the Law; Articles 14-17 and 25-26 of the Omantel Licence; Articles 20, 83, 91-94 of the Executive Regulation<br>• A new means of implementation may need to be set out in the decision.<br>• A new means of implementation may need to be set out in the decision.<br>• Accounting Separation, Regulatory Accounting and Reporting Requirements Framework Document, and Regulations |
| Market 19: Wholesale national roaming | No | | | | |
| Market 20: Wholesale transit | Yes | | | | |

# Annex 1: Public Consultation Questions

[**Note**: The box number has been incorporated as a prefix in the question number.]

**Question 2.1.1**: Do you agree with TRA's list of candidate markets in Figure 2.1?In particular, do you consider that any of the defined markets should not be included or should be amended? If so, please provide arguments for your view.

**Question 2.1.2:** Are there other telecommunications service markets that should be considered and are not included in any of the candidate markets listed in Figure 2.1? If so, please describe the market in terms of services, geography and customers and provide arguments for the market being considered.

**Question 2.2.1**: Do you agree with TRA's assessment that during the time of this review fixed and mobile access services should be treated as complementary services rather than as substitutable services? Please provide reasons and empirical evidence supporting your view. If you disagree please provide your alternative market definition.

**Question 2.2.2:** Apart from the issue of whether or not to include retail mobile access services in this market, do you agree with TRA's conclusions about the relevant product, geographic and customer market definition for the retail narrowband fixed access services market?

**Question 2.3.1**: Do you agree with TRA's assessment that during the time of this review fixed and mobile national call services should not be treated as sufficiently substitutable services to be considered to be in the same market? Please provide reasons and empirical evidence supporting your view.

**Question 2.3.2:** Do you have any market survey or other similar information bearing on the propensity of Omani customers to substitute fixed and mobile call services that you are able to make available to the TRA?

**Question 2.3.3:** Apart from the issue of whether or not to include retail mobile call services in this market, do you agree with TRA's conclusions about the relevant service, geographic and customer market definition for the local and national fixed call services market?

**Question 2.4.1**: Do you agree with TRA's conclusion that there is a material level of competition between fixed and mobile operators for international call services in Oman? Please provide reasons and empirical evidence supporting your view.

**Question 2.4.2:** Do you agree with TRA's assessment about the relevant service, geographic and customer market definition for the international call services market?

**Question 2.5.1**: Do you agree with TRA's assessment that during the time of this review fixed and mobile broadband services should not be treated as sufficiently substitutable services and should not be considered to be in the same market? Please provide reasons and empirical evidence supporting your view.

**Question 2.5.2**: Do you agree with TRA's assessment about the relevant service, geographic and customer market definition for the retail fixed broadband internet access service market?

**Question 2.6.1**: Do you agree with TRA's assessment that, during the time period of this review, dial-up and broadband internet access services should not be treated as sufficiently substitutable services to be considered to be in the same market, and that dial-up fixed access is better considered in a separate market? Please provide reasons and empirical evidence supporting your view.

**Question 2.6.2**: Apart from the issue of broadband covered in the previous question, do you agree with TRA's assessment about the relevant service, geographic and customer market definition for the retail dial-up internet access market?

**Question 2.7.1:** Do you agree with TRA's assessment that within the time horizon of this review mobile broadband access is part of the broader market of retail mobile services? If not, should mobile broadband access (or mobile data) be considered as a separate market from mobile access and voice services? Please provide reasons and empirical evidence supporting your view.

**Question 2.7.2**: Apart from the issue of mobile broadband (or mobile data) considered in the previous question, do you agree with TRA's conclusions about the relevant service, geographic and customer market definition for the retail mobile services market?

**Question 2.8.1:** Do you agree that the national leased lines market should include services of all distances and bandwidths? Are there distance and bandwidth categories that ought to be considered to be in separate markets or submarkets? Please provide your reasons and relevant evidence for your views, and, if appropriate, proposals for an alternative approach to leased line markets.

**Question 2.8.2**: Apart from the issue raised in the previous question, do you agree with TRA's conclusions about the relevant services, geographic and customer market definition for the retail national leased line market?

**Question 2.9.1**: Do you agree with TRA's assessment about the relevant service, geographic and customer market definition for the retail international leased line market?

**Question 2.10.1**: Do you agree with TRA's assessment about the relevant service, geographic and customer market definition for the retail fixed business data services market?

**Question 2.11.1:** Do you agree with TRA's conclusions about the relevant product, geographic and customer market definition for the wholesale fixed voice call origination market?

**Question 2.12.1**: Do you agree with TRA's assessment about the relevant service, geographic and customer market definition for the wholesale fixed voice call termination market?

**Question 2.13.1**: Do you agree with TRA's conclusion that line sharing (partial unbundling) and full local loop unbundling (ULL) should be considered to be in the same market? Please provide your reasons.

**Question 2.13.2:** Is ULL technically feasible in Oman? Please provide your reasons and supporting evidence.

**Question 2.13.3**: Do you agree with TRA's approach to exclude from the market definition alternative operators of alternative fibre access networks within the time frame of this review?

**Question 2.13.4**: Do you agree with TRA's conclusions about the relevant service, geographic and customer market definition for the wholesale fixed network infrastructure market?

**Question 2.14.1**: Do you consider that bit stream access and ULL should be included in the same wholesale market? Please provide your reasons and relevant evidence.

**Question 2.14.2:** Leaving aside the specific issue raised in the previous question, do you agree with TRA's assessment about the relevant service, geographic and customer market definition for the wholesale broadband access market?

**Question 2.15.1**: Should wholesale leased line trunk and terminating segments be considered to be in the same market? Please provide your reasons and relevant evidence.

**Question 2.15.2**: Apart from the issue raised in the previous question, do you agree with TRA's conclusions about the relevant service, geographic and customer market definition for the wholesale leased line terminating segments market?

**Question 2.16.1**: Should wholesale leased line trunk and terminating segments be considered to be in the same market? Please provide your reasons and relevant evidence.

**Question 2.16.2**: Apart from the issue raised in the previous question, do you agree with TRA's conclusions about the relevant service, geographic and customer market definition for the wholesale leased line trunk segments market?

**Question 2.17.1**: Do you agree with TRA's assessment about the relevant service, geographic and customer market definition for the international capacity market?

**Question 2.18.1**: Do you agree with TRA's assessment about the relevant service, geographic and customer market definition for wholesale mobile termination services?

**Question 2.19.1**: Do you agree with TRA's assessment about the relevant service, geographic and customer market definition for wholesale mobile access and call origination services?

**Question 2.20.1**: Do you agree with TRA's assessment about the relevant service, geographic and customer market definition for wholesale national roaming services?

**Question 2.20.2:**If there is no current demand for wholesale national roaming services, should the TRA define a relevant market? Please provide your reasons and any evidence in relation to the existence of demand.

**Question 2.21.1**:  Do you agree with TRA's assessment about the relevant service, geographic and customer market definition for the wholesale national transit market?

**Question 2.21.2:** If there is no current demand for wholesale national transit services should the TRA define a relevant market?  Please provide your reasons and any evidence in relation to the existence of demand.

**Question 3.1.1:** Do you agree with TRA's assessment set out above that in this market the three criteria are cumulatively satisfied and the market for retail access to the public telephone network from a fixed location is susceptible to ex ante regulation?  Please state your reasons and provide relevant supporting evidence.

**Question 3.2.1:** Do you agree with TRA's assessment set out above that in this market the three criteria are cumulatively satisfied and the market for retail national voice call services is susceptible to ex ante regulation? Please state your reasons and provide relevant supporting evidence.

**Question 3.3.1:** Do you agree with TRA's assessment set out above that in this market the three criteria are cumulatively satisfied and the market for retail fixed and mobile international voice call services is susceptible to ex ante regulation? Please state your reasons and provide relevant supporting evidence.

**Question 3.4.1:** Do you agree with TRA's assessment set out above that in this market the three criteria are cumulatively satisfied and the market for retail broadband access services from a fixed location is susceptible to ex ante regulation? Please state your reasons and provide relevant supporting evidence.

**Question 3.5.1:** Do you agree with TRA's assessment set out above that in this market the three criteria are not cumulatively satisfied and the market for retail dial up internet services is not susceptible to ex ante regulation? Please state your reasons and provide relevant supporting evidence.

**Question 3.6.1:** Do you agree with TRA's assessment set out above that in this market the three criteria are cumulatively satisfied and the market for retail mobile services is susceptible to ex ante regulation? Please state your reasons and provide relevant supporting evidence.

**Question 3.7.1:** Do you agree with TRA's assessment set out above that in this market the three criteria are cumulatively satisfied and the market for retail national leased lines services is susceptible to ex ante regulation? Please state your reasons and provide relevant supporting evidence.

**Question 3.8.1:** Do you agree with TRA's assessment set out above that in this market the three criteria are cumulatively satisfied and the market for retail international leased lines services is susceptible to ex ante regulation? Please state your reasons and provide relevant supporting evidence.

**Question 3.9.1:** Do you agree with TRA's assessment set out above that in this market the three criteria are not cumulatively satisfied and the market for retail business data services is not susceptible to ex ante regulation? Please state your reasons and provide relevant supporting evidence.

**Question 3.10.1:** Do you agree with TRA's assessment set out above that in this market the three criteria are cumulatively satisfied and the market for wholesale origination fixed voice services is susceptible to ex ante regulation? Please state your reasons and provide relevant supporting evidence.

**Question 3.11.1:** Do you agree with TRA's assessment set out above that in this market the three criteria are cumulatively satisfied and the market for wholesale fixed voice call termination is susceptible to ex ante regulation? Please state your reasons and provide relevant supporting evidence.

**Question 3.12.1:** Do you agree with TRA's assessment set out above that in this market the three criteria are cumulatively satisfied and the market for wholesale fixed network infrastructure services is susceptible to ex ante regulation? Please state your reasons and provide relevant supporting evidence.

**Question 3.13.1:** Do you agree with TRA's assessment set out above that in this market the three criteria are cumulatively satisfied and the market for wholesale broadband access services is susceptible to ex ante regulation? Please state your reasons and provide relevant supporting evidence.

**Question 3.14.1:** Do you agree with TRA's assessment set out above that in this market the three criteria are cumulatively satisfied and the market for wholesale terminating segments of leased line services is susceptible to ex ante regulation? Please state your reasons and provide relevant supporting evidence.

**Question 3.15.1:** Do you agree with TRA's assessment set out above that in this market the three criteria are cumulatively satisfied and the market for wholesale trunk segments of leased line services is susceptible to ex ante regulation? Please state your reasons and provide relevant supporting evidence.

**Question 3.16.1:** Do you agree with TRA's assessment set out above that in this market the three criteria are cumulatively satisfied and the market for wholesale international capacity services is susceptible to ex ante regulation? Please state your reasons and provide relevant supporting evidence.

**Question 3.17.1:** Do you agree with TRA's assessment set out above that in this market the three criteria are cumulatively satisfied and the market for wholesale mobile termination services is susceptible to ex ante regulation? Please state your reasons and provide relevant supporting evidence.

**Question 3.18.1:** Do you agree with TRA's assessment set out above that in this market the three criteria are cumulatively satisfied and the market for wholesale mobile access and origination services is susceptible to ex ante regulation? Please state your reasons and provide relevant supporting evidence.

**Question 3.19.1:** Do you agree with TRA's assessment set out above that in this market the three criteria are not cumulatively satisfied and the market for wholesale national roaming is not susceptible to ex ante regulation? Please state your reasons and provide relevant supporting evidence.

**Question 3.20.1:** Do you agree with TRA's assessment set out above that in this market the three criteria are cumulatively satisfied and the market for wholesale transit services is susceptible to ex ante regulation? Please state your reasons and provide relevant supporting evidence.

**Question 4.1.1:** Do you agree with TRA's general approach as described in Section 4.1?

**Question 4.1.2:** If not please provide reasons and your alternative proposals for approach that you consider should be adopted, noting that the approach needs to be consistent with the Market Definition and Dominance Decision and Guidelines formally adopted by the TRA.

**Question 4.2.1:** Do you agree with TRA's assessment that during the time frame of this review, Omantel is a singly dominant operator in the provision of retail fixed access service to the public telephone network? Please provide reasons and relevant evidence to support your views.

**Question 4.2.2:** Do you have specific evidence that Omantel achieves above-normal or below-normal profitability in this market? If so please provide it to the TRA.

**Question 4.3.1:** Do you agree with TRA's assessment that during the time frame of this review, Omantel is a singly dominant operator in the provision of retail fixed voice call national and local services? Please provide reasons and relevant evidence to support your views.

**Question 4.3.2:** Do you have specific evidence that Omantel achieves above-normal or below-normal profitability in this market? If so please provide it to the TRA.

**Question 4.4.1:** Do you agree with TRA's assessment that during the time frame of this review, Omantel is a singly dominant single operator in the provision of retail mobile and fixed voice call international voice call services? Please provide reasons and relevant evidence to support your views.

**Question 4.5.1:** Do you agree with TRA's assessment that during the time frame of this review, Omantel is a singly dominant operator in the provision of fixed broadband internet services? Please provide reasons and relevant evidence to support your views.

**Question 4.6.1:** Do you agree with TRA's assessment that during the time frame of this review, Omantel and Nawras are jointly dominant in the retail mobile services market? Please provide reasons and relevant evidence to support your views.

**Question 4.6.2**: Do you have any information on the level of spare capacity that the Class I service providers have in relation to this market? Could you please provide it to the TRA?

**Question 4.6.3:** Do you have any views and relevant information on whether the Mobile Number Portability arrangements introduced in August 2006 are effective or not, and whether or not they are contributing to competition in the market?

**Question 4.6.4**: Do you have any information on whether national mobile call prices have decreased over the past 3 years? Could you please provide your views and supporting information to the TRA?

**Question 4.7.1:** Do you agree with TRA's assessment that during the time frame of this review Omantel is singly dominant in the market for national leased line services? Please provide reasons and relevant evidence to support your views.

**Question 4.8.1:** Do you agree with TRA's assessment that during the time frame of this review, Omantel is singly dominant operator in international leased line services market? Please provide reasons and relevant evidence to support your view.

**Question 4.9.1:** Do you agree with TRA's assessment that during the time frame of this review, Omantel is singly dominant in the market for wholesale fixed voice call origination services? Please provide reasons and relevant evidence to support your view.

**Question 4.10.1:** Do you agree with TRA's assessment that during the time frame of this review, Omantel and Nawras are singly dominant operator in the market for wholesale fixed voice call termination services on their own networks? Please provide reasons and relevant evidence to support your view.

**Question 4.11.1:** Do you agree with TRA's assessment that during the time frame of this review, Omantel is singly dominant operator in the market for wholesale fixed network infrastructure services? Please provide reasons and relevant evidence to support your view.
**Question 4.11.2**: Given the diversity of infrastructure types and the circumstances of specific infrastructure assets, do you agree with the approaches outlined in paragraphs © and (d) above? Please provide reasons to support your view.

**Question 4.12.1:** Do you agree with TRA's assessment that during the time frame of this review, neither Omantel nor Nawras is singly dominant operator in the market for wholesale broadband access services?

**Question 4.12.2:** Do you agree that Omantel and Nawras are jointly dominant in the market for wholesale broadband access services??Please provide reasons and relevant evidence to support your view.

**Question 4.13.1:** Do you agree with TRA's assessment that during the time frame of this review, Omantel is singly dominant in the wholesale market for terminating segments of leased line services?

**Question 4.14.1:** Do you agree with TRA's assessment that during the time frame of this review, Omantel is singly dominant operator in the market for wholesale trunk segments of leased line services? Please provide reasons and relevant evidence to support your view.

**Question 4.15.1:** Do you agree with TRA's assessment that during the time frame of this review, Omantel and Nawras are jointly dominant in the wholesale international capacity services market? Please provide reasons and relevant evidence to support your view.

**Question 4.16.1:** Do you agree with TRA's assessment that during the time frame of this review, both Omantel and Nawras are singly dominant in the markets for wholesale mobile termination services on their own respective networks? Please provide reasons and relevant evidence to support your view.

**Question 4.17.1:** Do you agree with TRA's assessment that during the time frame of this review, Omantel and Nawras are jointly dominant in the market for wholesale mobile access and call origination services? Please provide reasons and relevant evidence to support your view.

**Question 4.18.1:** Do you agree with TRA's assessment that during the time frame of this review, no operator is singly or jointly dominant in the wholesale market for transit services? Please provide reasons and relevant evidence to support your view.

**Question 5.1.1**: Do you agree with TRA's assessment of the risks of harm that might result from dominance in this market in the absence of ex ante regulation? Have any types of harm that might result from dominance been overlooked? Please give reasons.

**Question 5.1.2:** Do you agree with TRA's assessment of the options for *ex-ante* remedies for dominance in this market and the remedies that TRA concluded were appropriate and should be applied? Please give reasons.

**Question 5.1.3:** Do you consider that some of the *ex-ante* remedies proposed might be duplicative and should be either held in abeyance or applied more lightly than suggested in the discussion of the market? If so, please identify the remedies, give reasons and suggest, if applicable, how a lighter administration might be achieved.

[**Note**: Questions 5.1.1, 5.1.2, and 5.1.3 are repeated in relation to the remedies for all markets in Chapter 5 except Market 18 Question 4 question for which appear below.]

**Question 5.14.4:** Do you favour a transition to an arms-length cost based arrangement between Class I mobile operators and MVNOs? If so, please indicate the process and the end-agreement that you prefer together with arguments in favour of your view.

**Question 6.1.1**: Do you agree with this approach to implementation? (The approach referred to is outlined in Section 6 of this Report.)

**Question 6.1.2:** Do you consider that any of the obligations in existing Licence conditions, or in the Executive Regulation or other Regulations referred to in this Table are insufficient? If so, please provide arguments to support your view. (The Table referred to is in Section 6 of this Report.)

# Annexure B: The Decision on ex ante Rules Governing Market Definition and the Regulation of Dominance

This is an unofficial translation and is provided here for information purposes only. Reliance may only be placed upon the official Arabic version

## *Ex ante* Regulations

## The Regulation of Dominance

### Article 1: Definitions

In the application of the provisions of these regulations, the terms and expressions used herein shall express the exact meaning exhibited in both Telecommunications Regulatory Act & its Executive Regulation, whereas the following terms and expressions shall have the meanings shown against each, unless the text otherwise requires:

a) Ex ante Regulation means the regulation imposed by the TRA to minimize or manage the potential risks of harm of dominance as deemed appropriate by the TRA.

b) Dominance means that a licensee enjoys a position of economic strength affording it the power to behave to an appreciable extent independently of competitors and customers in a certain Market. Dominance may be in a relevant market for one or more licensees.

c) Joint Dominance means Dominance attributable to two or more Service Providers operating collectively in a market which is characterised by a lack of effective competition and in which no single licensee has significant market power as shown in Article 5 Para 1 of these regulations.

d) Market Failure, in particular, occurs in the following cases:

- Inability of a market to operate in an effectively competitive manner and to produce the outcomes normally expected from competition such as rivalry between competitors in terms of price, service, innovation and performance.
- Reasonable anticipation of market failure that is where there is a reasonable expectation that effective or sustainable competition will not happen in the near future.

e) Relevant Market means a market defined in customer and geographic terms comprising products or services that are regarded as interchangeable or substitutable due to their characteristics, prices and intended uses and which is determined as such by the TRA under Article 2 of these Regulations.

f) Remedy means a regulatory requirement imposed by the TRA on a licensee which is Dominant or which enjoys a position of Joint Dominance in a market to lessen or minimize the potential risks of harm which may affect competition in that market.

## Article 2: Market Definition Procedure

(1) The TRA will define Relevant Markets as a precondition to any decision to adopt Remedies. In defining Relevant Markets, the TRA shall have regard to:

- the products or services included;
- the customer groups served; and
- the geographical area and/or route affected.

(2) To group services into Relevant Markets, the TRA will consider the following elements:

a) Demand-side substitutability.

b) Supply-side substitutability.

c) Examining the available evidence of consumer behaviour, relative prices and price movements of potentially competing products or services, and switching costs, which may hinder consumers from substituting a product or service for another. TRA may use internationally accepted tests and methodologies.

(3) The TRA will generally consider retail and wholesale services separately, unless it deems otherwise.

**Article 3: Procedure for Determination of Dominance**

(1) The TRA will determine a Dominant licensee according to the following:

A. Determine whether a Relevant Market is effectively competitive in a given geographic area.

B. Determine whether to apply a remedy, impose an obligation, maintain, amend, or revoke either one on a licensee considered to be Dominant.

C. Assess whether any licensee has Dominance in a Relevant Market in accordance with the guidelines issued by the TRA and published on its website.

(2) Where a Service Provider is Dominant in a Relevant Market, it may also be deemed by TRA to be Dominant in a closely related market, where the links between the two markets are such as to allow the market power held in one market to be leveraged into the other market, thereby strengthening the market power of the licensee concerned.

**Article 4: Joint Dominance**

Joint Dominance may be determined by TRA in the following cases:

(1) Where the market is concentrated and exhibits a number of characteristics of which the following may be the most important:

- Low elasticity of demand,
- Similar market shares,
- High legal or economic barriers to entry,
- Vertical integration with collective refusal to supply,
- Lack of countervailing buyer power,
- Lack of potential competition.

(2) In cases of tacit collusion or market inertia, and is unlikely to arise where there is demonstrable evidence of active competition for a reasonable period of time.

(3) Existence or absence of arrangements, contacts or any other links between the licensees.

**Article 5: Market assessment**

TRA will conduct regular market assessments to ensure that decisions on Dominance and Joint Dominance remain relevant. A licensee determined to be Dominant may request such a review more frequently at its expense, subject to providing sufficient evidence that such a review is warranted.

**Article 6: Susceptibility to ex ante Regulation**

(1) The TRA may impose Remedies on a licensee which it has determined to be Dominant or to enjoy Joint Dominance in the following cases:

- If compliance requirements of an ex post intervention to redress a Market Failure are extensive or complex.

- If public interest requires frequent and/or timely intervention

(2) If the public interest requires the clarity of the lehgal framework regulating competition The TRA shall not impose Remedies on a licensee which it has determined to be Dominant or to enjoy Joint Dominance if, in its opinion, the emergence of effective competition is foreseeable in the near future or if ex-post controls are likely to be sufficient to address the Market Failures concerned.

**Article 7: Remedies**

Notwithstanding any obligations set out in the Telecommunications Regulatory Act, its Executive Regulation and the decisions issued in implementation thereof, TRA may, by way of a justified decision and in line with the regulatory objective to develop competition, and in a manner proportionate with the size of the potential risk of harm of of dominance, impose on any Dominant licensee one or more remedies of the following:

a) A non-discrimination requirement, being a requirement to apply equivalent conditions in equivalent circumstances, and not to discriminate in favour of the regulated firm’s own subsidiaries or partners.

b) A transparency requirement, being a requirement to make public specified information (including accounting information, technical specifications, network characteristics, and prices).

c) A tariff approval requirement, being a requirement to obtain TRA approval of tariff proposals related to services offered in the Relevant Market prior to implementation.

d) A tariff notification requirement, being a requirement by the dominant licensee before or after implementation.

e) A cost studies requirement, being a requirement to participate in cost studies undertaken by the TRA through the provision of cost and related data in the form specified by the TRA

f) A price control requirement, being a requirement that the dominant licensee should only charge prices for individual services or for bundles of services in a manner that complies with formulae, constraints and/or criteria determined by the TRA in relation to those services from time to time

g) An accounting separation requirement, being a requirement that the dominant licensee should provide accounts to the TRA in accordance with specifications of the TRA relating to periodicity, timing, and content, with all costs and revenues separated into service and other categories outlined by the TRA

h) Subscriber information requirement, being a requirement that the dominant licensee should provide information as specified by the TRA to subscribers on the inception of service or at periods during the course of a subscription, such as information on subscriber bills.

i) A terms of service requirement, being a requirement that the dominant licensee shall seek approval from the TRA in relation to terms of service or shall provide services in the market in which it is dominant on terms specified by the TRA

j) A quality of service requirement, being a requirement that the dominant licensee shall either specify and meet nominated service quality standards or meet standards nominated by the TRA.

k) A reference offer requirement, being a requirement that the dominant licensee shall prepare an interconnection and access reference offer acceptable to the TRA.

l) An interconnection or access negotiation requirement, being a requirement that the dominant licensee shall negotiate and agree on terms and conditions of access and/or interconnection or usage of specific network elements with other licensees. If no agreement is reached following negotiation, the licensee may refer the matter to the TRA to issue a binding decision.

m) A provision of service requirement, being a requirement that the dominant licensee shall provide services mandated by the TRA in markets in which it has been found to be dominant by the TRA.

n) An essential facilities requirement, being a requirement that the dominant licensee shall permit access to facilities that the TRA has nominated to be essential for the provision of retail services by other service providers competing with the dominant operator.

**Article 8: Regulation of Wholesale Services**

(1) As a general rule, the TRA will regulate wholesale markets. TRA will regulate retail markets if the regulation of wholesale markets will not resolve problems in the retail market within a sufficiently short period of time determined by the TRA.

(2) The TRA may impose obligations to offer retail services under certain conditions regarding prices, price caps, availability, quality, or other matters on a licensee which is Dominant, or enjoys Joint Dominance, in a Relevant Market.

**Article 9: Guidelines and publication**

(1) The TRA will prepare, and from time to time update, Guidelines setting out the principles it will adopt when defining markets, determining susceptibility to *ex ante* regulation and determining Dominance and Remedies. The TRA may also prepare Guidelines in relation to emerging markets, including next generation networks.

(2) The TRA will publish on its website, and from time to time update, the Guidelines it issues in accordance with the provisions of these regulations, and will also publish

a list of the Relevant Markets and the Dominant licensees and the remedies applicable.

### Article 10: Public Consultations

The TRA may consult with the licensees and the public on the *ex ante* regulation and its application.

### Article 11: Monitoring Compliance and Penalties

The TRA, at its discretion, shall monitor the licensee’s compliance with the Remedies while considering the circumstances of the Relevant markets in question and the potential risks to the competition and public interest.

The TRA may impose the prescribed penalties in case of violating such obligations.

# Annexure C: The Market Definition and Dominance Guidelines

## Table of contents

# 1 Introduction

## 1.1 Purpose

The purpose of these Guidelines is to provide as much certainty and clarity as is reasonably possible on the way in which the TRA will define telecommunications service markets, analyse such markets for dominance, and determine regulatory remedies to be imposed on dominant service providers to address the risk of harm that may result for competition in such markets and for the interests of consumers.

## 1.2 Scope

These Guidelines address the approach that the TRA will take to the following matters:

(a) the identification and definition of telecommunications service markets;

(b) determination of whether such markets are susceptible to ex ante regulation for dominance and are relevant markets for the application of ex ante remedies if service providers are assessed as being dominant;

(c) the determination of appropriate remedies; and

(d) the review and amendment of past determinations in respect of the matters outlined in paragraphs (a), (b) and (c) above.

## 1.3 Relationship to Anti-Competitive Behaviour and Principles Guidelines and to regulation in response to anti-competitive behaviour

In regulatory theory, a distinction is drawn between ex ante and ex post regulation. Ex ante regulation comprises a set of pre-determined rules and remedies imposed by the TRA on market players who are dominant in specified markets in Oman under Articles 12, 25, 27, 46 bis and 46 bis (1) of the Act and Articles 91-94 of the Executive Regulation while ex post regulation comprises the framework of competition rules described in separate guidelines.

With regard to ex post regulation, the TRA has already determined the Anti-Competitive Behaviour Decision and Anti-Competitive Behaviour and Principles Guidelines that will be applied in the manner in which it responds to anti-competitive behaviour.

## 1.4 Legal Status

These Guidelines have been developed in accordance with the Telecommunications Regulation Act, the Executive Regulations and the Market Definition and Dominance Decision, and must be interpreted in a manner that is consistent with this body of legislation.

These Guidelines may be amended from time to time by the TRA.

The Guidelines are not legally binding upon the TRA but reflect the TRA's intentions in relation its approach to ex ante regulation for dominance.

## 1.5 Structure of these Guidelines

These Guidelines are structured into Chapters as follows:

- Chapter 2: Market Definition and Dominance Report Procedure
- Chapter 3: Definition of Markets
- Chapter 4: Relevant Markets
- Chapter 5: Market Analysis of Dominance
- Chapter 6: Remedies

In the case of each chapter, the relevant principles that the TRA will seek to uphold in relation to the subject matter of the chapter are set out, together with the tests and measures that will be applied by the TRA when it is considering the subject matter.

# 2 Market Definition and Dominance Report Procedure

## 2.1 Principles

Whenever the TRA proposes to initially determine or to amend an existing determination associated with ex ante regulation of dominance it will prepare a Market Definition and Dominance Report ("Report") in order to:

(a) express in as clear and transparent a way as reasonably possible the considerations that it is taking into account in this matter;

(b) encourage participation in the process through consultation with potentially affected service providers and interested parties; and

(c) indicate the evidence and default assumptions that have been relied upon for regulatory decisions.

Regulation should not be imposed unless the market forces, if any, at work in a market are insufficient to sustain effective competition or unless competition alone cannot deliver social and economic outcomes that have been set out as desirable in legislation. These circumstances are collectively known as market failures.

The TRA will refrain from intervening in markets unless there is market failure, and will only intervene, if at all, to the minimum extent necessary to address the market failure. In the case of dominance in a market the TRA will only regulate to the extent necessary to address the risk of harm from dominance to competition and to consumer interests.

The TRA is committed to evidence-based regulation and therefore will be guided by the available evidence in determining if there is a requirement to intervene and to regulate, and in assessing the extent and intensity of the regulation required.

## 2.2 Purpose of Report

A Report on any telecommunications service market or group of markets will set out the evidence and arguments for the proposed regulatory outcome for the purpose of providing a clear rationale to affected and interested parties, and to allow them an opportunity to comment on both the proposed outcome and the reasons adduced for that outcome.

If some of the information available to the TRA has been determined by the TRA to be commercially confidential, and that the harm to the commercial interests of one or more service providers that would likely result from publication is greater than the harm to the public interest in non-disclosure, the TRA will seek to describe the import of the information that has not been published. In such cases the evidentiary burden and the burden of persuasion will be on any party seeking non-publication.

## 2.3 Coverage of Report

The Report will analyse the definition of the market or markets that it covers, together with their susceptibility to ex ante regulation for dominance, market analysis of dominance and the remedies appropriate if there is dominance.

If the market has been the subject of an earlier Report, then the Report will analyse changes that have occurred in the market or markets in the meantime, insofar as those changes are relevant to a change in regulation.

A Report may cover one or more markets. In the case of some markets the boundary conditions that define the markets are in flux as a result of demand, technology and cost changes, and in these cases it is important not to consider changes affecting only one of a number of adjacent markets.

## 2.4 Forecasting Horizon of Report

It is accepted that telecommunications service markets are in a period of rapid change resulting from changes in underlying technologies, cost structures and cost relationships and demand. Current markets are characterised by substantial convergence in terms of technologies, services and applications and competitors. This means that regulatory categories require more frequent review to ensure that they are relevant to current and future conditions, and that the regulation based on such categories is supportive of development of telecommunications service markets and services.

In preparing a Report the TRA is concerned with establishing regulation for the present and immediate future. It is not concerned with establishing the basis for longer term regulation. That will be done in later Reports. In order to establish a basis for regulating for the present and immediate future the TRA must consider how far it can foresee with a reasonable degree of certainty. The forecasting horizon may vary depending on the level of dynamic and predictable change that is occurring in the sector.

At present the TRA considers that a period of two years represents a reasonable forecasting horizon and it intends to use that period as a horizon in its Reports, unless specific circumstances suggest otherwise for specific markets. The forecasting horizon should not be confused with the frequency and periodicity of reviews, a separate matter that is separately discussed below.

## 2.5 Frequency and Periodicity of Reports

The TRA does not intend to commit to a fixed cycle of Reports or to a Report preparation frequency, other than to undertake a review of each market in which it has imposed ex ante remedies for dominance at least every five (5) years from the completion and publication of the previous review.

On the other hand, because the forecasting horizon for each Report will typically be two years it is very unlikely that the TRA will wish to commence a further review of a market in less than two years from the publication of the Report of the previous review.

It is important to note that the forecasting horizon has been linked to a period in which forecasts of market circumstances might be reasonably certain. In practice, however, the circumstances may last well beyond two years, notwithstanding that they could not be foreseen to apply for an extended period at the time of the review and of the Report preparation. Therefore, the forecasting horizon of, typically, two years, does not imply that a further review and Report will be required for each market at the end of two years from the previous Report.

## 2.6 Initiation of a review and the preparation of a Report

The TRA may initiate a review of the definition, dominance and remedies in a relevant market and the preparation of a Report either of its own motion or in response from an application from any service provider licensed under the Act.

The TRA may refuse any application for the preparation, review or amendment of a Report, according to its discretionary powers, for reasons the TRA will disclose, such as where the application is frivolous or unsubstantiated or that the defined telecommunications markets have not sufficiently evolved since the issuance of the last Report and related determinations.

# 3 Definition of Markets

## 3.1 Principles

A telecommunications service market for the purpose of these Guidelines comprises all services which are substitutes for each other not only in terms of the objective characteristic of those products, their prices or their intended use, but also in terms of the conditions of competition and/or the structure of supply and demand for the product in question. Defining the relevant product market therefore requires a consideration of the extent to which different products are substitutable and exercise a competitive constraint on each other. In addition markets need to be defined in customer terms and in geographic terms, because these affect the limits of substitutability as well.

Throughout these Guidelines there is reference to wholesale markets and services and to retail markets and services. Wholesale services are services that are available only to other licensed service providers in Oman as an input into the services provided by those other licensed service providers. Services that are not wholesale services may be purchased by any customer, and are referred to as 'retail services'.

## 3.2 The service market

The TRA approach will be to undertake an initial assessment to sort telecommunications services into groups based on the similarity of their characteristics and therefore of their potential substitutability in terms of:

(a) demand-side substitutability, in order to determine the extent to which services are available which could be substituted relatively easily by users for the services under consideration; and

(b) supply-side substitutability, in order to determine the extent to which substitute services to the services under consideration are available, which service providers could provide at relatively short notice (normally meaning within a year).

The TRA may consider any factor that, in its opinion, reasonably affects market definition, including consideration of the smallest group of services and the smallest geographic area in relation to which a service provider can impose and profitably maintain a small but significant non-transitory increase in price (known as a SSNIP) above the competitive level.[19]

[19] The starting point of the application of the SSNIP test is the competitive price level and in cases where the price of a service or a product is regulated on the basis of efficient economic costs, this is assumed to be set at a competitive level.

In most cases, a 5-10% price increase would be considered significant and a period of one year or more would be considered non-transitory. This test is also known as the Hypothetical Monopolist Test, because the service provider is assumed to be a monopolist for the purposes of the exercise.

The candidate set of products and services will comprise a separate market if a hypothetical monopoly supplier could impose a SSNIP above the competitive level without the SSNIP being unprofitable.

In cases where the applicability of the SSNIP test is limited by, for example, the absence of data or the difficulties associated with estimating the competitive price level, the SSNIP test will be used as a conceptual framework within which to identify the boundaries of the market. The TRA may therefore include a combination of quantitative and qualitative analyses, including the assessment of the products and services in terms of their physical characteristics, prices and intended use.

The TRA for example may also look at price differences between products to define separate markets for business and residential users taking into account that quality issues might also constraint the switching behaviour of customers, i.e. customer might want to switch to a lower quality product if the price of the more expensive products increases and if they no longer consider that the higher quality justifies the price difference.

## 3.3 Geographic markets

The geographical market for any service is the geographic area in which the conditions of service provision and of competition are essentially similar. Some judgement needs to be exercised in determining geographic markets and the extent of differences in the circumstances of competition from one locality to another. The TRA will also take into account:

(a) whether current service providers treat a market as national, regional or local having regard to the differences in the terms of conditions of supply that they offer from place to place;

(b) the geographical treatment of similar service markets in other countries;

(c) the consequences of national, regional and local definitions of market for the development of competition; and

(d) the effectiveness and convenience of regulatory administration resulting from any particular approach to the issue, taking account likely impacts on customers, service providers and the TRA.

In cases where the nature and intensity of competition varies within the territory where the dominant provider operates, the TRA may take this into account and impose different remedies accordingly in different parts of the territory. This may be a more practical alternative to defining sub-markets on a geographical basis in some cases.

## 3.4 Customer markets

In determining suitable definitions for markets the TRA will consider the customers who constitute the market.

In the case of wholesale markets for the purposes of these Guidelines, the services are those that only licensed service providers are eligible and entitled to acquire.

In the case of retail markets the TRA will consider whether the nature of the services and the terms and conditions associated with their provision vary significantly between customer segments that the customer segmentation should be considered to be part of the definition of the market.

In particular the TRA will have regard to whether the terms and conditions of service differ between business, government and corporate customers on the one hand, and residential or non-business customers on the other.

## 3.5 Other considerations in defining markets

The TRA may take other factors into consideration in defining markets if those factors are considered important and relevant. As a general rule the TRA will not define markets and services in technology terms.

# 4 Relevant Markets

## 4.1 Principles

Relevant markets are those that the TRA has determined, from a list of candidate markets, to be susceptible to ex ante regulation for dominance.

The TRA will seek to regulate in ways that avoid undue interference or distortion in the development of markets.

## 4.2 The three-criteria test

When considering whether or not to impose ex ante regulation, the TRA will apply the so-called three-criteria test. This states that a market is susceptible to ex ante regulation in cases where:

(d) there are high and non–transitory barriers to market entry;

(e) there is no tendency towards competition behind such barriers; and

(f) ex post control by competition rules is insufficient to address market failures. At this scope the TRA will take into account number of conditions including

  a. the degree of generalisation of non-competitive behaviour

  b. the degree of difficulty involved in addressing non-competitive behaviour

  c. the degree of risk that non-competitive behaviour might result in irreparable damage in related or connected markets

  d. the need for regulatory intervention to ensure the development of effective competition in the long run

The three-criteria test is cumulative in its application. That means that if any one of the three criteria is no longer satisfied in a market, ex-ante regulation may be removed in the course of a market review and, in that circumstance, the ex post competition framework will be relied on to address anti-competitive behaviour in the market.

In applying the three-criteria test the TRA will apply the following detailed interpretations:

- Barriers to market entry include structural, legal or regulatory barriers (such as licensing barriers).

- The tendency towards competition that may or may not exist behind barriers to entry will be considered over the forecasting horizon of the review and the Report.
- If there is a tendency towards competition it will need to be one that is material within the forecasting horizon of the review and the Report.

## 4.3 New service markets

All ex ante regulation has a propensity to affect the development of markets and may even distort that development. The TRA recognises that the tendency for regulation to distort market growth and development is particularly likely where the services in the market are new or emerging and where demand has yet to emerge or is only just becoming apparent.

In the absent of strong evidence of dominance in related markets (particularly those in the same value chain) the TRA will be disinclined to intervene with ex ante regulation for dominance where the services are new and innovative and the demand patterns are unclear.

## 4.4 Reconsideration of markets as relevant markets

The TRA reserves its position in relation to the reconsideration at a later date of candidate markets that are found in the course of a review not to be susceptible to ex ante regulation for dominance. This reservation is particularly appropriate in cases where the service market has been found to be too embryonic to be susceptible to ex ante regulation, but where is has subsequently developed towards maturity at the time of a later review.

# 5 Market Analysis of Dominance

## 5.1 Principles

Once competition intensifies in a telecommunications service market to an appropriate level, reliance on ex-ante regulation of market dominance will be reduced in favour of greater reliance on market outcomes and on the application in the telecommunications sector of ex-post competition controls in cases where there is an allegation of abuse of market dominance or of anti-competitive conduct.

The TRA considers that there will seldom be justification for the ex ante regulation for dominance of downstream retail telecommunications service markets if wholesale markets in the same value chain are either sustainably competitive or effectively regulated. Nevertheless, if wholesale market regulation is untried, there may be a case for a temporary extension of downstream ex ante regulation for dominance until the wholesale market remedy or remedies have been proven to be effective.

There may be single dominance or joint dominance in a market. In neither case is dominance to be considered to be behaviour. Dominance is a capacity for acting independently in a market that is a result of the circumstances of the market and the position in the market of one or more service providers. In the case of joint dominance the TRA will assess the risk of harm that arises from the potential for tacit collusion in a relevant market. No evidence of intent or behaviour is required.

## 5.2 Criteria for Single Dominance

Without limiting its ability to consider other factors and criteria to determine whether single dominance exists in a market, the TRA will have regard to the application of the following criteria:

A.1 Market share

A.2 Overall size of the undertaking

A.3 Control of infrastructure not easily duplicated

A.4 Network effects

A.5 Technological advantages and superiority

A.6 Absence of or low countervailing buying power

A.7 Easy or privileged access to capital markets / financial resources

A.8 Product / services diversification

A.9 Economies of scale

A.10 Economies of scope

A.11 Vertical integration

A.12 A highly developed distribution and sales network

A.13 Absence of potential competition

A.14 Barriers to expansion

A.15 Ease of market entry

A.16 Excess pricing and profitability

A.17 Lack of active competition on non-price factors

A.18 Switching barriers

A.19 Customers' ability to access and use information

A summary of the measures for and application of each criterion is explained in a fuller manner in Annex A.

## 5.3 Criteria for Joint Dominance

Dominant position may be held collectively (joint dominance) when two or more legally independent undertakings are linked in such a way that they adopt a common policy in relation to the market.

A three step test is set out with three necessary conditions to establish joint dominance:

(c) The market must be sufficiently transparent for each member of the oligopoly to monitor the behaviour of other members;

(d) There must be a clear incentive for individual members of the oligopoly not to cheat by departing from any common policy on the market. Therefore, there should be adequate deterrents to ensure long-term compliance;

(e) It must be established that the reactions of any actual or future competitors, customers or consumers will not be able to jeopardize the results expected from the common policy.

Without limiting its ability to consider other factors and criteria to determine whether joint dominance exists in a market, the TRA will have regard to the application of some or all of the following criteria:

B.1 Market concentration

B.2 Transparency

B.3 Mature market

B.4 Stagnant or moderate growth on the demand side

B.5 Low elasticity of demand

B.6 Homogenous product

B.7 Similar cost structure

B.8 Similar market share

B.9 Lack of technical innovation, mature technology

B.10 Absence of excess capacity

B.11 High barriers to entry

B.12 Lack of countervailing buying power

B.13 Lack of potential competition

B.14 Various kinds of informal and other links between the undertakings concerned

B.15 Retaliatory mechanisms

B.16 Lack of or reduced scope for price competition

B.17 Existence of incentives for tacit collusion

B.18 Ability to enforce the terms of a collusive agreement or tacit understanding

A summary of the measures for and application of each criterion is explained in a fuller manner in Annex B.

## 5.4 General rules of application for dominance criteria

The TRA will generally apply the following rules or guidelines in applying dominance criteria, whether for single or joint dominance:

(a) The criteria for dominance include some with overlapping coverage; however the criteria involved have separate and distinct focus so that different aspects of dominance are highlighted. There is advantage in the criteria remaining on the list and no disadvantage in partly overlapping criteria, provided the criteria are applied with appropriate caution and judgment. This means that application methods will be avoided if they involve check-listing and simple weighting based on whether each criterion supports a designation of dominance or not.

(b) The TRA will not prioritise or weight criteria in advance of considering the characteristics of the relevant market in which they are to be applied.

(c) The application of criteria for dominance definition is dependent on the results of market analysis, for which one of more criteria could potentially apply depending on the specific market circumstances.

(d) Some criteria appear to be double-edged in their application and may suggest dominance under some circumstances and effective competition and market rivalry under other circumstances. The circumstances of the relevant market will determine the way in which such criteria apply and also whether they support an assessment of dominance or not.

# 6 Remedies

## 6.1 Principles

The TRA will apply the following principles on remedies as far as the circumstances of dominance and the relevant market will permit:

(a) The TRA will apply remedies first to dominance in wholesale markets and only then will it consider whether it is necessary to also apply remedies to dominance in related retail markets, bearing in mind that the wholesale market remedies may preclude the need for retail market remedies.

(b) The TRA will impose the least intrusive remedy that will in its judgement be sufficient to address the market failure from dominance in the relevant market and to protect competition and consumer interests associated with that market.

(c) The TRA will shape remedies and determine their intensity of application to ensure that the remedy is appropriate, reasonable and proportionate to the risk of harm from the dominance found to exist in the relevant market.

(d) As a general principle the remedies applied to dominant service providers that are found to be jointly dominant in a market should be the same.

(e) As a general principle the remedies applied to dominant service providers in similar markets (such as the market for call termination in which each network constitutes a separate market) should be similar, taking account of the burdensome nature that the obligation represents for each dominant service provider.

## 6.2 Determining appropriate and proportionate remedies

Where it has determined that a service provider is dominant in a relevant market the TRA will then assess the nature of the potential harm that the position of dominance might entail for competition and for consumer interests. In making this assessment the TRA will consider:

- The types of harm that are reasonably associated with dominance in the circumstances of the relevant market;
- The specific orders or remedies that would directly address the harm that might result; and
- How the orders and remedies might best be shaped to be the least intrusive as possible while still being effective in reducing the risk of harm to an acceptable level.

## 6.3 Shaping the intensity of remedies

Where a remedy is capable of being shaped or varied in intensity the TRA will consider how best to shape and specify the remedy having regard to:

- The potential harm from the dominance revealed on analysis;
- The likelihood of the dominance being reduced or neutralised by impending market development; and
- The risk of the remedy inadvertently reducing genuine competition in the relevant market.

## 6.4 Available remedies

The TRA has a range of potential remedies from which it can choose to apply through an order on a dominant service provider. Remedies may be applied separately or in combination, as the circumstances of the relevant market and of the nature and source of dominance requires.

The remedies available to the TRA include those listed below, together with an indication of the type of harm from dominance in response to which each remedy would typically be applied:

(a) **Non discrimination.** A requirement that the dominant service provider shall apply equivalent conditions in equivalent circumstances. In other words, the dominant service provider shall not discriminate in favour of the firm's own subsidiaries or partners. This remedy would typically be applied to address the risk of harm that a dominant operator that is vertically integrated could price by, for example, offering different qualities of service or undue requirements that are not warranted by cost or other objective factors, and give preference to its own retail operations compared to competitive retail operations.

(b) **Publication of information**: A requirement that the dominant service provider publish certain information to ensure that customers and competitors have improved understanding of some aspect of the operation of the dominant service provider. This remedy would typically be applied where the harm from dominance would likely be based on asymmetry of information in the market place, and where the dominant service provider, buy virtue of its position in the market or its longer time in the market has access to better and greater information than other service providers and customers.

(c) **Tariff filing and approval**: A requirement that the dominant service provider should file with the TRA tariffs related to services in the market in which it is dominant prior to implementation and/or require the TRA's approval before implementation. This remedy would typically be applied where the harm from dominance would result from an ability to impose predatory prices, excessive prices or cross-subsidised prices, and where price competition in the market is weak.

(d) **Tariff Notification**: A requirement that the dominant service provider should notify its tariffs to the market within a nominated time before or after implementation. This remedy would typically be applied where the harm from dominance arises in whole or in part from prices not being made known to the market so that other competitors and customers may not be aware of the price options that they have from the dominant service provider.

**(e) Cost studies**: A requirement that the dominant service provider should participate in cost studies undertaken by the TRA through the provision of cost and related data in the form and time specified by the TRA. This remedy would typically be applied where the dominant service provider has the capacity to charge prices that are not cost related and are, in consequence, likely to be predatory, excessive or cross-subsidising.

(f) **Price Cap regulation**: A requirement that the dominant service provider should only charge prices for individual services or for bundles of services in a manner that complies with the provision of the price cap. This remedy would typically be applied where the dominant service provider has the capacity to charge prices that are not cost related and are, in consequence, likely to be predatory, excessive or cross-subsidising, but where some leeway is appropriate to enable the dominant service provider to be innovative and flexible in its approach to pricing in the market.

(g) **Accounting Separation**: A requirement that the dominant service provider should provide accounts to the TRA in accordance with specifications of the TRA relating to periodicity, timing, and content, with all costs and revenues separated into service and other categories outlined by the TRA. This remedy would typically be applied where the regulatory needs to understand the costs and revenues associated with services in markets in which there is dominance or in other related markets.

**(h) Subscriber information obligations**: A requirement to provide information to subscribers on the inception of service or at periods during the course of a subscription (such as in the course of providing bills) which information is considered by the TRA to be required to better inform subscribers and to enable them to make choices according to their perceived self- interest, and in the interests of service competition. This remedy would typically be applied where there is a substantial likelihood of competition being reduced or limited by information asymmetry in the market and by limited access to relevant information to enable informed choices to be made.

(i) **Terms of service**: A requirement that the dominant service provider shall seek approval from the TRA in relation to nominated categories of terms of service or shall provide services in the market in which it is dominant on terms specified by the TRA. This remedy would typically be applied where the dominant service provider has the capacity to apply terms that are unfair or which express its dominant position in the market.

(j) **Quality of service**: A requirement that the dominant service provider shall either specify and meet nominated service quality standards or meet standards nominated by the TRA.

(k) **Terms and conditions of access and interconnection**: A requirement that terms and conditions of access and interconnection shall be negotiated and agreed between the dominant service provider and other interconnected service providers or else be subject to arbitration by the TRA, at the request of one or both parties. This remedy would typically be applied where access to a facility or to a wholesale service is required to be provided by the dominant service provider to facilitate the provision of competitive retail services by other operators.

(l) **Mandated provision of services**: A requirement that the dominant service provider shall provide services mandated by the TRA in markets in which it has been found to be dominant by the TRA. This remedy would typically be applied where a wholesale service is required to be provided by the dominant service provider to facilitate the provision of competitive retail services by other operators.

(m) **Access to essential facilities**: A requirement that the dominant service provider shall permit access to facilities that the TRA has nominated to be essential for the provision of retail services by other service providers competing with the dominant service provider. This remedy would typically be applied where access is required to be provided by the dominant service provider to facilities that are essential inputs to the provision of competitive services by other operators and where the option of supply from other sources is not reasonably available.

(n) **Reference offers (in relation to interconnection, access, and usage)**: A requirement that the dominant service provider shall prepare an offer acceptable to the TRA in relation to the terms and conditions under which it will provide nominated services to eligible service providers, in compliance with content and format requirements specified by the TRA. This remedy would typically be applied where there is a need for non-discriminatory and transparent terms to engender certainty in the provision of interconnection and other services on fair and reasonable terms.

# Annex A: Single Dominance Criteria: Measures and Application

## Criterion A.1 Market share

### Measures

Market shares of all relevant firms in the market can provide an initial picture of the relative competitive positions of the firms in the market.

For most telecommunications services markets it is possible to measure market share in terms of total market revenues, total subscribers or customers, and total services in operation. The measures will not lead to the same market share results because service providers may position themselves to attract higher or lower value customers, or to attract business enterprises as customers, thereby potential having a greater services-to-customer ratio than the market as a whole.

Where a regulator or legislator has indicated a particular preferred measure for market share in the context of market analysis for dominance the choice is for market share measured in terms of revenue – so that the market share of an individual service provider will be the revenues of that service provider as a proportion of the total revenues of all service providers in the relevant market.

There are two main reasons for this preference:

- Sometimes the number of subscribers is not a useful indicator of share, because of the variation in size of customer orders. For example, in the retail market for leased lines, typically only medium to large scale business enterprises operating at more than one location or site are customers and the numbers of leased lines that they rent can vary greatly. In this context the customer count is not particularly helpful in assessing market share.
- In some markets the services are of different capacities or sizes and price. The retail market for leased lines is a good example here as well, because the capacity of leased lines can vary from nx64 Kbit/s to multiples of STM-1. In addition the distance covered will also vary greatly. For these reasons a market share measure based on a count of services will not be helpful for dominance analysis because the services in the set are too varied.

In all circumstances, the analysis of market shares for the assessment of dominance will have to be measured over time, rather than only at a single point in time. It is the strong persistence of certain patterns that could give a strong indication of an industry situation.

### Application

Market share is at best an indication of other factors at work in the market. It is the result of these factors, and may reflect their presence. Other factors could include merit-based factors such as product quality, service levels, branding, ubiquity of operation and ease of access of the target customer group.

Best practice usage of market share is as an initial indicator that there may be dominance in the market, but that further assessment is required. This application is based on market share being a high or a low figure, and that the concentration in the market is high. This further application (of concentration) is considered using the HHI method. HHI is the Herfindahl-Hirschman Index a commonly accepted measure of market concentration. It is calculated by squaring the market share of each firm competing in the market and then summing the resulting numbers. For example, for a market consisting of four firms with shares of thirty, thirty, twenty and twenty percent, the HHI is 2600 ($30^2 + 30^2 + 20^2 + 20^2 = 2600$). The HHI takes into account the relative size and distribution of the firms in a market and approaches zero when a market consists of a large number of firms of relatively equal size. The HHI increases both as the number of firms in the market decreases and as the disparity in size between those firms increases.

Sometimes the combination of all three measures will add information about the nature of competition in a market that is not clear from examining a single measure of market share in isolation. For example, if the market share measured in revenue terms is considerably greater than the market share measured in terms of services, there may be an implication of dominance in that the service provider has been able to determine that it will have the quality accounts, leaving less valuable and potentially less profitable accounts for competitors in the market. However, this situation is one that needs to be further examined in the context of a specific relevant market, and not in the abstract.

More importantly, the application of the criterion over time is very important, rather than at a single point in time. Single data point analysis, especially when used in threshold tests, may often provide little useful information about the strength and dynamics of competition in a market. For example, if the market share in revenue terms of a service provider is 50% there may be a strong inclination to regard this as evidence of dominance, if tests based on 40% threshold levels for example, are applied. However, the level of confidence associated with this conclusion may be seriously impaired if the additional information from time series analysis is that the share has reduced at 5 percentage points each quarter on average over the last year. Similarly time series analysis of HHI results is important for the same reason.

## Criterion A.2 Overall size of the undertaking

### Measures

Overall size can be measured on many dimensions including –

- Employment
- Gross or net assets
- Capitalisation
- Net cash flow
- Profitability
- All of the above

The point of these measures is to indicate the extent to which the size of the undertaking varies (is bigger than) the typical or average size of enterprises against which it is competing.  Therefore size assessment is about relative size rather than absolute size. Some size related advantages could be in economies of scale, finance, purchasing, production capacity, distribution and marketing.

**Application**

Enterprise size is not usually a compelling criterion by itself because it is very difficult to measure accurately the impact that size has on competition.  A service provider that is large relative to its competitors may be assumed to have the ability to draw on reserves of resources (or excess capacity) that its competitors do not have to compete in the market, for example if a producer is able to switch production in a short time frame in order to respond to a price increase, he exercises a competitive constraint on that market. This in turn may prevent or restrain price increases by its competitors and have potentially a positive impact on competition. On the other hand, the very existence of size may be perceived by competitors in a negative way and reduce their competitive efforts to the level they consider the large competitor may tolerate. As this discussion indicates, it may be inappropriate to draw too many conclusions from the existence of size alone.

Sometimes size may also prove to be a disadvantage, if it becomes a source of inefficiency, rather than an advantage.  For example, large enterprises may develop bureaucratic processes for approval and change that become barriers to speedy and responsive market place action, and which hand advantages to smaller, more flexible competitors.  Again, further evidence that size has created performance barriers is also needed and should not be assumed.

We conclude that the use of size as an indicator is often fraught with complications and should always be undertaken with care because size is one of the criteria that are a double-edged.  There is an assumption that it always supports a conclusion of dominance, but it may be either neutral or work in other ways in the context of specific markets.

## Criterion A.3 Control of infrastructure not easily duplicated

### Measures

The term 'easily' covers a number of meanings as used in the definition of this criterion. The fundamental economic aspect of the term is that the infrastructure is not economically duplicable. This means that there is no economic basis for duplication of the infrastructure being considered. Infrastructure in this category includes ducts and the customer access network of fixed networks in most locations.

The second meaning is that the infrastructure is not easily duplicated because it is a scarce resource (such as spectrum availability) or because there are other barriers to duplication, such as the requirement for a local council permit that may be readily withheld. Infrastructure in this category includes poles, masts and towers, and rights of way (easements) that need to be considered on a case by case basis.

### Application

There is no accepted or standard measure to be applied in the case of control of such infrastructure. If access to a particular type of infrastructure is required in order to compete in a market for services that rely for delivery on that infrastructure, and it is either not economic or otherwise appropriate to seek to duplicate the infrastructure, then this goes to dominance in the relevant market. Because there is no clear measure that is always applicable, consideration of various typical circumstances might lead to a very narrow view of the definition of facilities involved.

For example, in some areas, such as densely inhabited inner city locations and central business districts, the level and density of service demand will make it economic to duplicate customer access cabling systems and in these locations the criterion may not apply to cable and duct infrastructure. However, the exception might not apply beyond such areas.

As a second example, if the reason that major towers above a certain height cannot be easily duplicated is because some Local Government (or Town) Councils want to preserve the visual amenity of their communities, then this may be a reason to apply the criterion on a location by location basis. In those areas where there is a Council prohibition on planning permits for new towers, the criterion would apply, but not in areas where prohibitions did not apply.

## Criterion A.4 Sunk costs

### Measures

Sunk costs are the costs that are incurred before the activity takes place and that can not be recovered or reversed if the service provider decides to exit the market. Sunk costs are typically encountered in industries, such as the telecommunications industry, where there is a high level ratio of fixed costs over variable costs, such as for example investments in networks infrastructures.

High sunk costs may represent a barrier to entering the market in the sense that they create an asymmetry between potential new entrants and the incumbent that the latter may exploit to deter entry into the market. A dominant operator may, for example, signal to a potential entrant that, if it were to enter the market, prices would be too low to cover sunk costs.

**Application**

Sunk costs are a firm's or an industry's specific historic costs that are irreversibly spent and independent of the future quantity of service supplied.

The extent to which costs are sunk costs has potentially important implications for market structure. However, these are very complex to measure and are dependent on a number of market characteristics including for example the market demand levels and the firm's ability to recover these sunk costs in the course of its commercial operations.

## Criterion A.5 Network effects

**Measures**

In economics and business, a network effect (also called network externality) is the effect that one user of a good or service has on the value of that product to other people. When network effect is present, the value of a product or service increases as more people use it. In the case of telecommunications services there is no standard measure but there are factors that can be assessed and which will influence a judgment on whether the network effect is large or small (or effectively non existent).

The factors include:

- The relative size of networks in terms of coverage and subscribers
- The existence of fair, reasonable and efficient interconnection arrangements
- The saturation levels of the service (in terms of % of population)
- The ability of service providers to offer deep discounts for on-net calls and other services (based on an assessment of the charges for on-net services compared to off-net and the potential for discounts)

**Application**

The information that has been collected and referred to above needs to be analysed in the context of a relevant market, where the comparative situations of the different service providers can be considered.

For example, if there are two competing service providers in a market with similar numbers of subscribers, and where the total service penetration is 10% of the population, this may indicate that, although there appears to be substantial potential for network effects to have effect, the position and opportunities in that regard of each service provider is similar to that of the other. In such a situation it would be reasonable to conclude that there is unlikely to be a position of dominance based on this criterion.

## Criterion A.6 Technological advantages and superiority

### Measures

The telecommunications systems and platforms equipment market is served by world class technologies from global vendors who are willing to sell to any service provider. All service providers potentially have access to all technologies and to all vendors. This development has been assisted by the development of end to end public standards through the ITU, ETSI and other similar standards bodies. The difference between the capabilities of one vendor's equipment and systems and those of another are reducing, and software-defined upgrades are a constant and regular feature of the service that accompanies such equipment.

Nevertheless it is still possible that a service provider might enjoy technological advantages and superiority as a result of deploying proprietary systems, including software, or because of exclusive contracts with vendors and systems developers. This is the evidence or measure that would be sought in such cases.

### Application

If there is evidence of technological superiority, then it will be necessary to examine the nature of the matter to which the superiority relates and also whether in its nature the superiority is temporary or longer term.

## Criterion A.7 Absence of or low countervailing buying power

### Measures

Countervailing buying power occurs when the power of a seller in one situation is impacted by the converse relationship of the same parties in another situation. This concept recognises that the relationships between service providers in a market are usually complex and multi-dimensional. Countervailing buying power could take different forms for which the analysis of potential competitive constraint on the market needs to be assessed on a case by case basis.

A competitor who may have what would otherwise be dominance in a market, has to refrain from taking advantage of the dominant position having regard to the prospects of 'retaliation' by larger competitors. The retaliatory capability is the countervailing power.

One application in which countervailing buying power is often is in relation to the market for the termination of interconnected calls, where each network is effectively a separate market (in countries where the calling party's network pays – CPNP – for call termination) and even small network operators have a terminating call monopoly. [20]

The leading European case in relation to countervailing buying power in the telecommunications sector is the case involving '3' and BT in the UK. 3 claimed that it did not have significant market power in relation to call termination because BT, the main customer for its call termination services, had countervailing buyer power. Specifically, 3 argued that its termination rates were constrained by the fact that it was dependent on BT to interconnect with its network, rather than the other way around. However, Ofcom concluded that 3 has SMP, partly because of regulatory constraints imposed on BT.

**Application**

This criterion is applied by inquiring whether there are restraints in practice on the way in which a position of potential dominance in a market might be exercised, and, if so, whether those restraints are associated with other buying relationships that the parties might have in the market.

An example might be where a small service provider is assumed to be constrained from charging a larger service provider above costs for call termination services because the small service provider requires a number of wholesale services from the larger operator, including call termination and also, say, wholesale leased lines, unbundled local loops and wholesale line rental (the list might be longer). The hypothesis is that the small operator need not be designated as dominant in relation to call termination because the need to obtain other wholesale services at reasonable rates will be a constraint on its behaviour and encourage it to be reasonable in relation to its own prices.

A deeper inquiry is required. If all of the other wholesale services are subject to ex ante regulation and to regulated cost-based prices then the need to acquire them on reasonable terms may not be a constraint in relation to call termination prices. The test would be whether there is a reasonable apprehension on the part of the smaller service provider that the larger service provider has the capability to inflict commercial damage through non-supply or excessive prices in relation to other transactions and whether being reasonable in relation to the terms for providing services in return might reduce the risk of the capability being exercised.

[20] The situation is one of bilateral monopoly where both sides are dominant, in the sense that they are not constrained by competition

## Criterion A.8 Easy or privileged access to capital markets / financial resources

### Measures

The measure or test is twofold;

1. whether a service provider has access to financial resources at costs that are low relative to the risk-adjusted cost of capital appropriate to the relevant telecommunications market (that is, below market rates); and

2. if so, whether the access is easier or on better terms than might reasonably be available to competitors in the market.

Telecommunications markets are generally considered to be capital intensive so access to capital on a preferred or privileged basis, if it occurred, would lead to a position of advantage in the market, and might be a basis for a finding of dominance, especially if considered in conjunction with other criteria.

The audited accounts of the service providers would be a source of information on the cost of capital that has been incurred. More general parameters of the appropriate cost of capital in the market could be obtained by benchmarking or from financial advisory firms in their client reports on the market.

Many service providers are part of larger enterprises and do not necessarily publish the accounts applicable to each operating division or subsidiary, assuming the licensed service provider is a business unit or a subsidiary. These practical difficulties may make it difficult to establish relevant costs of capital for a specific telecommunications business.

### Application

If reliable information about costs of capital in the market and in the service provider under consideration is available then the application is straightforward. The costs of capital involved would need to be below an appropriate commercial rate in the market in question. However, this is not sufficient for the criterion to be applied. If all or most of the other significant competitors in the market enjoy similar costs of capital then the service provider under consideration would enjoy no competitive advantage from this source, and would not be dominant in the market on the basis of this criterion. Therefore the availability of capital on easy or privileged terms has to be considered relative to the costs of capital of other service providers in the market.

A further and different application of the criterion could be where general prevailing economic conditions make new capital raising difficult and therefore more expensive for new entrants to the market. Incumbents have been capitalised at least for current operations (even if capital for expansions is costly or scarce), so the advantage in this situation is that access to capital is past access (rather than being strictly *privileged*) and easier access than available to start-ups or other types of new entrants.

## Criterion A.9 Product / services diversification

### Measures

A service provider with a diversified range of services may have advantages in the market compared with single-product or few-product operators. There are a number of ways in which product diversification is a source of advantage and potential dominance in a relevant market, including:

1. the ability to bundle various services and obtain advantage from the reduced costs of delivery and the improved customer loyalty (or lock-in effects) that results from the discounts that might be offered; and
2. the ability to use market capital (such as brand strength) in one service market to assist commercial operations in other service markets.

The measures that could be applied in relation to this criterion are:

- the number, content and range of bundles on offer;
- the discounts offered with bundles relative to the prices available outside the bundle;
- customer churn of bundled customers relative to churn without bundles and the churn rates of competitors

### Application

The application of this criterion requires great care is needed because the impact of diversification (or lack of diversification) on dominance may be ambiguous and depend on specific circumstances. This is because:

- the advantages of diversity might be offset by loss of commercial focus
- service providers with single or few services may be able to generate superior performance or efficiency related to those services and pass on customer benefits (this will depend on the market)

In conclusion, product diversification is most likely to support a finding of dominance in those circumstances where, for various reasons, smaller service providers cannot compete effectively; for example, if they can not create competitive bundles.

## Criterion A.10 Economies of scale

### Measures

Economies of scale are the efficiencies in terms of unit costs from increased production achieved as a result of fixed costs being spread across a greater scale of outputs. Service providers with substantial scale economies have cost advantages that enable them to achieve and retain a position of advantage and possibly of dominance in a market. Potential entrants in the market would then need to enter the market on a similar large scale to obtain the same economies of scale as the incumbent.

But scale economies do not continue indefinitely. They are exhausted at various levels of production or output. The point of exhaustion will depend on the nature of the market and the technologies used to produce services for that market. The measure of scale economies is in terms of the unit costs at various points along the volume curve, and these costs are determined through accounting analysis or cost modelling.

### Application

Economies of scale factors need to be applied with care. If the unit costs of two competitors are similar then the scale advantage will have been exhausted. Where economies of scale is an important consideration for dominance is where an incumbent has maximised its economies of scale and new entrants have high costs and services, but no scale benefits at all. The new entrants will have substantial disadvantages in terms of unit costs.

## Criterion A.11 Economies of scope

### Measures

Economies of scope are conceptually similar to the economies of scale but they refer to the efficiency gains from having a range of products or services rather then from a single one. Economies of scope occur when the range of businesses and operations of an enterprise allow it to spread its fixed common and overhead costs across the full range, thereby reducing the costs that would otherwise have been incurred by a single business or service. Unit costs are lowered as a result.

Economies of scope can be measures via cost studies and cost modelling to show the impact on unit costs if fixed common and overhead costs can be allocated more widely within the firm.

### Application

These factors are applied in the same way as for economies of scale. The applications will determine whether the reduced costs resulting from scope economies give the service provider a significant advantage and potentially put it in a position of dominance in the market.

## Criterion A.12 Vertical integration

### Measures

Vertical integration occurs when the service provider operates at both the wholesale and retail levels in the market for similar services. An example would be where a service provider competes in the retail broadband market and also in the upstream wholesale market for unbundled local loops (ULL), which might be an essential input to the competitors that supply retail broadband via ADSL means.

The test for vertical integration is to determine what are the wholesale services needed to complete a retail service offering in a market and then to determine whether a single service provider operates at both levels.

### Application

This criterion is applied by determining the potential capacity of a service provider to foreclose the potentially competitive retail market. However, vertical integration between retail and wholesale services does not always provide an incentive to foreclose, because the wholesale service provider might also have an incentive to maximize the profit by setting the access price so to extract the entire retail profit ("Chicago Critique"), i.e. implement price squeeze and other strategies to gain competitive advantage in the retail market by either discriminating in favour of its own retail operation or by charging all retailers wholesale input prices that are above cost

A test to determine if advantage is being sought through price squeeze or other pricing strategies is to implement accounting separation and cost studies to enable the costs for the wholesale product to be assessed and to be compared to the prices being charged to retailers.

Imputation tests are also applied. These tests use competitor costs to impute the wholesale price that would permit an efficient competitor to match prevailing retail prices in the market. These tests can be applied in the other direction to determine the appropriate retail rates that should be charged by adding a modelled cost of wholesale service to the additional costs of an efficient service provider. If the retail prices being charged by the integrated service provider are below the appropriate prices calculated via this method, then there is below cost selling and potentially price predation in the market.

## Criterion A.13 A highly developed distribution and sales network

### Measures

The measure is the ubiquity and exclusivity of the service provider's distribution and sales network.

### Application

If the service provider has tied up the preferred channels to market through exclusive contracts that prevent the same channels being used by competitors, then there is a prima facie case for dominance based on this criterion. It is important that the sales and distribution network options for the competitor are reduced significantly by the firs service provider's tied arrangement. If there are a number of department store chains in the economy and the service provider under consideration has only tied up one of them, then this would not be the creation of a potentially dominant position.

## Criterion A.14 Absence of potential competition

### Measures

This criterion assesses whether there are any potential competitors in adjacent markets who may be encouraged to enter the relevant market. This is an increasingly important consideration in the current era of convergence at all levels in the market. In practice this means that a non-traditional entrant from an adjacent or neighbouring market might well need to be considered as a potential entrant in a converged market.

### Application

The criterion is applied by considering what might need to happen for potential competitors to enter the market and whether they would experience any significant barriers to doing so. If barriers to entry are significant the potential competitors that have been identified may not be potential competitors after all.

## Criterion A.15 Barriers to expansion

### Measures

A key barrier to expansion is that market penetration has reached or is near saturation levels. The measure is penetration per 100 population, or per 100 households, or against whatever penetration metric is appropriate to the market in question. A further measure is an assessment of the potential for penetration, a figure that may be derived from customer surveys of buying intention and by analysing the actual penetration rates of more developed markets in the relevant service field.

### Application

The criterion is applied by comparing the actual and the potential penetration levels and assessing whether there remains significant opportunity that might be attractive to new entrant competitors. It should be noted that potential penetration has been under-estimated significantly in some markets in the past, and that saturation might have been assumed prematurely.

For example, it was assumed at one point that the saturation level of mobile service markets was one service for every member of the population (except for very young children) and that as penetration approached the 100% market the expansion potential was disappearing. In practice the penetration levels have gone well beyond 100%, reflecting the take-up on multiple services to obtain the on-net call price discounts.

## Criterion A.16 Ease of market entry

### Measures

This criterion is concerned with the nature of barriers, if any, to entry into the market. The measures to consider here are:

- Legal or regulatory barriers particularly constraints in licensing and restrictions on the numbers of licences granted
- Structural barriers related to the actual market conditions, i.e. cost or demand structure which create asymmetric conditions between enterprises
- Commercial barriers to entry associated with amassing the capital needed to enter successfully and establish a network based business
- Consideration of the number of licensees actually operating behind the entry barriers, if such barriers exist in the first place. The number of service providers in the market relative to the potential of the market to sustain the existing service providers on a commercially sustainable basis, is a major consideration on whether a new entrant might enter or avoid the market.

### Application

There is no standard methodology to apply here. The relative ease of entry needs to be considered having regard to current penetrating levels, future levels based on the potential in the market, and to the number of service providers already in the market serving available demand. Barriers to entry that will need to be considered in this analysis include also structural barriers such as economies of scope and current market conditions, such as the prevailing price levels.

## Criterion A.17 Excess pricing and profitability

### Measures

The key measures are the profitability of the service provider in the relevant market compared to the profitability that might be expected in the market if it was competitive. The first might be difficult to measure separately from the profitability of the service provider's operations overall. The second might be established have regard to the EBITDA ratios of service providers in comparable but competitive service markets.

### Application

A comparison of the two measures (the service provider and a competitive industry) over time will enable a conclusion about whether and by how much and for how long the profitability has been excessive. Even if excessive, if the profitability is reducing to competitive levels this may suggest that competition is becoming effective in competing away excess profitability and prices.

Care must be taken in applying the criterion because low profits need not reflect competitive outcomes. For example, low profits may reflect inefficiency and high costs in a situation where the affordability of the potential customer base is low.

## Criterion A.18 Lack of active competition on non-price factors

### Measures

There are no standard measures for this criterion. In practice there needs to be an analysis of the number of price packages and other offering that comprise bundles or variations built on non-price factors. Non-price factors may include service quality such as in terms of availability (e.g. improved maintenance and fault response options) or other aspects of technical quality.

### Application

This criterion needs to be applied with care. In practice it may serve to modify the assessment of the application of other criteria. For example, in a particular market the overall price levels may not be falling as quickly as the reduction in underlying costs. Normally this would be taken as some evidence that competition was impaired in the market concerned. However, customers in that market may value non-price factors, such as service quality and reliability, very highly, and this may lead to much more competition on those non-price factors. If this is the case, it may well modify the original hypothesis that there is dominance in the market. In fact the competition could be quite robust, but be expressed more in non-price terms than in commoditised markets where price is the key dimension of competition.

## Criterion A.19 Switching barriers

### Measures

If customers are unable to switch from one service provider to another then this may contribute to a dominant position by the service provider with the largest share of customers. If customers cannot switch or are constrained in doing so, the service providers may do less to ensure they are retained than might be done in a fully competitive market.

The key measure is customer churn as a percentage of total customers and movements in churn over time.

### Application

Churn is the typical observed behaviour of customers making choices and changing service providers. The existence of barriers to churn is relevant – such as service contracts with long commitment periods, and the absence of number portability schemes.

Low churn does not necessarily mean that there is low competition. If churn is signalled in advance by the procedures for service cancellation or for porting, then service providers might spend considerable effort in dissuading the potential churnee, through the offer of endorsements to stay. This is particularly the case in number portability where the possibility of porting a number as part of a churn will usually encourage service providers to address the factors leading to churning in the first place. If this competitive initiative is successful, the churn rate will decline. In that sense, churn is not necessarily linked to greater and more intense competition.

## Criterion A.20 Customers ability to access and use of information

### Measures

Customers who are unable to compare other services with the one they have and who lack information on what is available and under what conditions, will be less inclined to change service providers, and will contribute to the service provider's potential dominance. In some cases the requirements by the regulator that operators notify their prices and publish their tariffs and other conditions of service might increase transparency and reduce the likelihood of single dominance in the relevant market. (It may actually facilitate the conditions for joint dominance however, as discussed later in these Guidelines.)

### Application

Judgments are needed on the level of transparency (there being no acceptable standard or gauge) that exists and whether there is a lack of transparency in one or more vital pieces of information that could potentially cause distortion in the market and discourage customer movement.

# Annex B: Criteria for Joint Dominance

## Criterion B.1 Market concentration

### Measures

The smaller the number of firms the more likely is tacit collusion to occur. The measure is the HHI test that is discussed under criterion A.1

### Application

The application is discussed under criterion A.1 above. The higher the Index and the market concentration the more likely it will be that the circumstances are favourable for joint dominance.

## Criterion B.2 Transparency

### Measures

Transparency in this context indicates the visibility of prices and quantities to sustain joint dominance. One of the key factors to sustain joint dominance is the ability to detect deviation from collusive understandings in a timely manner. If for example, price or quantity changes are not observable the rival firm will not be able to discern whether the lower number of customers served is based on a reduction in demand or a price cut from its competitor. Therefore, visibility of prices and price changes firms to achieve collusive outcomes and therefore joint dominance.

Other evidence of transparency may be the movement of staff between service providers in the market over time thereby enabling the service providers to have a substantial understanding of each other's plans and strategies. More direct ways of achieving transparency may also be evident such as disclosure requirements to share markets and securities and exchange commissions.

### Application

Application of this criterion is at best a judgement that may support other indicators of joint dominance. The application of this criterion is intended to answer the question about the means by which information might pass between or be known by other competitors about a first competitor.

## Criterion B.3 Mature market

### Measures

The measures of maturity in a market include market penetration relative to an assessment of potential penetration.

### Application

The measures will indicate where a particular market is on the product or service life cycle. The life cycle will be capable of being plotted as an 'S' curve with the points of inflection possibly being drawn from the experience of the particular service in other country markets.

## Criterion B.4 Stagnant or moderate growth on the demand side

### Measures

The measure will be the level of sales activity over time, expressed in volume (rather than price) terms. These are essentially measures of market inertia.

### Application

This measure will be evidence that one of a number of possible conditions favourable to joint dominance is fulfilled in the market, and that there is a risk of joint dominance as a result.

## Criterion B.5 Low elasticity of demand

### Measures

The measure is the change in demand for a service against the price changes that have been applied over time. Time series analysis is important to show whether the price elasticity index is low or high or somewhere in between.

### Application

Care has to be taken in applying this criterion. Where price elasticity of demand is low – that is the demand for services is less responsive to price – there may be a tacit acceptance amongst competitors that the customers not be given the benefit of cost reductions. In the other hand if non-price factors become more important to both customers and competitors, then there may well be robust competition in the relevant market. The specific circumstances of the relevant market are very important in applying this criterion.

## Criterion B.6 Homogenous product

### Measures

Incentives for collusion and potential for joint dominance are may operate in different directions when products are homogeneous, similar or are perceived to be similar. If products are differentiated it would be more difficult to punish the rival, and even a significant reduction in price might still leave the deviant firm with a positive demand but at the same time the deviation would also be less profitable.

The approach taken in relation to criterion A.8 is applicable here.

#### Application

The approach in relation to criterion A.8 is applicable here.

### Criterion B.7 Similar cost structure

#### Measures

The measures will be based on cost studies, with similar scale and coverage being a proxy for determining the potential for similar cost structures.

#### Application

Symmetry and similar cost structures facilitate joint dominance. Comparison of costs structures or potential costs will enable an assessment of their similarity. However, this is only one factor that adds to the risk of joint dominance in a market and needs to be considered as part of an overall mix of relevant criteria.

### Criterion B.8 Similar market share

#### Measures

Market share measures are discussed in relation to criterion A.1 and are relevant here.

#### Application

Symmetry and similar market shares facilitate joint dominance. Comparison of market shares and how they are constituted will enable an assessment of their similarity. However, this is only one factor that adds to the risk of joint dominance in a market and needs to be considered as part of an overall mix of relevant criteria.

### Criterion B.9 Lack of technical innovation, mature technology

#### Measures

The evidence will include the capital investment history of the market and the recent of the latest significant investment.

#### Application

The recency of significant new investment may be compared with overall industry investment in other telecommunications markets. However, the lack of investment may not be complete because even in very mature markets there are often economic opportunities to reduce costs through system improvements and related investments in operational efficiency.

## Criterion B.10 Absence of excess capacity

### Measures

The measure will be an audit of excess capacity or enquiry of market participants about network utilisation.

### Application

Network utilisation and capacity measures need to be assessed over time and against the comparable measures for a growing and competitive market. However the role played by the presence of excess capacity in relation to joint dominance is ambiguous: excess capacity indicates a stronger incentive to deviate from the collusive outcome with a stronger effect if the rival has not the same extra capacity. On the other hand however, the effect is not the same if both firms have the same level of excess capacity.

Also care needs to be taken to ensure that other causes or potential causes of network utilisation and reduced excess capacity have been considered. An example might be the mandated sharing of facilities or services resulting in higher utilisation.

## Criterion B.11 High barriers to entry

### Measures

The measures in relation to criterion A.15 apply here.

### Application

As per A.15.

## Criterion B.12 Lack of countervailing buying power

### Measures

The measures in relation to criterion A.6 apply here.

### Application

As per A.6

## Criterion B.13 Lack of potential competition

### Measures

The measures in relation to criterion A.13 apply here.

### Application

As per A.13

## Criterion B.14 Various kinds of informal and other links between the undertakings concerned

#### Measures

The evidence for such links may come from many sources and be of diverse kinds. There is no standard measure. The movement of senior people between firms is evidence of such linkages and of the potential for knowledge to be transferred between competitors about plans and strategies.

#### Application

Evidence of linkages may answer the question about how tacit understanding could work in a market.

## Criterion B.15 Retaliatory mechanisms

#### Measures

The level of inter-firm wholesale activity is a measure of the opportunity for one competitor to be potentially harmful to another. A second measure is whether the conditions for a price war – progressive retaliation to price initiatives with yet lower prices – exist in a market.

#### Application

The concept of retaliation in this context is based on the likelihood that the service providers will recognise that they have retaliatory capability and that they will therefore not initiate robust competitive moves. The emphasis is not on actual knowledge, but whether the circumstances of the market create a risk of this occurring.

## Criterion B.16 Lack of or reduced scope for price competition

#### Measures

Cost studies and cost modelling will show how close to cost prices have become over time.

#### Application

The measures applicable to this criterion need to be analysed over a time period, because both there may be a moving potential for cost reductions with additional investment or new technology that changes costs and cost relationships.

## Criterion B.17 Incentives for tacit collusion

#### Measures

This is a catch-all criterion since many of the specific criteria already mentioned imply incentives for tacit collusion. Summarizing the economic theory suggest that the analysis of joint dominance is based on the so called "incentives constraints" to facilitate collusion, i.e. each firm will compare the immediate gains it makes from deviation with the profit it gives up in the future if the rival reacts.

Important here are measures associated with the profitability and market success of one or more of the service providers in a market with few service providers.

**Application**

The incentives for market competitors in the circumstances of a relevant market to collude tacitly and to thereby affect market outcomes depends on market circumstances and other relevant factors as explained above (Criteria B1 to B17).

It is sometimes assumed that all competitors have an incentive for collusion, but this need not always be the case. If a service provider is winning that part of the market that it finds most profitable to serve it may have no incentive at all to work in harmony in a collusive manner with the rival that it is beating through direct competition. The incentive criteria would be essentially a negative one, and would be applied particularly in circumstances where there was no evidence of a credible and compelling incentive to collude.

## Criterion B.18 Enforceability of tacit collusion or understanding

**Measure**

As the one above, this criterion relates to whether the circumstances exist for tacit collusion to arise, or whether there is any evidence that suggests the contrary. In part the evidence will overlap with considerations of retaliatory mechanisms covered in relation to criterion B.15 above. However there may be other factors as well that influence consideration of the market such as, for example, large and aggressive customers who purchasing processes that encourage competitive bidding.

**Application**

Application of this criterion is a judgment based on the evidence that can be adduced.