The provision of dedicated capacity over leased lines in Malta

Market definition, the state of competition & the setting of remedies

Consultation document

Document Reference Number	**MCA/C/12-1149**
Publication Date	**31st July 2012**

Malta Communications Authority
Valletta Waterfront, Pinto Wharf, Floriana, FRN 1913
Tel: (+356) 21336 840
Fax: (+356) 21336 846

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Executive Summary

In accordance with Article 9 of the Electronic Communications (Regulation) Act, the Malta Communications Authority ('the MCA') carries out regular reviews of competition in communications markets to ensure that regulation remains appropriate in the light of changing market conditions.

This review sets out the MCA's proposal concerning the regulatory treatment of the relevant product markets for the provision of dedicated capacity over leased lines in Malta.

On the basis of market findings, the MCA has set out its regulatory proposals to promote and foster effective competition to the benefit of industry and consumers.

A. Proposed market definition

The MCA identifies five relevant product markets:

- a retail market for the provision of dedicated capacity over national leased lines;
- a retail market for the provision of dedicated capacity over international leased lines;
- a wholesale market for the provision of dedicated capacity over national trunk segments of leased lines;
- a wholesale market for the provision of dedicated capacity over international trunk segments of leased lines in Malta; and
- a wholesale market for the provision of dedicated capacity over terminating segments of leased lines.

On the basis of a substitutability assessment, and in line with the EU Commission's Recommendation, the relevant product markets include:

- analogue leased lines;
- digital SDH leased lines; and
- Ethernet circuits.

The MCA concludes that the identified markets are national in scope.

The current review specifically takes into consideration Malta's particular geographic circumstance as an island state and specifically defines international leased lines markets, in line with the established definition in the preceding market review carried out in 2006.

B. The assessment of competition

Throughout its analysis, the MCA found that GO has SMP on the following markets:

- the retail market for the provision of dedicated capacity over national leased lines;
- the wholesale market for the provision of dedicated capacity over national trunk segments of leased lines; and

- the wholesale market for the provision of dedicated capacity over international trunk segments of leased lines in Malta.

The findings supporting the MCA's proposal to designate GO with SMP include:

- high market shares for GO, with markets exhibiting a small pool of buyers and low churn rates;
- high barriers to fully replicate GO's access network infrastructure and offers, with high sunk costs characterising market entry and expansion;
- scale economies enjoyed by GO not readily available to competing operators; and
- no countervailing buyer power dynamics to constrain GO's ability to behave independently of customers.

GO's SMP position in the markets in question is not likely to change significantly within the timeframe of this review.

The MCA did however find the following markets to be effectively competitive:

- the retail market for the provision of dedicated capacity over international leased lines; and
- the wholesale market for the provision of dedicated capacity over international trunk segments of leased lines.

The MCA's proposal of competitive markets is supported by the following findings:

- market entry and expansion materialising despite the high level of sunk costs that are involved (no insurmountable barriers to entry);
- GO's physical infrastructure and offers have been fully replicated;
- market shares for GO declining as a result of competitors managing to penetrate the market and building market share on high net worth customers;
- high net worth customers exerting sufficient countervailing buyer power as to constrain GO from behaving independently of customers; and
- newer market entrants in a position to pose a competitive constraint on the pricing behaviour of GO.

The structure of the markets in question is therefore deemed to be effectively competitive, and the current competitive conditions are likely to persist within the timeframe of this review.

In the circumstances, competition law per se is also deemed to be sufficient to address any potential competition shortcomings in this market.

C. Regulatory approach

i. Proposed imposition of regulatory obligations

- The retail market for the provision of dedicated capacity over national leased lines
  - Transparency obligation with respect to the provision of dedicated capacity over analogue leased lines;

- Transparency obligation with respect to the provision of dedicated capacity over SDH-based leased lines and Ethernet circuits; and
- Non-discrimination for the provision of dedicated capacity over digital SDH-based leased lines and Ethernet circuits.

The price control, cost accounting, and accounting separation obligations currently in force in the market in question will be withdrawn.

- The wholesale markets for the provision of dedicated capacity over national trunk and terminating segments of leased lines
  - Access to/and use of specific network facilities;
  - Transparency;
  - Non-discrimination;
  - Price control & cost accounting; and
  - Accounting separation

ii. Proposed withdrawal of regulatory obligations

Pursuant to Regulation 5(3) of the Electronic Communications Networks and Services (General) Regulations of 2011 ('ECNSR'), the MCA is proposing to withdraw the specific regulatory obligations, as per the 2006 decision, currently in force on GO in the following markets:

- the retail market for the provision of dedicated capacity over international leased lines; and
- the wholesale market for the provision of dedicated capacity over international trunk segments of leased lines.

D. Consultation with stakeholders

Market stakeholders are asked to submit their views on the proposals in this consultation document. Submissions may be forwarded to the MCA within the period ending on the 28th September 2012.

1 Introduction

The MCA is hereby carrying out its second-round market analysis of the provision of dedicated capacity over leased lines in Malta.

The introductory part to the current market review is structured as follows:

Section 1.1 provides a brief insight into the regulation of electronic communications markets, outlining in the process the developments concerning the EU Commission Recommendation on relevant markets susceptible to *ex ante* regulation;

Section 1.2 outlines the methodology used by the MCA in the market review process, in the context of market definition, the assessment of the state of competition, and the regulatory approach.

Section 1.3 gives an overview of the main conclusions in the MCA's 2006 Decision concerning leased lines.

Section 1.4 provides a generic description of a leased line, outlining in the process the different types of leased lines that are commercially available in Malta. This section also makes reference to some general data related to leased lines.

1.1 Regulatory insight

The European Union ('the EU') regulatory framework for electronic communications networks and services is designed to create harmonized regulation across Europe and aims at reducing barriers to market entry, while fostering effective competition to the benefit of industry and consumers.

1.1.1 The regulatory framework for electronic communications

The basis for the regulatory framework of electronic communications is five directives, which were originally adopted in the European Union in 2002 and later amended in 2009[1]:

- Directive 2002/21/EC on a common regulatory framework for electronic communications networks and services ('the Framework Directive');
- Directive 2002/19/EC on access to, and interconnection of, electronic communications networks and associated facilities ('the Access Directive');
- Directive 2002/20/EC on the authorisation of electronic communications networks and services ('the Authorisation Directive');
- Directive 2002/22/EC on universal service and users' rights relating to electronic communications networks and services ('the Universal Service Directive'); and

[1] Directive 2009/140/EC of the European Parliament and of the Council of 25 November 2009 amending Directives 2002/21/EC on a common regulatory framework for electronic communications networks and services, 2002/19/EC on access to, and interconnection of, electronic communications networks and associated facilities, and 2002/20/EC on the authorisation of electronic communications networks and services and Directive of the European Parliament and of the Council of 25 November 2009 amending Directive 2002/22/EC on universal service and users' rights relating to electronic communications networks and services, Directive 2002/58/EC concerning the processing of personal data and the protection of privacy in the electronic communications sector and Regulation (EC) No 2006/2004 on cooperation between national authorities responsible for the enforcement of consumer protection laws.

- Directive 2002/58/EC concerning the processing of personal data and the protection of privacy in the electronic communications sector ('the ePrivacy Directive').

The Framework Directive provides the overall structure for the regulatory regime and sets out the fundamental rules and policy objectives and regulatory principles that NRAs must follow.

Article 8 of the Framework Directive sets out the key policy objectives of the NRAs, in particular, the promotion of competition, the development of the internal market and the promotion of the interests of citizens of the European Union.

The EU Directives were transposed into Maltese law on 12th July 2011. The relevant national legislation are the Malta Communications Authority Act (Cap 418), the Electronic Communications (Regulation) Act (Cap. 399) (hereinafter referred to as 'the ECRA'); and the Electronic Communications Networks and Services (General) Regulations of 2011 (hereinafter referred to as 'the ECNSR).

1.1.2 The EU Commission Recommendation on relevant markets

The EU Commission Recommendation on relevant product and service markets within the electronic communication sector susceptible to *ex ante* regulation (hereinafter referred to as 'the EU Recommendation') promotes harmonisation across the single market and guarantees legal certainty across the EU. The Explanatory Memorandum to the Recommendation[2] states that the Recommendation '*seeks to ensure that the same product and service markets will be subject to a market analysis in all Member States and that market players will be aware in advance of the markets to be analysed'*.

The Memorandum also explains that the Recommendation allows NRAs to regulate markets that differ from those identified in the Recommendation, as long as this is justified by national circumstances. Accordingly, NRAs are allowed to define relevant markets appropriate to national circumstances, provided that the utmost account is taken of the product markets listed in the Recommendation.

Of particular relevance to this market review is the list of markets in the revised Recommendation on relevant markets, which no longer includes the retail market for the 'minimum set of leased lines' and the wholesale market for the trunk segments of leased lines.

1.1.2.1 The 2003 Recommendation

In 2003, the Commission published its first Recommendation on relevant markets, identifying a set of 18 markets in which *ex ant*e regulation may be warranted, including a retail market for the minimum set of leased lines (Market 7), a wholesale market for terminating segments of leased lines (Market 13) and a wholesale market for trunk segments of leased lines (Market 14)[3].

[2] Link to "Explanatory Note": http://ec.europa.eu/information_society/policy/ecomm/doc/implementation_enforcement/eu_consultation_procedures/sec_2007_1483_2.pdf

[3] Link to the Recommendation of 11 February 2003 on relevant product and service markets within the electronic communications sector susceptible to ex ante regulation: http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2003:114:0045:0049:EN:PDF

Specific reference to the term 'minimum set of leased lines' can be found in the Universal Service Directive, which highlights on the need of *'specified leased line circuits with harmonised characteristics that must be made available under particular conditions throughout the national territory'*[4].

The minimum set of leased lines is identified in the 2003 Recommendation as a specific set of retail markets for which it is not felt necessary to identify specific markets for each category of leased line in the minimum set.

When referring to the wholesale level, the Explanatory Memorandum to the 2003 Recommendation states that the terminating segments of a leased circuit (sometimes called local tails or local segments) depend on the '*network topology specific to particular member States*' and the trunk segments.

Further to this, the said Memorandum states that '*trunk segments may not support alternative operators*' and that '*additional market segmentation is possible between high and low capacity leased lines*'.

1.1.2.2 The 2007 Recommendation

The Commission issued a new Recommendation on relevant markets in 2007, this time identifying seven markets in which *ex ante* regulation may be warranted.

Former Markets 7 and 14 are no longer identified as being susceptible to *ex ante* regulation.

The Explanatory Memorandum justifies the removal of former Market 7 on the basis that '*with wholesale regulation in place there should be few barriers to market entry into the retail market*'.

When referring to the wholesale level, the Explanatory Memorandum considers that with respect to trunk segments of leased lines *'one may see a tendency towards effective competition where alternative operators have made sufficient investment in alternative infrastructures and are in competition with the incumbent on the merchant market'*. It adds that the tendency towards competitive outcomes in trunk segment leased line markets across the EU *'is likely to continue'* and *'therefore the market for wholesale trunk segments of leased lines is withdrawn from the recommended list'*.

The Explanatory Memorandum however states that national circumstances may justify that trunk segments of leased lines *'continue to fulfil the three criteria and are susceptible to ex ante regulation'*.

The new Recommendation however identifies the wholesale market for terminating segments of leased lines (Market 6) as a market in which *ex ante* regulation may be warranted[5].

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[4] The EU Commission Recommendation on the provision of leased lines in the European Union, published in January 2005, describes the concept of a leased line part circuit as '*the dedicated link between the customer premises and the point of interconnection of the other authorised operator at (or close to) the network node of the notified operator*'. For the purposes of the 2003 Recommendation, the EU Commission underlines that a leased line part circuit '*should be regarded as a particular type of a wholesale leased line which can be used by the other authorised operator to provide services to retail users, other operators or for its own use such as, but not limited to, leased lines, connections to the switched telephone network, data services or broadband access*'.

[5] Link to the 2007 Recommendation: http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2007:344:0065:0069:EN:PDF

The EU Commission Recommendation originally came into force in July 2003 (Rec. 2003/311/EC). After having been in force for more than four years, the Recommendation came up for review and was eventually published in its current form in December 2007. The European Commission adopted the Recommendation in accordance

In relation to terminating segments of leased lines, the 2007 Recommendation maintains that '*there is little dynamic towards effective competition and competition law cannot alone address the failures on the trunk segments market'*.

1.2 The market review process

The MCA conducts its market reviews consistent with the prevailing legal and economic standards established under EU Community competition law and principles.

There are three main stages which the MCA follows as part of its market review process, as follows:

- the definition of the relevant market or markets;
- an assessment of the state of competition in each market, in particular whether any undertakings are deemed to have SMP in the market in question; and to
- an assessment of the appropriate regulatory obligations which should be maintained, amended, or withdrawn, given the findings of SMP, to ensure that regulation remains appropriate in the light of changing market conditions (NRAs are obliged to impose some form of regulation where SMP is identified).

More detailed requirements and guidance on the conduct of the market review process are provided in the Directives, the ECRA, and the ECNSR and in additional documents issued by the Commission and the MCA.

Three documents that are of particular relevance to the current market review are:

- the Commission Recommendation on relevant markets, which identifies a set of markets in which *ex ante* regulation may be warranted; and
- the Commission guidelines and principles on market analysis and the assessment of SMP, set out in the 'Guidelines for market analysis and the assessment of significant market power' ('SMP Guidelines')[6] referred to in Article 15(2) of the Framework Directive; and
- the MCA 'Market Review Methodology'[7], which outlines the guidelines on the methodology to be used for assessing effective competition in the Maltese electronic communications sector.

1.2.1 Identifying relevant markets

The market definition exercise aims to identify, in a methodical way, the competitive constraints faced by undertakings, thereby also facilitating the subsequent market analysis procedure.

The assessment is forward looking in nature, taking into account '*expected or foreseeable technological or economic developments over a reasonable horizon'*[8].

with Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communications and services. The Recommendation is accompanied by an "Explanatory Note" providing the 'background to the review and revision of the Recommendation' and the basis for identifying and analysing the markets relevant for the purposes of *ex ante* regulation.

[6] The Guidelines are referred to in Article 15(2) of the Framework Directive.

[7] Link to MCA market review methodology:
http://www.mca.org.mt/sites/default/files/articles/marketreviewmethod.04.pdf

[8] See Section 2.1 of the Explanatory Memorandum to the Recommendation.

As stipulated by the Recommendation, the current market review starts by identifying markets at the retail level, followed by a similar assessment at the wholesale level.

There are two dimensions to the market definition exercise: the product market dimension and the geographic market dimension.

Central to the various dimensions of the market definition exercise are the demand-side and supply-side substitutability analysis among the different products and services which could potentially form part of the market under investigation.

As per the Commission's guidelines on market analysis and the assessment of SMP, demand-side substitutability is used to measure the extent to which consumers are prepared to substitute other services or products for the service or product under investigation.

Supply-side substitutability, on the other hand, indicates whether suppliers, other than those offering the product or service in question, would switch in the immediate to short term their line of production to offer the relevant products or services without incurring considerable additional costs.

The Hypothetical Monopolist Test ('the HMT Test'), otherwise commonly referred to as 'the SSNIP test' (meaning 'small but significant non-transitory increase in price') is a key element in the substitutability assessment.

The HMT test considers the interchangeability of products in the case of a hypothetical small increase in price, usually understood as being an increase in the range of 5 to 10 percent, in any of the products/services under investigation.

Overall, the HMT test would determine whether a hypothetical monopolist would be in a position to sustain a 5 to 10 percent increase in price because of significant demand-side and supply-side substitution effects.

To this effect, the relevant product market shall comprise all those products and services that are substitutable, not only in terms of the price and the intended use of the product under investigation, but also in terms of the overall conditions of supply and demand.

With respect to the geographic product market definition, the Recommendation states that '*a relevant geographic market comprises an area in which the undertakings concerned are involved in the supply and demand of the relevant products or services, in which area the conditions of competition are similar or sufficiently homogenous and which can be distinguished from neighbouring areas in which the prevailing conditions of competition are appreciably different*'.

The MCA defines the relevant geographic markets on the basis of an interchangeability assessment between products and services following a SSNIP. It applies two main criteria in its assessment of the geographic dimension of the market definition exercise:

- the area covered by the network; and
- the scope of application of legal and other regulatory instruments.

Finally, it is pointed out that the market definition exercise takes appropriate account of the 'technology neutrality' principle. In this regard, the current review takes utmost account of all network platforms in Malta, irrespective of the underlying technology.

1.2.2 Assessing the state of competition

According to Regulation 6(2) of the ECNSR '*an undertaking shall be deemed to have significant market power if, either individually or jointly with others, it enjoys a position equivalent to dominance, that is to say a position of economic strength affording it the power to behave to an appreciable extent independently of competitors, customers and ultimately consumers*'.

Regulation 6(4) also states that '*where an undertaking has significant market power on a specific market, it may also be deemed to have significant market power on 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 undertaking'*.

Therefore, in view of the above, the current review seeks to determine whether one or more undertakings in the relevant markets may be designated as having SMP, where that undertaking(s) enjoys a position of dominance. Similarly, an undertaking may be designated as having SMP where it is in a position to leverage market power across closely related markets.

In this assessment, the MCA will investigate whether GO still enjoys SMP in the retail and wholesale leased line markets, as determined in the first-round market analysis carried out in 2006.

In view of those leased lines markets that are currently regulated but have been removed from the Recommendation on relevant markets, the MCA carries out a 'three criteria test'.

The markets concerned are listed hereunder:

- the retail national market for the minimum set of leased lines;
- the retail international market for the minimum set of leased lines;
- the wholesale market for national trunk segments of leased lines; and
- the wholesale market for international trunk segments of leased lines.

The Recommendation specifies that the three criteria must be met cumulatively before a market can be identified as being susceptible to *ex ante* regulation.

Regulatory intervention in a particular market would only be warranted if:

- the market in question is subject to the presence of high and non-transitory barriers to entry, being either of a structural, legal, or regulatory nature;
- the said market has those characteristics, such as barriers to entry, which do not allow for effective competition without regulatory intervention within the timeframe of this review; and
- competition law by itself is inadequate to address any potential market failure in the absence of ex-ante regulation in the market in question.

In case one of the three criteria is not met, the market under investigation would not be considered as being susceptible to *ex ante* regulation and existing regulatory obligations would have to be withdrawn.

In view of those leased lines markets that are currently regulated and are included in the Recommendation on relevant markets, the MCA carries out an SMP assessment.

This is the case for the wholesale market for terminating segments of leased lines.

The MCA assesses SMP in this market on the basis of the following criteria:

- market shares;
- control of infrastructure not easily duplicated;
- vertical and horizontal integration;
- economies of scale and scope;
- countervailing buyer power ('CBP'); and
- potential competition[9].

1.2.3 Proposed regulatory approach

In accordance with Regulation (6) of the ECNSR, if an operator is designated as having SMP on a relevant market, either individually or jointly with others, the MCA is obliged to impose on such operator appropriate regulatory obligations, referred to in sub regulation (2) of regulation 5 of the ECNSR, or to maintain or amend such obligations where these already exist.

The MCA is duty bound to intervene and propose remedial measures if a finding of dominance is ascertained or the conditions set out by the 'three criteria test' are fulfilled. If this scenario pertains to markets where regulation already exists, the MCA would propose to maintain or amend such regulations.

If, on the other hand, SMP cannot be ascertained and the conditions set out by the 'three criteria test' are not fulfilled, the MCA would not impose *ex ante* regulation. If this scenario pertains to markets that are already regulated, the MCA would propose to withdraw such regulation, in accordance with Regulation (5) of the ECNSR, subject to an appropriate period of notice given to all parties affected by such withdrawal.

1.2.4 Consulting with stakeholders

The MCA is hereby publishing this market review to provide market players the opportunity to comment on the findings prior to adopting its final proposals.

As specified by Article 9 of the ECRA, the MCA shall carry out this market review in accordance, where appropriate, with an agreement with the National Competition Authority ('the NCA')[10] under Article 4 of the MCA Act.

In line with the cooperation agreement signed on 20th May 2005 between the MCA and the Office of Fair Competition, succeeded by the Office for Competition forming part of the Malta Competition and Consumer Affairs Authority ('the MCCAA'), the MCA has initiated a two-week consultation process with the MCCAA. The MCA will be publishing any comments forwarded by the MCCAA at a later stage in the response to this consultation document.

As required by Regulation 7 of the ECNSR, the MCA shall also notify the results of this market review and the proposed draft measures to the Commission and to other NRAs in Europe following the closure of the national consultation exercise.

[9] The analysis concerned shall also be supported by market data, which is collected from various internal and external sources, including users and providers of electronic communications networks and services and from regular consumer surveys.

[10] In line with the cooperation agreement signed on the 20th May 2005 between the MCA and the OC (formerly known as the Office of Fair Competition, or the "OFC"), the MCA has carried out a two week consultation process with this entity. The official position of the OC has been presented in writing and is being made available to the general public.

1.3 Background to previous decision

The first round market review decision on 'Retail Leased Lines, Wholesale Terminating Segments and Wholesale Trunk Segments of Leased Lines' was published on the 16th August 2006.

Retail markets

The MCA defined two retail leased lines markets:

- the market for national retail leased lines; and
- the market for international retail leased lines.

The relevant product markets included 'traditional' leased lines (i.e. analogue leased lines and digital SDH leased lines) with bandwidth up to and including 2Mbit/s, in accordance with the 'minimum set of leased lines'[11] referred to in Article 18 of the Universal Service Directive and as identified in the list of standards in the Commission Decision 2003/548/EC[12].

The relevant product market did not however include digital SDH leased lines with a bandwidth above 2Mbit/s, on the presumption that intervention at the wholesale level was sufficient to address any competition problems that may arise in the provision of such lines.

The demand-side and supply-side substitutability assessment has shown that ATM connections and Ethernet circuits offered a functionally equivalent service to that offered over 'traditional' leased lines. However, ATM connections and Ethernet were excluded from the relevant product market given that they involved data transmission speeds at and above 10Mbit/s, compared to a data transmission speed of up to 2Mbit/s for the minimum set of leased lines.

xDSL offerings, VPN connections and cable data services were also excluded from the relevant product market.

The MCA considered each market to be national in scope.

Wholesale markets

At the wholesale level, the MCA defined three separate markets:

- a market for national trunk segments of leased lines;
- a market for international trunk segments of leased lines; and
- a market for terminating segments of leased lines.

The MCA located the 'boundary' between trunk segments and terminating segments of leased lines at the core node closest to the end-user.

The relevant geographic markets were found to be national in scope.

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[11] This minimum set included two types of analogue leased line and three types of digital leased lines with speeds ranging up to 2048 kbit/s.

[12] Link to Commission Decision 2003/548/EC published in July 2003 on the minimum set of leased lines with harmonized characteristics and associated standards referred to in Article 18 of the Universal Service Directive: http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2003:186:0043:0045:EN:PDF

The substitutability assessment had shown that ATM connections and Ethernet circuits offered a functionally equivalent alternative to 'traditional' leased lines and were therefore included in the relevant wholesale product markets.

Assessment of competition

In its assessment of the state of competition in identified markets, the MCA considered a number of criteria such as market shares, economies of scale and scope, sunk costs, the replicability of infrastructure and the negotiating position enjoyed by customers.

On the basis of its findings, the MCA concluded that all the identified leased lines markets were not effectively competitive.

To this effect, the MCA established that GO held SMP in the said markets.

This conclusion had been supported by the following evidence:

- no potential competition from alternative operators;
- GO held a 100% market share in all markets; and
- no customer could exert sufficient CBP on GO.

Regulatory approach

At the retail level, the MCA imposed on GO obligations of non discrimination, transparency, cost orientation, cost accounting, and accounting separation.

At the wholesale level, the MCA mandated GO to:

- provide sufficient access to, and use of, specific network facilities to undertakings making reasonable requests for access and leased line services;
- provide all access obligations on terms and conditions that transparent and non-discriminatory;
- apply a cost-oriented pricing methodology to ensure fair and efficient access to its network and services, by implementing a cost-based accounting system; and
- implement accounting separation so as to ensure that prices charged are non-discriminatory and transparent.

1.4 Leased lines in Malta

A leased line is a permanent (always on) connection allowing for the symmetric transmission of voice and data between two fixed points or locations.

Two main types of leased line offers are currently available:

- leased line offers to end-users, which are mainly businesses seeking to connect office sites or seeking a fast, reliable and efficient connection to the Internet; and
- leased line offers to service providers, which may either use the leased line for internal purposes or to provide leased line services to end-users. [13]

[13] See European Commission, 'Explanatory Note', page 38.

1.4.1 Access network infrastructure supporting leased lines

The physical network infrastructure supporting leased lines comprises two distinct elements:

- the access part, which connects end-users to the network; and
- the core part, which incorporates the transport layer over which dedicated capacity solutions are transmitted.

The architectural options for the access part of the network are either copper or fibre from the network termination point ('NTP') at the end-user's premises back to aggregation nodes / local exchanges within the network tree structure. These architectural options are described below:

i. Copper and/or Fibre in the access network

The active transmission equipment supporting leased lines is deployed at the local exchanges (or equivalent) scattered across the Maltese islands. The transmission equipment could either be based on analogue technology, digital SDH technology, and/or Ethernet technology.

Access network infrastructure based on copper is mainly used as an end-user access line.

There are considerable restrictions on capacity offered over copper when compared to optical fibre, which is capable of delivering much higher bandwidths. Therefore in most instances fibre is used to connect the leased line client to the exchange.

GO is the only operator that uses copper in the access network to connect the leased line client directly to the nearest exchange, mainly for low speed leased lines (usually less than 64kbps connections). GO generally uses fibre for leased line connections supporting higher bandwidth.

Melita's nationwide access network infrastructure is based on coax cables, deployed back to a hierarchy of fibre and metro aggregation nodes up to the headend.

In respect of the supply of dedicated capacity over leased lines by Melita, the connection between the end-user and the operator's network is always provided via a fibre connection.

The active transmission equipment used by Melita to supply dedicated and backhaul capacity is deployed at the headend referred to above.

Vodafone's physical infrastructure is limited to a number of trunk segments, serving a small number of business clients. Vodafone uses fibre when connecting the client to one of its aggregation points.

ii. Line-of-sight microwave

Microwave is currently used to provide network connectivity between the different types of mobile network nodes, mainly the base stations of mobile network operators ('MNOs'). Traffic from base stations is then backhauled back to the core network using fibre.

Vodafone currently makes use of microwave to provide dedicated connectivity to third parties. However, the availability of such a service is subject to a clear line of sight to one of Vodafone's base stations and to available space.

It is also of note that, in the event of adverse atmospheric conditions, microwave connectivity has a risk of failure, thereby limiting the level of service quality and security as opposed to fibre deployments. These types of occurrences are however very limited in Malta due to its mild climate.

The active transmission equipment used by Vodafone to supply dedicated connectivity to third parties is located at the network operations centre.

1.4.2 Classifying leased lines by network level

Leased lines are traditionally divided into three separate segments corresponding to different network levels.

- Terminating segments

  These are the physical connections, over copper or fibre, between a local exchange (or an operator's trunk network) and a user site, including a modem or other CPE at the user site, used for the provision of dedicated capacity.

  The Explanatory Memorandum to the Recommendation underlines that '*what constitutes a terminating segment will depend on the network set topology specific to particular Member States and will be decided upon by the relevant NRA'*.

- Trunk segments

  These are the physical connections connecting two terminating segments; and

- International segments

  These are the physical connections between a core node located in Malta and onto the international (submarine) links.

  It is of note that GO , Melita, and Vodafone have each deployed a submarine link (two in the case of GO) to mainland Europe[14].

  All submarine links terminate in Sicily, as shown in Diagram 1 below.

[14] GO inaugurated the first optic fibre submarine cable between Malta and Sicily in 1995.

In 2004, Vodafone also went ahead with its preparations to launch its own international gateway.

Melita commissioned an undersea cable in 2008 covering a distance of around 100kms, linking St. Paul's Bay to Pozzallo in Sicily. Cable laying works were completed in 2009.

During the same period of Melita's deployment, GO also deployed its second undersea cable, which was laid down between St. Paul's Bay to Mazara Del Vallo in Sicily. Cable laying works were completed in 2009, covering a distance of 290kms.

Diagram 1: International links to Sicily

This means that a site in Malta can be connected to a site in a foreign country through the combination of one terminating segment between the site and the nearest local exchange, a trunk segment from there to the international core node and an international segment[15].

1.4.3 Classifying leased lines by bandwidth

Leased lines are offered at different bandwidths. The availability of different bandwidths is important as it would allow end-users to choose one type of leased line over another depending on their connectivity requirements to transmit data.

In this regard, the choice of bandwidth would therefore shed light on the degree of sophistication in the type of service sought by the end-user and the price charged by the service provider to deliver the service.

For ease of reference, two bandwidth categories are referred to in this review:

- Bandwidth up to 2Mbit/s

  These types of leased lines are typically sold in multiples of 64kbit/s (in 2006 referred to as the 'minimum set of leased lines').

  Analogue leased lines and digital SDH leased lines with bandwidth not exceeding 2Mbit/s fall within this category.

- Bandwidth exceeding 2Mbit/s:

  This bandwidth category includes digital SDH leased lines supporting data rates above 2Mbit/s such as 34Mbit/s, 45Mbit/s, 155Mbit/s (STM-1), 622Mbit/s (STM-4) 1Gbit/s and 2.5Gbit/s interfaces.

  Ethernet connections are also included in this category as these are typically offered at a range of committed data rates of 10Mbit/s or more.

[15] To complete the connection with the user site in the foreign country a number of trunk and terminating segments would also be bought from foreign operators. However, these transactions do not fall within the scope of this market review.

1.4.4 Classifying leased lines by technology

Leased lines are supported by different technologies in the access network.

These are briefly outlined below:

i. Analogue and semi-digital leased lines

Analogue and semi-digital leased lines are based on legacy technologies and are in the process of being phased out. These types of leased lines are mostly used for voice and alarm services but can also at times be used for data.

Only GO supplies analogue and semi-digital leased lines, but only to existing customers, as these types of leased lines are not commercially available to new clients.

ii. Digital SDH leased lines

Digital SDH leased lines are still commercially available, with GO providing them to both end-users and alternative operators for national and international dedicated connectivity.

Vodafone and Melita only offer digital SDH leased lines for the provision of international dedicated capacity.

iii. Ethernet circuits

As is the case with 'traditional' leased lines, Ethernet circuits provide dedicated connectivity for Internet access. However, these circuits also support new business models based on applications that may not be fully supported by legacy technologies.

Ethernet circuits are currently offered by GO, Melita, and Vodafone.

1.4.5 Classifying leased lines on the basis of other characteristics

The Explanatory Memorandum to the Recommendation also includes service guarantees, distance and location or locations to be served as key elements characterising leased lines.

- Distance

Malta is a highly built and densely populated archipelago of islands just covering an area of 320 square kilometres.

With its small geographic size, all national trunk segments in Malta are on the core network rings and the distances on mainland are unlikely to differ significantly.

This means that distance is not a key consideration when assessing the demand for and supply of dedicated capacity over leased lines in Malta.

- Location or locations to be served

Malta is an island located in the centre of the Mediterranean Sea, with Sicily at 93.3 kilometres to the north and Tunisia at 312.5 kilometres to the west. This means that the provision of dedicated connectivity to a site on a foreign territory would have to rely, to a major extent, on submarine fibre cable links.

Rolling out a submarine cable is a complicated process, associated with significant financial outlays and long implementation timeframes.

This may suggest that demand and supply conditions for IPLCs differ significantly to those concerning national circuits. This matter will be discussed in detail in the market definition exercise.

It is therefore considered that, in view of Malta's geographic circumstances, the location or locations to be served are a therefore key consideration when classifying leased lines.

- Service guarantees

Another important qualitative characteristic of leased lines is service guarantees. Service providers and customers in general enter into SLAs when negotiating contracts for the provision of leased line services which usually carry superior terms and conditions than standard data connections.

1.4.6 Market trends

This section makes reference to market data related to the take-up of 'traditional' leased lines and Ethernet circuits.

Market data has been submitted directly by local suppliers, namely GO, Melita and Vodafone. Market data refers to the years 2010 and 2011, with figures presented in quarterly intervals.

An important consideration in the assessment of market data relates to the distinction between national and international leased lines, in line to the conclusions of the market review carried out in 2006.

Data on prices and market shares is presented at a later stage in this document, particularly when carrying out the assessment of the state of competition in identified leased lines markets.

1.4.6.1 Developments at the retail level

- National leased lines

In absolute terms, the number of national leased lines as at the end of Q4 2011 totalled 966, down from 982 as at the end of Q1 2010.

As can be seen from Chart 1 below, the number of analogue leased lines is still relatively high compared to the total number of leased lines.

Nevertheless, analogue leased lines have seen a sustained reduction in their number over the last two years, down from 360, or around 37% of the total, as at the end of Q1 2010 to 248, or 25% of the total, as at the end of last year.

The number of digital SDH leased lines have also declined slightly, down by 6.2% over a 12-month period ending December 2011. Digital SDH leased lines accounted for 28% of the total number of lines as at the end of last year.

On the other hand, the number of Ethernet circuits registered growth both in relative and absolute terms. As at the end of 2010, Ethernet accounted for around 33% of the total number of leased lines. This share went up to around 46% by the end of 2011.

In absolute terms, the number of Ethernet circuits went up from 373 to 444 during the same period. This increase in Ethernet circuits amounts to 58% of the disconnections reported for analogue and digital SDH leased lines.

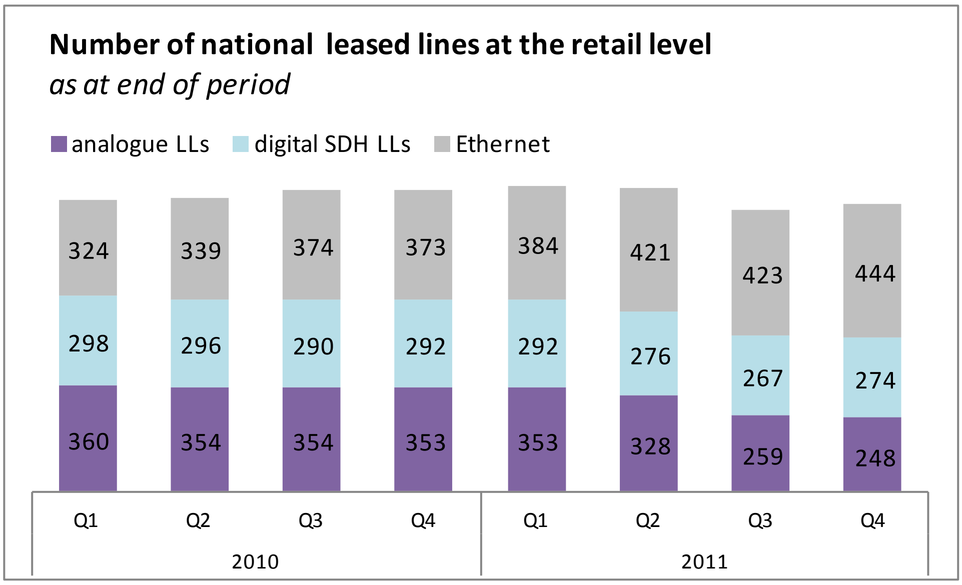

Chart 1: Number of leased lines, at the retail level

- International leased lines

The number of international leased lines as at the end of 2011 totalled 90, up from 70 as at the end of 2010.

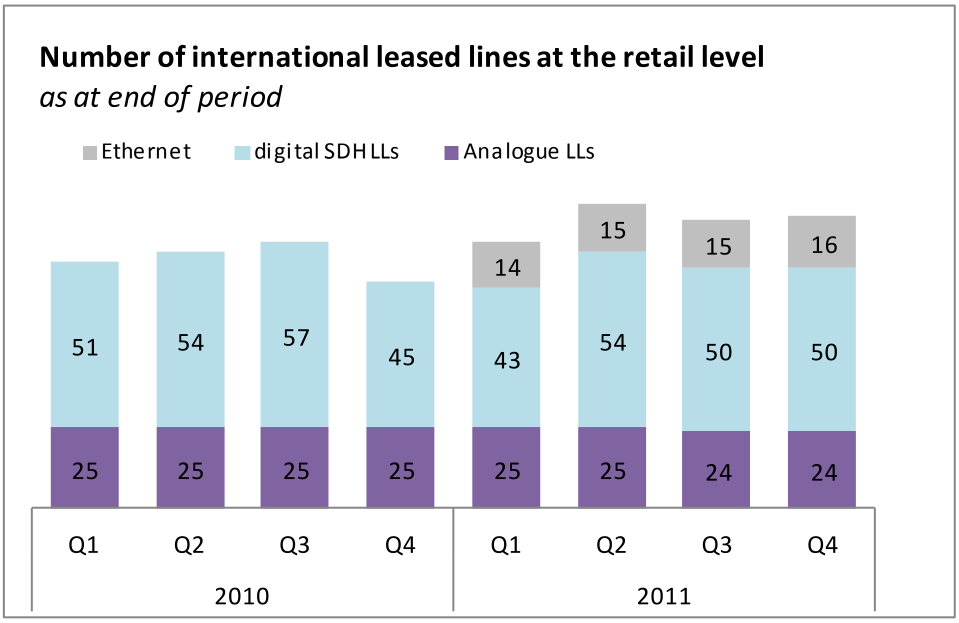

Chart 2: International leased lines at the retail level

The number of international leased lines on the analogue platform totalled 24 as at the end of last year, thereby accounting for around 27% of the total number of lines. Their number was stable throughout the period under review.

Digital SDH leased lines accounted for around 56% of the total number of lines as at the end of last year, and Ethernet circuits accounted for the remaining share at around 18%.

1.4.6.2 Developments at the wholesale level

The data presented in this section refers to the take-up of leased lines by service providers to supplement their own network requirements and/or for resale to third parties.

Following the market analysis conducted in 2006, the MCA identified distinct markets for terminating segments and trunk segments of leased lines. However, given that wholesale leased lines are typically sold and purchased 'end-to-end', figures presented below refer to the number of 'end-to-end' leased lines (i.e. the number of leased line circuits) purchased at wholesale level.

The figures analysed in this section also take into account the distinction between national and international leased line circuits.

Market data refers to the years 2010 and 2011, with figures presented in quarterly intervals.

- National leased line circuits

  As at the end of 2011, the number of national leased line circuits purchased at the wholesale level totalled 108, down from 122 as at the end of 2010.

  More than 99% of these circuits were offered over SDH technology.

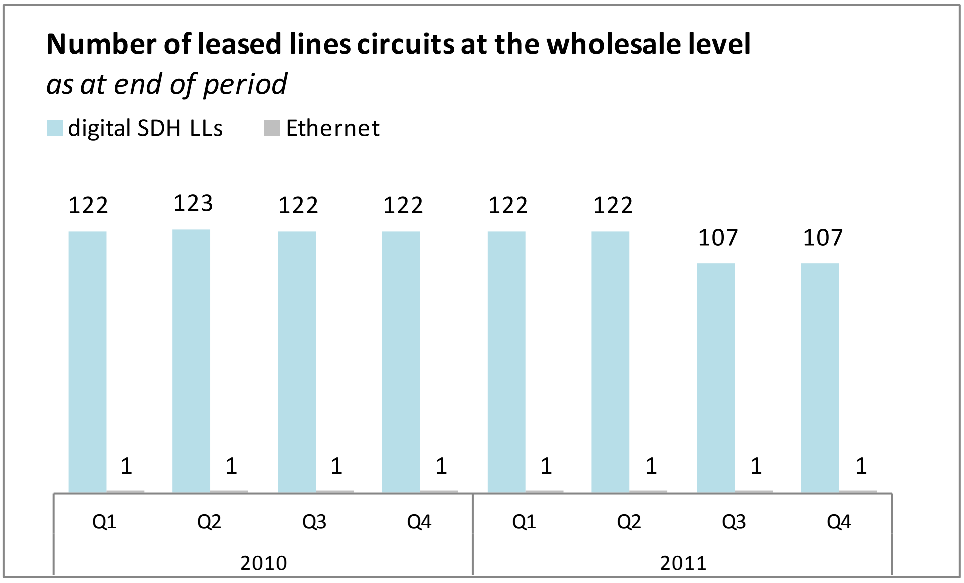

Chart 3: Number of national leased lines circuits

- International leased line circuits

As at the end of 2011, the number of international leased line circuits purchased at the wholesale level totalled 11.

All circuits were offered over SDH-based technology throughout the period under review.

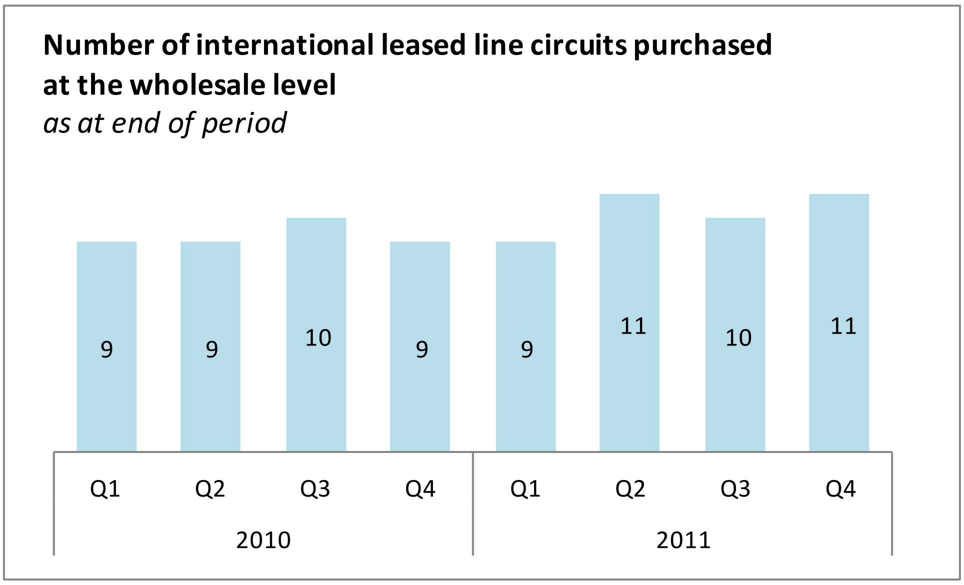

Chart 4: Number of international leased lines circuits

2 Market definition

This section presents the proposals of the MCA concerning the market definition of relevant leased lines markets.

It is structured as follows:

Section 2.1 provides a brief introduction to the principles and methodology upheld in the market definition exercise.

Section 2.2 proceeds with the definition of retail leased lines markets, in terms of the relevant product market and the geographical scope of the market in question.

Section 2.3 deals with the definition of wholesale leased lines markets, again in terms of the relevant product market and the geographical scope of the market in question.

2.1 Background

The MCA takes full account of all applicable guidelines and recommendations issued by the European Commission in defining relevant leased lines markets in Malta.

Consistent with the Commission's guidance, the MCA first defines the relevant retail markets, and then goes on to define the relevant wholesale markets.

The MCA assessment is forward looking in nature and seeks to determine the boundaries of the identified markets by assessing constraints on the price setting behaviour of firms.

Three main types of constraints are considered: demand-side substitution, supply-side substitution and the homogeneity of competitive conditions for the services under investigation.

The substitutability assessment rests on the logic of the HMT test and follows the principle of technology neutrality.

Where the proposed market definition deviates from the Recommendation, the difference is identified and justified in light of the national circumstances.

2.2 Definition of the retail market(s)

The retail market definition exercise is to identify the set of products that have those characteristics as to offer a service that is functionally equivalent to that offered over a 'traditional' leased line.

A leased line provides dedicated connectivity over which to carry voice and/or data traffic services to the-end user or service provider. The typical characteristics of a leased line include:

- scaleable bandwidth;
- uncontended connectivity;
- guaranteed availability (resiliency and security); and
- symmetric bandwidth.

The traditional product range of leased lines is based on legacy technology and encompasses analogue leased lines and digital SDH leased lines and hence the term 'traditional' leased lines used in this market review.

In 2006, the MCA determined that analogue leased lines and digital SDH leased lines were demand-side substitutes for each other and were therefore included in the same retail product market definition. The current review seeks to determine whether or not this conclusion is still valid.

The MCA also identified ATM connections and Ethernet circuits as offering equivalent functionality as a 'traditional' leased line, but did not find sufficient evidence as to justify the broadening of the retail market definition as to include these products. The current review will reassess its position concerning ATM connectionss and Ethernet.

The MCA also considers other products or services that were not included in the retail market definition of the 2006 review, such as xDSL, VPN connections and cable modem services, in order to determine whether the conditions of demand and supply have changed to such an extent as to justify their inclusion in the relevant product market(s).

The retail market definition exercise will also determine whether or not to uphold the conclusions of the 2006 market review in relation to the distinction between national and international leased line markets and the break in bandwidth for these markets identified at 2Mbit/s.

2.2.1 Analogue and digital SDH leased lines

The MCA considers whether or not analogue leased lines and digital SDH leased lines continue to form part of the same relevant market.

The following factors are particularly relevant in the discussion of this issue:

- the type of technology and equipment supporting the product on offer;
- the technical specificities/characteristics of the product(s) concerned;
- market trends related to the evolution in leased lines volumes;
- observed migration patterns; and
- the prices charged for the products under consideration.

Demand-side substitutability

The demand-side substitutability assessment between analogue leased lines and digital SDH leased lines is based on a qualitative assessment of the two types of leased lines, an overview of market trends, and a comparison of relative prices of the two products.

In order to determine whether or not analogue leased lines are in the same market as digital SDH leased lines, the assessment compares analogue leased lines with digital SDH leased lines having the lowest bandwidth i.e. 64kbit/s lines.

Qualitative assessment

Analogue leased lines[16] are provided using analogue equipment deployed at the customer's premises. Capacity on the analogue network is typically used for the provision of voice and voice-band data connections. For data transmission using a modem, analogue leased lines can usually carry, at most, approximately 40-50 kbit/s.

Meanwhile, digital SDH leased lines are provided using a high-speed modem designed to provide dedicated connectivity and data transfer. The basic building block of capacity in

[16] The MCA notes that analogue leased lines are no longer being offered to new customers by GO.

the digital network is 64 kbit/s, which is typically used for data but could also carry voice if the necessary equipment is installed at the end-user's premises.

Despite the differences in equipment, analogue and low bandwidth digital SDH leased lines are normally provided using similar or the same technology in the core network[17].

It is also possible to adapt an analogue leased line to transmit digital data with the use of modems at either end of the transfer path. A digital leased line can also be converted to transmit analogue signals with the use of analogue to digital converters at either end of the transfer path.

Migration trends

The extent of demand-side substitution between two products could be informed by an assessment of migration trends for the relevant products.

For the purposes of the current review, such an assessment shall first take into consideration the migration patterns observed for analogue leased lines and for 64kbit/s digital SDH leased lines.

Chart 5 shows that, between Q1 2010 and Q4 2011, the number of analogue leased lines went down by 29%, whilst the number of 64kbit/s digital SDH leased lines went down by 38%. These declines imply that there has been no migration from analogue to 64kbit/s leased lines in the period under review.

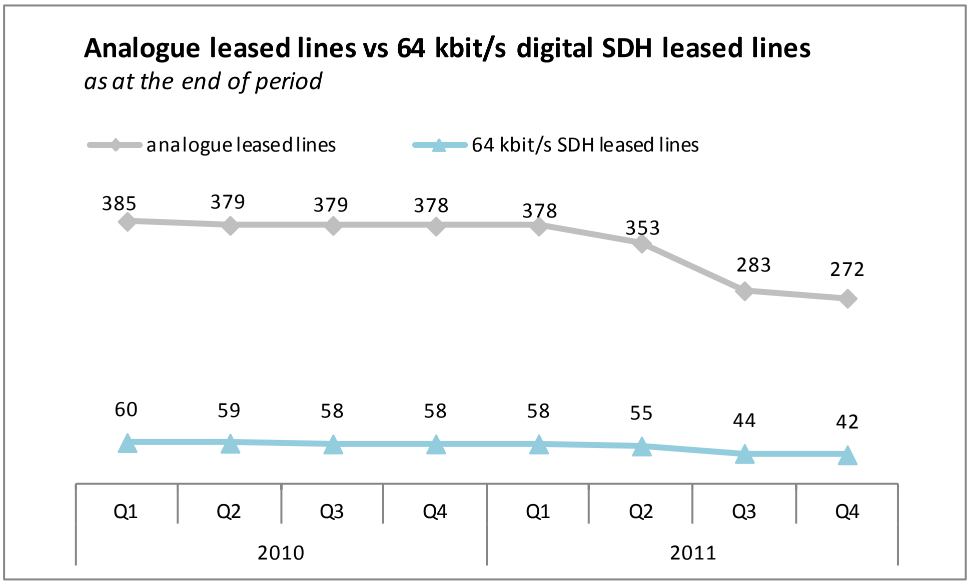

Chart 5: Analogue leased lines and 64kbit/s digital SDH leased lines

Although this may initially suggest that end-users might be migrating from analogue leased lines to digital SDH leased lines with bandwidths higher than 64kbit/s, Chart 6 proves otherwise.

[17] The access network is where related services usually differ, as different equipment has to be installed at the serving exchange/node and the customer premises.

In fact Chart 6 illustrates that the number of digital SDH leased lines with bandwidth higher than 64kbit/s also declined during the same period.

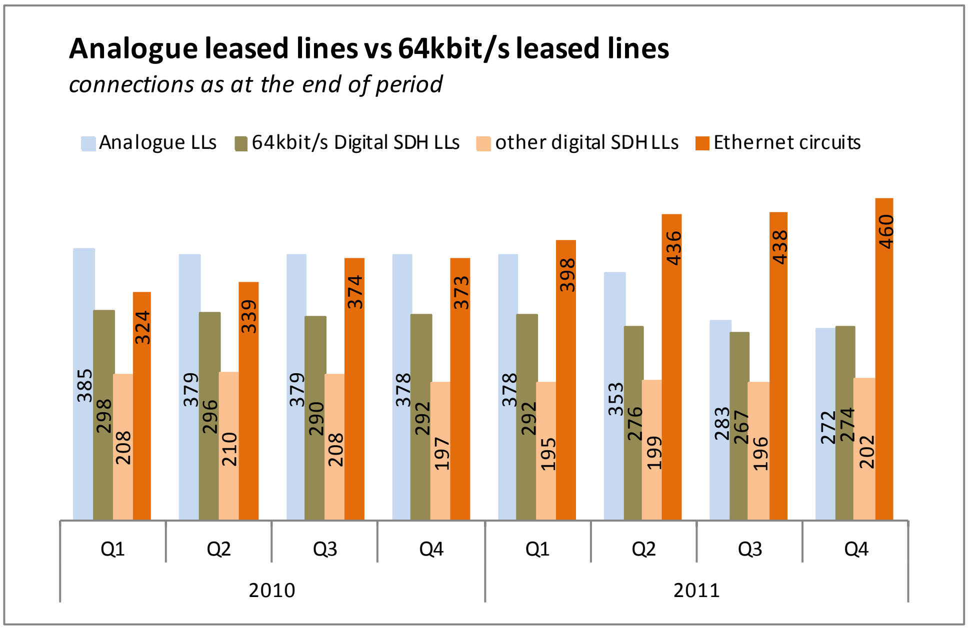

Chart 6: Analogue leased lines vs 64kbit/s leased lines

These trends suggest that switching from analogue to digital SDH, although possible in theory, is in fact not happening.

Instead, Chart 6 shows that end-users are migrating from analogue and digital SDH leased lines to Ethernet circuits. In fact, the number of Ethernet circuits increased by 41% between Q1 2010 and Q4 2011.

This goes to show that, when seeking higher bandwidths, end-users would rather switch to Ethernet circuits with a bandwidth of 10Mbit/s, rather than a digital SDH leased line with a bandwidth ranging from 1600kbit/s to 2Mbit/s.

This is because the price of a 10Mbit/s Ethernet circuit is much cheaper.

In fact, it is considered that the price of a digital SDH leased line (with a bandwidth ranging from 1600kbit/s to 2Mbit/s) would not constrain the price of a 10Mbit/s Ethernet circuit, because even in the event of a SSNIP of 5%-10% to the Ethernet option, the latter would remain considerably cheaper.

The above provides a first indication that analogue leased lines could be included in a market encompassing Ethernet circuits through a chain of substitution for the different prices of digital SDH leased lines and Ethernet circuits.

Price comparisons

The MCA notes that the prices of analogue leased lines and digital SDH leased lines with bandwidth up to 2Mbit/s are currently regulated on a cost oriented basis.

Tables 1 and 2 show that the regulated prices of analogue leased lines and 64kbit/s digital SDH leased lines are significantly different.

Nevertheless, it is quite obvious from figures presented in Charts 5 and 6 that consumers are reasonably indifferent between the two types of leased lines, given their similar functionalities. Whilst it is likely that existing end-users on analogue would value the additional quality of service associated with a 64kbit/s digital SDH leased line, they have simply opted to continue using the cheaper analogue option.

Those end-users that no longer considered an analogue leased line as offering an adequate solution for their business requirements eventually migrated to Ethernet, as evidenced above.

Retail local leased line prices		
Type	Connection fee	Annual rental fee
Analogue - 2 wire	€ -	€ 433
Analogue - 4 wire	€ -	€ 713
Semi-Digital - 2 wire	€ 140	€ 915
Semi-Digital - 4 wire	€ 140	€ 1,148
64kbit/s	€ 280	€ 1,414

Table 1: Annual rental fees for local leased lines, exclusive of VAT[18]

Retail international leased line prices				
Type	Connection fee	National terminating	International trunk	Annual rental fee
Analogue - 9.6kb/S	€ 559	€ 116	€ 682	€ 1,078
Digital - 64kbit/s	€ 559	€ 356	€ 700	€ 2,074

Table 2: Annual rental fees for international leased lines, exclusive of VAT[19]

Tables 1 and 2 show that in the event of a SSNIP implemented by a hypothetical monopolist for analogue, the price of an analogue leased line would still be less expensive than that of a 64 kbit/s digital leased line. Nevertheless, with the knowledge that analogue is a technology that is being phased out and given that the 64kbit/s digital SDH leased line may offer some additional service quality, there is some incentive for end-users to switch to SDH-based products, starting with a bandwidth of 64kbit/s.

Nevertheless, current bandwidth requirements today by far exceed 64kbit/s. Given that a 10Mbit/s Ethernet circuits is cheaper than an SDH leased line with bandwidth ranging from 1600kbit/s to 2Mbit/s, migration is happening directly towards Ethernet.

Supply-side substitutability

The MCA considers the extent to which suppliers of digital SDH leased lines would consider producing analogue leased lines in the event of a SSNIP implemented by a hypothetical monopolist, such as to pose a constraint on the said increase in price.

The MCA notes that only GO is currently supplying both analogue leased lines and digital SDH leased lines. Therefore supply-side substitution would be more relevant for operators of other services entering the analogue market.

[18] Prices, which are regulated, became applicable as from 1st April 2008.

[19] Prices, which are regulated, became applicable as from 1st August 2008.

Given that no operator, other than GO, is currently supplying either analogue or digital SDH leased lines, it is considered unlikely that market entry would materialise in the short term as a result of a 5 to 10% increase in the price of either analogue or digital SDH leased lines. This is because of the high costs of deployment that are involved.

Preliminary conclusion

Digital SDH leased lines and analogue leased lines are functionally equivalent, primarily because they can both support voice and data and secondly because the underlying network facilities supporting the supply of analogue and digital SDH leased lines are similar, with the exception of the terminal equipment and the hardware required at the serving exchange/node.

Analogue leased lines and digital SDH leased lines should therefore be considered part of the same relevant product market.

2.2.2 Potential alternatives to 'traditional' leased lines

The MCA considers a number of products and services that might act to constrain some or all of the 'traditional' leased line services. These are:

- VPN connections;
- xDSL;
- ATM connections;
- Ethernet circuits;
- HFC-based WAN data services; and
- Satellite connections and microwave links.

Where functional equivalence in delivering dedicated connectivity services to end-users is determined, the MCA would propose to broaden the relevant retail product market accordingly.

In the ensuing discussion the MCA shall first outline the main qualitative characteristics of the products under investigation, followed by a substitutability assessment.

2.2.2.1 Description of potential alternatives to leased lines

- VPN connections

A VPN is an IP-based solution that allows for the delivery of private network services over a public infrastructure, the public Internet. The destination point of the VPN is always associated with the IP address defined by the user.

VPN solutions can be configured according to the requirements of the end-user, thereby allowing the end-user to send data and to choose to have that data arrive at different destinations on demand. Indeed, VPN solutions allow for both point-to-point or point-to-multipoint applications via IP tunnelling over a private network.

VPN solutions fall short of guaranteeing symmetric bandwidth and the quality of service parameters associated with 'traditional' leased lines.

- xDSL

Digital subscriber line ('xDSL') technologies are based on copper loops that convert the copper pair into a digital line. Digital Subscriber Line Access Multiplexers ('DSLAMs') at an exchange connect high-speed xDSL data traffic.

DSL-based services may either offer:

- asymmetric capacity, meaning that the service supports lower data rates for upstream traffic than for downstream traffic (e.g. ADSL), or

- symmetric capacity, meaning that the service supports the same data rates for upstream and downstream traffic (e.g. SDSL).

It is worth noting that no symmetric DSL broadband services are commercially available in Malta. All DSL-based broadband connections offered locally are asymmetric connections.

An important change since 2006 concerning xDSL relates to the rates on which data could be downloaded and uploaded by the end-user. Whilst in 2006 an ADSL customer could, for example, receive data up to 1024 kbit/s, nowadays it is possible to receive data at significantly higher rates.

In itself, the fact that DSL-based services only offer end-users with asymmetric capacity for broadband access is sufficient to conclude that ADSL and 'traditional' leased line are not functionally equivalent and therefore cannot be considered as functional substitutes.

- Cable data services

Melita is the only cable provider in Malta, and its services are available on a nationwide level. Cable data services are offered via the cable service interface specification ('EuroDOCSIS')[20] modem infrastructure.

The MCA notes that Melita owns both a high capacity fibre IP backbone and the 'last mile' of its hybrid fibre coaxial ('HFC') network.

In 2006, the MCA argued that whilst the product portfolio available at the time included offers with symmetric data rates, capacity on the upstream path was still heavily contended and therefore high constant data rates could not be guaranteed.

Melita has continued investing in its HFC network, which has last year been upgraded to DOCSIS 3. This upgrade enabled Melita to offer higher data connectivity rates. For example, Melita's entry broadband package for residential customers is currently advertised with a potential download speed of up to 15Mbit/s and a potential upload speed of 1Mbit/s. Other broadband packages are advertised with download speeds ranging from a potential of up to 25Mbit/s to a potential of up to 100Mbit/s. Correspondingly, upload speeds range from a potential of up to 1.5Mbit/s to a potential of up to 4Mbit/s.

Further to the above, DOCSIS 3.0 does not make Melita's HFC-based service uncontended. Capacity on the upstream path remains heavily contended and high constant data rates are inherently difficult to guarantee as capacity has to be shared between several end-users served by a given node.

- ATM connections

[20] The DOCSIS standard defines interface requirements for cable modems which enable dedicated encrypted connections and guarantee high-speed data distribution and committed data rates over cable television system networks.

Asynchronous Transfer Mode ('ATM') is a channel-based transport layer, over which dedicated transmission is achieved by means of 'virtual' circuit switching. Technically, this solution seeks to optimise the overall utilisation and performance of the transport network by, for example, appropriating of unused bandwidth in ATM circuits. It also allows for traffic prioritisation for end-users by, for example, reducing the number of redundant cells in the network and thereby saving bandwidth for full frames.

One of the most important features of ATM solutions is their guaranteed quality of service ('QoS'), which is specified in the contract agreement between the end-user and the service provider.

ATM-based services have been commercially offered by GO until very recently. The said operator has recently discontinued offering ATM services and all end-users have by now been transferred to Ethernet-based services.

- Ethernet circuits

Ethernet circuits offer symmetric dedicated capacity at a range of bandwidths. Bandwidths of 10Mbps, 100Mbps, 1Gbps and 10Gbps are currently available on the market. Intermediate bandwidths can also be offered in steps of 1Mbps.

The availability of such a wide range of bandwidths provides the end-user with additional flexibility as it can be configured more easily to address the various requirements.

If, for example, an end-user needs a capacity of 50Mbit/s, the traditional SDH solution would require the end-user either to purchase two 34Mbit/s connections or a 155Mbit/s connection. On the other hand, the Ethernet-based solution would allow the end-user to purchase exactly the exact capacity required. This would suggest that, compared to a SDH-based leased line solution, an Ethernet-based solution offers additional flexibility to the end-user as it can be configured more easily to address the various bandwidth requirements of the market.

As with SDH solutions, Ethernet-based solutions offer a reliable and secure connectivity over the IP network, which could either be configured on a point-to-point or point-to-multipoint basis.

Ethernet-based solutions are also in general supported by SLAs between the end-user and the service provider.

- Satellite connectivity and microwave links

Satellite connectivity and long distance microwave links are used in Malta as a backup service only.

Satellite connectivity cannot be considered to offer the same level of quality as a 'traditional' leased line mainly because of limitations related to latencies[21] in transmission of data and capacity offered. Satellite is in fact used in very rare cases.

The microwave link technology also has serious limitations when compared to a 'traditional' leased line, as it is susceptible to atmospheric conditions and line of sight limitations.

2.2.2.2 Substitutability assessment

Demand-side substitutability

[21] Latency is ingrained in satellite communications due to the inherent long distances the packets have to travel.

The demand-side substitutability assessment between the products described above and ‘traditional’ leased lines is based on a qualitative assessment of the products in question, an overview of migration trends, and, where data is available, a comparison of relative prices.

Qualitative assessment

The MCA considers that, in view of the product descriptions in Section 2.2.3, VPNs, xDSL, cable data services, satellite services, and microwave links do not serve end-user needs in the same way as ‘traditional’ leased lines, even though they might share some common functionalities and characteristics.

The MCA’s qualitative assessment has shown, for example, that VPNs cannot guarantee symmetric bandwidth and the high levels of guaranteed service associated with leased lines. xDSL and DOCSIS services offer limited ability to support dedicated symmetric bandwidth and therefore do not offer the same level of security and resilience as leased lines. Satellite connectivity and microwave links are not sufficiently resilient and cannot always guarantee the bandwidth.

Further to the above, quality service requirements associated with the products under investigation are generally not supported by the same level of SLAs characterising a ‘traditional’ leased line.

The MCA therefore concludes that VPN connections, xDSL, cable data services, satellite services and microwave links are not functionally equivalent to a ‘traditional’ leased line. Hence, the MCA proposes to exclude these products from the retail product market or markets encompassing ‘traditional’ leased lines.

The MCA also identified the qualitative characteristics of ATM connections and Ethernet circuits. The MCA considers that ATM connections and Ethernet are based predominantly on dedicated point-to-point connections, offering secure and resilient connectivity. ATM and Ethernet-based solutions are also supported by SLAs between the end-user and the service provider.

This would suggest that ATM connections and Ethernet offer a functionally equivalent alternative to a ‘traditional’ leased line.

Another development since the last market review is that ATM connections are no longer commercially available. The only supplier of ATM connections, GO, has informed the MCA that it is no longer offering these products commercially and that existing customers have been migrated to Ethernet. The MCA therefore does not include ATM connections in the relevant retail product market or markets under consideration.

Migration trends

Trends in demand for Ethernet circuits and ‘traditional’ leased lines are shown in Chart 7 below.

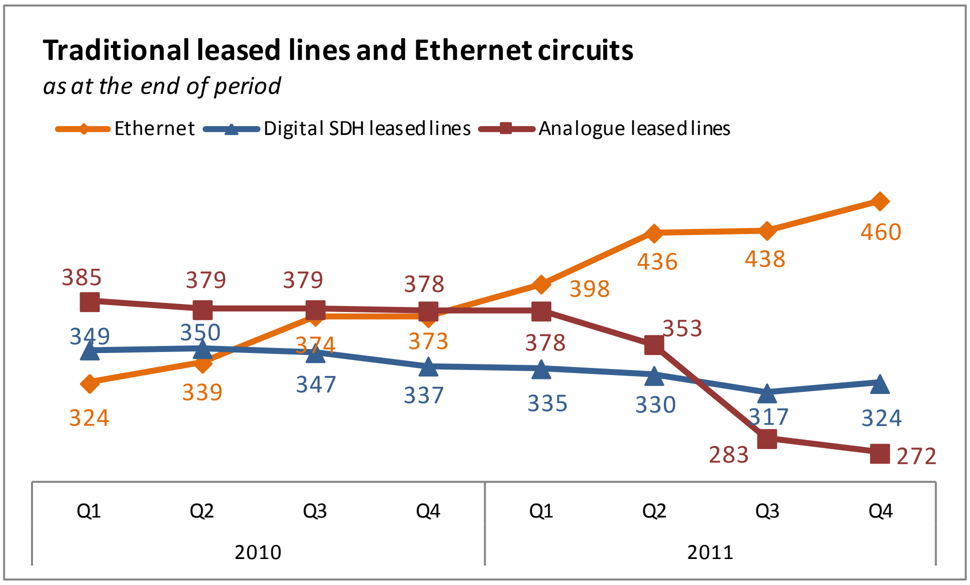

Chart 7: Ethernet circuits, retail level

Chart 7 shows that, between Q1 2010 and Q4 2011, both analogue leased lines and digital SDH leased lines with bandwidth not exceeding 2Mbit/s went down in their aggregate volumes.

The number of analogue connections went down by 29%, but the fall was less marked at 7% for digital SDH leased lines.

In contrast, the same chart shows that Ethernet volumes went up by 42%. These findings therefore point to a market whereby an increasing number end-users has found scope to switch to Ethernet.

The price differentials between Ethernet circuits and digital SDH leased lines are such that it is anticipated that the number of end-users on Ethernet circuits continues to increase, as declines are reported for analogue and digital SDH leased lines.

More detail on current prices for Ethernet and 'traditional' leased lines is presented below.

Price comparisons

Given that Ethernet circuits have been found to be functionally equivalent to 'traditional' leased lines, a price comparison between the two products would shed light on whether the price of one would constrain the price of the other in the event of a SSNIP.

Retail rates		
Type of product		Annual rental fee
digital SDH LL - 1600 to 1984kbit/s	€	5,663
digital SDH LL - 2Mbit/s	€	6,369
Ethernet circuit - 10Mbit/s	€	4,896
Ethernet circuit - 17Mbit/s	€	6,852

Table 3: Annual rental fees for digital SDH leased lines & Ethernet circuits (excl. VAT) [22]

[22] The rates quoted for digital SDH leased lines are cost-oriented and became applicable as from 1st April 2008.

In light of the price differences observed in Table 3, it is unlikely that the price of a 2Mbit/s SDH-based leased line would constrain the price of Ethernet circuits with bandwidth of 10Mbit/s. This is because a SSNIP implemented by a hypothetical monopolist for the 10Mbit/s Ethernet option would still leave such circuit cheaper than the 2Mbit/s digital SDH alternative.

This substitution pattern holds further up in the Ethernet product portfolio through a chain of substitution dynamic.

On the other hand, it is possible that the price of Ethernet circuits would constrain the price of digital SDH leased lines in the event of a SSNIP for SDH. This is because the said increase in price would serve as an incentive to customers to switch away from SDH to Ethernet.

The MCA considers that in terms of pricing, Ethernet circuits and SDH leased lines are substitutable through a chain of substitution dynamic.

No price comparison between ATM connections and 'traditional' leased lines is provided, given that ATM connections are no longer commercially available.

Supply-side substitutability

The MCA considers the extent of supply-side substitution between the provision of dedicated capacity over Ethernet circuits and the provision of dedicated capacity over 'traditional' leased lines.

Supply-side substitutability would exist if, in the absence of wholesale regulation, the suppliers of Ethernet circuits would be able to provide SDH-based leased lines, at low cost and within a relatively short period of time.

The assessment of supply-side substitution between 'traditional' leased lines and Ethernet circuits is relevant for existing suppliers of dedicated capacity over leased lines, in particular Melita and Vodafone, given that these operators do not supply SDH-based capacity on the national segment of the market. Currently, only GO supplies SDH-based leased lines on this segment.

In the event of a SSNIP for dedicated SDH capacity by GO, Melita and Vodafone would still not be able to supply SDH-based products sufficiently quickly and without additional significant cost(s).

This is because the said operators would need to invest in legacy technology which is relatively more expensive. The high level of sunk costs that are associated with such an investment would hinder Melita and Vodafone from replicating GO's 'traditional' leased lines offers, sufficiently quickly, such as to pose a constraint on the said increase in price.

Preliminary conclusion

The MCA considers that, from a functional and pricing point of view, Ethernet circuits are substitutes to 'traditional' leased lines.

In view of the above, the MCA considers that the formerly defined retail markets for the provision of the 'minimum set of leased lines' must be broadened to include the provision of dedicated capacity over analogue leased lines, digital SDH leased lines and also Ethernet circuits, irrespective of bandwidth.

The term 'minimum set of leased lines' is therefore no longer relevant and will no longer be applied.

2.2.3 National and international leased lines

In the previous market review, the MCA defined two separate retail leased line markets, namely a market for retail national leased lines and a market for retail international leased lines.

The MCA considers whether this distinction remains valid in the current market circumstances.

Demand-side substitutability

Given that Malta is an island, end-users seeking to acquire dedicated connectivity to a site on a foreign jurisdiction must acquire access to an international leased line. An international leased line originates from an international gateway in Malta and terminates on the international facilities of a third party, with the closest point of presence being located in Sicily. A national leased line is different in that it allows for the provision of dedicated capacity between two points of presence in Malta.

Both national and international leased lines share similar functional characteristics. For example, both offer dedicated connectivity with no contention, bandwidth is symmetric and scaleable, and the service is guaranteed.

The key functional difference between national and international leased lines lies on the location(s) to be served. An international leased line allows the end-user to establish a direct link to a foreign jurisdiction, a characteristic upon which the end-user would obviously not compromise.

This means that an end-user of an international leased line would not switch to a national leased line in the event of a SSNIP implemented by a hypothetical monopolist of international leased lines. This is because a national leased line would not cater for dedicated international connectivity.

The MCA therefore considers that there is no demand-side substitutability between national and international leased lines.

Supply-side substitutability

The MCA considers the extent to which suppliers of national leased lines would switch production to international leased lines, in the event of a SSNIP implemented by a hypothetical monopolist.

The MCA underlines that the building of international connectivity infrastructure absorbs significant financial resources and takes substantial time to materialise. The implementation of an international connectivity project is generally intended for realization over a number of years, given that such a project would entail the setting up of an international media gateway, the laying of a submarine cable and the necessary arrangements for international connectivity from the landing point of the submarine cable. Furthermore, international connectivity is often provided as part of broader regional and international negotiated agreements, the dynamics of which are different from those prevailing at the national level.

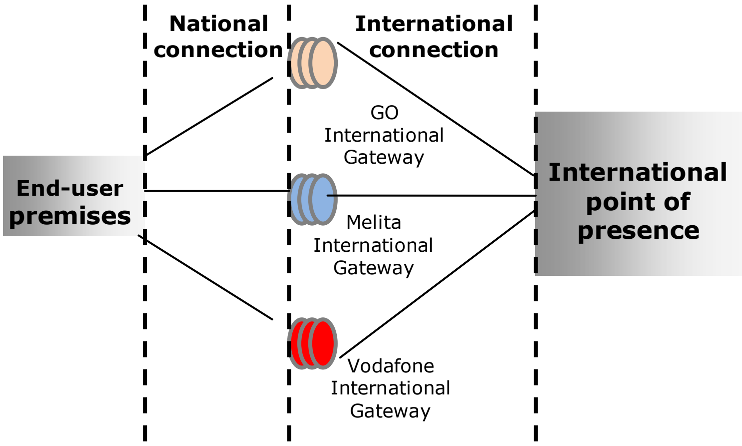

Diagram 2: International connectivity

The above would suggest that, in the event of a SSNIP for international leased lines, a supplier of national leased lines in Malta would no switch product to international leased lines and vice versa.

Preliminary conclusion

The MCA considers that there are separate markets for retail national leased lines and retail international leased lines.

2.2.4 Segmenting retail leased line markets by bandwidth

Local operators offer leased lines at various bandwidths, given the diverse range of bandwidth requirements of different end-users.

The MCA considers whether it is relevant to segment retail leased line markets by bandwidth, determining in the process whether there are breaks in the chain of substitution.

Demand-side substitutability

The choice of bandwidth depends on the end-user's requirements and, ultimately, price.

If, for example, a bandwidth of 10Mbit/s is required, the market presents the end-user with several options. The end-user may consider purchasing a 10Mbit/s Ethernet circuit or five 2Mbit/s SDH circuits or any other solution offering dedicated capacity above 10Mbit/s.

Ultimately, the end-user's choice is likely to be related to the price of the product on offer. It is reasonable to assume that the end-user chooses the cheapest option meeting its requirements. If it can be demonstrated that a sufficient number of end-users would switch between products offering adjacent bandwidths, then it would be possible to conclude that the product market may include a range of bandwidths.

If, for example, a 2Mbit/s SDH leased line is directly substitutable to a 17Mbit/s Ethernet circuit following a SSNIP, and the 17Mbit/s Ethernet circuit is in turn substitutable to a 19Mbit/s Ethernet circuit following a SSNIP, the three products are linked by a chain of substitution based on price and could therefore be included in the same product market.

In view of the above, the MCA considers whether SDH leased lines and Ethernet circuits of different bandwidths belong to the same product market, through a chain of substitution argument.

In this regard, Table 3 in sub section 2.2.2.2 indicates that the regulated annual price of a digital SDH leased line with a bandwidth of 2Mbit/s costs €6,369. Assuming no regulation, a SSNIP of 10% would increase the price of the said leased line to €7,006.

This means that following a SSNIP, 2Mbit/s digital SDH leased lines would be constrained by Ethernet circuits with bandwidth ranging from 10Mbit/s to 17Mbit/s, given that the two latter Ethernet options would still cost less.

The implementation of a SSNIP for a 17Mbit/s Ethernet circuit is in turn constrained by 18Mbit/s and 19Mbit/s circuits.

The existence of a chain of substitution has been found to hold at higher bandwidths.

Overall, the MCA concludes that the bandwidth break identified at 2Mbit/s in 2006 cannot be retained as the competitive conditions for different bandwidths are sufficiently similar. Available data shows that the distribution of end-users by bandwidth is concentrated on the lower end speeds. This suggests that a SSNIP implemented by a hypothetical monopolist on digital SDH is most likely to be unprofitable as the bulk of end-users would then have an incentive to switch to Ethernet.

Supply-side substitutability

The MCA considers the extent to which suppliers would consider supplying dedicated connectivity at a particular bandwidth in the event of a SSNIP implemented by a hypothetical monopolist, such as to pose a competitive constraint on the said increase in price.

With respect to the provision of dedicated capacity over national leased lines, GO is the only operator that supplies dedicated connectivity over analogue leased lines and digital SDH leased lines, across various bandwidths.

As is the case with Melita and Vodafone, GO also supplies dedicated capacity over Ethernet circuits, across different bandwidths.

Given that GO supplies dedicated connectivity from the lowest bandwidth supported by analogue up to the highest bandwidth supported by Ethernet, the supply-side substitution assessment would be more relevant for Melita and Vodafone as these do not offer analogue leased lines and digital SDH leased lines.

In the event of a SSNIP implemented by a hypothetical monopolist for a 2Mbit/s SDH leased line, Melita and Vodafone would continue offering higher-speed Ethernet circuits.

Indeed, Melita and Vodafone would not invest in SDH technology given that their Ethernet offers provide similar functionality to a 2Mbit/s SDH leased line at a cheaper price and given the high level of sunk costs involved in undertaking such an investment.

With respect to the provision of dedicated capacity over international leased lines, GO, Melita and Vodafone offer both digital SDH leased lines and digital Ethernet solutions.

This means that, in the event of a hypothetical monopolist implementing a price increase for a leased line Vodafone and Melita could readily offer a substitute within a reasonably short period of time, thereby constraining the said increase in price.

Preliminary conclusion

The MCA no longer finds justification to hold the break in bandwidth at 2Mbit/s given that no break in the substitution chain has been identified.

The MCA considers that the retail markets for the provision of dedicated capacity should therefore be broadened to encompass digital SDH with bandwidth exceeding 2Mbit/s and all Ethernet products.

2.2.5 Relevant geographic markets

The EU Commission guidelines on market analysis and the assessment of SMP set out that a relevant geographical market comprises the area in which the undertakings concerned are involved in the supply of, and demand for, relevant products and services in relation to which the conditions of competition are sufficiently similar or sufficiently homogeneous and which can be distinguished from neighbouring areas in which the prevailing conditions of competition are appreciably different to those areas.

The EU Guidelines refer to the use of two criteria in determining the geographical scope of a relevant market, namely the area covered by a network, and the existence of legal and other regulatory instruments.

The existing conditions of competition are homogenous in the relevant retail markets for the provision of dedicated capacity in Malta. The markets in question are subject to a national pricing constraint, as all authorised or licensed suppliers offer services and determine prices at the national level without differentiating by reference to geographic location.

The MCA therefore considers that the geographical market for the relevant retail product markets under review is national in scope.

2.2.6 Conclusion on the retail market definition exercise

From the analysis above and in line with the Commission's recommendations, the MCA identifies two retail product markets for the provision of dedicated connectivity over leased lines in Malta.

These are:

- a market for the provision of national dedicated capacity supplied over 'traditional' leased lines and Ethernet circuits; and

- a market for the provision of international dedicated capacity supplied over 'traditional' leased lines and Ethernet circuits.

The relevant product markets are national in scope.

Q1. Do you agree with the above preliminary conclusions regarding the definition for the retail leased lines markets?

2.3 Definition of the relevant wholesale leased line market(s)

The wholesale market definition exercise identifies the set of products that could potentially form part of the market or markets under investigation.

The MCA recalls that, in 2006, trunk and terminating segments of leased lines were found to belong to separate markets. The current exercise will determine whether or not the definition of distinct trunk and terminating leased lines markets remains valid.

In 2006, the MCA also concluded that there are separate markets in Malta for national trunk segments of leased lines and international trunk segments of leased lines and that neither of these markets is segmented on a route-by-route basis. The conditions of demand and supply underpinning the provision of dedicated capacity over wholesale trunk segments of leased lines will therefore be revisited to determine whether separate trunk markets should be defined in the current review.

Another issue under consideration relates to self-supply, specifically as to whether self-supply of dedicated capacity over wholesale segments of leased lines should be considered as part of the relevant product markets.

The MCA finally considers whether it is appropriate to define distinct wholesale markets at different bandwidths.

2.3.1 The composition of the product market at the wholesale level

The MCA considers the composition of the wholesale product market. This exercise is being carried in the light of results achieved at the retail level.

The proposed market definition at the retail level considers that:

- analogue leased lines and digital SDH leased lines fall within the same relevant product market, hence the term 'traditional' leased lines;
- Ethernet circuits are functionally equivalent and therefore substitutable to 'traditional' leased lines;
- services offered over ATM connections are no longer part of the relevant product market as they are no longer offered by GO and all connections have been migrated onto Ethernet; and
- services offered over VPN connections, xDSL, and cable DOCSIS are not functionally equivalent to services offered over 'traditional' leased lines.

Preliminary conclusion

The MCA is of the opinion that, likewise, at the wholesale level, the relevant product market should include services offered over analogue leased lines, digital SDH leased lines, and Ethernet circuits.

These three products are considered to be functionally equivalent and therefore substitutable at the wholesale level.

2.3.2 Trunk segments and terminating segments of leased lines

The MCA considers whether to define separate markets for the provision of dedicated capacity over trunk segments of leased lines and the provision of dedicated capacity over terminating segments of leased lines.

Demand-side substitutability

Although it is possible for a network operators or Other Alternative Operators ('OAOs') to discretely purchase either terminating or trunk capacity, wholesale leased lines in Malta are typically purchased on an end-to-end basis.

In line with the definitions presented in Section 1.5.2, Diagram 3, configures a typical scenario whereby an operator or OAO purchases dedicated capacity over wholesale leased lines to cater for its own network requirements and/or for resale to third parties.

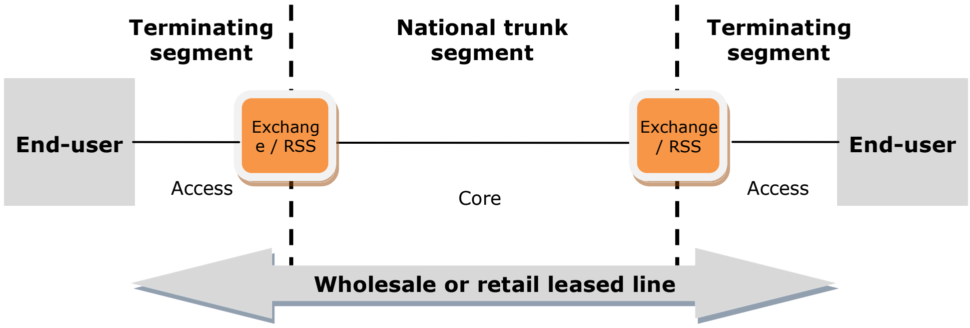

Diagram 3: Segments of an 'end-to-end' national leased line

The MCA considers that each segment of the acquired leased line fulfils a specific function, without which the customer would not be in a position to operate properly.

This would suggest that in the event of a SSNIP implemented by a hypothetical monopolist for one of the wholesale segments of leased lines, the customer would unlikely switch from one wholesale segment to the other. The said increase in price would instead open up the possibility of wholesale customers switching suppliers, as long as a functionally equivalent alternative is available.

Malta's geographic circumstances also bring to the fore another important consideration. Given that Malta is an island state, connectivity with mainland Europe assumes significant relevance, especially for wholesale customers seeking connectivity to a site on a foreign jurisdiction.

Diagram 3 illustrates that this would comprise access to an international gateway, and access to an international trunk segment or an international half circuit. The international trunk segment would connect the supplier's international gateway to the point of interconnection with the international facilities of a third party (the nearest point of presence is in Sicily).

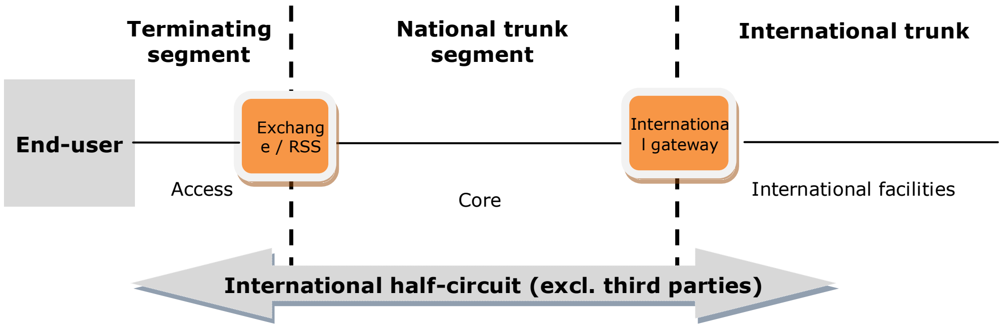

Diagram 4: Segments of an 'end-to-end' international leased line

The MCA again observes that wholesale customers seeking to acquire dedicated international capacity in Malta would typically purchase an end-to-end service, with each wholesale leased line segment fulfilling a specific need.

A SSNIP implemented by a hypothetical monopolist for one of the wholesale segments of leased lines would not therefore result in switching from one wholesale segment to the other.

The MCA also notes that international capacity is currently available from GO, Melita and Vodafone. The implementation of a SSNIP by a hypothetical monopolist would therefore open up the possibility of wholesale customers switching supplier and not switching between trunk and terminating segments.

Trunk and terminating segments of leased lines are complements rather than substitutes, given that each segment relates to the provision of capacity across different parts of the underlying network.

Supply-side substitutability

The MCA notes that the economic conditions underpinning the supply of trunk segments over the core network in Malta are different to those underpinning the supply of terminating segments over the access network.

Terminating segments of leased lines typically account for the transfer of dedicated traffic volumes in the access network, whilst trunk segments aggregate all traffic passing through the supplier’s core network. Investment decisions would therefore be intrinsically linked to the economic considerations behind these intended objectives.

It is recalled that new market entrants Melita and Vodafone have over the years invested significantly in core network infrastructure to enhance their network connectivity and capacity levels.

This investment has translated into the two international media gateways, each corresponding to the international trunk segment laid through the submarine links owned by Melita and Vodafone.

Nevertheless, Vodafone does not yet own a nationwide access network infrastructure, but only a limited number of trunk segments.

It is also noted that, as opposed to GO, neither Melita nor Vodafone currently supply SDH-based dedicated lines.

On the other hand, Melita and Vodafone are competing directly with GO in the supply of Ethernet-based capacity over wholesale segments of leased lines connecting two sites located in Malta. Nevertheless, Vodafone’s offers are not ubiquitous, as these are only commercially offered where Vodafone’s infrastructure is available.

It is considered that, in the event of a hypothetical monopolist implementing a SSNIP for the provision of dedicated capacity over trunk or terminating segments of leased lines, Vodafone would not be in a position to respond to the said increase in price by expanding its trunk network sufficiently quickly as to constrain the pricing behaviour of the incumbent, GO. This is because of the significant upfront investment required to deploy the necessary infrastructure, most of which would classify as sunk costs for trenching and ducting.

It is also considered that in the event of a hypothetical monopolist implementing a SSNIP for the provision of trunk or terminating SDH-based capacity between two local sites, neither Melita nor Vodafone would be in a position to respond to the said increase in price by replicating GO's SDH-based offers sufficiently quickly as to constrain the said increase in price.

In view of the above conditions of supply, the MCA considers it unlikely for a supplier of trunk segments to switch production to terminating segments, or vice versa, in the event of a SSNIP implemented by a hypothetical monopolist.

Preliminary conclusion

The MCA considers that trunk and terminating segments of leased lines are inherently complementary in nature rather than substitutes, given that they relate to the provision of dedicated capacity across different parts of the underlying network.

Trunk and terminating segments of leased lines should therefore fall within separate markets.

In view of this market segmentation, the MCA considers that the boundary between trunk and terminating segments of leased lines may be considered to occur at that point on the core network which is closest to the location of the customer's premises i.e. at the serving exchange/node.

With respect to the provision of international capacity, the MCA considers that the split between the local terminating segment and the international trunk segment of leased lines is most likely to occur at the serving media gateway, in this case the 'international media gateway', defined as the point at which capacity is no longer carried on infrastructure used also for national traffic.

2.3.3 National and international segments of wholesale leased lines

The MCA is hereby considering whether or not the distinction between national and international markets, already identified at the retail level, also holds at the wholesale level.

Demand-side substitutability

In the case of trunk segments, the provision of a national service would comprise the provision of dedicated connectivity between two points, or two local exchanges, on a local core network and handover, at access network level, to the terminating segments of leased lines.

On the other hand, the provision of an international service would comprise access to a local terminating segment up to nearest serving exchange/node, a local trunk segment to the international gateway, and the eventual access to an international trunk segment. The international trunk segment would connect the supplier's international gateway to the point of interconnection with the international facilities of a third party[23].

It follows, from the above, that the costs of supply associated with each service would differ significantly and that, as a result, the applicable market rates for the two services would also differ.

For example, the provision of dedicated capacity over international trunk segments of leased lines would encompass a charge attributed to the expenses associated with access to the international media gateway (or local landing point), and an international segment

[23] The MCA notes that the setting up of an international media gateway, the laying of a submarine cable and the necessary arrangements for international connectivity from the landing point of the submarine cable would entail significant financial outlays and would only materialize over a number of years.

charge, attributed with the handover of traffic from the serving international media gateway to an international trunk segment.

On the other hand, the provision of dedicated capacity over a national trunk segment of leased line would only encompass the national segment charge, attributed to the handover of traffic from the serving local exchange to a national trunk segment, and a subsequent handover to another local exchange.

In terms of functionality, the MCA notes that with the current network topologies, the provision of dedicated capacity to a foreign network is only possible via one of the submarine cable links. In this regard, a wholesale customer would succeed in conveying traffic to a site on a foreign network only if it purchases dedicated international capacity directly from existing suppliers, or else from OAOs purchasing wholesale access to trunk segments for resale from existing suppliers.

The MCA also considers that, typically, bandwidth requirements associated with national dedicated connectivity are different to those associated with international connectivity.

It therefore follows that, from the demand-side analysis, an OAO purchasing dedicated capacity over an international trunk segment of leased lines would not respond to a SSNIP by a hypothetical monopolist of international trunk segments by switching to a national trunk segment (or vice-versa). This is because the intended use of the products is not the same.

Supply-side substitutability

From a supply-side point of view, the MCA considers that, in the event of a SSNIP implemented by a hypothetical monopolist, it is unlikely that a supplier of international trunk segments of leased lines, such as Vodafone, would switch to the provision of dedicated capacity over national trunk segments, sufficiently promptly or cost effectively in order to constrain the hypothetical monopolist implementing the SSNIP for the national trunk service.

Conversely, it is also unlikely that a supplier of dedicated capacity over national trunk segments of leased lines would consider switching its production into the international market sufficiently promptly and at minimal cost (given the high costs associated with the insularity of Malta) such as to constrain the behaviour of the hypothetical monopolist.

Apart from the time and elevated costs of building international infrastructure, access to international trunk segments of leased lines is often provided as part of broader regional and international agreements, the dynamics of which are different from those prevailing with respect to national infrastructure.

Preliminary conclusion

The MCA is of the view that, given the prevailing national circumstances, the demand and supply-conditions underpinning the provision of dedicated capacity over national trunk segments of leased lines differ significantly to those underpinning the provision of dedicated capacity over international trunk segments of leased lines.

The MCA therefore defines two wholesale trunk markets:

- a market for the provision of dedicated capacity over national trunk segments of leased lines; and
- a market for the provision of dedicated capacity over international trunk segments of leased lines.

The MCA also considers that the above-mentioned distinction between national and international markets is not relevant for wholesale terminating segments of leased lines. This is because, irrespective of the type of trunk capacity being sought, the competitive conditions associated with the terminating segments of leased lines (in this case the terminating segments up to the premises and installations of the operator and its customers) are sufficiently homogenous throughout the national territory.

2.3.4 The inclusion of self-supply in wholesale markets

The MCA considers whether or not self-supply of dedicated capacity should be included within the relevant product markets of any of the wholesale leased line markets.

Demand-side substitutability

It is recalled that GO and Melita own a ubiquitous access network infrastructure and both supply their own retail arm for their various business segments.

Both operators also have sufficient spare capacity available at the wholesale level to offer to other service providers at no significant additional cost.

In these circumstances, it is proposed that self-supply of dedicated capacity by GO and Melita should be considered part of the relevant wholesale product markets.

Note is also made of Vodafone, a third operator active in the provision of dedicated capacity of leased lines at the wholesale level. It is recalled that this operator's presence on the market is limited to a number of routes as it lacks the requisite national infrastructure to supply ubiquitous wholesale offers at a national level. This means that, in the event of new demand on routes that are not within reach of Vodafone's network, the said operator would have to incur significant investment costs to cater for such demand. It is therefore considered unlikely that Vodafone would cater for such new demand within the timeframe of this review.

Nevertheless, Vodafone has sufficient spare capacity to provide additional bandwidth on those routes that are already served by its network infrastructure (i.e. where it has appropriate coverage), irrespective of whether additional capacity is for self-supply or for resale to third parties.

The self-provision of dedicated capacity over wholesale segments of leased lines and the provision of dedicated capacity over wholesale leased lines segments to third party providers face the same pricing constraints and should as a result fall within the same relevant wholesale market.

Supply-side substitutability

The MCA considers that the assessment of supply-side substitution for the self-provision of dedicated capacity over wholesale segments of leased lines in Malta is not relevant given that GO, Vodafone and Melita already provide dedicated capacity over wholesale segments of leased lines to third parties.

Preliminary conclusion

It is considered that any self-supply of dedicated capacity over wholesale segments of leased lines should be considered part of the relevant wholesale product markets. This is because existent suppliers have spare capacity which could be offered in the wholesale market to the third parties whenever required.

2.3.5 Bandwidths of wholesale segments of leased lines

The retail market definition exercise does not propose bandwidth breaks for retail leased lines markets. The MCA considers whether a conclusion of no bandwidth breaks at the wholesale level.

In 2006, the MCA considered that wholesale markets for terminating segments and trunk segments of leased lines should not be broken down into smaller bandwidth-defined markets or capped to a defined bandwidth.

The MCA did specify at the time that wholesale capacity was typically aggregated on the core network, thereby allowing suppliers of wholesale segments to supply a range of bandwidths over their core transmission network.

The investment made by local operators gives them the ability to offer a range of bandwidths over the infrastructure. To this effect, the MCA considers that existent suppliers would in fact readily switch supply between low and high bandwidth supplied over a wholesale trunk segment, in response to a SSNIP for one of the options.

The same reasoning would apply in the case of wholesale terminating segments of leased lines. For example, if a supplier is currently supplying a high bandwidth on a terminating segment, it could readily switch to supply a lower bandwidth, in response to a lasting increase in price for the low bandwidth option.

Given that existent suppliers have sufficient excess capacity to cater for the anticipated increase in the demand for bandwidth, it is considered that customers of wholesale segments of leased lines could easily switch between different bandwidths in view of changing capacity requirements. Wholesale customers could also switch between suppliers in response to SSNIP for a particular bandwidth option. Nevertheless, the customer's choice would be restricted to those options offered by suppliers whose network coverage captures the customer's location.

Preliminary conclusion

There are no factors that would justify the breakdown of the wholesale markets for terminating segments and trunk segments of leased lines into smaller bandwidth-defined markets (i.e. to disaggregate capacity) or to cap the market to a defined bandwidth.

2.3.6 Relevant geographical market

The EU Commission guidelines on market analysis and the assessment of SMP set out that a relevant geographical market comprises the area in which the undertakings concerned are involved in the supply of, and demand for, relevant products and services in relation to which the conditions of competition are sufficiently similar or sufficiently homogeneous and which can be distinguished from neighbouring areas in which the prevailing conditions of competition are appreciably different to those areas.

The EU Guidelines also refer to the use of two criteria in determining the geographical scope of a relevant market, namely the area covered by a network, and the existence of legal and other regulatory instruments.

The existing conditions of competition are homogenous in the relevant wholesale markets for the provision of dedicated capacity over leased lines in Malta.

The markets in question are subject to a national pricing constraint, as all authorised or licensed suppliers offer services and determine prices at the national level without differentiating by reference to geographic location.

The MCA therefore considers that the geographical market for the relevant wholesale product markets under review is national in scope.

2.3.7 Summary of wholesale market definition

According to the analysis carried out and evidence available to the MCA, three wholesale markets in the provision of dedicated connectivity over leased lines have been identified.

These are as follows:

- a wholesale market for the provision of dedicated capacity over national trunk segments of leased lines;
- a wholesale market for the provision of dedicated capacity over international trunk segments of leased lines; and
- a wholesale market for the provision of dedicated capacity over terminating segments of leased lines.

The relevant product markets include analogue leased lines, digital SDH leased lines, and Ethernet circuits.

The identified wholesale markets are national in scope.

Q2. Do you agree with the above preliminary conclusions regarding the definition for the wholesale leased lines markets?

3 Market analysis

This section presents an assessment of competition for the markets identified in the previous section.

It is structured as follows:

Section 3.1 outlines the markets defined in Section 2, highlighting in the process whether or not the markets in question are included in the list of markets specified as relevant for the purpose of *ex ante* regulation in the Commission Recommendation;

Section 3.2 provides detail to the application of the Three Criteria Test on the markets that are no longer listed in the Recommendation;

Sections 3.3 and 3.4 present an assessment of the state of competition in the retail markets for the provision of dedicated capacity over leased lines. The findings for these markets are summarized in Section 3.5.

Sections 3.6 and 3.7 present an assessment of the state of competition in the wholesale trunk markets. The findings for these two markets are summarized in Section 3.8.

Section 3.9 presents an assessment of the state of competition in the wholesale market for the provision of dedicated capacity over terminating segments of leased lines.

3.1 Background

Having identified, in the previous chapter, the relevant markets that comprise the provision of dedicated capacity over leased lines in Malta, this section shall now assess these markets to determine whether any undertaking has SMP.

The MCA defines five relevant leased lines markets that are considered as being relevant for the purposes of *ex ante* regulation.

Retail markets

At the retail level, two leased lines markets are defined, namely:

- a market for the provision of dedicated capacity over national leased lines; and
- a market for the provision of dedicated capacity over international leased lines.

The current retail market definition is broader than that specified in 2006. This is because the relevant product markets now include 'traditional' leased lines and Ethernet circuits at all bandwidths.

In 2006, the relevant product markets included only 'traditional' leased lines up to a bandwidth of 2Mbit/s (the minimum set of leased lines).

The retail market for the minimum set of leased lines is no longer included in the list of markets specified as relevant in the Commission's Recommendation, nor are the retail markets identified above.

Wholesale markets

At the wholesale level, three leased lines markets are defined, namely:

- a market for the provision of dedicated capacity over national trunk segments of leased lines;
- a market for the provision of dedicated capacity over international trunk segments of leased lines; and
- a market for the provision of dedicated capacity via terminating segments of leased lines.

The relevant product markets include wholesale 'traditional' leased lines and wholesale Ethernet circuits at all bandwidths.

In 2006, the relevant product markets also included ATMs, which this time round have been excluded given that they are longer commercially available.

The wholesale market for the provision of trunk segments of leased lines is no longer included in the list of markets specified as relevant in the Commission's Recommendation, nor are the trunk markets identified above.

The wholesale market for the provision of terminating segments of leased lines is however listed in the Recommendation.

3.2 The application of the three cumulative criteria

The Recommendation provides NRAs the opportunity to regulate non-listed markets, if there is justification to do so by national circumstances.

Once a market that is not listed in the Recommendation is defined, the Commission recommends the application of a 'three criteria test' in identifying whether or not the characteristics of the market in question may be such as to justify the imposition of regulatory obligations set out in the specific Directives.

The three criteria are the following:

i. high and non-transitory barriers to entry;

ii. the dynamic state of competitiveness behind entry barriers; and

iii. the sufficiency of competition law to adequately address market failure(s) in the absence of *ex ante* regulation.

Within this context, regulatory intervention on the market or markets in question would only be warranted if:

i. the identified markets are subject to the presence of high and non-transitory barriers to entry, being either of a structural, legal, or regulatory nature;

ii. the identified markets have those characteristics, such as barriers to entry, which do not allow for effective competition without regulatory intervention within the timeframe of this review; and

iii. competition law by itself is inadequate to address any potential market failure in the absence of ex-ante regulation.

Failure to meet one of the above conditions would lead the MCA to conclude that the market in question is not a candidate market for the purposes of *ex ante* regulation. In such a scenario, an already regulated market would have to be deregulated.

3.3 The state of competition in the retail market for national leased lines

3.3.1 Assessment of the first criterion

The MCA assesses whether or not the market in question is subject to high and non-transitory barriers to entry.

Barriers to market entry can be of a structural, legal, or regulatory nature.

Structural barriers can take various forms, however, sunk costs, economies of scale and scope, and vertical integration are the major elements that are addressed in this assessment.

As for legal or regulatory requirements, the MCA considers that these do not affect the costs of market entry and are considered to pose a minimum burden for market entry.

i. Sunk costs

A new market entrant can offer dedicated connectivity over national leased lines by primarily investing in an own-built access network infrastructure or else by purchasing wholesale access to the necessary infrastructure.

The first option requires a large upfront investment on activities that involve trenching, ducting, rodding and the laying of optical fibre. Much of this investment will be considered as a sunk cost given that investment cannot be recovered if the entrant decides to exit the market.

In Malta, no new undertaking resorted to purchasing wholesale access with the aim of supplying dedicated connectivity over leased lines. Instead, new entry took place by way of Melita and Vodafone rolling-out own-built physical infrastructure to compete directly with GO.

It is however relevant to underline that new entrants have not fully replicated GO's nationwide access network infrastructure, which supports retail offers over analogue and digital SDH leased lines and Ethernet circuits.

In this regard, the network infrastructure of Melita and Vodafone only supports the provision of dedicated capacity over Ethernet circuits.

Vodafone's market presence is not considered as being ubiquitous, as this operator lacks the necessary nationwide infrastructure that is required to supply Ethernet-based offers across all the national territory. In fact, Vodafone is currently supplying Ethernet-based retail offers to selected clients only, on a case-by-case basis.

Part of the underlying infrastructure required for the provision of retail leased lines is the availability of trenches and ducts through which all the wiring is required to pass. In this regard, Vodafone currently owns a very limited number of ducts. It is therefore likely that new demand for Vodafone's retail national leased line products would entail a new phase of digging, trenching, and ducting and the passing of fibre.

The MCA considers that the high level of sunk costs associated with such an investment would pose a significant barrier to the achievement of ubiquity and full replicability by this operator within the timeframe of this review.

With respect to Melita, the MCA notes that the access network infrastructure of this operator spreads across all the national territory. However, this operator has not yet managed to build a market share as to sufficiently constrain GO's behavior in the supply of Ethernet circuits. In fact, around 97% of all buyers of Ethernet circuits recorded as at the end of 2011 were connected to GO.

As already noted above, Melita and Vodafone do not supply analogue and digital SDH leased lines. To do so, these operators would have to invest in their physical infrastructure in order to duplicate the physical infrastructure of the incumbent. However, this is not considered possible within the timeframe of this review, given that such an investment involves a significant sunk cost element.

ii. Economies of scale and scope

Economies of scale refer to the cost reductions that a business may enjoy as it expands its production and penetrates the market in which it operates. Economies of scale are generally achieved because as production increases, the cost of producing each additional unit falls, provided that fixed costs, among other elements, are shared over an increased number of units. On the same lines, the additional costs incurred by a supplier of leased lines will fall as the number of connections increases.

Although Melita and Vodafone have now been present in the market under review for a number of years, their market shares remain weak.

The incumbent operator, on the other hand, still enjoys the loyalty of over 95% of the local subscriber base for leased lines. To this effect, it is considered that the average cost per leased line for GO is likely to be lower than that faced by new entrants.

It is also likely that GO experiences economies of scale relative to new entrants in the provision of associated supply services, such as billing and end-user support. This is because these ancillary services would be catering for a larger number of users and the related costs would therefore be spread over a larger subscriber base.

Specific mention must be made of GO's 100% market share with respect to the provision of dedicated capacity over analogue and SDH leased lines at the national level.

Even assuming full replicability within the timeframe of this review, which is unlikely, neither Melita nor Vodafone would succeed in building a market share that is sufficient for them to achieve the level of scale economies enjoyed by the incumbent.

As for economies of scope, it is noted that GO has over the years developed its ubiquitous network to offer a suite of electronic communication services. In this regard, the sharing of common inputs across a suite of services is likely to have lowered the costs for GO to operate in the market in question.

Melita and Vodafone too offer a suite of electronic communications services that can lead to cost savings on common processes.

To this effect, Melita may very well benefit from economies of scope in the fixed, broadband, Pay TV and mobile access markets. However, Melita's market penetration for fixed and mobile access is much smaller than that of GO but nearly at par for broadband and Pay TV. This means that it is unlikely for Melita to achieve GO's level of economies of scope.

Vodafone's range of services also includes limited broadband and fixed access. In both instances, Vodafone's market presence is negligible compared to GO. It is therefore unlikely for this operator to achieve economies of scope in the provision of dedicated capacity over leased lines within the timeframe of this review.

The MCA therefore considers that GO is able to exploit economies of scale and scope more effectively than Melita and Vodafone. This may deter newer market entrants from increasing their market share and from building scale efficiencies.

iii. Vertical integration

Vertical integration involves an undertaking operating in a given market, while also being operative in a market that is at a higher or lower level in the chain of provision. Put differently, an undertaking may decide to enter a market by investing in both upstream access to infrastructure markets and downstream service provision markets, as this may give the undertaking a competitive edge over existent and potential competitors by way of market power leverage from upstream to downstream markets. Ultimately, vertical integration may deter potential entry in such markets.

In principle, the integrated provider can make it difficult for new entrants at the retail level to obtain the necessary inputs at a competitive price in the absence of regulation. Similarly, the vertically integrated provider can engage itself in a number of non-price leveraging strategies that may take the form of delaying tactics and withholding of information, amongst others.

With reference to the market under investigation, GO and Melita, and Vodafone are all vertically integrated operators, in that they are active at both the wholesale and the retail level.

However, Melita and Vodafone cannot compete at par with GO as they are absent from the provision of dedicated capacity over analogue and digital SDH leased lines.

The above would suggest that GO’s vertical integration in the supply of analogue and digital SDH leased lines is in fact likely to generate efficiencies that are not readily available to competitors.

Competition problems may arise in the absence of *ex ante* regulation, particularly if the incumbent operator opts to refuse to deal with Melita and Vodafone, should these operators consider purchasing access to wholesale services from GO with the aim of supplying analogue and SDH digital leased lines at the retail level.

In such a scenario, Melita and Vodafone would only be in a position to offer dedicated capacity over Ethernet circuits i.e. where they are effectively present at both the wholesale and retail chain of provision.

The MCA therefore believes that GO’s vertical integration may hinder competition as it can engage in uncompetitive behaviour.

Preliminary conclusion on the first criterion

From the arguments presented above it emerges that the market in question is characterized by a number of structural factors that serve as a barrier to the full replicability of the incumbent’s access network and retail offers, thereby hindering a competitive outcome for the market in question.

For instance, investment to fully replicate GO’s access network infrastructure and retail offers results in significant sunk costs.

Moreover, although Melita and Vodafone have been in business for a number of years, they are not in a position to benefit from the scale and scope efficiencies enjoyed by the incumbent.

3.3.2 Assessment of the second criterion

In this second part of the assessment, the MCA will seek to determine whether or not the market under review is moving towards a competitive outcome.

The market in question has been through a number of developments over the years and more so since the last market review in 2006. Of significance to this second stage analysis have been the advent of Melita and Vodafone.

The MCA however acknowledges that new market entry alone is not sufficient to conclude that the market is moving towards a competitive outlook.

To this effect, the MCA will look at market shares, barriers to expansion, the state of competition, price movements, and CBP before reaching a conclusion.

i. Market shares

Although market shares are not on their own determinative of a finding of SMP, market shares exceeding the 50% threshold are generally indicative of SMP. This notion stems from the EU Commission Guidelines which underline that, according to established case-law, market shares in excess of 50% are in themselves, save in exceptional circumstances, evidence of the existence of SMP.

The MCA notes that although existing wholesale regulation has been in force for the last six years and market entry has taken place, GO's overall market share in terms of connections remains high.

As at the end of 2011, GO's overall market share of the local subscriber base for retail national leased lines stood at 98.7%.

A further assessment of the distribution and evolution of market shares by type of product within the relevant product market would show that:

- GO's market share as at the of 2011 with respect to analogue leased lines and digital SDH leased lines stood at 100%; and that

- GO's market share as at the end of last year with respect to Ethernet circuits stood at 97%.

This means that in terms of national leased line connections, GO has more or less retained the same market share it enjoyed in 2006; this while the market saw the arrival of Melita and Vodafone in the supply of Ethernet.

This goes to show that several years following the launch of their commercial offerings, Melita and Vodafone still have not managed to attract a sufficient number of customers such as to pose a competitive threat to GO.

Distribution of market shares related to retail national LLs	Q1 2010	Q2 2010	Q3 2010	Q4 2010	Q1 2011	Q2 2011	Q3 2011	Q4 2011
...on the basis of subscribers								
GO	99.59%	99.60%	99.61%	99.61%	98.74%	98.73%	98.74%	98.76%
Melita	0.41%	0.40%	0.39%	0.39%	0.39%	0.39%	0.42%	0.41%
Vodafone					0.87%	0.88%	0.84%	0.83%
...on the basis of revenues								
GO	97.89%	98.43%	98.00%	98.07%	97.47%	96.20%	95.76%	92.49%
Melita	1.50%	1.50%	1.50%	1.52%	1.52%	2.99%	3.39%	3.36%
Vodafone					0.80%	1.96%	2.47%	5.07%

Table 4: Evolution of market shares for retail national leased lines

A further assessment of market shares on the basis of revenues reconfirms GO's presumption of dominance in the market under investigation, as its market share stood at 92.5% as at the end of 2011.

The MCA therefore considers that GO's market position has not been constrained by Melita's and Vodafone's entry into the market.

The MCA considers that this situation is likely to persist within the timeframe of this review, as it is not anticipated that Melita and Vodafone build sufficient market share as to constrain GO's ability to act independently of existing competitors and customers.

ii. Prices

At present, GO's retail prices for analogue leased lines and digital SDH leased lines of up to 2Mbps are regulated by the MCA. However the prices of higher bandwidth leased lines and the prices of Ethernet circuits are free to move in accordance with market forces as they are not regulated.

Although, Melita and Vodafone are not active in the provision of retail analogue and SDH leased lines at the national level, they both offer Ethernet circuits. Nevertheless, as shown by the market share assessment, GO has maintained a very high market share. Whilst the MCA observes that there is switching between analogue and SDH leased lines to Ethernet circuits, no significant switching has been observed between operators providing such services.

The MCA believes that, despite the entry of these two market players, GO has maintained the lead in this market and it is unlikely that such a position will change within the timeframe of this review.

iii. Barriers to expansion

There are circumstances wherein growth and expansion on the part of service providers, particularly newer market entrants, is inhibited by markets that are mature and saturated, and markets that display significant barriers to entry.

There are several factors which could deter the onset of additional supply in the retail market under investigation. For example, neither Melita nor Vodafone are currently providing a ubiquitous digital SDH-based offer. Given the high level of sunk costs involved in the provision of such services, the situation is not expected to change materially within the timeframe of this review.

There could also be unfavorable changes in terms of market demand that would either act as an incentive or as a disincentive for further investment and growth in the relevant market. For example, local demand for Ethernet circuits has been on the increase over the last two years.

In this regard, GO, Vodafone and Melita all have their own commercial Ethernet offers. Nevertheless, GO managed to build and maintain a high market share of this product segment, at the expense of the other operators. In fact, GO's market share of this product segment stood at 97% as at the end of last year.

The case of Vodafone is somewhat particular, in that this operator can only supply national Ethernet circuits on a very limited scale and on a case-by-case basis. The preparedness of Vodafone to grow and expand is indeed doubly constrained by the high level of sunk costs involved in network build.

The decline in demand for analogue leased lines and digital SDH leased lines with bandwidths not exceeding 2Mbit/s has not been fully transposed in increases for leased lines with higher bandwidth, including Ethernet-based offers. In fact, only around 58% of the disconnections reported under the SDH subscriber base in the last two years did in fact switched to an Ethernet-based service offer[24].

The above indicates that the local subscriber base for national leased lines is shrinking. This development can have an impact on the prospects of growth in supply, as a shrinking subscriber base may indeed suggest a lower return on investment to existing and potential suppliers.

iv. Countervailing buyer power

The degree of CBP enjoyed by customers depends on their proportion of a supplier's output, their awareness of alternative sources of supply, and the time and costs involved in switching to these alternatives.

If customers enjoy a strong negotiating position, it is likely that they could exercise CBP to restrict the ability of providers to act independently in setting prices and to eventually influence the overall conditions of supply in the market.

When buyers of a certain product or service are large and powerful, they can effectively stop their service providers from increasing prices above the competitive level. The extent of their CBP would however depend on their ability to switch to alternative providers sufficiently quickly and at a reasonable cost.

In this regard, the MCA underlines that despite Melita's and Vodafone's presence in the market in question, GO has kept its leading position in the market, even with respect to Ethernet.

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[24] The fact that 42% of disconnected SDH interface leased lines have not opted to switch to Ethernet-based offers might also indicate that xDSL, cable, IP-VPN or microwave solutions could provide a reasonable alternative to some clients, especially when low bandwidth connections are required.

However, it is recalled that the above products are excluded from the market because of differences in their functionalities to traditional leased lines and Ethernet circuits. For example, broadband services provide asymmetric connections and do not ensure the privacy of the connection.

GO has indeed managed to absorb around half of the declines it registered in terms of the number of analogue and digital SDH leased line connections over a 12-month period ending in Q4 2011 through an increase in the number of Ethernet connections.

The MCA is aware that migration to Ethernet comes at a cost. However, it is reasonable to assume that such costs do not inhibit migration from 'traditional' leased lines to Ethernet circuits, as depicted in Chart 6 which demonstrates that migration to Ethernet is happening.

Furthermore, it is likely that end-users may consider that switching to Ethernet circuits provided by their existent supplier of 'traditional' leased lines may cause less disturbance to the business when compared to switching services from one provider to another.

The MCA finally recalls that no other operator other than GO currently supplies 'traditional' leased lines. This means that end-users accustomed to analogue and SDH technology and not willing to switch to alternative technologies have no other option other than to get the service from GO.

v. Potential competition

The MCA has already assessed the state of competition in the market in question on the basis of the distribution and evolution of market shares on the basis of lines and revenues.

It is recalled that GO managed to maintain a 100% market share with respect to the provision of analogue leased lines and SDH leased lines. GO also managed to build and maintain high market shares, over 95%, with respect to the Ethernet product range.

This is likely to hinder Melita and Vodafone from achieving scale efficiencies and thereby from competing effectively with GO.

Preliminary conclusion on the second criterion

The MCA considers that the market under investigation does not tend towards effective competition within the timeframe of this review. The market share analysis shows that high market shares persist for the incumbent, both in terms of volumes and revenues, whilst Melita and Vodafone fail to build a market share as to sufficiently constrain GO's pricing behavior, and this years after having launched their commercial Ethernet offers.

The MCA has also identified high barriers to expansion, mainly as a result of high network infrastructure costs and a slow rate of growth in demand for Ethernet.

Overall, the MCA considers that market entry by Vodafone and Melita does not materially imply that the market has become effectively competitive. Given GO's high market shares, it is unlikely that the market structure would tend towards effective competition within the timeframe of this review.

The MCA therefore concludes that GO currently enjoys SMP in the retail market for the provision of dedicated capacity over national leased lines.

3.3.3 Assessment of the third criterion

In its assessment of the first and second criteria, the MCA determines that there are a number of factors that could restrict competition within the timeframe of this review.

The MCA's assessment of market shares establishes that GO enjoys a position of power in the market under investigation and that the relevant market is not tending towards effective competition.

Given the nature of the market under investigation and the potential problems that may arise, the MCA believes that competition law alone would not be sufficient to ensure the stability of the market in question and the continuity of the provision of such important services on competitive terms.

The MCA considers that *ex ante* retail obligations, other than *ex post* remedies, are necessary in the market in question.

3.4 The state of competition in the retail market for international leased lines

The MCA will carry out a three criteria test for the market in question, which is already subject to *ex ante* regulation but is not part of the Recommendation.

If, the market assessment fails any of the said three criteria, no *ex ante* regulation would be warranted and would therefore have to be withdrawn.

3.4.1 Assessment of the first criterion

Malta is connected with mainland Europe via four submarine fibre optic cables, two are owned by GO, one by Melita, and another one by Vodafone. These links are vital for the electronic communications services industry in Malta since they represent the main connection point with international providers, not just for international leased lines, but also for international calls, IP bandwidth, and other services.

The MCA observes that investment in these submarine links has been made in the last few years despite the significant financial outlays and the complexity of laying a submarine cable between Malta and Sicily.

With the exception of GO, which is currently regulated, Melita and Vodafone are offering related services on a commercial basis.

In the MCA 's view, the most important and relevant criteria in relation to the assessment of the market in question are sunk costs, economies of scale and scope, and vertical integration.

i. Sunk costs

The provision of dedicated capacity over international leased lines requires access to an international gateway and submarine cable infrastructure. To the extent that an operator does not have such infrastructure in place, a large scale upfront investment is required to set up the necessary infrastructure.

Despite the high sunk costs that are involved both Melita and Vodafone deployed an international gateway and the corresponding submarine link and have fully replicated GO's retail offers in this market.

This goes to show that whilst entry in this market entails high sunk costs, these costs do not constitute an insurmountable barrier to market entry.

ii. Economies of scale

Although GO could take some advantage of its longstanding market presence and efficient scale operations, market entry has not been deterred. Melita and Vodafone replicated GO's ubiquitous network infrastructure and international leased line offers.

Given that Melita and Vodafone achieved full replicability in this market, it is likely that they would succeed in building a market share that would give them access to scale economies within the timeframe of this review.

iii. Vertical integration

The MCA notes that market entrants have mirrored the vertically integrated structure and retail products of the incumbent in the market under consideration. In this regard, both Melita and Vodafone operate as vertically integrated operators, in the same way as GO. As is the case with the latter operator, both Melita and Vodafone have sufficient spare capacity to cater for existing and new demand.

Overall, the MCA considers that advantages accruing to GO as a result of its vertical integration do not constitute an insurmountable barrier to entry. Furthermore, the efficiencies stemming from vertical integration are not just available to GO. In fact, Melita and Vodafone could also avail of efficiencies resulting from their vertically integrated structure.

Preliminary conclusion on the first criterion

The MCA considers that high sunk costs, scale economies, and vertical integration do not constitute an insurmountable barrier to entry in the market for the provision of dedicated capacity over international leased lines and therefore the first criterion is not met.

3.4.2 Assessment of the second criterion

The assessment of the second criterion considers whether market shares, CBP, barriers to expansion and the state of competition are such that the market is tending towards effective competition.

i. Market shares

There are currently three operators active in the market under investigation. These are GO, Melita and Vodafone.

Table 5 (see below) shows that GO is the largest supplier, with Melita and Vodafone building their market share. This buildup of market share by newer market entrants has to be seen in the context of increasing demand for products offering higher bandwidths, as evidenced by the increase of Ethernet-based connections.

Given that Melita and Vodafone have fully replicated GO's retail offers and have spare capacity available to cater for new demand, it is considered reasonable to anticipate that GO's market share continues to decline within the timeframe of this review.

Distribution of market shares related to retail international LLs	Q1 2010	Q2 2010	Q3 2010	Q4 2010	Q1 2011	Q2 2011	Q3 2011	Q4 2011
…on the basis of subscribers								
GO	100.00%	97.47%	95.12%	94.29%	97.56%	93.62%	93.26%	92.22%
Melita						4.26%	4.49%	4.44%
Vodafone		2.53%	2.44%	2.86%	2.44%	2.13%	2.25%	3.33%
…on the basis of revenues								
GO	100.00%	82.47%	78.28%	81.18%	80.06%	63.24%	54.24%	53.98%
Melita						21.69%	27.00%	27.00%
Vodafone		17.53%	21.72%	18.82%	19.94%	15.07%	18.76%	19.03%

Table 5: Evolution of market shares for retail international leased lines

It is also worth noting at this stage that the assessment of market shares includes analogue leased lines, which are all GO customers, in the calculation. Since 2006 analogue leased lines are no longer offered to new clients and eventually analogue leased lines will be phased out. Each analogue disconnection would therefore raise the possibility of clients seeking an equivalent alternative, possibly offered by Vodafone or Melita. The possibility of clients switching to Vodafone and Melita would further constrain GO's pricing behavior in the market under consideration.

Table 5 illustrates that although by the end of last year GO had a 92% market share on the basis of the number of international leased lines, its share goes down to 54% when the market share assessment is undertaken on the basis of revenues.

This would confirm that Melita and Vodafone did not just replicate GO's retail international offers, but that these operators have also managed to attract high net worth customers i.e. customers purchasing high bandwidth connections and therefore with higher revenue streams. This state of affairs is likely to persist within the timeframe of this review, and it can be reasonable anticipated that GO's market share on the basis of revenues shall decline further below the 50% threshold over the next two years.

The MCA therefore considers that although Melita and Vodafone only account for a small market share in terms of the number of international leased lines, they are in a position to effectively constrain the incumbent by building a market share on customers that can be considered high net worth.

The small customer base characterising this market may therefore carry more weight in terms of CBP as it generates a higher turnover than the customer base for national leased lines.

ii. Countervailing buyer power

If customers enjoy a strong negotiating position, it is likely that they could exercise CBP to restrict the ability of providers to act independently in setting prices and to eventually influence the overall conditions of supply in the market.

It is recalled that Melita and Vodafone have fully replicated GO's international leased line offers. End-users in this market therefore have the opportunity to switch to these alternatives, especially in response to a price increase implemented by the GO.
However, the existence and extent of CBP does not just depend on the availability of alternatives but also on the commercial significance of the customer to the supplier.

It has already been argued in the previous section that some customers are likely to be individually important to the supplier as they could account for a high proportion of its turnover in the market, as evidenced by Melita's and Vodafone's customer base. This suggests that some buyers in the market in question have sufficient bargaining power as to constrain GO from behaving to an appreciable extent independently of competitors and customers.

This reinforces the view of the MCA that Melita and Vodafone may further constrain the ability of GO to act independently within the market under review, not by necessarily increasing their market share in terms of the number of international leased lines but on the basis of acquiring customers that account for a larger segment of reported revenues.

The MCA also acknowledges that switching between the incumbent and alternatives is also likely to increase within the timeframe of this review. This would pose an additional constraint on GO's pricing behavior.

In line with market trends observed over the last two years, demand for high bandwidth leased lines is also expected to increase further in the coming years.

It therefore follows from the above that buyer power in the market under investigation shall assume increasing relevance, especially as demand for higher bandwidth is on the increase.

The countervailing buyer power of customers in the market in question, together with availability of alternatives, would ensure that GO does not act independently of its competitors and customers within the timeframe of this review.

iii. Barriers to expansion

The MCA observes that there are no barriers to expansion in the market under review, despite a small pool of buyers and a high level of sunk costs associated with market entry.

This is because Melita and Vodafone are managing to build their market share on high net worth customers and have sufficient capacity to cater for anticipated demand. It is therefore reasonable to consider that these operators would not face any barriers to expansion.

The MCA therefore considers that there are no barriers to growth and expansion in the market under investigation.

iv. Potential competition

The MCA has already assessed the state of competition in the retail market under consideration, mainly on the basis of the distribution and evolution of market shares.

It is recalled that although GO managed to maintain a high market share with respect to the number of end-users having access to an international leased line, newer market entrants have managed to offset the position of GO by building a small market share on high net worth customers.

Note is again made of GO's declining market share with respect to revenues generated in the market. In this regard, GO's market share went down by 46% in two years.

Given that market demand is shifting towards lines with higher bandwidth, it is likely that, over the next two years, Melita and Vodafone would build a stronger market share, on the basis of the number of leased lines, as well as on the basis of revenues earned in relation to the retail products on offer.

The MCA therefore considers that GO's high market share with respect to the number of lines does not support a presumption of dominance by this operator in the market. This is because Melita and Vodafone could exercise sufficient pressure on the incumbent operator by managing to attract customers with high turnover.

The MCA therefore believes that the market in question is effectively competitive. The MCA is also of the opinion that Melita and Vodafone are capable of increasing their market share such as to pose a greater competitive constraint on GO.

Preliminary conclusion on the second criterion

The MCA considers that the market under investigation is effectively competitive and that it is expected to remain so within the timeframe of this review.

The market share analysis shows that GO's high market share with respect to the number of lines is not sufficient to support the presumption of dominance in the market concerning international leased lines.

Melita and Vodafone offset GO's high market penetration in terms of connections by building and maintaining a market share on the sales value generated by their customers. This strategy enables these two operators to sufficiently constrain GO's pricing behavior and its ability to behave independently of competitors.

3.4.3 Assessment of the third criterion

In its assessment of the first and second criteria, the MCA has determined that the market under consideration is effectively competitive as the incumbent operator GO cannot afford to engage in anti-competitive behavior, given the competitive constraints posed by Melita and Vodafone.

The MCA considers that Melita and Vodafone will continue building market share within the timeframe of this review, at the expense of GO.

Overall, the MCA believes that competition in this market is possible in the absence of *ex ante* regulation at this level. It also deems that competition law alone would be sufficient to ensure the stability of the market in question and the continuity of the provision of such important services on competitive terms.

3.5 Overall conclusions on the state of competition in retail leased lines markets

On the basis of findings in Sections 3.3 and 3.4, the MCA considers that:

i. The retail market for the provision of dedicated capacity over national leased lines exhibits high and non-transitory barriers to entry, including a high level of sunk costs and lack of CBP, which cannot be overcome within the timeframe of this review.

   GO enjoys SMP in the market in question, and its high market share is not expected to fall significantly prior to the conduct of the next market review.

   Competition law, *per se*, is therefore deemed not sufficient to address and mitigate the identified barriers to entry and the MCA therefore proposes e*x ante* regulatory intervention to avoid harm on existing competition and to ensure future market entry.

ii. The retail market for the provision of dedicated capacity over international leased lines does not present insurmountable barriers to market entry.

Market entry has taken place, with Melita and Vodafone launching commercial offers that are increasingly exercising pressure on GO's pricing behaviour.

In this regard, the market share of GO will decline further from its current values, with Melita and Vodafone building market share. The market structure is therefore deemed to be effectively competitive and to remain so within the timeframe of this review.

Competition law, *per se*, is deemed sufficient to address any potential competition shortcomings in this market.

Q3. Do you agree with the above preliminary conclusions regarding the assessment of the state of competition of retail leased lines markets?

3.6 The state of competition in the wholesale market for national trunk segments of leased lines

The MCA defined a wholesale market for the provision of national trunk segments of leased lines.

The relevant product market has been proposed to comprise analogue leased lines, digital SDH leased lines and digital Ethernet leased lines.

There are currently three suppliers of national trunk segments of leased lines in Malta. These are GO, which owns a nationwide copper access network infrastructure with coverage across the whole national territory and supplies ubiquitous digital SDH-based and Ethernet-based offers; Melita, which also owns a nationwide coax access network infrastructure but only supplies Ethernet-based offers; and Vodafone, which lacks the requisite national infrastructure to supply ubiquitous wholesale offers. Vodafone is currently offering Ethernet-based offers on a very limited scale.

Given that the market in question is not listed in the EU Commission Recommendation as a relevant market susceptible to *ex ante* regulation, the MCA carries out a Three Criteria Test to determine whether regulatory intervention is warranted in this market.

3.6.1 Assessment of the first criterion

The assessment of the first criterion considers whether sunk costs and control of infrastructure not easily duplicated, economies of scale and scope, and vertical integration would constitute a barrier to entry in the market under investigation.

i. Sunk costs and control of infrastructure not easily duplicated

Rolling out fixed infrastructure is a costly and a lengthy procedure as it entails significant financial outlays and long implementation timeframes. This is of particular relevance to the market in question as access to physical infrastructure in the form of ducting and fibre deployment as well site acquisition is required to offer dedicated capacity over national trunk segments of leased lines.

Locally, GO was the first operator to supply trunk segments of leased lines throughout the entire national territory. GO also has both an SDH trunk network and an Ethernet trunk network over which it could offer dedicated capacity.

GO utilizes a number of Ethernet switches located in a number of sites across the island. This enables GO to reach its end-users more easily, using shorter loops for terminating segments and make more efficient use of the trunk segments.

Melita on its part also has a nationwide access network but is not in a position to offer the same products offered by GO. In fact Melita only offers Ethernet products but not SDH trunk segments.

Furthermore, Melita hosts all of its Ethernet switches within its Network Operations Centre (‘NOC’). When deploying an Ethernet connection Melita has to physically connect the end-user to its NOC, which implies longer loop lengths and increased operational difficulties to connect the two sites. This may pose a constraint on Melita to access end-users which are far from its NOC.

Note is also made of Vodafone, the third operator active in this market. As already explained earlier, Vodafone has only deployed Ethernet circuits to selected clients and on a case-by-case basis. Vodafone’s offer is therefore far from ubiquitous. In fact, Vodafone would have to absorb significant (sunk) costs, and long implementation timeframes, in order to replicate GO’s ubiquitous network infrastructure, since the said operator does not own a national access network. In this perspective, new demand for Vodafone would imply additional network deployment , which is associated with significant sunk costs and lengthy implementation timeframes. This situation is not expected to change within the timeframe of this review.

Due to the high level of sunk costs involved in network deployment and the ability of the incumbent to benefit from a better network setup and scale operations, GO’s ubiquity is not likely to be replicated within a two-year timeframe.

The Recommendation on relevant markets makes reference to the possibility that in a number of Member States the trunk network of the incumbent can be replicated. The MCA notes that since the last review in 2006 neither Melita nor Vodafone have replicated GO’s trunk network and product offerings.

The MCA has also considered whether any existent operator or new entrant could, within the timeframe of this review, profitably replicate such a trunk network. The MCA has modeled the possibility of an operator replicating GO’s trunk network based on the costs of an efficient operator and using a LRIC methodology.

At the outset, the MCA safely considers that no operator would replicate all the existing aggregation points used by GO to offer SDH services. Such a significant investment decision is irrational to consider at this stage when Ethernet has become the mainstream technology for the provision of dedicated capacity. Consequently the MCA has only modeled a smaller number of sites which GO uses for hosting its Ethernet switches.

The model considers all the costs associated with the deployment of a trunk network that would allow the new entrant to have a number of sites scattered across the island to easily replicate GO’s Ethernet offerings.

From the results obtained the MCA safely concludes that with the three year timeframe of this review no alternative operator would find it financially feasible to replicate GO's network. The table below illustrates the results of a sensitivity analysis based on the model[25].

NPV with a 30% market share			
Connection Speed	**5yrs**	**7yrs**	**10yrs**
100% - 10Mbps	✗	✗	✗
50% - 10Mbps / 50% - 100Mbps	✗	✗	✗
NPV with a 50% market share			
Connection Speed	**5yrs**	**7yrs**	**10yrs**
100% - 10Mbps	✗	✗	✗
50% - 10Mbps / 50% - 100Mbps	✓	✓	✓

Table 6: Financial feasibility results

The only scenario where replicating GO's network would be financially feasible is based on the following conditions:

- the alternative operator garners 50% market share of the total leased lines connections in Malta from the first day of operation;
- at least 50% of these connections must have a speed of a 100Mbps or more; and
- the project becomes marginally profitable after five years.

Such a scenario cannot materialize within the timeframe of this review and it also highly unlikely that any new entrant would manage to start its operations with a 50% market share. Furthermore, the fact that none of the existing operators have managed to replicate GO's network to date further indicates that this market presents very high barriers to entry.

The MCA therefore concludes that high sunk costs and infrastructure not easily replicable pose a barrier to future market entry.

ii. Economies of scale and scope

GO's entry in this market materialized years ago, well before Melita's and Vodafone's entry. This made it possible for the incumbent to gather its existing subscriber base since it was the only operator offering these kind of services in Malta.

Given its ubiquity and high market shares, GO's roll out of its SDH and Ethernet trunk networks is likely to enjoy better economies of scale as opposed to any other new entrant. In this regard, GO could benefit from cost advantages and efficiencies that are not achievable by Melita and Vodafone within the timeframe of this review.

Meanwhile, GO is also present in a number of other wholesale markets and could therefore utilize the trunk infrastructure for the provision of a whole range of other products and services. This would suggest that GO could also exploit economies of scope to its advantage as it is able to share the cost of supplying trunk services with that of other electronic communications products.

[25] Results are being omitted due to the sensitivity of the data.

Economies of scope are therefore considered as an added factor that may contribute to GO's ability to provide wholesale national trunk segments of leased lines at significantly lower costs than those incurred by its competitors.

Consequently GO enjoys economies of scale and scope that are not readily available to its competitors. This poses a barrier to the achievement of full replicability by competitors and could diminish the incentive for future market entry.

iii. Vertical and horizontal integration

It is considered that, given its long-standing market presence and its high market share, the incumbent operator GO may take advantage of its position as a vertically integrated operator to leverage power (vertically) into the retail leased line markets and (horizontally) into related wholesale markets.

GO may, for example, embark on a strategy of accommodating internal demand, a strategy that would allow the said operator to benefit its own retail arm as it discriminates against other wholesale customers.

Such behaviour would foreclose competition in the wholesale market under consideration and is likely to enforce barriers to entry in related markets.

The MCA therefore concludes that GO can reap economic advantages from vertical and horizontal integration, and that these advantages can be exploited to foreclose competition within the timeframe of this review.

Preliminary conclusion on the first criterion

The high level of sunk costs involved in replicating GO's ubiquitous network infrastructure and offers, the ability of GO to take advantage of significant economies of scale and scope and vertical and horizontal integration, constitute a significant barrier to market entry and market expansion in the provision of dedicated capacity over national trunk segments of leased lines.

The first criterion for defining the market in question as being susceptible to *ex ante* regulation is therefore fulfilled.

3.6.2 Assessment of the second criterion

The assessment of the second criterion considers whether market shares, countervailing buyer power, barriers to expansion, and the state of competition are such that the market is tending towards effective competition.

i. Market shares

The MCA notes that although existing wholesale regulation has been in force for the last six years and market entry has taken place, GO's overall market share with respect to national trunk segments of leased lines has always been high.

When assessing the distribution of market shares, calculations take into consideration both self-supply of national trunk segments of leased lines and the supply of trunk segments to third parties.

As at the end of 2011, GO's share of the product market, which now also takes into account the Ethernet trunk network, stood at 97.6% in terms of connections and 77.3% in terms of revenues generated.

Distribution of market shares related to national trunk segments of leased lines	Q1 2010	Q2 2010	Q3 2010	Q4 2010	Q1 2011	Q2 2011	Q3 2011	Q4 2011
Number of lines								
GO	99.16%	99.00%	98.96%	99.03%	98.31%	97.85%	97.75%	97.62%
Melita	0.50%	0.50%	0.48%	0.49%	0.48%	0.96%	1.04%	1.02%
Vodafone	0.34%	0.50%	0.56%	0.49%	1.21%	1.20%	1.21%	1.36%
Revenues								
GO	92.28%	89.92%	87.47%	89.23%	89.42%	84.82%	82.83%	77.31%
Melita	1.29%	1.00%	1.21%	1.18%	1.10%	6.13%	7.06%	9.75%
Vodafone	6.43%	9.08%	11.31%	9.59%	9.48%	9.05%	10.11%	12.93%

Table 7: Evolution of market shares for wholesale national trunk circuits

Table 7 shows that the prevailing market share of the incumbent operator gives rise to the presumption of SMP. This is because although both Melita and Vodafone has been commercially active in the market in question for a number of years, their combined market share does not even add up to 25% . The MCA considers that this situation is not likely to change within the timeframe of this review.

The MCA considers that GO's market share is unlikely to fall within the timeframe of this review, especially as Melita and Vodafone will not be in a position to fully replicate the whole range of the incumbent's wholesale offers in the market in question.

ii. Countervailing buyer power

The degree of CBP enjoyed by customers depends on their proportion of a supplier's output, their awareness of alternative sources of supply, and the time and costs involved in switching to alternatives.

If customers enjoy a strong negotiating position, it is likely that they could exercise CBP to restrict the ability of providers to act independently in setting prices and to eventually influence the overall conditions of supply in the market.

It is of note that the market in question is characterized by a small pool of buyers. Furthermore, nearly 98% of existing buyers acquire national trunk segments of leased lines from GO.

The ability of these buyers to exercise CBP on the incumbent depends on their capability to switch to alternatives and/or else on their ability to self-supply their own requirements, sufficiently quickly and at a reasonable cost.

The MCA underlines that, despite market entry by Melita and Vodafone, GO has kept its leading position in the market. Competitors did not manage to build market share, as buyers continue to rely on GO's SDH and Ethernet trunk networks. It is also of note that the largest 'buyer' of GO's national trunk segments of leased lines is its own retail arm.

The MCA therefore considers that it is unlikely for buyers in this market to exert a sufficiently strong CBP on the incumbent, such as to constrain it from pricing above the competitive level and from acting independently of wholesale customers and competitors in the absence of wholesale regulation.

iii. Barriers to expansion

There are several factors which could deter newer entrants from expanding in the market under investigation. For example, Melita does not avail of an SDH trunk network. Given the high level of sunk costs involved in deploying associated network infrastructure, Melita is not likely to expand its market presence to the SDH segment of the product market within the timeframe of this review.

In addition, barriers to switching may impede Melita from building a market share in the Ethernet segment of the product market. This is because customer loyalty, developed as a result of the long term market presence of the incumbent, may pose a barrier to switching on GO's clients. For example, given their long-term relationship and loyalty to the incumbent, GO's customers may be reluctant to switch to an alternative product offered by Melita or Vodafone or any other potential competitor at the end of their contract term.

In a scenario where neither Melita (nor Vodafone) could fully replicate GO's SDH trunk network and where most of the wholesale customers are serviced by SDH-based offers of the incumbent, barriers to switching effectively pose a significant barrier to market expansion. These barriers to switching may diminish over time as, for example, demand shifts to services requiring an Ethernet-based transport layer. However, such a shift is not expected to materialise sufficiently within the timeframe of this review as to pose a credible threat on the incumbent.

Meanwhile, Vodafone can only supply national trunk segments of leased lines on a very limited scale and on a case-by-case basis. The preparedness of Vodafone to grow and expand in the market under consideration is indeed constrained by the high level of sunk costs involved in network build.

The MCA does not therefore consider that newer market entrants can expand to such a scale over the next two years, as to constrain the ability of the incumbent to act independently of competitors and customers.

iv. Potential competition

The MCA has already assessed the state of competition in the market in question on the basis of the distribution and evolution of market shares[26]. It is recalled that GO managed to maintain a high market share, close to 100% in number of lines, in the market under consideration, despite Melita's nationwide presence.

The MCA also considers that within the timeframe of this review, it would be rather difficult for Melita and Vodafone or any new entrant to gain sufficient market share as to significantly change the current market structure and consequently the results of this analysis.

Therefore, the MCA considers that the market under investigation will not become competitive as the level of potential competition is low.

Preliminary conclusion on the second criterion

The MCA considers that the market under investigation does not tend towards effective competition within the timeframe of this review. The market share analysis shows that high market shares persist for the incumbent, that Melita has not managed to build market share, years after having launched its commercial Ethernet offers, and that it is not commercially viable for Vodafone to replicate GO's ubiquitous network infrastructure and offers.

[26] Market shares are calculated on the basis of the number of retail leased lines requiring a national trunk segment.

The MCA has also identified high barriers to expansion, mainly as a result of high network infrastructure costs and a low rate of growth in demand.

Overall, the MCA considers that, given its high market shares and infrastructure not easily replicable, GO is deemed to enjoy SMP in the wholesale market for the provision of dedicated capacity over national trunk segments of leased lines.

3.6.3 Assessment of the third criterion

In its assessment of the first and second criteria for this market, the MCA gives careful consideration to factors which could inhibit market entry and market expansion and which could potentially restrict competition within the timeframe of this review.

The MCA concludes that the market in question is subject to high and non-transitory barriers to entry, with GO capable of behaving independently of competitors and customers in the absence of *ex ante* regulation.

Given the nature of the market under investigation and the potential problems that may arise, the MCA believes that competition law alone would not be sufficient to ensure that the market under investigation becomes competitive.

Given the barriers to entry identified in this market and the fact that there are no prospects for effective competition, the MCA considers that detailed *ex ante* obligations other than *ex post* remedies would be required.

3.7 The state of competition in the wholesale market for international trunk segments of leased lines

The MCA identified the provision of dedicated capacity over international trunk segments of leased lines as a separate market to that concerning the provision of dedicated capacity over national trunk segments.

It has been further stated that international trunk segments include connectivity from the undertaking's international gateway to the point of interconnection with third party international facilities, with the closest point of presence located in Sicily.

The boundary between international and national trunk segments of leased lines has been identified as the international gateway.

Given that the proposed market is not listed in the EU Commission Recommendation on relevant markets susceptible to ex ante regulation, a Three Criteria Test is carried out to determine whether it should be subject to *ex ante* regulatory intervention.

3.7.1 Assessment of the first criterion

In assessing whether the market under investigation is subject to high and non-transitory barriers to entry, the assessment of the first criterion takes into consideration a number of factors that could possibly give rise to such barriers. These are sunk costs and control of infrastructure not easily replicable, economies of scale and scope, and vertical integration.

i. Sunk costs and control of infrastructure not easily replicable

Of particular relevance in the current assessment are the high sunk costs associated with investing in infrastructure required for the provision of dedicated capacity over international trunk segments of leased lines.

Prior to 2006, only the incumbent operator GO owned an international gateway and submarine link. The situation in the following years, first with Vodafone deploying its own gateway and submarine cable, and then with Melita undertaking a similar investment years later.

It is of note that these investments in international connectivity have been made in the last few years, despite the significant financial outlays and the complexity that such projects would entail.

Melita and Vodafone have managed to fully replicate GO's network infrastructure and are currently supplying ubiquitous SDH-based and Ethernet-based offers in the market under investigation.

This would therefore suggest that although the level of sunk costs incurred to establish a presence in the market under review is high, it is not considered to pose an insurmountable barrier to entry.

ii. Economies of scale and scope

Given the long term market presence and its high market share, GO may be considered to enjoy efficient scale operations in the market in question.

However, the MCA considers that even Melita and Vodafone are already in a position to avail of some cost advantages based on their client portfolio and it is bound to increase further as they acquire new customers.

Furthermore, as is the case with GO, Melita and Vodafone can also benefit from economies of scope, as they offer a range of products over their international trunk segments of leased lines which fully replicates that of GO.

The ability of Melita and Vodafone to benefit from economies of scale and scope would suggest that GO is unlikely to be in a position whereby it could act independently of competitors.

In itself, the fact that both Melita and Vodafone managed to replicate GO's services is indicative that economies of scale do not constitute an insurmountable barrier to entry.

iii. Vertical integration

The MCA notes that market entrants have mirrored the vertically integrated structure and products of the incumbent in the provision of services in the market under consideration.

In this regard, both Melita and Vodafone are currently offering a vertically-integrated product and both have sufficient spare capacity to cater for existing and new demand.

Therefore, the efficiencies stemming from vertical integration are available to newer market entrants, and not just to the incumbent. To this effect, it is considered that Melita and Vodafone could also avail of scale efficiencies resulting from their vertically integrated structure.

Overall, the MCA considers that advantages accruing to GO as a result of its vertical integration do not therefore constitute an insurmountable barrier to entry.

Preliminary conclusion on the first criterion

The MCA considers that although market entry is subject to high sunk costs and lengthy investment periods, these costs are not considered to be insurmountable.

Market entry has indeed materialized, with Melita and Vodafone replicating the incumbent's ubiquitous international trunk infrastructure and related offers.

3.7.2 Assessment of the second criterion

The assessment of the second criterion considers whether market shares, countervailing buyer power, barriers to expansion and the state of competition are such that the market is tending towards effective competition.

i. Market shares

The assessment of the distribution of markets shares sheds light on the relative strength and position of each supplier in the market under investigation.

The current assessment calculates market shares on the basis of the number of international segments and on the basis of market revenues.

Calculations on the basis of connections take into consideration the self-supply of international trunk segments and the supply of international trunk segments to third parties.

An important development in the market under consideration has been market entry by Melita and Vodafone, which are currently competing directly with GO, through their wholesale SDH and Ethernet offers. As a result, the competitive dynamics observed for this market are considered as differing significantly from those observed in the market for national trunk segments of leased lines.

Table 8 shows that GO's market share with respect to the number of international trunk segments of leased lines declined by nine percent over the last two years, to 86.1% as at the end of 2011.

Table 8 however also illustrates that GO's market share calculated on the basis of revenues went down from 73% as at the end of Q1 2010 to around 44% as at the end of last year, whilst Melita and Vodafone built market share.

Distribution of market shares related to international trunk segments of leased lines	Q1 2010	Q2 2010	Q3 2010	Q4 2010	Q1 2011	Q2 2011	Q3 2011	Q4 2011
…on the basis of the number of lines								
GO	95.29%	93.18%	93.27%	93.41%	93.41%	88.57%	87.88%	86.14%
Melita	-	-	-	-	-	5.71%	6.06%	5.94%
Vodafone	4.71%	6.82%	6.73%	6.59%	6.59%	5.71%	6.06%	7.92%
…on the basis of revenues								
GO	73.23%	63.70%	56.78%	64.42%	62.78%	52.25%	44.37%	43.84%
Melita	-	-	-	-	-	18.09%	22.12%	21.98%
Vodafone	26.77%	36.30%	43.22%	35.58%	37.22%	29.66%	33.51%	34.17%

Table 8: Evolution of market shares for international trunk circuits

This development confirms that Melita and Vodafone did not just manage to replicate GO's wholesale offers in this market, but also managed to build market share on high net worth customers.

Given that Melita and Vodafone also have spare capacity available to cater for new demand, it is considered reasonable to anticipate that GO's market share declines even further within the timeframe of this review.

The availability of alternative offers to those supplied by the incumbent has therefore had a significantly positive impact on this market's competitive dynamics, as reflected by falling market shares for the incumbent operator.

It is therefore considered that the market under investigation is effectively competitive.

ii. Countervailing buyer power

The degree of CBP enjoyed by customers depends on their proportion of a supplier's output (or revenues), their awareness of alternative sources of supply, and the time and costs involved in switching to these alternatives.

It is recalled that Melita and Vodafone have replicated the wholesale offers of the incumbent in the market under review. Clients in this market can therefore switch to these alternatives, especially in response to a price increase implemented by the incumbent. The fact that Melita and Vodafone have built market share is indicative that wholesale clients in this market are aware and indeed consider wholesale offers supplied by these operators as an adequate alternative to those offered by the incumbent.

However, apart from the awareness of alternatives and the possibility to switch to these alternatives, the ability of wholesale clients to exert CBP on their supplier also depends on their commercial relevance.

It has already been argued in the previous section that, when comparing the distribution of market shares on the basis of revenues, Melita and Vodafone have managed to attract high net worth customers.

This scenario points to the presence of customers in this market that could effectively exercise buyer power on GO and other suppliers as to effectively constrain their ability to act independently of its competitors and customers within the timeframe of this review.

iii. Barriers to expansion

There are circumstances wherein newer market entrants would find it difficult to grow, especially in markets that are mature and saturated, and which display significant barriers to entry.

The MCA however observes that both Melita and Vodafone are currently supplying ubiquitous SDH-based and Ethernet-based offers, in direct competition to those supplied by GO.

In this regard, Melita and Vodafone managed to build a market share on high net worth customers, and it is likely that, as a result of growing competition, these operators will be able to maintain and possibly build upon these shares within the timeframe of this review.

Further to the above, Melita and Vodafone are vertically integrated operators with excess capacity and appropriate coverage to cater for current and future demand. Both operators are competing effectively with GO, and thereby constraining its behavior on this market.

The MCA considers that there are no barriers to growth and expansion in the market under investigation.

iv. Potential competition

The MCA has already assessed the state of competition in the wholesale market concerning international trunk segments of leased lines on the basis of an assessment of distribution of market shares.

It is recalled that newer market entrants have managed to challenge GO’s market position by building a market share on high net worth customers.

Note is made of GO’s market share with respect to market revenues. In this regard, GO’s market share stood at 43.8%, with Vodafone and Melita accounting for the remaining share.

The MCA therefore considers that GO’s high market share with respect to the number of international trunk segments of leased lines does not support a presumption of dominance by this operator in the market in question. This is because Melita and Vodafone could exercise sufficient pressure on the incumbent operator by managing to attract customers with high turnover.

The MCA reiterates that Melita and Vodafone are likely to maintain and possibly build on their market share within the timeframe of this review.

Preliminary conclusion on the second criterion

The MCA considers that the market under investigation is effectively competitive and that it is expected to remain so within the timeframe of this review.

3.7.3 Assessment of the third criterion

The MCA notes that the market under consideration displays strong competitive dynamics that are likely to persist within the timeframe of this review.

Melita and Vodafone pose a competitive constraint on GO as both operators are providing ubiquitous wholesale offers and both have sufficient spare capacity to meet current and future demand without incurring significant additional costs.

The MCA considers that in the absence of *ex ante* regulation in the market under investigation, competition conditions would persist within the timeframe of this review.

The MCA also deems that, in the absence of *ex ante* regulation, the MCCAA could effectively deal with any potential issues that may arise through *ex post* powers.

3.8 Overall conclusions on the state of competition in wholesale leased lines trunk markets

On the basis of findings outlined in Sections 3.6 and 3.7, the MCA considers that:

i. The wholesale market for the provision of dedicated capacity over national trunk segments of leased lines exhibits high and non-transitory barriers to entry, including a high level of sunk costs and lack of CBP, which cannot be overcome within the timeframe of this review.

GO holds SMP in the market in question, and its high market share is not expected to fall prior to the conduct of the next market review.

Competition law, *per se*, is deemed not sufficient to address and mitigate the identified barriers to entry and the MCA therefore proposes ex *ante* regulatory intervention to avoid harm on existing competition and to ensure future market entry.

ii. The wholesale market for the provision of dedicated capacity over international trunk segments of leased lines does not present insurmountable barriers to market entry.

The market share assessment clearly indicates that Melita and Vodafone are exercising strong competitive pressures on GO, as reflected by the declining market shares of the incumbent in terms of number of lines and a low market share in terms of revenues.

The market structure is therefore deemed to be effectively competitive, and that competitive conditions are likely to persist within the timeframe of this review.

The MCA also considers that competition law, *per se*, will be sufficient to address competition shortcomings in this market.

Q4. Do you agree with the above preliminary conclusions regarding the assessment of the state of competition in wholesale markets concerning trunk segments of leased lines?

3.9 The state of competition in the wholesale market for terminating segments of leased lines

This section presents an analysis of dominance in the wholesale market for the provision of dedicated capacity over terminating segments of leased lines.

In its assessment of SMP, the MCA takes utmost account of the Commission's SMP Guidelines.

3.9.1 Assessment of SMP against relevant criteria

Market dominance can be assessed using a large number of criteria, as described in the Commission's and the MCA's guidelines on SMP assessment.

The MCA is of the opinion that, in light of market evidence and the principle of proportionality, this exercise must carefully take into account only a select number of criteria.

In the MCA 's view, the most relevant criteria for the purposes of the current assessment are the following:

- market share analysis;

- the level of sunk costs;

- barriers to entry and potential competition;

- economies of scale and scope;

- infrastructure not easily replicable; and

- vertical integration.

These criteria are in turn discussed in more detail below.

3.9.1.1 Analysis of market shares

The MCA notes that high market shares are not in themselves decisive as to whether an undertaking enjoys SMP in a market. Nonetheless, market shares that exceed the 50 per cent threshold would generally raise the presumption of SMP. This is in line with EU Commission Guidelines which state that, according to established case-law, market shares in excess of 50% are in themselves, save in exceptional circumstances, evidence of the existence of SMP.

Table 9 below shows that with respect to the distribution of market shares and the way these developed over the last two years, GO's market share of terminating connections was persistently in excess of 95% in 2010 and 2011.

GO's market shares on the basis of revenues are also high, well in excess of the 50% threshold.

It is considered that this situation will not change over the next two years, mainly because of the relatively small size of the market segment in question, the limited opportunities envisaged for further market expansion, and the high level of sunk costs that operators such as Vodafone would need to assimilate in order to replicate the incumbent's infrastructure and eventually capture and maintain a larger market share.

Distribution of market shares related to terminating segments of leased lines	Q1 2010	Q2 2010	Q3 2010	Q4 2010	Q1 2011	Q2 2011	Q3 2011	Q4 2011
…on the basis of the number of lines								
GO	99.30%	99.22%	99.20%	99.24%	98.50%	98.25%	98.19%	98.13%
Melita	0.52%	0.52%	0.50%	0.51%	0.50%	0.75%	0.81%	0.80%
Vodafone	0.17%	0.26%	0.29%	0.25%	1.00%	1.00%	0.99%	1.07%
…on the basis of revenues								
GO	93.78%	93.07%	91.34%	92.56%	92.58%	90.02%	88.71%	83.24%
Melita	1.49%	1.16%	1.42%	1.39%	1.28%	3.68%	4.18%	6.92%
Vodafone	4.73%	5.77%	7.24%	6.05%	6.14%	6.30%	7.10%	9.84%

Table 9: Evolution of market shares for terminating segments of leased lines

From a prospective point of view, the MCA expects that GO shall maintain high market shares within the timeframe of this review. It is considered that any increase in market share by alternative operators within the timeframe of this review is not likely to be sufficient as to reduce the ability of GO from acting independently of competitors.

In conclusion, the MCA considers that GO's market share is at a level which is indicative of SMP in the provision of dedicated capacity over terminating segments of leased lines.

Given the forward looking nature of this document, the MCA considers other criteria to form the basis of a finding of SMP.

3.9.1.2 Sunk costs

Sunk costs are upfront costs that an undertaking must incur when investing in market entry. Given that sunk costs are not recoverable upon exit, the new entrant must ensure that return on investment at least covers these sunk costs.

In the context of terminating segments of leased lines, significant sunk costs arise with the deployment of an access network infrastructure. Locally, GO was the first operator to supply terminating segments of lease lines throughout the entire national territory. Given its long standing market presence, it is conceivable that the said operator would be in a better position to ensure that the return covers a substantial part of the investments undertaken, especially initial investments undertaken on network build out, such as the costs incurred on ducts and trenches. On the other hand, newer market entrants would still have to incur such costs associated with newer deployments.

In order to compete effectively with the incumbent operator, Melita and Vodafone would have to replicate GO's access network infrastructure and wholesale leased line product / service offerings at a national level.

However, it is considered that although Melita owns a nationwide access network infrastructure, it is still not in a position to offer the same level of ubiquity as that offered by GO. This is because Melita can only provide Ethernet circuits but not SDH based leased lines. Furthermore, as already discussed Melita has to deploy long terminating loops up to its NOC, which may pose some limitations for Melita when clients are located far from the NOC.

On the other hand, Vodafone would have to replicate GO's ubiquitous network infrastructure, since it does not own a national access network.

In both cases highlighted above, the high levels of sunk costs involved in replicating GO's services is unlikely to make it economically viable for these operators to compete with the incumbent within the timeframe of this review.

The ensuing asymmetry would make it very difficult for existing and potential market entrants to compete effectively with the incumbent in the provision of dedicated capacity over terminating segments of leased lines.

3.9.1.3 Economies of scale and scope

GO's entry in the market in question materialized well before that of Melita and Vodafone. As a result, GO managed to build and maintain a very strong market share, close to 100%, which is unlikely to fall within the timeframe of this review.

Given its ubiquity and high market shares, GO is likely to enjoy better scale economies, as opposed to Melita and Vodafone. In this regard, GO could benefit from cost advantages and efficiencies that are not achievable by newer market entrants within the timeframe of this review.

GO is also present in a number of wholesale markets and could therefore exploit economies of scope to its advantage by sharing the cost of supplying terminating services with that of other electronic communications products.

It is therefore considered that the economies of scale and scope that GO has in the market in question pose a barrier to the achievement of full replicability by Melita and Vodafone and could also diminish the incentive for future market entry.

3.9.1.4 Control of infrastructure not easily duplicated

Investing in physical infrastructure is very often an extensive and costly exercise.

As already noted in previous sections, only the incumbent operator GO has a nationwide access network infrastructure in place.

Given that a large part of the investment required for the deployment of fixed networks cannot be recovered on exit, it is in practice very difficult for either Melita and Vodafone to fully replicate GO's ubiquitous network and service offers related to terminating segments of leased lines.

The MCA has already established that replicating the trunk network of GO is not financially viable and consequently it is also considered that replicating the terminating infrastructure of GO would also be unprofitable.

The high sunk costs involved in replicating GO's access network infrastructure therefore pose a high and non transitory barrier to entry and expansion in the market under investigation.

3.9.1.5 Vertical and horizontal integration

An undertaking may decide to enter a market by investing in both upstream access to infrastructure markets and downstream service provision markets. This strategy is not in itself detrimental as it would generally lead to efficiency gains in the provision of services to end-users. However, the presence of an undertaking at both the higher and lower levels in the chain of provision could still raise an incentive for such an undertaking to discriminate against existent and potential competitors, and an incentive to leverage market power from upstream to downstream segments.

The leveraging of market power by vertically integrated operators could involve the implementation of price and non-price leveraging strategies.

It is considered that, given its long standing presence and high market share in the provision of dedicated capacity over terminating segments of leased lines, the incumbent operator GO may abuse of its position as a vertically integrated operator to leverage power (vertically) into the retail leased line markets and (horizontally) into the wholesale trunk markets.

GO may embark on a strategy of accommodating internal demand, a strategy that would allow the said operator to benefit its own retail arm from economies of scale and scope and discriminate against other wholesale customers.

Such behaviour would therefore foreclose competition in the wholesale market concerning terminating segments of leased lines and to enforce barriers to entry in related retail and wholesale markets.

The MCA therefore concludes that vertical integration may represent a barrier to entry in the wholesale market in question.

3.9.1.6 Barriers to switching for consumers

Barriers to switching for consumers may pose a structural barrier to entry and to expansion. The main considerations related to barriers to switching relate to the contract terms of agreement between the customer and the service provider, such as the term of the contract, and the 'actual' costs involved in switching supplier during the contract period or after the expiry of the contract term.

Customer loyalty, developed as a result of the long-term market presence of the incumbent, may also pose a barrier to switching to alternatives. For example, given their long-term relationship and loyalty to the incumbent, GO's retail and wholesale customers may be reluctant at the end of their contract term to switch to Melita or Vodafone or any other potential competitor.

In a scenario where neither Melita nor Vodafone could fully replicate GO's SDH-based transport network and where most wholesale customers are serviced by SDH-based solutions, barriers to switching effectively pose a significant barrier to entry. These barriers to switching may diminish over time as, for example, demand shifts to services requiring an Ethernet-based transport layer.

Given GO's persistently high market shares in terms of terminating leased lines connections, it is considered that customer loyalty may be sufficiently strong as to impinge on the preparedness of wholesale buyers to consider switching to services offered by operators competing with GO at the end of their contract periods.

In view of the above, the MCA believes that barriers to switching are still significant and therefore pose a barrier to competition and to market expansion.

3.9.1.7 Potential competition

Potential competition refers to the prospect of new undertakings entering the market within a short period of time. The threat of market entry could in fact constrain the incumbent from raising prices above competitive levels, leading to a situation in which no market power can be profitably exercised.

The provision of dedicated capacity via terminating segments of leased lines depends on the deployment of an access network infrastructure. As already noted, GO could face some competition from both Vodafone and Melita in the supply of terminating segments of leased lines.

However, given its limited extent of entry, Vodafone would have to absorb high sunk costs in order to extend its network. Any potential expansion by Vodafone over the next two years is therefore unlikely to be sufficient as to significantly challenge GO's SMP position in the market in question.

On the other hand, Melita owns an access network infrastructure with coverage throughout the entire national territory. This makes it possible for Melita to compete at par with the incumbent. However, current market shares provide good reason to suggest that the development of effective competition in the market under investigation would be difficult over the timeframe of this review.

Further to the above, new market entry other than that of Melita and Vodafone is unlikely to materialise as the costs of network roll-out are high and would constitute a significant barrier to entry, especially in the context of the size of the local market.

Overall, the MCA considers that it is unlikely for Melita and Vodafone to pose a sufficiently strong competitive constraint on GO in the market under investigation.

3.9.2 Conclusion on the assessment of the state of competition

It is considered that GO has SMP in the market under investigation.

The first presumption of dominance was drawn on the finding of persistently high market shares for GO.

There are other factors, however, that justify the finding that GO enjoys a position of SMP in the provision of dedicated capacity over terminating segments of leased lines.

GO is a vertically integrated provider and has the ability to lever power from upstream to downstream markets.

The market is also subject to the existence of barriers to entry and the relative size of the incumbent makes it very difficult for a new entrant to attract a sufficient number of customers during the timeframe of this review in order to to compete effectively.

Q5. Do you agree with the above preliminary conclusions regarding the assessment of the state of competition in the wholesale market concerning terminating segments of leased lines?

4 Regulatory approach and proposed intervention

This section outlines the MCA's proposed regulatory approach to the markets identified in this review.

It is structured as follows:

Sections 4.1 and 4.2 provide a brief overview to the background and principles of the MCA's regulatory approach.

Section 4.3 outlines the proposed regulatory approach at the wholesale level.

Section 4.4 outlines the proposed regulatory approach at the retail level.

Section 4.5 specifies the MCA's commitment to constantly monitor developments for the local leased lines markets.

4.1 Regulatory background

In accordance with Regulation 11(1) of the ECNSR, where an operator is found to have SMP on a relevant market, the MCA is obliged to impose on such an operator specific regulatory obligations or revise such obligations where they already exist.

However, in accordance with Regulation 11(2) of the ECNSR, where the MCA concludes that a finding of dominance cannot be ascertained, the MCA is not allowed to impose or maintain any specific *ex ante* regulatory obligations.

In the case where no SMP designation is made and where regulatory obligations already exist in the market, the MCA is to withdraw such obligations placed on the undertakings concerned, in accordance with Regulation 5(3) of the ECNSR, subject to an appropriate period of notice to be given to all parties affected by such withdrawal of obligations.

4.2 Principles upheld when setting regulatory obligations

The objective of any regulatory intervention is to ensure that the SMP operator is prevented from exploiting its position of dominance and to promote and facilitate the development of effective competition.

In selecting the remedies to impose, the MCA considers the nature of the competition problems that have been identified and, in accordance with the principle of proportionality, imposes where necessary those remedies which it considers to be the most adequate but the least burdensome.

Any obligations imposed by the MCA upon an SMP operator shall:

- be based on the nature of the competition problems that have been identified, in accordance with Regulation 11(4) of the ECNSR;
- be proportionate and justified, in light of the objectives laid down in Article 4 of the Electronic Communications Regulation Act (hereafter 'the ECRA'); and
- only be imposed following consultation, in accordance with Regulation 7 and Article 4A of the Act.

The MCA shall therefore consider whether those obligations that are currently in force as per the 2006 Decision on the leased lines markets in Malta continue to be appropriate and proportionate, in light of market developments and the newly proposed SMP determinations.

4.3 Proposed regulatory approach at the wholesale level

The MCA recalls that three separate wholesale markets are identified in this review, namely:

- a wholesale market for the provision of dedicated capacity over international trunk segments of leased lines;
- a wholesale market for the provision of dedicated capacity over national trunk segments of leased lines; and
- a wholesale market for the provision of dedicated capacity over terminating segments of leased lines.

In each case, the product market encompasses analogue leased lines, digital SDH leased lines, and Ethernet circuits.

Following the carrying out of the three criteria test the MCA found sufficient evidence to conclude that the wholesale market for the provision of dedicated capacity over international trunk segments of leased lines did not meet the three criteria test and therefore regulatory obligations currently in force need to be withdrawn.

On the other hand, the MCA finds that GO still maintains a position of SMP in the wholesale markets for the provision of dedicated capacity over national trunk segments and terminating segments of leased lines. In these two markets GO maintains very high market shares, barriers to entry are high, and there is lack of CBP.

The proposed regulatory regime for these wholesale markets is set in more detail below.

4.3.1 The wholesale market concerning international trunk segments of leased lines

As highlighted earlier on, the wholesale market concerning international trunk segments of leased lines is effectively competitive as no undertaking enjoys an SMP position.

Given this conclusion and the provisions under Regulation 5(3) of the ECNSR, the MCA proposes to withdraw the regulatory obligations currently governing GO's provision of services in the market in question. This withdrawal shall be implemented without prejudice to any other general obligations at law.

In order to have a smooth transition from a regulated to a non-regulated market, the MCA shall withdraw the existing obligations at the expiry of 90 calendar days following the publication of the final decision concerning this market.

Current obligations shall continue in effect during these 90 calendar days.

The MCA believes that this notice period is justified and sufficient to allow for all stakeholders to make necessary arrangements for the new regulatory approach to the market in question.

4.3.2 The wholesale markets for national trunk and terminating segments of leased lines

The MCA carried out a Three Criteria Test for the wholesale market concerning national trunk segments of leased lines, as this market is not listed in the Recommendation.

The MCA also carried out an SMP analysis for the market concerning terminating segments of leased lines.

The analysis performed shows that in both instances full replicability of GO's wholesale offers is not possible within the timeframe of this review. It has been noted that although both GO and Melita own a nationwide access network infrastructure with coverage across the national territory, Melita does not, for example, provide dedicated capacity over national trunk segments of SDH leased lines, but only provides such services over national trunk segments of Ethernet circuits. Vodafone, on the other hand, lacks the requisite national infrastructure to provide a ubiquitous service.

With respect to both markets, most buyers still opt for GO to meet their demand for dedicated capacity. As a result, neither Melita nor Vodafone has managed to build market share in the markets in question.

The MCA concludes that neither Melita nor Vodafone would be in a position to fully replicate GO's national trunk and terminating offers within the timeframe of this review.

This scenario places GO in an advantageous position given that, as a vertically and horizontally integrated operator, it could implement leveraging practices to undercut competition. It follows that, unless prohibited by effective regulatory intervention, GO's dominance in the two wholesale markets under consideration may allow the said operator to engage in price-related and non-price leveraging strategies.

GO may for example resort to strategies such as price discrimination, margin squeeze and cross-subsidisation. It could also implement other non-price related strategies such as by denying access, making discriminatory use of or withholding information, employing delaying tactics, discriminating on the quality of the product offered to third parties, and imposing undue requirements on potential alternative service providers at the downstream level. This may contribute significantly to the creation of a non-competitive environment.

GO may also implement horizontal leveraging practices, by leveraging its position in one market to exert undue influence on other markets at the same level in the value chain. This form of leveraging can be exercised by GO as it operates in a number of horizontal wholesale markets.

GO is also currently in a position to access economies of scale and scope that are not so readily available to its competitors. This may bring extra pressure to bear on the margins available for competitors. In the absence of appropriate *ex ante* regulation at the wholesale level, these pressures may eventually be translated into the retail market.

4.3.2.1 Obligations currently in force

The obligations that are currently in force on GO with respect to the provision of dedicated capacity over national trunk segments and terminating segments of leased lines are set out below:

i. access to wholesale services – mainly to ensure that GO offers OAOs sufficient access to its wholesale inputs, including access to both end-to-end and part circuit leased line products, which access would not be offered if GO had to be left unregulated;

ii. non-discrimination – to ensure that GO applies equivalent conditions in the provision of access to third party access seekers as with its own retail arm, irrespective of whether an end-to-end or part circuit wholesale leased line product is being sought;

iii. transparency – to oblige GO to publish a reference offer for wholesale leased lines and RIO, which shall be sufficiently unbundled to ensure that undertakings are not required to pay for facilities that are not necessary for the services requested, giving a description of the relevant offerings broken down into components according to market needs, and the associated terms and conditions including prices.

iv. price control – so as to ensure proper restraint on GO's wholesale leased line prices.

   a. cost orientation – to ensure that any cost recovery mechanism or pricing methodology that is currently mandated serves to promote efficiency and sustainable competition as well as to maximise consumer benefits;

   b. cost accounting - to effectively support the cost orientation and to oblige GO to provide the MCA with detailed information regarding its product costs and ensure that fair, objective and transparent methodologies are followed in allocating costs to the identified regulated products.

v. accounting separation - mainly to ensure that GO is not discriminating between its wholesale and retail arms and between its portfolio of services when providing access at a wholesale level.

4.3.2.2 Proposed maintenance of obligations currently in force

Given the identified competition problems arising from GO's SMP position in the wholesale markets in question, the MCA is proposing the imposition of the following wholesale obligations.

i. Access to wholesale services

GO is to continue to offer access to its end-to-end wholesale leased lines products and to entertain any reasonable requests for access to service variants. Coupled with this, GO is to give OAOs access to specified network elements and, or facilities, where such access is not already provided. The provision of access by GO to part circuit products (terminating segments and national trunk segments of a leased line) is considered indispensable too.

Furthermore:

- in accordance with Regulation 15 (2)(b) of the ECNSR, GO is to negotiate in good faith with undertakings requesting access;
- in accordance with Regulation 15(2)(c) of the ECNSR, GO is not to withdraw facilities already granted. This allows OAOs to continue to provide current retail services uninterruptedly. This notwithstanding, the MCA recognizes that in some instances providing such access may prove inefficient. In such case, GO may request the MCA to waive this obligation and the final decision would be the MCA's;
- in accordance with regulation 15(2)(e), GO is to grant open access to technical interfaces, protocols or other key technologies that are indispensable for the interoperability of services or virtual network services.
- in accordance with Regulation 15(2)(g) of the ECNSR, GO is to provide specified services needed to ensure interoperability of end-to-end

services to users, as well as to interconnect network and network facilities;

- in accordance with regulation 15(2)(h) GO is provide access to operational support systems or similar software systems necessary to ensure fair competition in the provision of services;

- in accordance with Regulation 15(2)(i) of the ECNSR, the Authority is also authorized, without prejudice to any measures that may be taken with respect to undertakings with SMP, to impose, to the extent that is necessary to ensure end-to-end connectivity, obligations on undertakings that control access to end-users including, in justified cases, the obligation to interconnect their networks or network facilities where this is not already the case;

- it is also considered necessary that GO continues to offer Interconnection Paths as under a RIO upon a reasonable request for such access being made by OAOs;

- in view of the above, GO is ought to provide all the relevant information on access to technical interfaces, protocols, or other key technologies indispensable for the interoperability of services, and to operational support systems or similar software necessary to ensure fair competition in the provision of services;

- the provision of SLAs by GO to OAOs is especially considered indispensable with respect to the provision of access to end-to-end wholesale leased lines, part circuit products and Interconnection Paths, as it provides OAOs with certainty as to the supply and repair of the wholesale input and hence allows them to compete on a downstream level.

All the above-mentioned access-related remedies must be provided by GO in a fair, timely and reasonable fashion.

The obligations of non-discrimination and transparency are considered imperative if OAOs are to compete with GO's retail arm. The provision of access by GO to these wholesale products also ought to be cost-oriented and accompanied by accounting separation as described below.

ii. Non-discrimination

An important remedy to address the competition problems resulting from vertical foreclosure is that of non-discrimination in the provision of access and, or interconnection.

In accordance with Regulation 13(2) of the ECNSR, GO, as the vertically integrated provider, is obliged to:

a) apply equivalent conditions in equivalent circumstances to other undertakings providing equivalent services, and

b) provide services and information to others under the same conditions (including timescales, on a basis and of a quality) equivalent to that which it provides to its own services, or those of its subsidiaries or partners.

The current status whereby wholesale national leased line offerings may be an important means by which OAOs provide certain services at a retail level leads the MCA to believe that the obligation of non-discrimination is essential for the uptake of wholesale products by OAOs during the lifespan of this review.

GO also makes use of wholesale leased line products provided internally by GO to be able to offer downstream services. In view of this, the imposition of a non-discrimination remedy obliging GO to offer access to its wholesale product to OAOs under the same conditions as it provides to its retail and downstream providers is necessary.

This non-discrimination obligation also applies to both access to wholesale leased line products (including end-to-end wholesale leased line and part circuit products) provided by GO, as well as to the provision of SLAs. This would diminish the possibilities of GO exercising non-price discrimination. Penalties would be applied if such SLAs are not provided in a non-discriminatory fashion by GO.

Notwithstanding the predominance in request for end-to-end wholesale leased lines, access to part circuit products, too, should be provided by GO on a non-discriminatory basis.

It is also considered essential that GO be obliged not to make use of any information from OAOs at a downstream level.

iii. Transparency

Regulation 12(1) of the ECNSR states that where an operator with an SMP position has obligations of non-discrimination, the MCA may impose obligations for transparency in relation to interconnection and, or access, requiring operators to make public specified information, such as accounting information, technical specifications, network characteristics, terms and conditions limiting access to and, or use of services and applications, and prices where applicable.

In particular, the MCA may require GO to publish a reference offer which shall be sufficiently unbundled to ensure that undertakings are not required to pay for facilities which are not necessary for the services requested, giving a description of the relevant offerings broken down into components according to market needs, and the associated terms and conditions including prices. This is in accordance to Regulation 12(2) of the ECNSR.

In such instances, the MCA is able to impose changes to reference offers to give effect to the obligations imposed under the Act.

Also in accordance with Regulation 12(2) of the ECNSR, the MCA may also specify the precise information to be made available, the level of detail required and the manner of publication.

The MCA believes that the obligation of transparency needs to be maintained on GO, and is intended to ensure the provision of sufficient information and clear processes required for access to the mandated services.

Currently GO is meeting its obligation to publish leased lines pricing and terms and conditions as part of both its Leased Lines Wholesale Services Offer and its RIO. By virtue of the obligation of transparency which the MCA is proposing to impose on GO, the said operator will be obliged to continue publishing (and update where necessary) reference offers related to the various wholesale leased line products. Such offers are to be sufficiently unbundled, include pricing, terms and conditions and SLAs, as established in the above access obligations and as may be directed by the MCA according to law. Furthermore GO is to update its offers with additional products as appropriate in fulfilment of the access obligations imposed above.

The publication of the description of the relevant offerings should in particular apply to the end-to-end wholesale leased lines products, to the part circuit products, to Interconnection Paths, as well as any new offerings by GO. The MCA reserves the right to specify the level of detail to be published with respect to such information from time to time.

In order to better overcome the competition problems discussed above, the MCA is of the opinion that GO should also continue to provide and publish (and update where necessary) appropriate manuals, order forms and processes for services, the details of which are to be determined on a case–by-case basis. The publication of other information may be requested by the MCA from time to time. Furthermore, the MCA is of the opinion that GO should provide detailed billing at the wholesale level.

The need to impose transparency obligations is felt in view of the need to ensure that GO provides other operators with effective access to its wholesale inputs.

iv. Price control

Due to the considerable barriers to achieving full replicability in the wholesale national trunk and terminating markets, it is not envisaged that GO's market status in the said wholesale markets would change within the timeframe of this review. In light of this, it is believed that unless proper restraint on wholesale prices is put on GO by means of regulation, foreclosure in the downstream market is possible.

Regulation 16 of the ECNSR authorises the imposition on the undertaking with a position of SMP (in this case GO) of obligations relating to cost recovery and price controls, including obligations for cost orientation of prices and obligations concerning cost accounting systems, for the provision of specific types of interconnection and, or access, in situations where a market analysis indicates that a lack of effective competition means that the operator concerned might sustain prices at an excessively high level, or apply a prize squeeze, to the detriment of end-users.

The MCA therefore maintains that GO should continue to apply cost-oriented prices and the necessary cost accounting systems for the regulated leased lines products in which it holds an SMP position.

Such intervention is in itself deemed instrumental in supporting competition at the retail level in question to the benefit of end-users, whilst at the same time supporting the obligations of non-discrimination and transparency at a wholesale level.

a. Cost orientation

In accordance to Regulation 16(2), the MCA shall ensure that, when applying obligations relating to cost recovery or pricing, any cost recovery mechanism or pricing methodology that is mandated shall serve to promote efficiency and sustainable competition as well as to maximise consumer benefits.

In view of the risk of excessive pricing being applied by GO in the wholesale market under review, the MCA is of the opinion that cost orientation would prove efficient in curbing such possible abuses of dominance. By mandating that interconnection and access to wholesale services provided by GO be cost oriented, the MCA believes that it would be in a position to ensure fair and efficient access to GO's network and services.

In implementing this measure, the MCA will pay careful attention to those costs which are shared amongst a number of products, as well as to ensuring that only efficiently incurred costs will feature in GO's charges.

The imposition of a price control may also alleviate the potential of a market squeeze being exercised by GO.

To this aim GO's present cost orientation obligation is to be maintained. For the time being the prices currently in GO's Leased Lines Wholesale Services Offer and its RIO will continue in force, until the conclusion of the forthcoming review of prices. Furthermore GO is to update its offers with additional products as appropriate in fulfillment of the access obligations imposed above.

In view of the differences in nature of the wholesale products, i.e. end-to-end wholesale leased lines, part circuit products and interconnection paths, the MCA reserves the right to revise and apply different methods of price control for the said wholesale products in accordance with law. Any changes will be communicated to the EU Commission accordingly.

b. Cost accounting

The MCA believes that, in order to effectively promote competition and curb possible abuse of dominance in the wholesale markets under review the imposition of a cost accounting system will be necessary to support cost orientation. It is therefore necessary to impose such obligation as a further remedy on GO. The MCA does not consider that the imposition of a cost accounting obligation would constitute an unreasonable burden on GO.

Such cost accounting system will provide the MCA with detailed information regarding GO's product costs and ensure that fair, objective and transparent methodologies are followed by the operator in allocating costs to the identified regulated products. Information from such system will be used by the MCA to complement the application of other regulatory measures such as transparency and non-discrimination.

GO is currently already obliged to support such a system by virtue of MCA decisions that are already in place[27].

v. Accounting separation

Accounting separation is instrumental in ensuring that the undertaking with SMP is not price discriminating between its retail arm and its competitors when providing access and interconnection at a wholesale level. By evidencing the wholesale and internal transfer prices of the products and services of the undertaking with SMP, accounting separation also supports the obligation of transparency discussed above.

The obligation of accounting separation is also important in the disclosure of possible market failures such as cross-subsidisation and the application of margin squeeze by an undertaking with SMP.

[27] http://www.mca.org.mt/article/accounting-separation-and-publication-financial-information-undertakings-having-smp-ecs

In view of the above and of the fact that the MCA is herein maintaining the obligations of non-discrimination and transparency on GO, the MCA feels that the imposition of an accounting separation obligation on the same GO is appropriate since it is justifiable and based upon the competition problems identified above.

Currently GO is subject to the accounting separation obligation described in the MCA decision on Accounting Separation. This level of obligation shall be maintained and its scope extended where necessary so as to include all services provided by GO falling within the ambit of this decision, until further consultation is deemed necessary.

The MCA is of the opinion that the remedies it is imposing are based on the nature of the competition problems it has identified in the relevant wholesale markets, and are proportionate and justified in light of the objectives set out in Article 4 of the ECRA.

6. Do you agree with the proposed regulatory approach concerning the wholesale markets for the provision of dedicated capacity over national trunk and terminating segments of leased lines?

4.4 Proposed regulatory approach at the retail level

4.4.1 The retail market for international leased lines

As already highlighted in the market analysis section, the retail market concerning international leased lines is effectively competitive as no undertaking enjoys a position of SMP.

Given this conclusion and the provisions under Regulation 5(3) of the ECNSR, the MCA proposes to withdraw the regulatory obligations that are currently governing GO's provision of services in the market in question. This withdrawal shall be implemented without prejudice to any other general obligations at law.

In order to have a smooth transition from a regulated market to a non-regulated market, the MCA shall withdraw the existing obligations at the expiry of 90 calendar days following the publication of the final decision concerning this market. Current obligations shall continue in effect during these 90 calendar days.

The MCA believes that this notice period is justified and sufficient to allow for all stakeholders to make necessary arrangements for the new regulatory approach to the market in question.

4.4.2 The retail market for national leased lines

The MCA concludes that the retail market concerning the provision of dedicated capacity over national leased lines is not effectively competitive, and that the MCA shall, after having identified GO with a position of SMP in the market in question, impose appropriate *ex ante* regulatory obligations on this operator.

Prior to presenting its regulatory proposals, the MCA shall first give an account of the competitive conditions underpinning this market, the regulatory measures that are already in place with respect to the market in question and the regulatory measures in related upstream markets.

4.4.2.1 Potential Competition problems

The MCA carried out a Three Criteria Test for the retail market under consideration.

The analysis performed in this regard shows that full replicability of GO's retail national leased line offers is not possible within the timeframe of this review, given the high level of sunk costs involved in fully replicating GO's network infrastructure.

Whilst, for example, GO could offer dedicated capacity across all the national territory over both digital SDH leased lines and Ethernet circuits, Melita could only offer a nationwide service over Ethernet. Vodafone's market presence, on the other hand, is constrained by its lack of ownership of the requisite national infrastructure. In fact, Vodafone could only offer dedicated capacity over Ethernet circuits on a very limited scale and on a case-by-case basis.

GO is also dominant in the upstream markets related to the retail market in question. This dominant position would allow GO, as a vertically integrated operator, to take advantage of economies of scale and scope that are not so readily available to its competitors. GO may translate these advantages in price and non-price leveraging strategies that could take the form of for example, price discrimination, the discriminatory use or withholding of information, delaying tactics, and quality discrimination.

GO may also take advantage of its presence across several other markets and of it being able to supply a greater range of services than its competitors in the market in question. For example, GO is currently capable of providing dedicated capacity over both digital SDH leased lines and Ethernet circuits. On the other hand, Melita and Vodafone can only offer such services over Ethernet leased lines.

The MCA determined that Melita and Vodafone are not in a position to fully replicate the incumbent's offers within the timeframe of this review and therefore cannot avail of the advantages pertaining to horizontal integration to the same extent as GO.

4.4.2.2 Regulatory obligations currently in force

The obligations that are currently in force on GO with respect to retail leased line markets are listed below.

GO is currently obliged to:

- adhere to the principle of non-discrimination when providing leased lines in order to ensure that it applies similar conditions in similar circumstances to persons providing similar services, and to provide leased lines under the same conditions and of the same quality as it provides for its own services, or those of its subsidiaries or partners, where applicable;
- ensure that tariffs for the provision of the 'minimum set of leased lines' follow the basic principles of cost orientation;
- adhere to the cost accounting system identified by the MCA,.
- abide by and implement the accounting separation obligation, described in the MCA decision on Accounting Separation[28];

[28] Accounting Separation and Publication of Financial Information by Undertakings having SMP in the Electronic Communications Sector – Report on Consultation and Decision of July 2009

- publish information, in an easily accessible and regularly updated form, including on GO's website, concerning the:
    - technical characteristics, including the physical and electrical characteristics as well as the detailed technical and performance specifications that apply at the network termination point;
    - the tariffs, including the initial connection charges, the periodic rental charges and other charges, and applicable terms and conditions;
    - the supply conditions, including, at least, information concerning the ordering procedure; the typical delivery period; the contractual period, which includes the period that is in general laid down in the contract and the minimum contractual period which the user is obliged to accept; the typical repair time; and any applicable refund procedure.

4.4.2.3 Proposed regulatory regime

Given the identified competition problems arising from GO's SMP position in the market in question, the MCA is proposing the imposition of appropriate retail obligations as per Regulation 5(4) of the ECNSR.

The MCA notes that although GO has been found to enjoy an SMP position in the provision of national leased lines, the prevailing market conditions are significantly different to those prevailing in 2006.

As explained in the market definition exercise, the relevant product market includes analogue leased lines, digital SDH leased lines and Ethernet circuits.

GO has 100% market share in the provision of analogue and digital SDH leased lines, as it is the only supplier of these types of leased lines. It is also noted that 'traditional' leased lines are declining as Ethernet circuits become the mainstream products. In the case of analogue leased lines, these have decreased significantly and no new connections have been offered since 2006.

On their part, Melita and Vodafone have entered the national retail leased lines market with their own Ethernet products and are trying to penetrate the market. However, GO maintains a very high market share in respect of the Ethernet product segment.

The above considerations would suggest that the MCA's regulatory approach with respect to the market in question should be set out in a proportionate manner, taking into account the nature of the products on offer and the conditions under which products should be made available to ensure that an SMP operator does not use its market power to restrict or distort competition, but at the same time ensure that regulation does not restrain the emergence of competition.

This approach would ensure that only proportionate obligations are imposed on undertakings designated with SMP.

Having said this, the MCA believes that given the finding of SMP, regulatory obligations should still be imposed on GO, but on the back of a lighter regulatory regime, given the market developments of recent years.

The MCA is of the opinion that the full set of wholesale remedies outlined above, together with the retail remedies proposed hereunder provide a holistic and effective way for enhancing market entry and promoting competition in the markets under consideration.

I. Regulation of the provision of dedicated capacity over analogue leased lines

The MCA is proposing the imposition of the transparency obligation on GO in the provision of dedicated capacity over analogue leased lines.

In accordance with Regulation (12) of the ECNSR, GO will be obliged by this condition to publish in an easily accessible form:

a. tariffs, including the initial connection charges, the periodic rental charges and other charges.

b. the terms and conditions for supply and use of an analogue leased lines. GO is not permitted to implement changes in the terms and conditions of any of its analogue leased lines products, without the prior approval of the MCA. Furthermore, following the approval of the MCA, GO must give it clients at least 30 working days notice prior affecting such changes.

   In addition to the above, the MCA maintains that, as per Regulation 12 of the ECNSR, it has the right to specify the precise information to be made available, the level of detail required and the manner of publication.

c. in the case where GO intends to discontinue any of its analogue leased lines products or services, GO is to seek the prior approval of the MCA. Furthermore, following the approval of the MCA, GO is to give its clients being affected by this change at least six (6) months prior notice in writing, in order to give these clients sufficient time to make the necessary alternative arrangements.

Given that analogue leased lines have not been offered to new customers for a long period of time and that migration to alternative products is happening, the MCA believes that the transparency obligation is justified and sufficient to ensure that GO does not distort the market but at the same time giving it the flexibility to adapt to market developments.

II. Regulation of the provision of dedicated capacity over digital SDH leased lines and Ethernet circuits

The MCA is proposing the maintenance of the transparency and non-discrimination obligations on GO in the provision of dedicated capacity over digital SDH leased lines.

It is also proposing that the same regulatory obligations are imposed on GO in the provision of dedicated capacity over Ethernet circuits.

In accordance with Regulation (12) of the ECNSR, GO will be obliged by this condition to publish in an easily accessible form:

a. tariffs, including the initial connection charges, the periodic rental charges and other charges.

b. the terms and conditions for supply and use of SDH leased lines and Ethernet circuits. GO is not permitted to implement changes in the terms and conditions of any of these products, without the prior approval of the MCA. Furthermore, following the approval of the MCA, GO must give it clients at least 30 working days notice prior affecting such changes.

   In addition to the above, the MCA maintains that, as per Regulation (12) of the ECNSR, it has the right to specify the precise information to be made available, the level of detail required and the manner of publication.

In accordance with Regulation (13) of the ECNSR, GO shall adhere to the principle of non-discrimination when providing dedicated capacity over national digital SDH leased lines and/or national Ethernet circuits.

GO is therefore to apply equivalent conditions in equivalent circumstances, and is to provide leased line services and information under the same conditions and of the same quality. Hence when offering varying terms and conditions to different customers, GO is obliged to justify such variances objectively.

The transparency and non-discrimination obligations remain essential for the MCA to oversee market developments appropriately.

III. Proposed lifting of price control, cost accounting, and accounting separation obligations

The MCA considers that the existing remedies of price control, cost accounting, and accounting separation obligations are no longer required in the provision of dedicated capacity over analogue and digital SDH national leased lines, currently applicable for the minimum set of leased lines.

These retail obligations are therefore to be withdrawn following the publication of the relevant MCA final decision notice.

These obligations are to be relaxed due to the holistic regulation in the related upstream markets and the presence of alternative operators in the provision of dedicated capacity over Ethernet circuits.

7. Do you agree with the proposed regulatory approach concerning the retail market for the provision of dedicated capacity over national leased lines?

4.5 Monitoring market developments

The MCA considers that it would be sensible to keep a reasonably close watch on market developments following this review. This would ensure that obligations imposed on the GO would be justified throughout the duration of this market review.

In all circumstances, the MCA reserves the right to amend, withdraw and impose any remedies it considers necessary in the markets under review.

If the MCA deems necessary or appropriate a new market review would be undertaken at any time in response to changing market conditions and where appropriate may issue further directions refining these remedies.

5 Submission of comments

The MCA welcomes written comments and representations to this report during the national consultation period, which shall run from the 31st of July 2012 to the 28th of September 2012.

The MCA appreciates that respondents may provide confidential information in their comments. This information is to be included in a separate annex to their response and should be clearly marked as being confidential. After due consideration of the comments and representations received, the MCA will review this analysis and publish a report summarising the responses to the consultation.

For the sake of openness and transparency the MCA will publish the names of all respondents to this consultation. To this end, all representations will be published, except where respondents indicate that a response, or part of it, is confidential. The MCA will take steps to protect the confidentiality of all such material from the moment that it is received at the offices of the MCA. Respondents should however avoid applying confidential markings wherever possible.

All responses must be submitted to the MCA by no later than close of business of the 28th of September 2012.

Extensions to the consultation deadline will only be permitted upon written request to the Authority. The MCA reserves the right to grant or refuse any such request at its discretion. Requests for extensions are to be made in writing within the first ten (10) working days of the consultation period.

All submissions should be made in writing and sent by email to patrick.b.vella@mca.org.mt.

Hard copies may also be posted or faxed to the address below.

Patrick Vella

Chief Policy and Planning
Malta Communications Authority
Valletta Waterfront, Pinto Wharf, Floriana, FRN 1913
Malta

Tel: +356 21 336840
Fax: +356 21 336846