Wholesale Broadband Access Market

Identification and Analysis of Markets,
Determination of Market Power and Setting of Remedies.

Consultation Document

25th July 2006

Contents

Executive Summary

A new regulatory framework for electronic communications networks and services entered into force in Malta on the 14th September 2004. The framework is designed to create harmonised regulation across Europe and is aimed at reducing entry barriers and fostering prospects for effective competition to the benefit of consumers. The basis for the new regulatory framework is five new EU Communications Directives.

The new Directives require National Regulatory Authorities (NRAs), amongst other things, to carry out reviews of competition in communications markets to ensure that regulation remains appropriate in the light of changing market conditions. For a limited period, while those reviews are conducted and until the new Significant Market Power (SMP) conditions are imposed, some of the regulatory regime which existed prior to the 14th September 2004 continues to be in force in line with Article 39 and 40 of the Electronic Communications (Regulation) Act.

This review sets out the Malta Communications Authority's (MCA's) proposal for identifying a market and making a market power determination. Those likely to be effected may forward their comments within the period ending on the 1st September 2006. Arrangements for submitting comments are explained in **Chapter 05**.

As required by Article 4 of the Electronic Communications (Regulations) (Article 7 of the Framework Directive), the MCA's proposals are being sent to the European Commission and to other NRAs.

Summary of proposals

Identification of markets

The group of products and services under consideration in this document consist of wholesale broadband access services. Wholesale services are those sold and purchased by electronic communications providers rather than by end-users.

In relation to these services, the MCA proposes to identify the relevant market of the national wholesale broadband access, in accordance with competition law principles and after having utmost regard of the European Commission's *Recommendation on relevant product and service markets.*

According to the market characteristics the relevant market:

- excludes simple resale products;
- includes all self-supplied wholesale broadband products provided over all existing broadband networks; and
- includes all wholesale broadband access products and services provided to third-party ISPs, via all existing broadband networks.

Assessment of market power

Based on the evidence presently available to the MCA and, after having analysed the operation of these markets and taken due account of the Commission's 'Guidelines on market analysis and the assessment of SMP' (SMP Guidelines), the MCA proposes that Datastream Ltd. and Melita Cable should be designated as having jointly (collectively) significant market power in the Wholesale Broadband Access market. This preliminary conclusion is supported by a number of factors including:

- High and similar market shares;
- Highly concentrated market;
- Existence of high entry barriers;
- Homogeneous products and prices;
- Evidence of parallel behaviour;
- Limited potential competition during timeframe of this review;
- No countervailing buyer power; and
- Limited elasticity of demand.

Full details of the MCA's draft decision and reasoning are contained in **Chapter 03** of this document.

Regulatory implications

Given the position of dominance held by Datastream and Melita Cable in the relevant market under review, the MCA proposes to impose conditions as follows:

- Access to/and use of specific network facilities;
- Non- discrimination;
- Transparency;
- Price control & cost accounting; and
- Accounting Separation.

Full details of these remedies, including their effect and the reasons for proposing to set these conditions, are contained in **Chapter 04** of this document.

Chapter 01 - Introduction

A new regulatory framework for electronic communications networks and services entered into force on the 25th July 2003. The framework is designed to create harmonised regulation across Europe and is aimed at reducing entry barriers and fostering prospects for effective competition to the benefit of consumers. The basis for the new regulatory framework is five new EU Communications Directives:

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

The Framework Directive provides the overall structure for the new regulatory regime and sets out fundamental rules and objectives, which read across all the new directives. Article 8 of the Framework Directive sets out three key policy objectives, which have been taken into account in the preparation of this consultation document, namely promotion of competition, development of the internal market and the promotion of the interests of the citizens of the European Union.

The Authorisation Directive establishes a new system whereby any person will be generally authorised to provide electronic communications services and/or networks without prior approval. The general authorisation replaces the former licensing regime. The Universal Service Directive defines a basic set of services that must be provided to end-users. The Access and Interconnection Directive sets out the terms on which providers may access each other's networks and services with a view to providing publicly available electronic communications services.

The Maltese legislation transposing these Directives came into effect on the 14th September 2004. The relevant pieces of legislation are the Electronic Communications (Regulation) Act, 2004 (hereinafter referred to as ECRA) and the Electronic Communications Networks and Services (General) Regulations, 2004 (hereinafter referred to 'ECNSR').

The new Directives require National Regulatory Authorities (NRAs) such as the MCA to carry out reviews of competition in communications markets to ensure that regulation remains appropriate in the light of changing market conditions.

Each market review is divided into three main parts:

- definition of the relevant market or markets;

- assessment of competition in each market, in particular whether any companies have Significant Market Power (SMP) in a given market; and

- assessment of the appropriate regulatory obligations which should be imposed given the findings on SMP (NRAs are obliged to impose some form of regulation where there is SMP).

More detailed requirements and guidance concerning the conduct of market reviews are provided in the Directives, the ECRA, the ECNS and in additional documents issued by the European Commission and the MCA. As required by the new regime, in conducting this review, the MCA has taken the utmost account of the two European Commission documents discussed below.

01.1 Market review methodology

In its Recommendation, the European Commission has identified a set of markets in which *ex ante* regulation may be warranted. The Recommendation seeks to promote harmonisation across the European Community by ensuring that the same product and service markets are subject to a market analysis in all Member States. However, NRAs are able to regulate markets that differ from those identified in the Recommendation where this is justified by national circumstances. Accordingly, NRAs are to define relevant markets appropriate to national circumstances, provided that the utmost account is taken of the product markets listed in the Recommendation (Regulation 6 of the ECNS).

The European Commission has also issued guidelines on market analysis and the assessment of SMP ("SMP Guidelines"). The MCA has also published a document outlining the guidelines on the methodology to be used for assessing effective competition in the Maltese electronic communications sector[1]. The MCA is required to take these guidelines into utmost account when analysing a product or service market in order to assess whether the market under investigation is effectively competitive or otherwise (refer to Regulation 8 of the ECNS).

As required by Article 7 of the Framework Directive and Regulation 6 of the ECNS, the results of these market reviews and the proposed draft measures need to be notified to the European Commission and to other NRAs. The Commission and other NRAs may make comments within the one month consultation period. If the Commission is of the opinion that the market definition, or proposals to designate an operator with SMP, or proposals to designate no operator with SMP, would create a barrier to the single market, or if the Commission has serious doubts as to its compatibility with Community law and issues a notice under Article 7(4) of the Framework Directive, the MCA is required by Regulation 6 of the ECNS to delay adoption of these draft measures for a further period of 2 months while the Commission considers its position.

The MCA has collected market data from a variety of internal and external sources, including providers of electronic communications networks and services, in order to carry out thoroughly its respective market definition and market analysis procedures based on established economic and legal principles, taking the utmost account of the Relevant Markets Recommendation and the Guidelines.

[1] Link to market review methodology: http://www.mca.org.mt/library/show.asp?id=513&lc=1

01.2 Consultation

As required by Article 10 of the ECRA, the MCA is to publish the results of the market reviews and to provide operators the opportunity to comment on the findings prior to adopting the final proposals.

Furthermore, Regulation 6 of the ECNSR establishes that, prior to adopting the draft measures proposed in the market review the MCA is required to notify the Commission with the findings of the market review, the proposed remedies and the outcome of the national consultation process.

In line with our national consultation process, the consultation period will run from the 25th July 2005 to the 1st September 2005 during which the MCA welcomes written comments on any of the issues raised in this paper. Further details on the public consultation are provided in **Chapter 05.**

01.3 Liaison with Competition Authority

Under Regulation 10 of the ECNSR, there is a requirement on the MCA to carry out an analysis of a relevant market within the Electronic Communications sector. This analysis must be carried out in accordance, where appropriate, with an agreement with the National Competition Authorities (NCA) under Regulation 10 of the ECRA.

In line with the co-operation agreement signed on the 20th May 2005 between the MCA and the Office of Fair Competition (OFC)[2], the MCA has initiated a two week consultation process with the OFC. The MCA has forwarded and presented the results of this review to the OFC. To date the MCA did not receive any representations from the OFC and therefore the MCA is of the understanding that the OFC agrees with the findings of the analysis. The OFC's official position is expected in the coming days. This will be made available to the general public, once received.

01.4 Structure of the document

The rest of the document is structured as follows:

Chapter 02 presents the MCA's preliminary conclusions on the definition of the market for the wholesale broadband access market in Malta. This section consists of a review of the market definition procedure and its scope, as well as demand-side and supply-side assessments at the retail and wholesale level;

Chapter 03 presents the MCA's market analysis for this market and outlines a preliminary view on whether this market is effectively competitive or identifies those undertakings having SMP; and

Chapter 04 provides a discussion of the general principles associated with remedies, identifies potential competition problems and outlines the proposed remedies on SMP operators, under the new regulatory framework.

01.5 Scope of this review

This review considers the market for wholesale broadband access in Malta, which includes the provision of wholesale broadband services to Internet Service Providers (ISPs) for the provision of retail broadband services.

Q1. Do you agree with the scope of the MCA's review for wholesale broadband access services in Malta?

Chapter 02 - Market Definition

Regulation 10 of the ECNS provides that before a market power determination may be considered, the MCA must identify the markets which are, in its opinion, the ones which, in the circumstances of Malta, are the markets in relation to which it is appropriate to consider such a determination and to analyse that market. In identifying the relevant markets, the MCA is required to take utmost account of all applicable guidelines and recommendations issued by the European Commission.

In formulating its approach to the market definition, the MCA has paid the utmost regard to the Commission's Recommendation of 11th February 2003.

Where the proposed market definition differs from the Commission's Recommendation, the difference is identified and justification given in the light of the national circumstances which justify this departure, in the manner prescribed by the Recommendation.

Paragraph 3.1 of the Commission's Recommendation states that *'because market analysis is forward-looking, markets are defined prospectively taking account of expected or foreseeable technological or economic developments over a reasonable horizon linked to the timing of the next market review'*. The market analysis has been carried out on a forward- looking basis and, where it is thought possible that market conditions may change significantly during the time of this review, these changes are identified and discussed.

The Recommendation states in Paragraph 4 that retail markets should be examined in a way that is independent of the infrastructure being used, as well as in accordance with the principles of competition law. Again, this approach is at the heart of the MCA's analysis. The MCA's approach in assessing the markets is based on an analysis of competition levels and an assessment of the extent to which switching among services by consumers constrains prices, irrespective of the infrastructure used by the providers of those services.

In its Recommendation the Commission identified a market for wholesale broadband access. The MCA has conducted an assessment of the market for wholesale broadband access in order to validate its appropriateness in the Maltese context, and as preparatory work for the assessment of SMP in this market.

This chapter outlines the MCA's findings setting out the different products that the MCA has identified, and giving reasoning for its proposed conclusions.

02.1 Background to the broadband sector in Malta

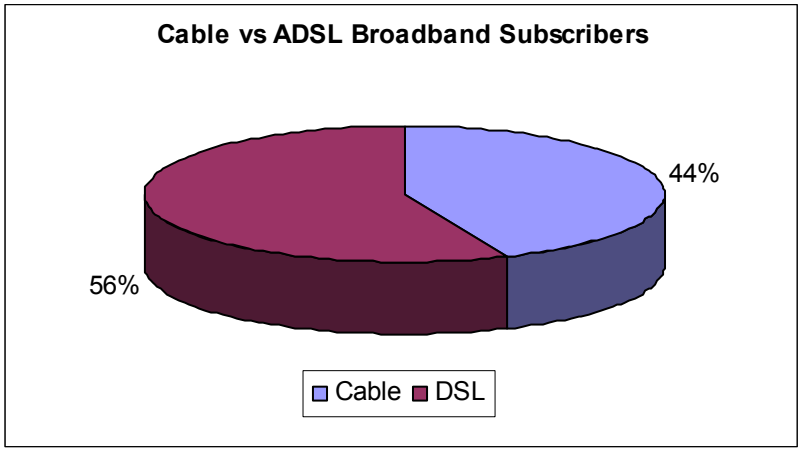
Latest statistics show that the total population of Malta stands at approximately 403,600. According to National Statistics Office[2] figures, there are approximately 128,000 residential units and 31,000 non-residential units. These figures indicate the small geographic size of Malta and this is reflected in the relatively small-scale electronic communications services/networks available. In the past decade, the electronic communications sector has nonetheless experienced a positive growth, both in terms of the number of operators and the variety of services offered.

[2] http://www.nso.gov.mt/

One of the key indicators of the state of a country's development is broadband take-up. As at December 2005 the average EU broadband penetration rate, (EU25), was 12.9% (figures by ECTA) whilst Malta had a penetration rate 12%[3] - slightly below the overall EU average.

There are two forms of broadband delivery technologies available in the Maltese market: DSL (Digital Subscriber Line) and Cable Modem Access. In 2000, both Datastream Ltd[4] (a subsidiary of Maltacom plc, the fixed line PSTN operator) and Melita Cable plc[5] (cable TV operator) had commenced provision of broadband access through DSL and cable modems respectively. In just over 5 years, more than 48,500 broadband connections have been deployed. This equates to an estimated penetration rate of 30% in terms of residential and non-residential units.

In terms of the overall retail market share split between technologies, this currently stands at approximately 27,000 DSL connections and 21,000 cable modems giving a 56:44 split. Since broadband became available in Malta, these market shares have remained more or less constant at around 60:40. It is probable that DSL is the prevalent technology because all ISPs can retail the service, while cable modems are only provided via the cable operator's own ISP, *Video on Line*[6].



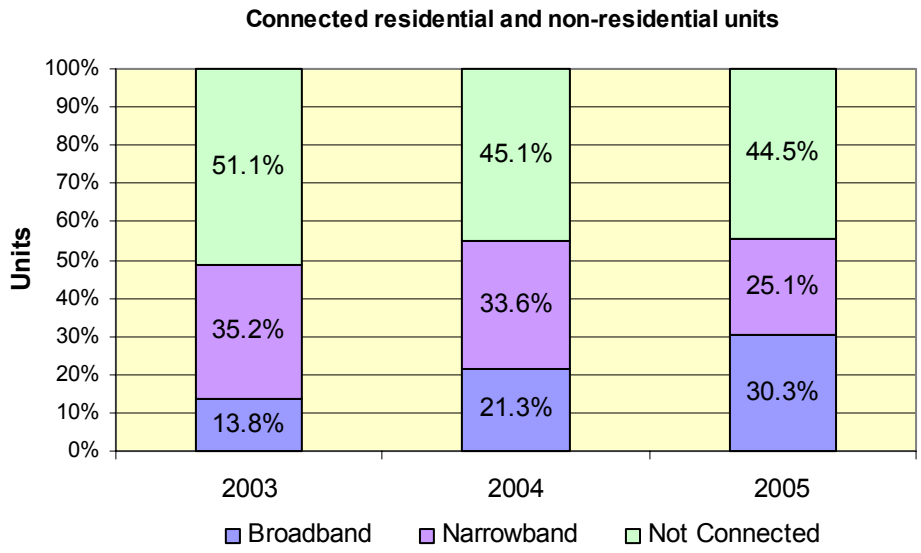
At present, around 44% of the Maltese residential and non-residential units still do not have an Internet connection. The remaining 56% either access the Internet via a broadband or a narrowband connection as depicted in the diagram below. Over the past three years, the number of unconnected units decreased by more than 6%.

[3] The broadband penetration rate as published by ECTA was 12.8% however this includes some point-to-point ATM connections that have already been considered in a separate market.

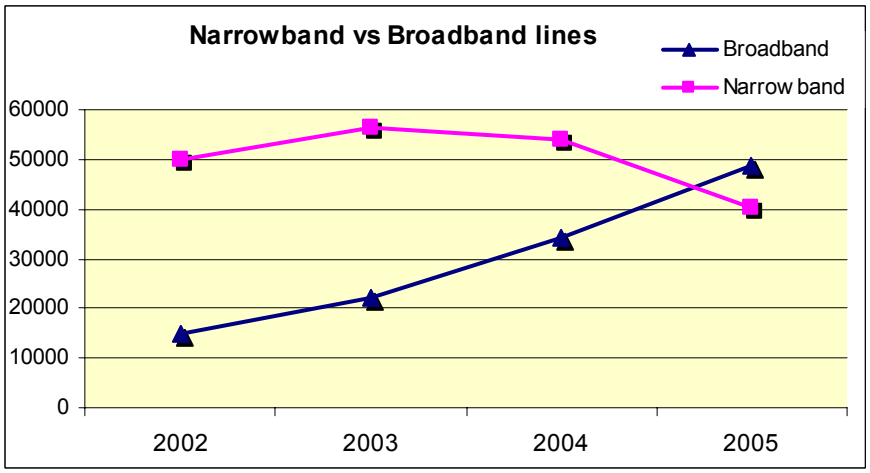
[4] Hereinafter referred to as Datastream

[5] Hereinafter referred to as Melita Cable

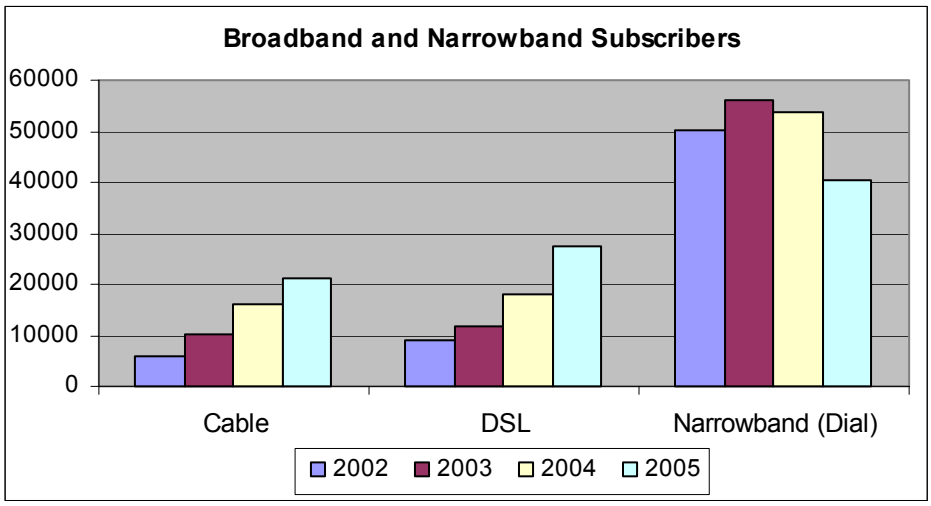
[6] http://home.Onvol.net/



In addition, during the third quarter of 2005, the number of broadband subscribers exceeded narrowband subscribers and therefore broadband become the predominant Internet access technology in Malta. As at December 2005, the share of broadband and narrowband stood at 55:45 respectively as shown below.



Over the past three years broadband subscriptions continued to increase whilst the number of narrowband subscribers is decreasing as more users are upgrading to broadband. The growth in cable and DSL broadband follows a very similar pattern. The evolution of Internet connections by type of technology is depicted hereunder.



Typical broadband connection speeds vary from 1Mbps to 4Mbps with 2Mbps currently being the most widespread. Most tariff plans are based on monthly flat rates, depending on speed and download limits. During the last quarter of 2004 the DSL incumbent also started offering a pay-per-use package for its users. For occasional users, this payment plan works out to be more economical than dial-up Internet and its popularity is increasing rapidly. Take-up was also boosted in October 2004 when both broadband providers doubled the connection speeds with no price increase. A further increase in speed at no extra cost was again repeated a year later in October 2005.

The monthly cost for a 2Mbps cable connection is around 30 Euros similar to that for a DSL connection at the same speed. For a pay-per-use DSL connection at 1Mbps, with 35 hours of usage in a 30-day time window, the cost is 18 Euros.

Late 2005 also saw an important commercial development in terms of the DSL provider. The wholesale and retail broadband arms of Maltacom plc, previously Datastream Ltd and maltanet Ltd respectively, merged to form a single legal entity – Datastream Ltd. Products are now marketed under the *maltanet*[7] brand.

To date the cable broadband provider has maintained separate legal entities for the wholesale (being delivered by Melita Cable plc) and retail service provision (via Video on Line Ltd).

In 2005, the Malta Communications Authority issued three Broadband Wireless Access (BWA) authorisations via assignment of rights of use of spectrum in the 3.5GHz band. At this point in time, none of these BWA networks has yet been established.

02.2 Market definition process

The purpose of the market definition process is to identify the competitive constraints that electronic communications service providers face. There are two dimensions to the definition of a relevant market: the relevant products to be included in the same market and the

[7] http://www.maltanet.net/

geographic extent of the market. The MCA's approach to market definition follows that identified in the MCA's market review methodology.

Recital (7) of the Recommendation clearly states that the starting point for market definition is a characterisation of the retail market over a given time-horizon, taking into account the possibilities for demand and supply-side substitution. The wholesale market is then identified subsequently to this exercise being carried out in relation to the retail market. This approach is repeated in paragraph 3.1 of the main Recommendation.

02.3 Delineation of the retail broadband market

The delineation of the markets is based on an analysis of demand and supply substitutability between different products and services which could potentially form part of the market under investigation. This section provides an analysis of the degree of substitutability between available products and services in Malta, taking also a forward-looking approach with respect to possible developments in the market under review.

In the February 2003 *Relevant Markets Recommendation,* the Commission has defined a wholesale market for broadband access (number 12).

Broadband is a technical term that describes a data communications technology that provides a permanent, high throughput connection. It is "fast" and "always on" and bridges the gap between dial-up modems and leased line circuits. Typical speeds can vary from above 128 kilobits per second (kbps) up to several Megabits per second (Mbps). Broadband technologies are able to provide a mix of data, voice, and video services over one "pipe". Broadband connections are typically asymmetric but can also support equal downstream and upstream rates.

In this context, broadband is thus taken to mean any technology that uses a permanent (or rapidly established) connection, has the capability of providing bi-directional data transmission rates that are higher than achievable using a narrowband (e.g. dial up/ISDN modem) technology, but without resorting to the use of a dedicated end-to-end network resource (like leased lines).

The Recommendation on relevant markets similarly defines broadband services as '*services allowing downstream capacity to end-users in excess of 128 kbps/sec. The bandwidth of the service supplied may be asymmetric or symmetric.'*

The Recommendation states that *'at the wholesale level, broadband access services include what is traditionally referred to as bitstream services.'* In the ERG common position on Bitstream Access, Bitstream is defined as *'a situation where the incumbent installs a high speed access link to the consumer premises and then makes this access link available to third parties, to enable them to provide high speed services to customers.* '

The common position further states that Bitstream Access is defined as *'the corresponding wholesale product for DSL services. Resale offers are not a substitute for bitstream access because they do not allow new entrants to differentiate their services from those of the incumbent.'*

Although the definition of Bitstream explicitly mentions the provision of wholesale access products over DSL infrastructure only, the Commission Recommendation does not exclude the inclusion of other networks (e.g. cable) provided that *'they offer facilities equivalent to bitstream service.'*

As outlined in the Explanatory Memo to the Recommendation, the starting point for market definition is the characterisation of the retail markets. Having defined the relevant retail market, it is then appropriate to identify the corresponding wholesale market.

As part of the market definition process, the delineation of the relevant retail market is performed by examining whether:

- Narrowband and broadband access services fall in the same retail market;
- DSL and other broadband access services fall in the same retail market;
- Residential and business customers fall in the same retail market.

2.3.1 Narrowband and broadband access services

The narrowband and broadband access services were analysed to determine substitutability and functional equivalence.

2.3.1.1 Demand-side substitutability

Functional characteristics

Although broadband and narrowband Internet access could potentially be substitutes, there are fundamental functional differences between the two services. In fact, narrowband is typically a dial-up service which is limited in the available access speed. On the other hand, as outlined above, broadband connections are usually 'always-on' and are capable of speeds in excess of 128kbps.

It is clear that from a functional perspective, a dial-up connection cannot be considered a good substitute to a broadband connection since it does not support high-speed downloads and uploads which are required for many on-line services and applications. The introduction of new broadband voice services, such as Voice over Broadband, as well as the increasing popularity of peer-to-peer applications, further highlights the underlying differences between narrowband and broadband access services.

Prices

Since the introduction of broadband services in 2000, the quality-price ratio of broadband connections increased considerably and therefore many new users opted to purchase a broadband connection rather than a dial-up connection. Furthermore, a number of existing dial-up users started to upgrade to broadband as the 'cost premium' of having a broadband connection started to decrease considerably. This trend is reflected in the decreasing number of narrowband connections as depicted earlier on. Moreover, the introduction of a pay-per-use broadband package provides users with greater flexibility with a budget-controlled system normally associated with narrowband packages.

2.3.1.2 Supply-side substitutability

The MCA has examined whether an ISP would respond to a small but significant non-transitory price increase by a hypothetical monopolist supplier of broadband services (and vice versa) by switching to provide solely narrowband services (and vice versa). The MCA

believes that, although an ISP would be able to substitute the provision of narrowband services entirely with broadband services fairly easily at this point in time, the converse would not occur.

Although currently most ISPs offer both narrowband and broadband services, an ISP wishing to offer its customers an access package capable of handling triple-play services would be highly constrained by this price increase.

2.3.1.3 Preliminary conclusion

Due to different functional characteristics and different prices structures outlined above, the MCA considers that narrowband and broadband access services are not directly substitutable. The MCA takes the view that, overall, narrowband and broadband access services do not fall within the same relevant product market.

2.3.2 DSL and other broadband access services

One issue to be addressed as part of the retail market definition exercise is whether there are distinct retail markets for the various broadband access services currently available or whether they form part of the same relevant product market.

A quick overview of the market shows that various broadband technologies are currently available, or are expected to be available in Malta over the next 24 – 36 months, as shown in the table below.

Technology	Present	Future**
Digital Subscriber Line (xDSL) *provided byDatastreamLtd (subsidiary of Maltacom plc, the incumbent)*	Yes	Yes
Cable Modem *provided by Melita Cable plc, the incumbent cable operator*	Yes	Yes
Broadband Wireless Access	No	Yes
Fiber to the Home	No	Unlikely
3G/HSDPA	No	Yes
DTTV	Yes	Yes
Satellite Broadband	Yes*	Yes

*Negligible

** Beyond timeframe of this analysis – 2 years

It is important to point out that all broadband technologies will be examined as part of this review. Malta could conceivably be covered by multiple broadband infrastructures in the future and the significance of these new networks has to be taken into account.

Technology	Current Network	Future Networks	Coverage
Digital Subscriber Line (xDSL)	1	1	95% +
Cable Modem	1	1	95% +
Broadband Wireless Access	0	3*	99%
Fiber to the Home	0	0	0%
3G/HSDPA	0	3	99%
DTTV	1	2	95%
Satellite Broadband	Several	Several	100%

* Minimum, could be more

In May 2005, the MCA issued two grants of rights of use for DTTV systems. These operators are bound by the licence conditions to complete their network deployment (i.e. 95% nationwide coverage) by October 2006. To date one of these operators is already marketing its services. However, currently these do not include data services and, to the knowledge of the MCA, the operators in question are not likely to offer such services within the timeframe of this review.

In terms of satellite broadband, services are provided by undertakings outside the Maltese territory, so far. Numbers of satellite broadband subscribers in Malta are limited to a few hundred and hence do not impinge on overall broadband market shares to any significant degree. Although satellite communications offer the possibility of broadband connections, they do present some limitations, namely latency and capacity offered. Latency is ingrained in satellite communications due to the inherent long distances the packets have to travel. Several techniques are deployed to reduce it as much as possible, still it is very difficult to eliminate completely. In most cases, the connection capacity offered by satellite connections does not exceed 2Mbps. Optimisation techniques are usually deployed to enhance the bandwidth usage on these connections, including compression. Thus, satellite connections might not be suitable for certain applications with specified requirements for bandwidth and latency such as VoIP and online gaming. Current developments are improving the situation and VoIP is slowly being deployed over satellite connections as well.

With regards to 3G, it is expected that by the end of 2006 the two local mobile operators will have started the deployment of their 3G networks. However, it is expected that full coverage will only be achieved by 2010. With the deployment of HSDPA, download speeds of up to 14.4 Mbps will be made possible. Nonetheless this will be dependent on a number of issues, such as vicinity to base station and number of concurrent users, which could result in lower connection speeds. Moreover, in order to access the system, consumers will need to buy new phones which initially are expected to be expensive compared to traditional 2G phones. The costs associated with the various data services offered over these infrastructures are also likely to be on the high side.

As pointed out in the tables above, a number of broadband wireless access networks will be deployed over the coming months. Some of these networks will be based on unlicensed bands namely used for WiFi. However, these bands are utilised on a non-interference, non-protection basis. This implies that there are no quality of service guarantees as would be the case with licensed frequency bands.

On the other hand, three of these BWA networks will be deployed in the 3.5GHz band i.e. using licensed spectrum. The deployment timelines for these technologies are such that within the next 12 months there will be potentially have 3 BWA networks having between 33% and 50% national coverage, depending on the applicable licence conditions. In all three cases, completion of the network deployment is expected by 2009.

In their submissions, all the operators in question stated they would be deploying networks based on the upcoming 802.16e (WiMax) standard. International statistics show that penetration of BWA networks (currently based on proprietary standards) is still very low. Development of in-built WiMax receivers for laptops, similar to what we currently have for WiFi, is expected to boost the uptake of this technology. However such development is expected to take place towards 2008, which would be near the end of the timeframe of this review.

The MCA is of the view that all these previously mentioned technologies, with the possible exception of Fibre to the Home, could potentially play a role during the timeline of this market analysis. However, cable and DSL platforms are expected to remain the dominant form of access to broadband services. Therefore, subsequent analysis will focus mainly on these two technologies.

2.3.2.1 Demand-side substitutability

Functional substitutability

The retail broadband access market in Malta is characterized by a significant number of retail service providers. Currently there are at least 15 Internet Service Providers (ISPs) that retail broadband services. All ISPs in the market are able to sell DSL broadband connections. However, only Video on Line (Onvol - the ISP subsidiary of Melita Cable) currently has access to the cable modem broadband service.

In terms of the service packages, taking a snapshot of the market towards late 2005, both cable and DSL broadband services exhibit the following characteristics:

- Downstream Speeds – vary from 1Mbps to 4Mbps
- Upstream Speeds – both providers offer 256kbps
- Payment Terms – Post-paid (cable & DSL), pre-paid (DSL only)
- Pricing - Equivalent DSL/cable packages have very similar prices.
  - Prices vary according to speed and download limits (€25-€50 per month).
  - Prices have remained relatively stable since introduction, but speeds have increased.
  - Connection, installation and modem fees typically waived through ongoing special offers.

Consumer evidence

In early 2005, the MCA conducted research into broadband users perceptions.[8] The main thrust of this survey was to test the degree of substitutability between the available broadband services. The key findings that emerged from the user perception survey can be listed as follows:

Consumers' awareness: 76.2% of subscribers claimed to have sufficient information regarding services and prices offered by ADSL and Cable ISPs in the broadband market.

Churn: The overall churn level between broadband technologies has been of 12% with a nearly symmetric churn level amongst technologies: ADSL to Cable – 6%, Cable to ADSL – 6.5%.

Hence it is clear that significant churn is present and that switching occurs between the two types of available broadband services.

Switching Capability: 52.6% of respondents think it is easy to switch between ADSL and Cable (or vice versa).

Furthermore, the MCA questioned end-users to determine the degree of substitutability between ADSL and Cable broadband. When questioned whether consumers think that ADSL is an appropriate substitute to Cable, only 15% of the respondents believe that the two broadband technologies are not substitutable. 45% stated that they consider them substitutable whilst 40% said they do not know because they have not yet experienced both technologies.

A similar response was obtained to the question as to whether end-users consider Cable broadband as an appropriate substitute to ADSL. Only 19% of the respondents argued that they do not consider cable as an appropriate substitute to ADSL. Examining the characteristics of the broadband services provided via ADSL and cable modem, it is clear that:

- Cable & DSL broadband services are interchangeable;
- User perception is that technology used to provide broadband access is irrelevant;
- Broadband access service characteristics are basically identical
  - Similar range of downstream/upstream speeds
  - Similar modem, installation and monthly costs
  - Similar Quality of Service
  - Similar Terms & Conditions
  - Same applications & content can be accessed;
- Switching costs now much reduced (modem deposit and installation fees waived);
- Coverage of both cable and DSL network is almost ubiquitous;
- Churn is present;
- Service packages track & mirror each other (price/bandwidth/download limits)

[8] http://www.mca.org.mt/library/show.asp?id=642&lc=1

All possible indicators therefore clearly demonstrate that the two broadband platforms exhibit functional equivalence.

Similarly it is expected that broadband services provided over BWA networks will be considered substitutable to both DSL and Cable since, in all likelihood, the services offered would be similar to existing services and packages.

Hypothetical Monopolist Test

As part of the demand-side substitution analysis, the hypothetical monopolist test assesses whether or not a hypothetical monopolist can profitably raise the price 5 to 10% above its competitive level.

At the retail level, the MCA considered whether a retailer of broadband access services (ISP) would be in a position to execute a Small but Significant and Non-transitory Increase in Price, say 10%, without losing much of its customers to other ISPs.

In the case of an ISP retailing broadband access via DSL, the ISP most certainly could not profitably increase the price since it would lose customers who would rapidly switch to other DSL ISPs. This is corroborated by the results of the research referred to earlier on. In fact, 64.3% of the respondents having ADSL Internet at home stated that they do not feel it is difficult to change ADSL Internet service provider (ISP) in case of a hypothetical price increase. Moreover, from the consumer research it has emerged that 45% of ADSL subscribers did at some point in time change their ISP for a variety of reasons including excessive pricing.

Following a hypothetical price increase, subscribers can also consider switching to the cable ISP - Onvol. In fact, consumers are able to, and do, switch between cable and DSL retail products. This is borne out by the result of the consumer survey that indicated that 33% of consumers would be ready to switch to the cable ISP in the case of a hypothetical 5-10% increase in price.

Similarly, an increase in retail price by Cable ISP could lead consumers to switch to a DSL provider.

From the analysis above it is clear that a hypothetical increase in price is not likely to be profitable for any ISP. The cross-price elasticity is positive and therefore the two products are good substitutes.

2.3.2.2 Supply-side substitutability

The MCA also investigated supply-side substitutability effects. In particular, the MCA considered whether new suppliers would be encouraged, and able, to start offering broadband services at no significant high costs in a short period of time following a price increase by a hypothetical monopolist ISP.

Such an outcome would depend to a great extent on the availability of wholesale broadband access services. New entrants at a retail level would need access to existing infrastructure however this is only rendered possible due to the existence of regulatory obligations. Without such obligations, a new entrant would be constrained to replicate the broadband infrastructure, which would imply a very high barrier to entry.

Given the high dependence on current regulation, it would be interesting to analyse a Greenfield scenario, i.e. what would result in the retail market should no regulation be present.

Currently, new entry into the market for an ISP retailing DSL broadband is possible in the short run without incurring very high costs. This is underpinned by existing regulation. The high numbers of ISPs present in the market shows the relative ease of market entry, although there are also legacy reasons for such a large number. Although regulatory measures were put in place to open the cable infrastructure, and there was demand from ISPs to be granted this type of access, such third-party access over the cable network has been denied.

It is therefore reasonable to conclude that:

(i) Had the regulatory mechanism mandating third-party access to the cable infrastructure actually been enforced, there would have been demand for such access by ISPs. This would enable third-party ISPs to provide cable broadband to end-users thus ending the competitive advantage that the retail cable ISP currently enjoys.

(ii) In the absence of the regulatory mechanism mandating third-party access to the DSL infrastructure, it is very likely that the DSL incumbent would cease to provide wholesale access to third-party ISPs in order to gain their existing market share and retail profits.

In the absence of any regulation, the outcome is fairly obvious. New entrants would have encountered very high barriers to entry (building a whole new broadband infrastructure, negating the possibilities offered by climbing the "ladder of investment"). The two companies controlling the two existing broadband platforms would have shared retail sales on a more or less equal basis, with significant incentives to co-ordinate at a retail level.

If access obligations (a wholesale remedy) were to be removed, then competition at the retail level would be significantly impaired – basically reduced to two vertically integrated downstream providers only i.e. self-supply cable and self-supply DSL.

2.3.2.3 Preliminary conclusion

The demand-side substitutability analysis showed that there exists a direct pricing constraint between cable and DSL.

On the other hand, supply side substitutability could exist but is distorted by the inability of new entrants to access the cable broadband infrastructure. Furthermore, it was concluded that in an unregulated situation, without an appropriate wholesale remedy, consumers' ability to switch would be significantly reduced. The retail market structure would tend towards duopoly.

In view of the above, the MCA is of the opinion that DSL and Cable broadband access products are substitutable and therefore in the same retail market.

2.3.3 Residential and business customers

An analysis was carried out to determine if the market could be segmented into residential and business sectors.

2.3.3.1 Demand-side substitutability

From data obtained, it resulted that both residential and business customers acquire the same connections in terms of connection speeds, coverage and quality of service.

Prices for business customers tend to be slightly higher due to unlimited download capacities. Small/medium businesses can purchase essentially the same package as residential customers with some minor additions like multiple email addresses and web hosting facilities. However, the technical characteristics typically remain the same.

2.3.3.2 Supply-side substitutability

As part of the supply-side substitution analysis, the hypothetical monopolist test assesses whether or not a hypothetical monopolist can profitably raise the price of the residential (or business) connections by 5 to 10% above its competitive level, without inducing other providers to start offering residential (or business) services.

Given that both the cable and DSL networks already have a nationwide coverage, it would be fairly easy for an existing operator to start offering residential (or business) connections following a price increase. In reality, nearly all ISPs offer their broadband packages to both business and residential customers.

2.3.3.3 Preliminary conclusion

Based on this assessment, the MCA is of the view that residential and business customers are in the same retail market.

2.3.4 Conclusion on the boundaries of the retail market

According to the analysis carried out and evidence available to the MCA, the retail market:

- Excludes narrowband services;
- Includes all broadband technologies available in the market during the timeframe of this review, but predominantly cable and DSL technologies; and
- Includes all business and residential customers.

Q2. Do you agree with the above preliminary conclusions regarding the definition of the retail market?

02.4 Delineation of the wholesale broadband market

The delineation of the markets is based on an analysis of demand and supply substitutability between different products and services which could potentially form part of the market under investigation. This section provides an analysis of the degree of substitutability between available broadband access networks in Malta, taking also a forward-looking approach with respect to possible developments in the market under review.

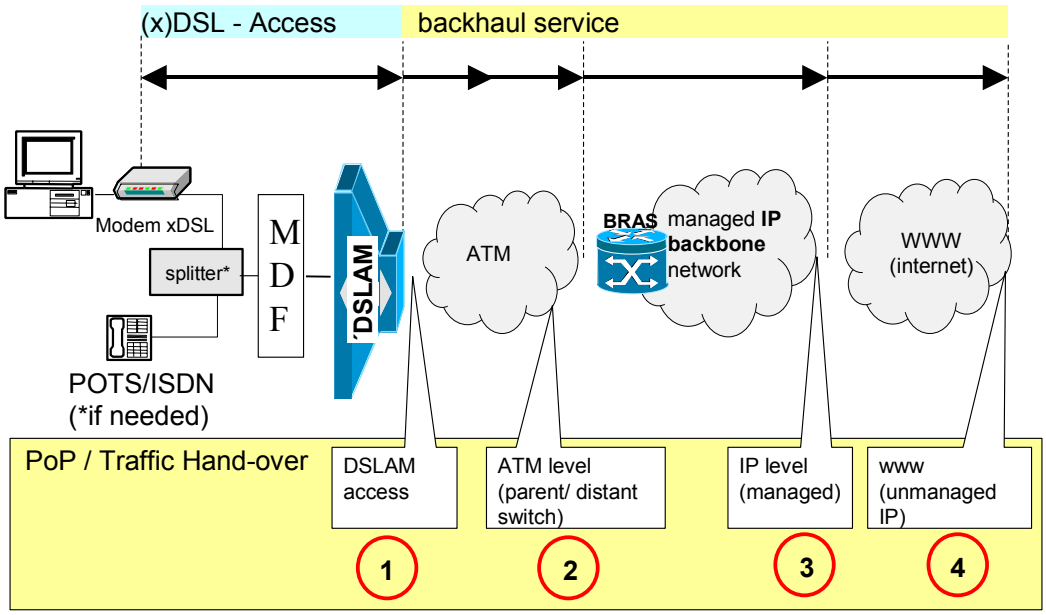
The demand for this wholesale service is derived from the demand for retail broadband services. The MCA considers that the relevant wholesale market will be as broad as the relevant retail market defined earlier on. Given this, and also on the basis of the analysis outlined at the retail level, it follows that, at the wholesale level, the following aspects will be analysed:

- Are the wholesale products available over different technologies equivalent?
- Are different broadband technologies within the same wholesale market?
- Do resale, self-supply and wholesale broadband access fall within the same market?

02.5 Are wholesale products available over different technologies equivalent?

2.5.1 Bitstream access over DSL network

DSL operates on the upper frequency bands of the local loop thereby enabling broadband speeds. At the Main Distribution Frame (MDF) the splitter forwards user data to the Digital Subscriber Line Access Multiplexer (DSLAM). This acts as an aggregation point for the data originating from the subscribers. Data is forwarded over an ATM network to the BRAS that enforces policy management and QoS. The resulting IP traffic is then routed over the managed IP network and eventually routed to the Internet. This applies also to the downstream flow albeit using different frequency bands.



Bitstream access is thus defined as the corresponding wholesale product for DSL services (high-speed services). However, this definition leaves open at which point the traffic is handed over as there are various handover points for DSL traffic between the incumbent and the ISP as shown in the diagram above.

The access point (point of handover of traffic) determines both the possibility to control the technical parameters with which the xDSL service is provided to the end user and the possibility to use the own network instead of the incumbent's.

The main difference between shared access[9] and bitstream access is the provisioning of the DSLAM. In the case of shared access, the new entrant always operates the DSLAM, whereas in the case of bitstream access, the incumbent operates the DSLAM. Thus, bitstream access offers no possibility for the new entrant to technically alter the xDSL access link (towards the customer).

The possibility to differentiate the service offered to the end user (and thus the extent to which value can be added by the new entrant), varies depending on the options the ISP subscribes to. In fact, the further to the right the access point is, the less possibilities the new entrant has to differentiate the service.

In particular, the options could be classified as follows:

Option 1 – DSLAM Access: The incumbent provides the DSL access link and hands over the bitstream to the new entrant directly after the DSLAM. This option requires a large upfront investment from the new entrant.

Option 2 – ATM/corresponding technology level: The incumbent provides the DSL access link plus a backhaul service and hands over the bitstream to the new entrant at an ATM-PoP or other technologies used[10]. The new entrant is able to offer an end user product with different technical characteristics as it can alter the Quality of Service parameters (QoS) such as the overbooking factors provided by the incumbent.[11]

Option 3 – IP level: The incumbent provides the DSL access link plus a backhaul service and hands over the bitstream to the new entrant at an IP-PoI. As in this option the incumbent runs the BRAS, it has the possibility to monitor the end user and controls the virtual private channel (VPC).

Option 4 – Resale: The incumbent provides the DSL access link plus a backhaul service and also provides the connectivity to the public IP network of the World Wide Web. At this level, the product the incumbent sells to the new entrant is technically the same to the one that which the incumbent sells to its own customers.

2.5.2 Cable Bitstream access

Data over cable system utilises certain frequency bands for the transmission of data services at broadband speeds. Data from the users' PC is transferred over the hybrid fibre-coax (HFC) network after being modulated by the cable modem. At the headend, upstream data

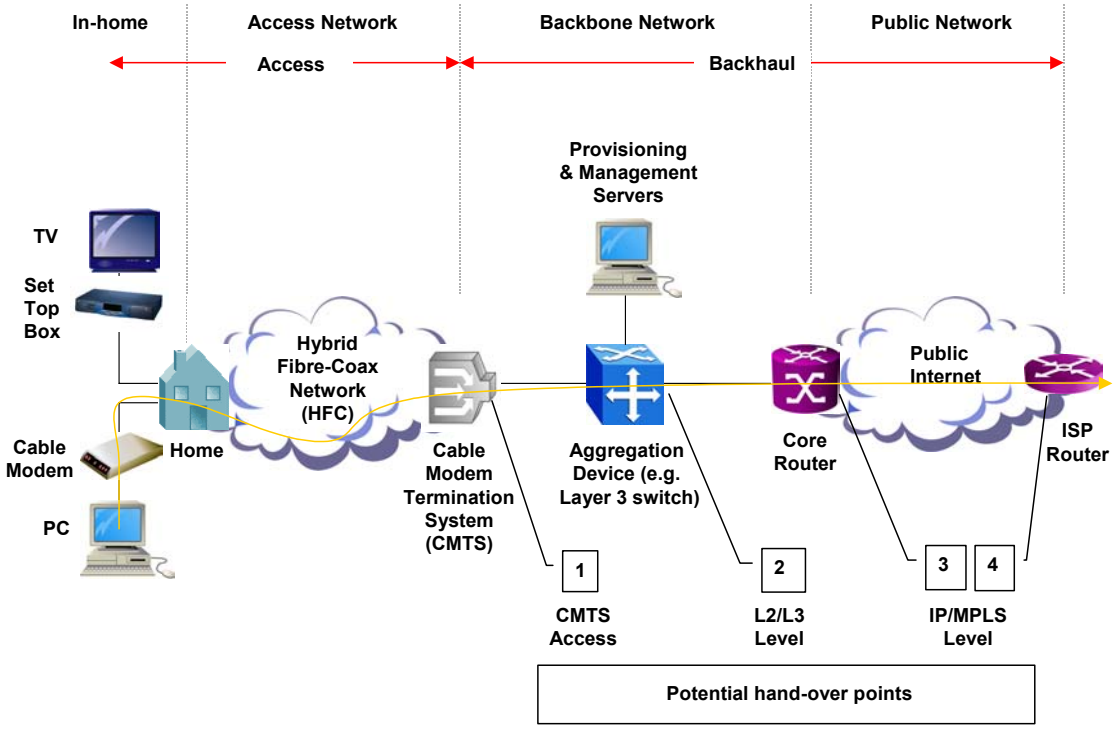
[9] Or fully unbundled lines used to provide xDSL access.

[10] Principle of technological neutrality.

[11] However, in order to be able to define such parameters per customer, i.e. to be able to define the QoS of the Virtual Circuits (VC) over the Virtual Path (VP), the incumbent has to configure this on the DSLAM as the VCs have to be defined at both the end of the new entrant and the end of the incumbent. The configuration is performed by the incumbent as requested by the new entrant.

is transfered to the Cable Modem Termination System (CMTS) which acts as a concentration device and provides connectivity into the backbone network. At this point, the data is processed and routed to the Internet. This applies also to the downstream flow albeit using different frequency bands.

As in the case of DSL, there are various possible points of interconnection over the cable network.



Option 1 – CMTS access: This type of solution almost echoes a "shared access" or "local loop unbundling" scenario. This allows the new entrants the greatest degree of freedom in selection of network equipment, system parameters and service differentiation. This would consequently require the greatest degree of investment. The availability of unused upstream and downstream channels poses a limiting factor for this option.

Option 2 - Interconnection at the aggregation point: This would assume that the alternate operator or ISP would use the "incumbent" cable operator's access network but install via co-location equipment within the backbone network that would handle all customer traffic destined to, or originating from, that particular ISP's network. This solution also gives the new entrant a significant amount of ability to differentiate its offerings from the incumbent's.

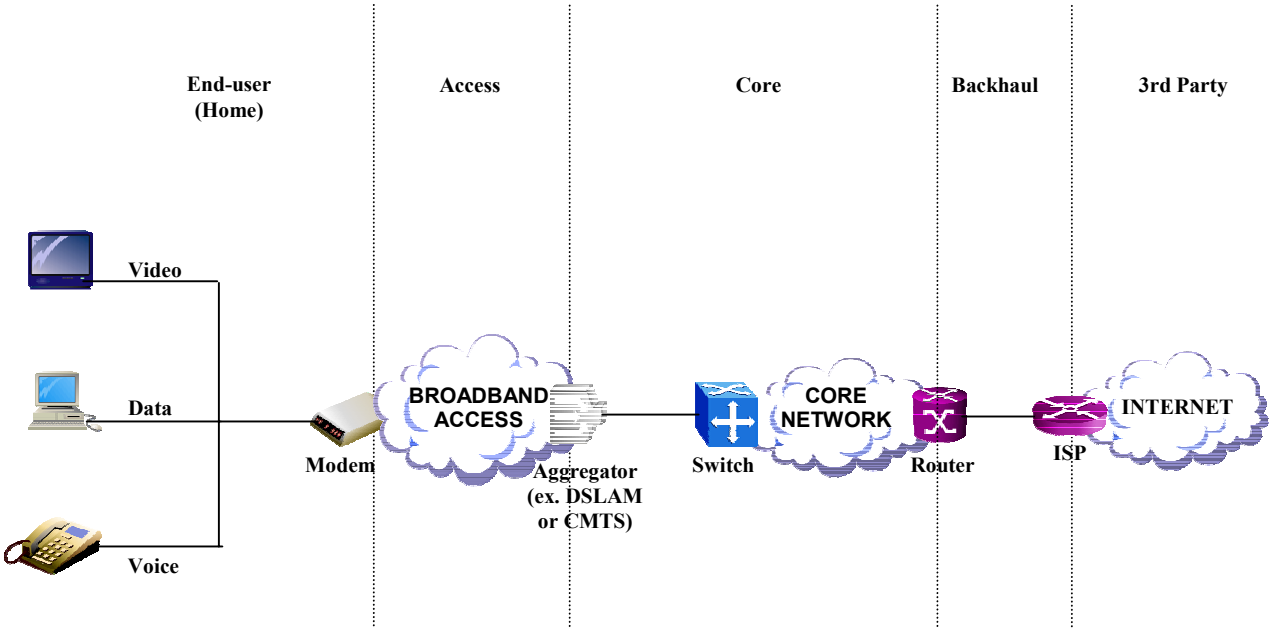
Option 3 - Interconnection at the service provider edge: This would imply using the incumbent cable operator's access and backbone networks and management and provisioning servers. Minimal service differentiation would be possible at this point apart from the type of upstream Internet connection that the new entrant decides to implement and any particular value-added services that can be implemented within their own networks.

Option 4 - Resale: Effectively here the new entrant is purchasing a wholesale broadband access product that includes ISP services from the incumbent and can only "badge" it

differently. This would not allow a new entrant to change any service parameters and can thus not be classified as "bitstream" access.

2.5.3 Comparison between the different technologies

Though different network components are utilised to deliver data over the different infrastructures, it is clear that there are numerous similarities. This would also apply to a BWA network since the concept of access network, aggregation point, core network and Internet access is common. A generic network setup would be as follows:



Furthermore, although the underlying technology is different, there are several similarities in the structure and costs involved as outlined in the table below:

	DSL	Cable	Wireless Systems
Customer Premises Equipment (CPE)	Modem	Modem	Modem
Physical Layer	Trenches/Ducts	Trenches/Ducts	Spectrum
Access Network	Copper line network: Maintenance Powering	HFC network: Maintenance Powering	Base Stations: Maintenance Powering
Aggregation Point	DSLAMs co-located at various exchange sites, aggregating traffic coming from the area	CMTS located at the cable headend operations centre, aggregating traffic coming from the various areas	Aggregation switch located at the network operations centre, aggregating traffic coming from the various areas
Core Network	Switches Routers Operations and Management Systems for the key systems in the network Billing systems Customer relation management systems	Switches Routers Operations and Management Systems for the key systems in the network Billing systems Customer relation management systems	Switches Routers Operations and Management Systems for the key systems in the network Billing systems Customer relation management systems

As can be seen from the table above, although the underlying technologies may be different, the network elements are very similar in all cases. It follows that cost structures are also very similar and thus, there is an element of cost-neutrality in implementing broadband access over different technologies.

Preliminary conclusion

Based on the analysis provided above, the MCA is of the view that wholesale broadband access services can be provided using different technologies. Although the technology is different, the underlying network elements and functionality are very similar for all network types. The MCA therefore believes that all types of network technologies supporting

wholesale broadband access are equivalent and should therefore be part of the same relevant wholesale market.

02.6 Are different broadband access technologies within the same wholesale market?

It has been seen that different broadband access technologies can provide and support similar services. In fact one possibility that was considered by the MCA during its preliminary analysis of this market was to define a separate wholesale broadband access market for the cable network (and similarly for other technologies). However, the overwhelming evidence is that the cable and DSL broadband products are competing in the same retail market and are considered by end-users to be good substitutes. What follows is an analysis of the degree of substitutability of wholesale cable and DSL broadband access services.

2.6.1 Demand-side substitutability

In order to assess the demand-side substitutability between cable and DSL wholesale access services, the MCA considered whether ISPs have a suitable alternative to resort to in the short run and at no high cost, if the DSL incumbent applies a hypothetical price increase for its wholesale DSL product.

If the DSL provider increases the price of wholesale broadband access, customers (ISPs) do not have an alternative substitute in the absence of regulation. However, if the cable operator provides wholesale broadband access to third parties, ISPs would be able to acquire an alternative wholesale access product. Cable wholesale access is an equivalent product to DSL wholesale access in terms of:

- **Functionality**

  There is no difference in the wholesale services that can be provided on cable network. The end product (broadband Internet) is also an equivalent service as concluded in the analysis of the retail market.

- **National Coverage**

  Both the DSL and cable broadband networks have ubiquitous coverage of the national territory. In fact, the cable operator has already upgraded its network in the late 1990s to be able to offer bi-directional services.

- **Ease of access for ISP-compatibility with current equipment, standards etc**

  The core network for DSL and cable platforms is mostly similar. Thus, the ISP network connected at the handover point of a wholesale broadband access product should be independent of the access network.

- **Immediacy of provision of wholesale services - within timeframe of this review**

  The cost burden for a cable network to provide wholesale access to third parties is considered reasonable, especially in the light of existing arrangements with a third-party, as described later on in the document. In any case, the wholesale costs incurred by the cable operator to provide such services would be similar to those incurred by a DSL operator.

The same would apply if the cable provider increased the price of its wholesale broadband access product. In this case, the DSL provider would be in a position to offer a viable alternative to the hypothetical cable customer (ISP).

2.6.2 Supply substitutability

The MCA also considered whether existing/new undertakings will easily enter the market at no significant high costs and in short run, following a price increase of wholesale broadband access by a hypothetical monopolist.

If the DSL provider increases the wholesale price of access, the cable operator will not start providing DSL access and vice versa. The high barriers to entry and timelines involved in the construction of a new fixed network with such extensive coverage makes such an entry an impractical alternative in the timeframe of this review.

Nonetheless, the DSL and cable providers would still be in a position to counteract such a move by providing similar functionality over their different access network. The functional equivalence of the wholesale broadband products outlined in the previous section as well as the end-users amenability to changing broadband providers (even if it involves a change in technology) implies that this is a feasible option that would render such a price increase unprofitable.

In the time horizon of this review there is also the potential for three (or more) BWA networks to be developed. However, these would require significant investment and are not envisaged to have developed sufficiently to be able to offer wholesale products to third parties within the timeframe of this review. Nevertheless, such networks, when sufficiently mature, would be able to support wholesale access service and therefore are to be considered part of the same relevant market.

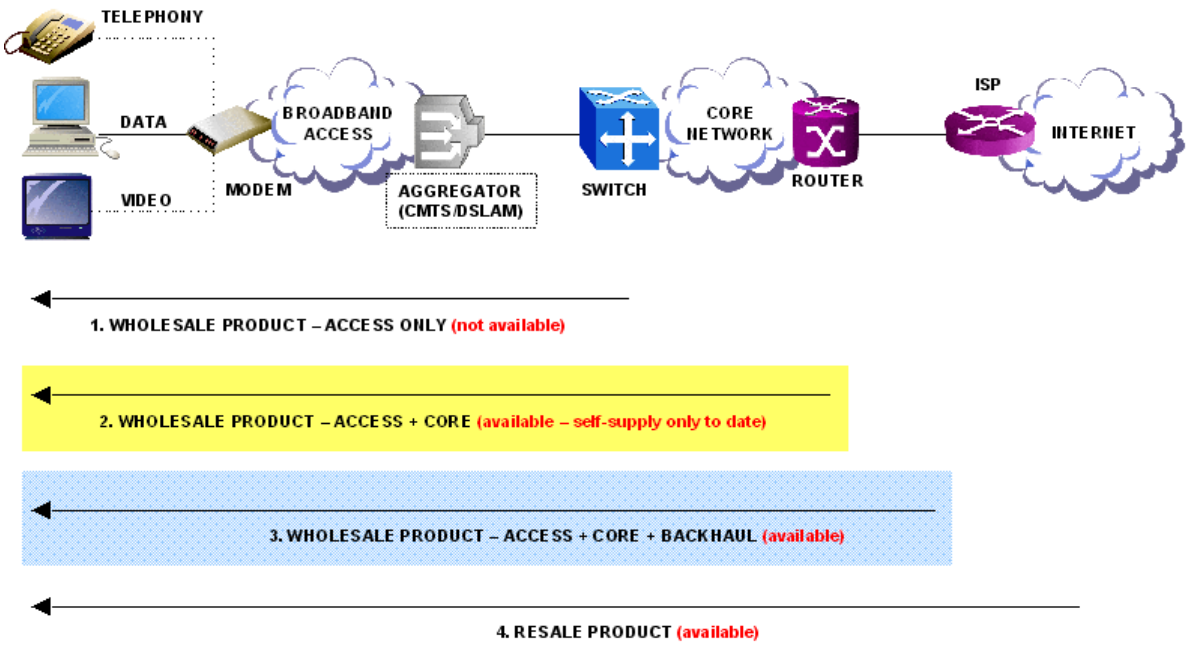
Preliminary conclusion

Based on these considerations, the MCA is of the view that wholesale broadband access over DSL networks, cable networks, as well as other broadband platforms able to support wholesale broadband access services, all form part of the same relevant wholesale market.

02.7 Are resale products, self-supply and wholesale broadband access within the same market?

If the strict definition of bitstream access, as defined in the Commission Recommendation on Relevant markets, were to be adhered to, the conclusion would have to be reached that this market hardly exists in Malta.

Nevertheless, it is abundantly clear that broadband access is being provided on a wholesale basis in a number of ways as depicted below.



2.7.1 Simple resale

In this scenario a downstream service provider, typically an ISP, will sell a packaged product provided by the upstream broadband access provider to an end-user. Here, service parameters including Internet access, service quality and contention ratios, are all pre-determined by the upstream provider and the ISP will have absolutely no control over them. One such service by the DSL network operator in Malta is known as '*Lavender*'. This product packages international connectivity to the wholesale DSL offer at specified contention ratios, which cannot be negotiated. Basically, this is a branding exercise with a retail-minus approach taken to costing, where the downstream service provider is allowed to make a small margin when on-selling. The retailer has no ability to differentiate the service from the incumbent's package, except perhaps from a branding perspective.

2.7.2 Self-supply

It is a common practice that the network operator of a broadband infrastructure supplies services internally to its retail arm, which is normally a wholly owned subsidiary ISP of the same entity. The downstream ISP naturally can forge very close links with the upstream provider and can tailor the end-user service offerings as it wishes since effectively, it has a significant degree of upstream control over the service parameters.

In the local scenario, both cable and DSL providers offer self-supply broadband access to their downstream ISPs. At present, the DSL incumbent offers its own downstream ISP a service known as '*Emerald*'. In this case, the service is handed over to the ISP at the Broadband Access Server (BRAS) i.e. level 2 of the above diagram. This particular type of service is solely used for the provision of self-supply DSL and is not currently being offered to third-party ISPs. This gives the vertically integrated ISP a significant ability to differentiate its retail offers.

The cable operator does not provide third-party access to its network and in fact, cable broadband is sold *almost exclusively* in this manner. This has resulted in the cable

broadband ISP being the largest in terms of retail market shares, implying clearly that it is gaining significant benefit from being in a unique situation with its upstream supplier. Due to regulatory obligations (non-discrimination), the DSL incumbent is compelled to make equivalent offers to third-party downstream providers.

At the retail level self-supply cable, self-supply DSL and third-party DSL broadband products are directly competing in the same market. As shown earlier in the retail market definition section, an increase/decrease in the price of self-supply DSL products will have a constraining effect on cable products at retail level and vice versa.

Since wholesale demand is derived from retail demand, a decrease in the price of wholesale self-supply DSL acts as a constraint on the wholesale cable access provider. Such a decrease in price would immediately be met by the cable provider and vice versa, to avoid losing customers at retail level. This was proved through recent cases of doubling of speeds, and matching of special offers.

2.7.3 Wholesale Broadband Access

The DSL network operator currently offers wholesale broadband access services to all third-party ISPs, whilst the cable operator offers wholesale broadband access services only exclusively to one particular third-party ISP.

Wholesale broadband access as described earlier on involves the network operator (Datastream for DSL and Melita Cable for cable modem) delivering end-user traffic in bulk via ATM or IP level hand-offs to a third-party. In a way, these services can be considered to be a hybrid form of bitstream access, however the downstream party has little or no control over the service delivery parameters. Instead, service differentiation relies on factors that can be controlled by the downstream party (an ISP) such as contention for IP transit capacity and download limits.

In the case of Datastream (for DSL), two service types are identified i.e. *Chrome* and *ISP Connect*. Both services handover traffic to the ISP at level 3 as referenced in the above diagram. The applicable contention ratios are the only distinction between the two. In fact, *ISP Connect* service is terminated directly on the ISP's router using a "bridged" connection, which, in practice, means almost 1:1 contention ratio. This type of connection is typically used by ISPs to serve business customers. From all the wholesale product services available, *Chrome* is currently the most popular amongst third-party ISPs.

It can also be seen from the technical descriptions that the implementation of "true" bitstream access solution should not be overly burdensome for the DSL incumbent as minimal additions or modifications would be necessary.

In the case of Melita Cable, the MCA is aware that wholesale broadband access services via cable modem are being provided to a third-party. The latter – MITTS Ltd - the Malta Government ICT service provider that is also an ISP in its own right, can order cable modem connections for end-users (government employees). Traffic from and to these MITTS users is directed to the third-party network over a fibre connection. It has to be emphasized that MITTS then layers Internet and Intranet access over the broadband transport delivery service. It is therefore amply clear that the cable modem broadband platform is already capable of "bitstream" equivalence. As outlined in the ERG paper, cable bitstream is technically and commercially possible – as witnessed with this type of commercial agreement in Malta.

Preliminary conclusion

The MCA therefore considers that, in line with the Commission Recommendation on relevant market, resale services fall outside the scope of the relevant product market. Given the analysis above, the MCA concludes that self-supply cable and DSL broadband access services and wholesale broadband access products provided over all existing broadband networks, are to be considered within the same relevant wholesale market.

02.8 Relevant geographic market

A relevant geographical market comprises the area in which the undertakings concerned are involved in the supply and demand of products and/or services, in relation to which the conditions of competition are sufficiently homogeneous and which can be distinguished from neighbouring areas because the conditions of competition are appreciably different to those areas.

According to the EU Guidelines, in the electronic communications sector, the definition of the geographical scope of the relevant market is generally determined with reference to the area covered by a network and to the existence of legal and other regulatory instruments.

Locally, both broadband infrastructures have by now expanded to cover almost the entire national territory and services are sold in exactly the same way, regardless of location.

Based on the above characterisation of the geographical scope of a relevant market and the market conditions described earlier on, the MCA takes the view that the relevant geographic market for the relevant product and service markets under consideration is the national territory of Malta.

02.9 Preliminary Markets

Following the analysis presented above, the MCA concluded that the national market for **Wholesale Broadband Access** services:

- Excludes simple resale products;
- Includes all self-supplied wholesale broadband products provided over all existing broadband networks; and
- Includes all wholesale broadband access products and services provided to third-party ISPs, via all existing broadband networks.

Q3. Do you agree with the above preliminary conclusions regarding the definition of the wholesale market?

Chapter 03 - Market Analysis

Having identified the relevant market as discussed in **Chapter 02** the MCA is required to analyse the market in order to assess whether any service provider/s have significant market power as defined in Regulation 8 of the ECNSR (Article 14 of the Framework Directive).

03.1 Method to assess Significant Market Power

Under the new EU Communications Directives and Article 4(8) of the ECRA, SMP has been newly defined so that it is equivalent to the competition law concept of dominance. Article 14(2) of the Framework Directive states that:

"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."

Further, Article 14(3) of the Framework Directive 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 the relevant market, one or more undertakings may be designated as having SMP where that undertaking, or undertakings, enjoys a position of dominance. Also, an undertaking may be designated as having SMP where it could lever its market power from a closely related market into the relevant market, thereby strengthening its market power in the relevant market.

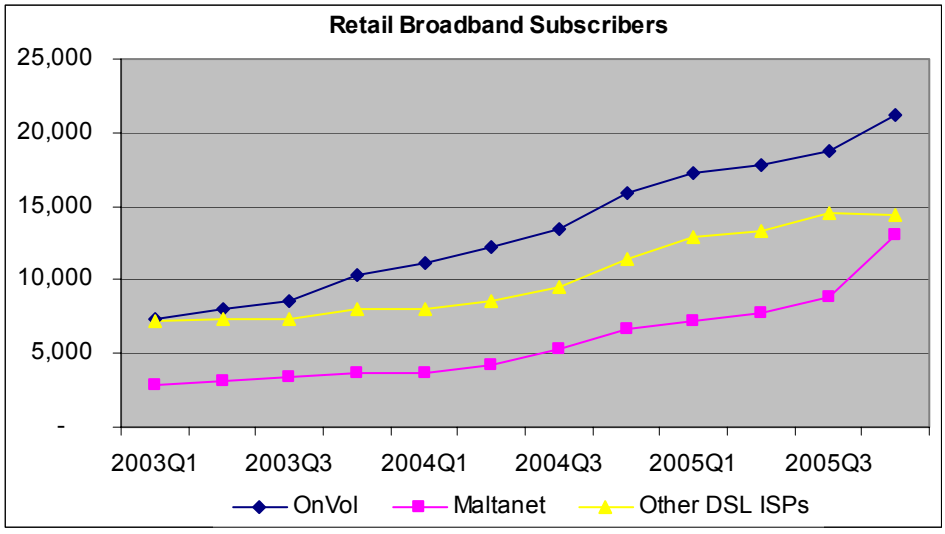
In assessing whether an undertaking has SMP, this review takes the utmost account of the Commission's SMP Guidelines as well as the MCA's equivalent guidelines, as referred to in Chapter 01 above.

03.2 Assessment of the retail broadband market

As at December 2005, there were 23 licensed ISPs in Malta. Out of these, at least 15 ISPs offer retail narrowband and broadband services to end-users. All ISPs offer DSL broadband, whilst only the vertically integrated cable ISP is currently offering cable broadband services.

The large number of ISPs present in the market indicates the relative ease with which ISPs can start providing Internet services. These ISPs do not face significant entry barriers since they can obtain access to the incumbent's PSTN network. Moreover, the sunk costs associated with the initial investment required to provide Internet services are considered to be relatively low. This has made it attractive for a large number of investors to enter the ISP market. It is worth noting that under the existing regulation, the MCA mandates open access at a wholesale level on both the DSL incumbent Datastream and also on the cable network operator Melita Cable. However to date, the cable operator is still appealing the MCA decision and has not granted open access to third-party ISPs.

The graph below depicts the number of broadband subscribers at a retail level spilt between cable broadband connections provided by the subsidiary cable ISP (Onvol), DSL connections provided by the fixed incumbent ISP (Maltanet) and the DSL subscribers of the other third-party ISPs.



The graph clear illustrates that the cable ISP, Onvol has the highest number of subscribers with more than 21,000 users, whilst the fixed incumbent's ISP, Maltanet, has around 13,000. The other third-party DSL ISPs share between them around 14,000 subscribers.

The table below illustrates the retail market shares in subscribers over the past three years.

	2003				2004				2005			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
OnVol	42%	44%	44%	47%	49%	49%	48%	47%	46%	46%	44%	44%
Maltanet	16%	17%	17%	17%	16%	17%	19%	20%	19%	20%	21%	27%
Other DSL ISPs	42%	40%	38%	36%	35%	34%	34%	34%	34%	34%	35%	30%

The cable ISP has over time maintained a very high market share compared to the other individual DSL ISPs. In fact, Onvol has maintained a market share of over 40% ranging between 42% and 49% over the past 3 years, whilst the fixed incumbent ISP Maltanet has consistently increased its market share from 16% to 27% throughout the past years.

Third-party DSL ISPs have seen their total market constantly decreasing from 42% to 30% over the past three years. It is interesting to note that the decrease in market share of third-party DSL ISPs is mainly reflected in increased subscribers for Maltanet. Should this shift in subscribers continue to be observed in the future, it may well be that at a retail level, there will be two very large market players which will be a mirror situation of the wholesale market.

Since Melita Cable has not yet opened up its network for third-party access, the vertically integrated cable ISP (Onvol) owns all cable broadband connections whilst the DSL connections are shared amongst all other ISPs. The lack of access to the cable network for

third-party ISPs is clearly limiting the potential for these ISPs to provide cable broadband products.

This asymmetry is also resulting in a competitive advantage for the cable ISP over the other ISPs since Onvol is the only ISP that is able to provide both DSL and Cable broadband in Malta. All other ISPs are only able to sell DSL broadband products. The fact that the cable ISP offers both broadband products clearly implies that other ISPs would have an incentive to offer a full range of broadband products and thus, be able to reach a larger number of potential customers. Moreover, the higher the number of ISPs providing cable broadband products, the larger the variety of products in the market, which could potentially increase the take-up of broadband services.

3.2.1 Analysis of competition at retail level

The first test for determining the finding of dominance in a market is the market share analysis. *Prima face,* Onvol seems to have a sustained high market share compared to the other players in the market. Moreover, Onvol has a competitive advantage over other ISPs, given that it is the only one capable of provider both cable and DSL broadband connections. This ensures that under the present market conditions Onvol is likely to maintain its high market share in the future.

The large number of ISPs present in the market indicates the relative ease with which service providers can enter this market. The sunk costs associated with the initial investment are low and it seems that there are low barriers to entry in the retail market. End-users have some countervailing buyer power since they can switch between service providers and different broadband packages. This limits the ability of retail providers to charge excessive prices.

Based on the above findings, the MCA is of the opinion that at present, given the existing regulatory regime, none of the ISPs appears to have significant market power. The number of ISPs in the market ensures that no one acts independently from its customers or competitors. Notwithstanding this, the MCA strongly believes that should regulatory obligations be withdrawn, third-party ISPs would not have any wholesale input and therefore the retail market would only be serviced by the two vertically integrated ISPs. This situation would clearly hinder the achievement of a competitive retail market.

Moreover, the MCA believes that, should the cable operator offer wholesale access to third-party ISPs, the level of competition at the retail level would strengthen and consumers would be in a better position to exploit the benefits of competition through additional providers supplying cable broadband products. Such an offer would clearly be taken up by alternative ISPs since the cable ISP itself acquires access from the DSL wholesale provider to offer both types of services.

Finally, the MCA is observing that over the past months, the market share of third-party ISPs is constantly shrinking. Should this situation persist, the current level of competition and choice in the market would be at risk. The MCA will continue to monitor closely the developments in the retail broadband market.

03.3 Assessment of the wholesale broadband access market – Single Dominance

This section considers whether single dominance is likely to exist in the identified relevant market. In the MCA's view the assessment is fully compliant with the Commission's Guidelines. The SMP assessment set out is based on the evidence available to the MCA.

3.3.1 Market shares

Single dominance can be assessed using a large number of criteria, as described in the Commission's and the MCA's guidelines on SMP assessment, however market share analysis is the first test that is generally applied to assess single dominance.

Although high market shares are not in themselves decisive as to whether an undertaking enjoys SMP in a market, the MCA is of the opinion that market shares higher than 50% would provide strong evidence towards the finding of SMP. Paragraph 75 of the Commission Guidelines states that, *"according to established case-law, very large market shares – in excess of 50% - are in themselves, save in exceptional circumstances, evidence of the existence of dominant position."*

The table below illustrates the wholesale market shares in terms of access lines and corresponding revenues for Datastream and Melita Cable as at December 2005.

Market Share - Wholesale Broadband Access Lines				
	2005Q1	2005Q2	2005Q3	2005Q4
Datastream	46.1%	46.2%	47.5%	50.6%
Melita Cable	53.9%	53.8%	52.5%	49.4%

Wholesale Revenues				
	2005Q1	2005Q2	2005Q3	2005Q4
Datastream	48.0%	47.9%	48.7%	47.8%
Melita Cable	52.0%	52.1%	51.3%	52.2%

Both the market shares in terms of access lines and wholesale revenues indicate that Datastream and Melita Cable have similar market shares. The trend over that past year shows that at a wholesale level the market is split fairly evenly between the two operators. The MCA believes that such a trend is likely to continue to be observed during the timeframe of this review. Based on the current market shares, the MCA does not find strong grounds to determine any operator as having single dominance in the wholesale broadband access market.

3.3.2 Economies of scale and scope

Both Datastream and Melita Cable have been present in the Maltese market for a large number of years. Datastream, which is a subsidiary company of Maltacom, makes use of the PSTN access network and started providing DSL broadband services in early 2000. Melita Cable, which has been present in the market since 1991 offering cable TV services under monopoly rights, undertook a major project in the late 1990s to upgrade its network to a bi-directional network. This upgrade enabled the cable operator to start providing cable broadband services in mid 2000.

Both network operators held a monopoly status until the liberalisation of the sector took place in 2001 for cable TV and 2003 for fixed telephony. This enabled Maltacom and Melita Cable to establish a very strong position in the provision of fixed telephony services and cable TV services respectively. As a result, over time both companies acquired significant economies of scale and scope over their respective networks.

The provision of broadband services over both networks resulted in additional network utilisation and therefore created increased economies of scope for both operators.

Although the underlying technology for the cable and PSTN networks is different, the level of economies of scale and scope likely to be observed for both networks is similar in the case of broadband services. This is supported by a number of factors, including the fact that companies have started to provide broadband services at the same time, prices and packages are very similar (implying similar network capabilities and cost of production), both networks enjoy national coverage and that the market is evenly split between the two broadband technologies.

The Maltese market presents a unique situation where both network operators face similar demand and supply market conditions. The MCA therefore considers that both Datastream and Melita Cable are likely to face similar economies of scale and scope in the provision of broadband services.

3.3.3 Barriers to entry

The deployment of a national cable and a PSTN network is a very significant investment and the MCA considers that it is practically impossible that any of these infrastructures is replicable within the two-year timeframe of this review. The significant sunk cost involved in building such networks makes it very unattractive for any new entrant to replicate the existing infrastructures. Both the PSTN and cable networks have been deployed in Malta for a long time now and both enjoy national coverage. The MCA therefore considers that there are very high barriers to entry in replicating these fixed networks.

Following a beauty contest in October 2005 however, the MCA has assigned three broadband wireless frequency bands for the deployment of three BWA networks. The national rollout period of these networks will vary between two to four years and deployment timeframes are established in the rights of use awarded to these operators. Although the deployment of a BWA network requires less investment in the access part than a cable or PSTN network (no trenching, ducting etc.), the timeframes and financial costs associated with the deployment of such a network are in themselves a clear indicator of significant financial and long-term commitments.

The MCA considers that during the timeframe of this review, there are barriers to entry in this market.

3.3.4 Countervailing buyer power

As stated earlier, Datastream is currently the only operator providing wholesale broadband access to third parties. Since there is no alternative wholesale provider of broadband services, third-party ISPs cannot effectively exert any countervailing buyer power on Datastream. Furthermore, should the current regulatory regime be withdrawn, there is a very significant possibility that third-party ISPs would not have any wholesale access at all.

The downstream ISPs of Melita Cable and Datastream cannot be considered as suitable candidates for exerting countervailing buyer power on the upstream providers.

Since there are no alternative wholesale broadband access providers, ISPs cannot exert any countervailing buyer power on Datastream and much less on Melita Cable.

3.3.5 Vertical integration

The two strongest ISPs at the retail level are the vertically integrated ISPs - Onvol which is the downstream provider of Melita Cable and Maltanet the DSL ISP of Datastream. With a respective market share of 44% and 27% respectively, Onvol and Maltanet capture more than 70% of the retail market. Although the market share of Maltanet is lower than that of Onvol, the difference is narrowing down over time and it is likely to narrow significantly more should wholesale regulation be withdrawn.

The fact that the two strongest ISPs at a retail level are the downstream providers of Melita Cable and Datastream is a reflection of their strong position at a wholesale level. Consequently both Melita Cable and Datastream gain advantage from being vertically integrated.

3.3.6 Preliminary conclusion on the analysis of single dominance

In its analysis, the MCA considered a number of factors such as economies of scale and scope, vertical integration, barriers to entry and countervailing buyer power. Throughout its analysis, the MCA has not found any evidence that either Melita Cable or Datastream have a significant advantage over each other, such that it would support the finding of single dominance in this market. The evidence available to the MCA suggests that both Datastream and Melita Cable hold a similar position in the wholesale market and both players face similar constraints.

Consequently, the MCA considers that the wholesale broadband market does not support the finding of single market dominance.

Q4. Do you agree with the above preliminary conclusions regarding the assessment of single market dominance?

Based on this preliminary conclusion, the MCA is of the opinion that there is sufficient evidence to carry out an assessment for the potential finding of collective dominance.

03.4 Assessment of the wholesale broadband access market – Collective Dominance

Regulation 8(3) of the ECNSR refers to a situation of dominance held by two or more undertakings in a particular relevant market. The second schedule of these Regulations describes situations under which the finding of joint dominance may be warranted and states, *"Two or more undertakings can be found to be in a joint dominant position within the meaning of regulation 8 of these Regulations if, even in the absence of structural or other links between them, they operate in a market the structure of which is considered to be conducive to coordinated effects."*

The Commission Guidelines define joint dominance, within the meaning of regulation 8(3) of the Regulations, as a situation where *"a dominant position may be held by two or more undertakings that are legally and economically independent of each other."* Within the meaning of this definition, two or more operators need not necessarily have any formal links

between them in order to support a finding of joint dominance. What is required is that the undertakings under investigation are faced by *"substantially the same position vis-à-vis their customers and competitors"* within a particular market, such that these market conditions may be conducive to tacit collusion or coordinated effects.

The *Guidelines* stipulate that when assessing ex ante, the likely existence or emergence of a market which is, or could become, conducive to collective dominance in the form of tacit coordination, NRAs should analyse:

(a) whether the characteristics of the market makes it conducive to tacit coordination; and

(b) whether such form of coordination is sustainable, i.e.

(i) whether any of the oligopolists have the ability and incentive to deviate from the coordinated outcome, considering the ability and incentives of the non-deviators to retaliate; and

(ii) whether buyers/fringe competitors/potential entrants have the ability and incentive to challenge any anti-competitive coordinated outcome.

The Court of First Instance in the case of the Airtours/First Choice merger decision applied these principles in its judgment[12]. In its decision, the Court sets out three necessary conditions for the finding of a collective dominance position:

i) Each member of the dominant oligopoly must have the ability to know how the other members are behaving in order to monitor whether or not they are adopting the common strategy. It is therefore necessary for all firms in the oligopoly to be aware, both precisely and quickly, of the way in which the other firms' market conduct is evolving. Important criteria to meet this condition are: market concentration, transparency, mature market, stagnant or moderate growth on the demand-side and homogeneity of products.

ii) Any tacit co-ordination must be sustainable over time. Implicit in this is the view that a retaliatory mechanism of some kind is necessary, so that any firm that deviates from the co-ordinated practice would be met by competitive reactions by other firms. The most important criterion to meet this condition is retaliatory mechanisms.

iii) It is necessary that existing and future competitors, as well as customers, do not undermine the results expected from the common policy. This condition may be met if there are high barriers to entry.

A number of characteristics which may indicate the presence of joint dominance are provided in the second schedule of the ECNSR. Based on the experience of available case law established by the European Court of Justice, joint dominance is likely to be found where the market satisfies a number of characteristics, in particular in terms of market concentration, transparency, and other characteristics discussed below.

The MCA has taken utmost account of the Commission Guidelines and the experience of the European Court of Justice in determining the finding of collective dominance. The analysis

[12] Case T-342/99 - Airtours plc. vs. Commission, 6 June 2002

presented below seeks to identify the existence of a collective dominance in the market under review.

03.5 Characteristics conducive to tacit coordination

An oligopolistic firm seeking tacit coordination with another firm would firstly need a clear incentive to do so, and secondly the ability to enter into such coordinated practices. The following criteria illustrate that the wholesale broadband access market in Malta presents sufficient characteristics that facilitate such coordination.

3.5.1 Homogenous product

Melita Cable and Datastream have a ubiquitous cable and PSTN network respectively with coverage in excess of 95% of households. Although the access network part is different, the backhaul and core network are very similar and therefore able to provide similar services.

This technical capability is actually reflected in the type of services that both operators offer in the retail and wholesale markets. Appendix 01 depicts the main broadband products that ISPs (including the vertically integrated ISPs Onvol and Maltanet) provide to retail customers.

As can be clearly seen all ISPs in the market provide very similar broadband packages. The number of different broadband products available in the market is somewhat limited with a choice of 2 mainstream products: the 2048/256kbps product targeted for the average broadband user and the 4096/256kbps targeted for heavy broadband users. The 256/256Kbps product is still limitedly available in the market however this product has become obsolete since the price of this package is in some cases even more expensive than the 2048/256kbps product.

In terms of pricing, the two main competitors Onvol and Maltanet have a very similar price range. For the 2048/256kbps package, the Onvol charges Lm12.83 monthly with a download limit of 7 Gigabytes, whilst Maltanet charges Lm12.5 for the same package with a download limit of 8 Gigabytes. The other DSL ISPs have a price that ranges between Lm9.90 up to Lm46 depending on the download limit imposed for the same 2048/256kbps package.

Onvol and Maltanet also offer a high-end package of 4096/256kbps, again at a similar price of Lm20.47 and Lm15 respectively. Onvol imposes a download limit of 10 Gigabytes whilst Maltanet imposes a limit of 8 Gigabytes. Other DSL operators also offer this package with a price range of Lm21 – Lm33 depending on the download limit.

The limited choice of broadband packages available in the retail market is determined by the wholesale inputs provide by the network operators Datastream and Melita Cable. Both Melita Cable and Datastream have over the past three years competed with two main products, one targeted for the average user and another for heavy users.

At a wholesale level, the cable operator does not have public offers to third-party ISPs and therefore provides only tailor made wholesale inputs to its retail ISP – Onvol. In reality, the upstream and downstream provider is the same company and makes use of the same resources and infrastructure. This further facilitates the level of differentiation that Onvol can provide in its broadband services.

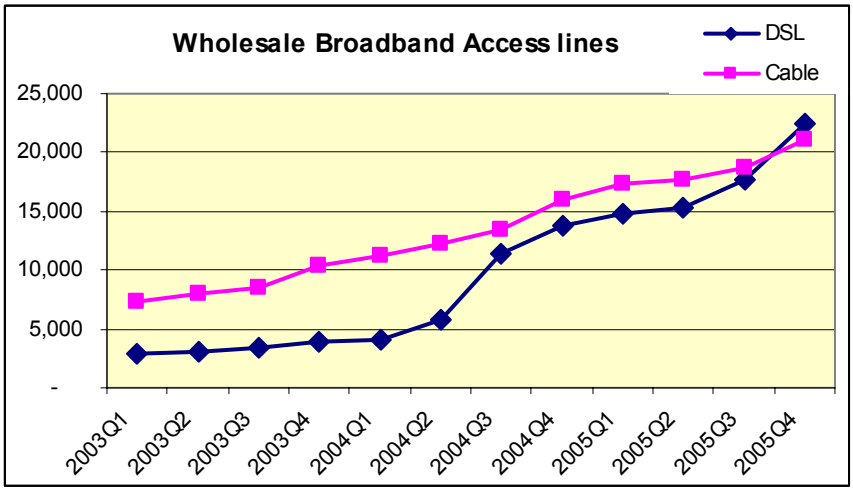
Datastream offers different wholesale access products to its own retail ISP and also to third-party ISPs, varying from resale products to wholesale products with handover point at the IP

level. ISPs have very limited choice in the type of wholesale access that they obtain since Datastream determines the prices and conditions of these services. A description of these DSL wholesale access products has already been provided in Section 2.7 above. Retail DSL ISPs are therefore not in a position to vary the type of broadband packages that they offer apart from the download limits and quality of international connectivity.

Consequently, the market is characterised by a high degree of product homogeneity and this situation is most likely to persist in the future. At a wholesale level the inputs offered by Datastream and Melita Cable to their retail ISPs are clearly comparable in order to provide a similar retail product. This suggests that there is scope for Datastream and Melita Cable to facilitate coordinated practices.

3.5.2 Similarity in market share

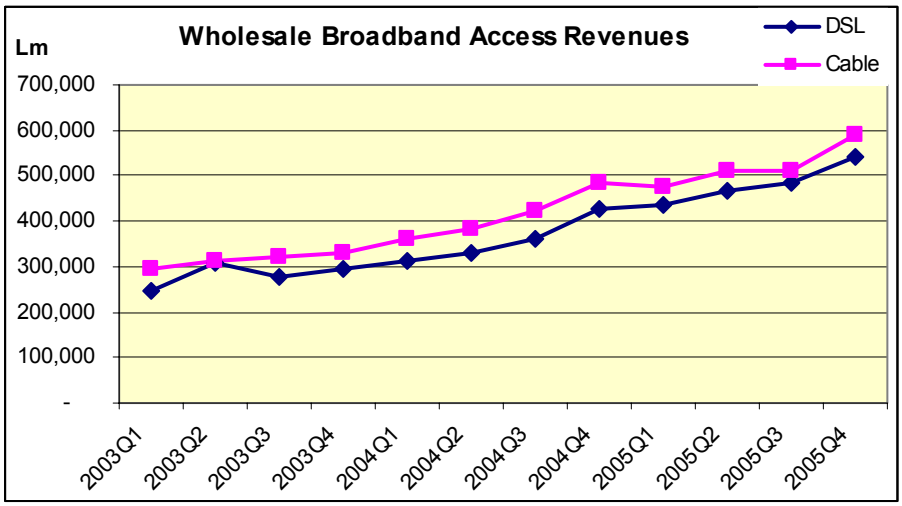
Market share is the main criterion that indicates the presence of dominance in a market. The best measure of market share for wholesale broadband access is the number of lines and revenues. Since the cable wholesale access lines are entirely made up of self-supplied lines, the wholesale market share can be calculated based on the number of retail lines. The wholesale DSL access lines however are made up of self-supplied lines and broadband access lines provided to third-party ISPs excluding resale lines. The following illustration depicts the wholesale broadband access lines and below the corresponding market shares for the past three years.



	2003				2004				2005			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Datastream	28.2%	28.1%	28.6%	27.5%	26.5%	31.8%	45.7%	46.5%	46.1%	46.2%	47.5%	50.6%
Melita Cable	71.8%	71.9%	71.4%	72.5%	73.5%	68.2%	54.3%	53.5%	53.9%	53.8%	52.5%	49.4%

The graph clearly illustrates the converging trends of the two operators. Both operators have over the past three years increased their subscribers considerably. Market shares have also converged steadily over the same period with a very symmetric share as at the end of 2005. The convergence in market shares is due to the fact that over time, Datastream has shifted

away from offering mostly wholesale resale products and is now offering more wholesale broadband access products, allowing more flexibility to third-party ISPs.



	2003				2004				2005			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Datastream	45.6%	49.7%	46.5%	47.3%	46.5%	46.4%	46.3%	47.1%	48.0%	47.9%	48.7%	47.8%
Melita Cable	54.4%	50.3%	53.5%	52.7%	53.5%	53.6%	53.7%	52.9%	52.0%	52.1%	51.3%	52.2%

The graph above shows that, over the past three years, revenues of Datastream and Melita Cable have continued to increase due to increased broadband connections. The revenue data for Datastream also includes wholesale revenues from resale products, since a detailed breakdown of revenues by type of wholesale service was not available. Nevertheless, had this breakdown been available, the market shares in revenues would not change significantly given that resale products account for a very small part of total wholesale revenues nowadays. As explained above, this is due to the fact that Datastream has increasingly shifted away from the provision of resale products to wholesale broadband access products.

The data provided above clearly shows that Melita Cable and Datastream have highly similar market shares, both in terms of wholesale broadband access lines and also in terms of revenues. This indicates that both operators have an incentive to coordinate their practices in order to maintain their current symmetric position at a wholesale level. Given that each firm has managed to acquire almost half of the subscribers in the market, it would be beneficial for both firms to maintain stability in the market in order to maximise their returns. In the absence of competition from other undertakings, existing operators have an incentive to maintain their current symmetric position in the market. This market structure is therefore conducive to coordinated practices.

3.5.3 Similar cost structures

Melita Cable and Datastream have a similar cost structure resulting from similar network infrastructures, although using different platforms. Both operators operate at a national level and have ubiquitous coverage of Malta and Gozo.

Although the two operators deploy different technology platforms, the broadband services that the undertakings provide are similar. In fact, at a retail level, both operators are able to offer a similar portfolio of services at similar prices. The fact that the retail prices for broadband products are very similar implies that the wholesale cost of producing such products is also fairly similar.

If the costs of production of broadband products was not similar, it would imply that either one of the operators is incurring a loss in order to set a price that matches that of the other provider, or else one of the operators is charging excessive prices since its costs are much lower than the retail prices. Clearly, an under-pricing strategy by one of the operators would result in significant losses and would therefore not be sustainable in the long run. On the other hand, if one operator has much lower cost of production but is still charging the same level of prices as its rival, it would imply that that operator has market power.

In Section 2.5.3 above, the MCA detailed a number of common elements that both Melita Cable and Datastream utilise to provide broadband services. Although some of the components are different, their intended uses and functionality are very similar.

The MCA is of the opinion that none of the broadband providers has a competitive advantage, such that it is able to incur significant lower cost of production over the other. Although deploying different technology platforms, the similarity in infrastructure used in the provision of broadband services points towards the conclusion that Melita Cable and Datastream face similar cost structures in the provision of wholesale and retail broadband services. The MCA further considers that this situation is likely to persist during the period of this review.

3.5.4 Market concentration

Concentration measures combine the market shares of some or all of the firms in a market into a single measure. A commonly accepted measure of market concentration is the Herfindahl-Hirschman Index (HHI). It is calculated by squaring the market share of subscribers of each firm competing in the market and then summing the resulting numbers. The HHI takes into account the relative size and distribution of the firms in a market and approaches zero when a market consists of a large number of firms of relatively equal size. The HHI increases both as the number of firms in the market decreases and as the disparity in size between those firms increases.

The US Department of Justice and Federal Trade Commission Horizontal Merger Guidelines contain explicit thresholds defined in terms of the HHI. Markets in which the HHI is between 1000 and 1800 points are considered to be moderately concentrated, and those in which the HHI is in excess of 1800 points are considered to be highly concentrated.

As at December 2005, the number of wholesale cable broadband access lines was 21,150 whilst the number of wholesale DSL access lines was 21,684. The cable operator had a market share of 49.4% whilst the DSL incumbent had a share of 50.6%. Calculating the HHI for this market results in an index of 5000. This measure indicates that the market is highly concentrated. This high concentration is likely to remain stable during the timeframe of this review. Based on the observed stability in market dynamics, the Authority concludes that market shares are likely to remain stable over the next two years, with each operator sharing an approximate equal number of broadband subscribers.

The potential entry of new BWA operators would increase the number of operators and would decrease the level of concentration. However, during the timeframe of this review the

market share gained by the new operator is likely to be limited since a new entrant would not have a nationwide coverage. The low market share of the new entrant would therefore have limited impact on the concentration index, which reinforces the fact that over the next two years the market will remain highly concentrated.

The MCA considers the very high concentration of the market as conducive to co-ordinated practices on the part of both operators. Furthermore, the symmetry in market shares and the sustainability of this situation ensure that both operators are likely to benefit fairly similarly from engaging in coordinated practices.

3.5.5 Lack of technical innovation and maturity of technology

Cable and DSL broadband technology has been in commercial deployment for close to a decade. Hence, they are relatively mature technologies and economies of scale and the huge volumes of sales have driven costs down. The supplier market has had time to rationalise. The ADSL and Euro-DOCSIS standards used in Malta have been around for quite a number of years and, as a result, have evolved to a degree where we have numerous flavours of these standards.

These developments were mainly meant to improve the performance in a number of areas such as download and upload speeds or quality of service features. These new standards are usually backward compatible and thus do not typically require major changes in the broadband networks. CPE can often be used even when there is a new standard unless the new features are absolutely required.

The MCA therefore considers that the stability and relative technology maturity in the provision of DSL and cable broadband services has enabled Melita Cable and Datastream to achieve cost optimisations and efficiencies, strengthening their ability to sustain a coordinated position in this market.

3.5.6 Lack or reduced scope for price competition

In a market with a large number of players, prices are set at an efficient level and no undertaking and/or group of undertakings are able to price significantly above cost. The wholesale broadband access market in Malta is characterised by a duopolistic market structure, where both undertakings face similar demand and supply conditions, have similar market power and each offer a similar portfolio of services at similar prices.

The MCA observes that Melita Cable and Datastream have attained a similar position in the market, both in terms of subscribers and associated wholesale revenues. A number of characteristics discussed above illustrate that both operators have, and are continuing to move towards, a symmetric position. Such a symmetric position, together with market stability, transparency and lack of alternative competitors, facilitates the incentive and ability of the interested parties to limit price competition. The incentive of engaging in such a strategy is that both operators can maximise their current returns without any of them moving away from the established equilibrium. A deviation from this point would be met immediately by the other party and would result in a lower market price that would lower overall market profits.

Ability to replicate products

Although Melita Cable and Datastream operate two different network technologies, both operators have similar network elements that enable them to replicate any service or

package that each undertaking provides to its customers. Both firms have over time provided a portfolio of services that is very similar. When one operator launches an offer in the market, the other operator promptly replicates that offer. The similarity in the portfolio of products offered enhances the ability and incentive to coordinate market behaviour.

This has been the case in a number of instances where both Datastream and Melita Cable doubled the speed of their connections. In October 2004, both operators upgraded the local download speed of their main package from 256kbps to 512kbps, in October 2005 increased the speed from 512kbps to 2048kbps and, in December 2005, both introduced a product with a download speed of 4096kbps – all within a matter of days from each other. Both operators have sufficient excess capacity and the necessary infrastructure to replicate the moves of each other within a matter of days.

Given that both operators enjoy national coverage and target the entire market, Melita Cable and Datastream tend to face the same demand and supply market conditions. Similar market characteristics would likely be countered with similar responses and actions, which further enhances the incentive to coordinate market strategies. By engaging in coordinated practices, both operators will be able to control the market and limit the level of competition to a desired level. Engaging in individual behaviour would increase the pressure on both operators. Consequently, given the symmetry in the market position of both undertakings, the desire to engage in similar behaviour to limit competitive pressures is high.

Availability of information

For coordination to be sustainable, both operators would require sufficient information on each other's pricing strategies, such that the market is sufficiently transparent that it enables parties to observe any deviations from the established pattern. The MCA considers that the market is sufficiently transparent and both the operators and customers can attain pricing information easily. The advertising campaigns, together with the availability of detailed information of products and tariff plans on their respective websites, provide an easy channel from where information can be obtained. Moreover, both operators have been present in the market for a number of years and therefore, both operators have developed means to monitor each other's behaviour and anticipate certain marketing strategies.

A relevant example of anticipated behaviour would be the special offers that both operators develop for the Christmas period and for the 'Information and Technology Fair ' held during the month of October. These offers are now customary for the Maltese market and both operators expect that the other party would come up with an offer and would therefore be ready to offer a similar incentive to consumers. In fact, a closer look at the trends of broadband subscriptions would indicate that, during the last quarter of the year, the highest number of new connections is registered.

Similar products and prices

Over the past two years retail prices of both DSL and cable broadband packages have remained relatively stable. Furthermore, an analysis of the tariff plans offered by operators' reveals that, on average, the prices charged by Datastream and Melita Cable are intrinsically similar.

Appendix 1 illustrates a selection of the retail broadband packages currently offered by retail ISPs. The data has been extracted from the ISPs' websites as at 30th May 2006. A quick overview of the products clearly shows that the main product in the market is currently the 2048/256kbps package with a price range varying between Lm9.90 and Lm46. The

difference in price range is mainly dependent on the download limit imposed by the ISPs. For example, the Lm9.90 package includes only 1Gigabyte download limit whilst the most expensive packages have no download limits. In December 2005 Onvol (cable ISP) introduced the 4096/256kbps product and soon afterwards, Maltanet replicated the offer. A number of DSL ISPs also started to offer the same service, following the provision of the required wholesale product by Datastream.

As the table clearly depicts, the number of different broadband products available in the market is somewhat limited with a choice of 2 mainstream products; the 2048/256kbps product targeted for the average broadband user and the 4096/256kbps targeted for heavy broadband users. The 256/256kbps product is still limitedly available in the market however this product has become obsolete since the price of this package is in some cases even more expensive than the 2048/256kbps product.

The limited choice of broadband packages available in the retail market is determined by the wholesale inputs provided by the network operators Datastream and Melita Cable. Melita Cable has over the past three years always competed with two products: one targeted for the average user and another for heavy users. Furthermore, Melita Cable has never provided third-party access and therefore it is only the downstream ISP that provides cable connections. Over the years, Datastream has also limited the number of packages available in the market to two main products that match the offers of Melita Cable. Retail DSL ISPs can therefore only vary the type of products that they offer in terms of download limits and quality of international connectivity. As a result, end users have a limited choice of mainly two broadband packages.

No reductions in prices

The MCA has observed that over the past two years, there have been very limited reductions in prices of broadband packages. The price for the mainstream broadband product has been revolving around the Lm12 (€27.9) mark whilst the top package price averages Lm20 (€46.6). Melita Cable and Datastream seem to have maintained a 'price-floor' in the market over the past two years. Instead of competing aggressively on price reductions, both companies have, in two separate instances, increased the bandwidth of their packages at no extra charge for the consumer. As a result, although in absolute terms prices have not decreased, in real terms the customers are benefiting from a better quality product at no extra charge.

Nevertheless, the MCA notes that both Melita Cable and Datastream are only providing two products in the market and have not provided the consumer with a wider choice of broadband packages. In fact, a consumer requiring a low speed broadband connection say (512kbps) still needs to purchase a 2Mbps or 4Mbps connection, thus incurring additional costs. The consumer would have been better off if both undertakings had introduced the new high-speed packages but also left the lower speed packages available to users at a lower cost.

Similarly, at a wholesale level, the MCA has not observed any price reductions for wholesale broadband access packages. On the contrary, given that the broadband speeds have increased eightfold in two years, the cost of acquiring wholesale inputs has also increased. A necessary wholesale component for the provision of bandwidth services is the international bandwidth required for international connectivity. Following the increase in speed of retail broadband packages, the international bandwidth requirement also increased and this has put significant pressures on third-party ISPs that have to purchase more international

bandwidth at prices which are higher than what the two vertically integrated operators pay, due to lack of economies of scale and volume discounts.

The MCA considers that, given the similarity of broadband products and the prices at which these products are offered, the market is conducive to coordination. The lack of reductions in prices over the past two years is indicative of limited competition. The MCA is of the opinion that Melita Cable and Datastream have a high incentive not to engage in price competition and maintain the overall current market structure. Furthermore, Melita Cable has an incentive not to grant access to third-party ISPs in order to maintain its high market share and competitive advantage over other ISPs.

Q5. Do you agree with the above conclusions regarding the assessment of characteristics conducive to tacit coordination?

03.6 Sustainability of tacit coordination

For a coordination strategy to be successful it has to be sustainable over time. Sustainability over time requires two main conditions: a) sufficient transparency in the market such that members of the dominant oligopoly can detect cheating; and b) an effective retaliatory mechanism with which members of the oligopoly can retaliate following cheating by one its members.

3.6.1 Market transparency

In order to sustain a coordinated outcome, the parties involved in the agreement need to be able to observe and monitor each other in order to identify any deviations from the agreed outcome. The ability to observe deviations is necessary to ensure that none of the parties involved in the agreement cheats to the detriment of the others.

As stated earlier, prices at the retail level are publicly known through advertising campaigns and are published on the operators' respective websites. Movements in retail prices would be immediately noticed by the other operator and also by consumers. A deviation from the coordinated outcome would then call for retaliation from the aggrieved party, which would most likely take parallel action and counter the deviation to the detriment of both operators.

The MCA strongly believes that, in the absence of regulation, both Melita Cable and Datastream are not amenable to the granting of access to third-party service providers. Such denial of access constitutes the focal point of the agreed strategy in the identified wholesale broadband access market.

Under the previous regulatory regime, the MCA had designated both Melita Cable and Datastream as dominant market players and were both mandated to provide wholesale access to third-party providers. To date, Melita Cable has resisted the opening up of its network and has contested the MCA's decision. On its part, Datastream has opened up its network to third-party ISPs and is offering a blend of resale and wholesale broadband access products. Nevertheless, the MCA is cognisant that should the wholesale remedy be withdrawn, Datastream would have a clear incentive to discontinue its wholesale offering and be in a position to attract the majority of the DSL broadband lines in the market onto its network. This situation would downsize the retail market to two main players - the two vertically integrated network operators.

As a result, transparency at a wholesale level is mainly focused on the supply of access, rather than the actual pricing at which this access is provided. Nevertheless, when one of the network operators changes its wholesale price, the other party would immediately notice since such a change would likely be reflected in the retail price. Since at a retail level prices are visible, the 'aggrieved' party would immediately notice and take corrective action.

The MCA therefore believes that there are sufficient transparency and detection mechanisms in the market place that would enable Melita Cable and Datastream to sustain a coordinated outcome.

3.6.2 Retaliatory mechanisms

The sustainability of a coordinated outcome depends on the incentive for each member of the oligopoly not to deviate from the agreed outcome. The sustainability of a coordinated outcome is therefore based on trust amongst its members that no party would be better off if it acts independently. If one party deviates from the common strategy, the other members of the oligopoly must have credible detection and punishment mechanisms with which they can retaliate back.

An effective punishment mechanism in an electronic communications market would commonly be the threat of resorting back to a state of normal competition. If the members of the oligopoly hold a sufficiently similar position in the market, a deviation from an agreed outcome and a reversion to normal competition would be detrimental for both. It would therefore be more profitable for both companies to choose a coordinated outcome, rather than a competitive one. This coordinated outcome means that while each company still retains a roughly equal market share, the price that they charge their customers is higher than the competitive price.

The MCA considers that at a retail level, an effective retaliatory mechanism exists and is sufficient to support a coordinated strategy. If one firm deviates by trying to undercut prices to gain the market share of the other, the second firm would adopt the same strategy, such that the deviating firm, besides risking no gains from the other firm's market share, may also be worse off in the long run due to a lower price level. The result of each firm competing to obtain the other's market share will be lower market prices and overall profits. Parallel behaviour has been observed in the two recent cases of doubling of speeds.

As stated previously, both network operators are not favourably disposed to provide wholesale broadband access to third-party service providers in the absence of regulation. This common strategy is the focal point of the coordinated behaviour that Melita Cable and Datastream are willing to entertain.

Due to the imposition of regulatory obligations, both network operators are obliged to provide wholesale broadband access to third-party service providers however, to date, only Datastream has complied with this obligation. As a result, the coordinated strategy to refuse the provision of access to third-party providers has been partially disturbed through regulation.

However, applying a Greenfield approach analysis would immediately result in both operators reverting back to the coordinated strategy. Should the obligations currently incumbent upon the operators be withdrawn, Datastream would have clear incentives to discontinue offering third-party access and adopt a similar strategy as Melita Cable. In this sense, the MCA has taken action to revert the market to normal conditions of competition by obliging both operators to grant third-party access.

To date the MCA's strategy has been partially successful since Melita Cable are still disputing this decision and have not yet offered third-party access. The MCA strongly believes that, should Melita Cable open up its network, existing ISPs would be interested to acquire wholesale cable access to be able to offer retail cable broadband service. This would increase the number of providers of cable broadband which would lead to a better choice and quality of service for the consumer, increased innovation and product differentiation.

The MCA is of the opinion that neither of the parties has an incentive to deviate from the wholesale coordinated strategy since the deviating member would incur losses rather than gains. Evidence shows that when Datastream 'deviated' from the agreed outcome when it offered third-party access following the imposition of regulation, Melita Cable did not retaliate by opening up its network. This behaviour shows that operators gain much more benefit in refusing wholesale access to third parties, rather than retaliating, following a deviation from the coordinated strategy.

Through their behaviour, both network operators have established that their point of equilibrium is a market where there are no third-party service providers, but only the two vertically integrated operators. A deviation from this outcome is highly unattractive and unlikely to happen in the absence of regulation. A retaliation or punishment mechanism would therefore be the deviation itself, since the deviating party would be worse off by having to share its market share with other third-party providers, thus losing potential revenues. This 'burden' is in itself a very effective punishment mechanism that maintains the coordinated outcome sustainable and the best option for both operators.

Q6. Do you agree with the above conclusions regarding the assessment of characteristics that sustain tacit coordination?

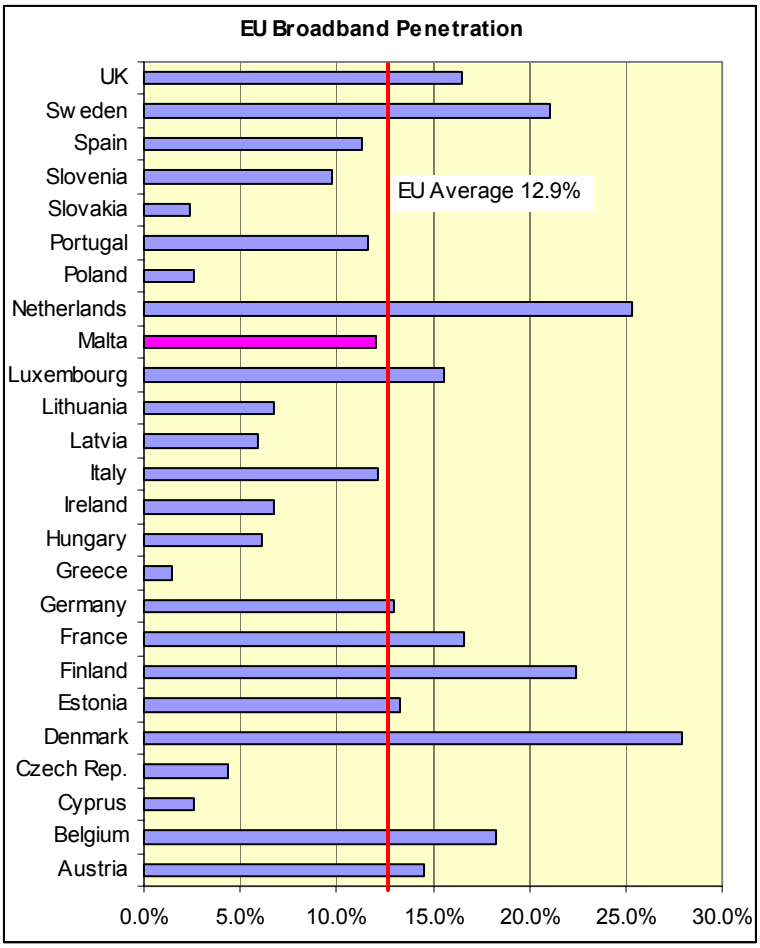
03.7 Potential market constraints on tacit coordination

In assessing the sustainability of the tacit coordination, the MCA needs to consider whether potential future competitors and/or customers would be able to pose sufficient constraints on the dominant oligopoly, such that the coordinated outcome would be at risk.

3.7.1 Mature Market

Market maturity is important because in a mature market there may be less incentive to compete aggressively. This situation would tend to create more favourable conditions for the adoption of coordinated behaviour, as there would be less incentive for players to compete to attract new customers.

Broadband penetration in Malta currently stands at around 12 %, which compares well with other EU countries. The following graph illustrates the broadband penetration in other EU member states.



Source: ECTA Broadband Scorecard December 2005, MCA

As can be seen from the graph above, Malta is slightly below EU average with the highest penetration rates observed in Nordic countries and countries where there is a strong presence of cable networks such as in the Netherlands, Belgium and the UK.

Although the penetration rate in Malta is in line with the EU average, other countries have managed to attain much higher penetration rates. This would indicate that the penetration rate in Malta is still low and therefore the market is still not mature.

Although the MCA believes that broadband penetration is bound to further increase in the near future, it is difficult to assume that the rate will be comparable to that of Denmark or the Netherlands within the timeframe of this review.

In Malta there are approximately 160,000 residential and non-residential units of which more than 88,500 already have access to the Internet. Out of these 88,500 Internet subscriptions around 48,500 are broadband connections.

From a survey carried out by the MCA in January 2005[13] it emerged that 84 % of those who did not have an Internet connection responded that they would not get an Internet connection in the future. The main reasons that respondents gave were that they either do not need it or

[13] Link to broadband consumer survey - http://www.mca.org.mt/library/show.asp?id=642&lc=1

else they do not know how to use a computer. Assuming that this figure is representative, out of the remaining 71,500 units not having an Internet connection, only 16% or 11,500 units will consider purchasing an Internet connection.

If this estimate is correct, then the increase in broadband connections is largely dependent on the ability of both network operators to attract current narrowband users to upgrade to a broadband connection. To this end both Melita Cable and Datastream have introduced basic packages targeted at narrowband users, which further support the belief of the Authority. However, from the consumer survey it transpires that out of the respondents that at the time of the survey had a narrowband connection, only 33% were considering to upgrade to broadband. The remaining 67% of the respondents said that they were not going to upgrade to broadband because Internet is rarely used and broadband is still very expensive.

Assuming again that these statistics are correct, out of the existing 40,000 narrowband users, the other 33% or 13,000 would (or already have since Jan 05) upgrade to a broadband connection. Adding these to the potential 11,500 'new' broadband connections, the total number of broadband lines in Malta would at best increase by another 24,500. In terms of penetration rate, an addition of 24,500 connections to the existing ones would result in a penetration rate of around 18%[14].

The MCA therefore considers that unless both network operators manage to attract narrowband users to upgrade to broadband, the growth in broadband connections would be contained. In this sense, the MCA believes that the broadband market is mature enough to sustain a coordinated outcome by both operators. Given the number of broadband connections that the market supports, it is beneficial for both operators to coordinate practices in order to attract new customers but maintain an overall similar price level and market share.

A potential development in this market is the trend of having personal mobile broadband connections. The emergence of 3G and BWA broadband services would boost individuals to acquire personal broadband connections. This trend can potentially increase the demand for broadband connections significantly.

However, as argued earlier, the development of nationwide 3G and BWA networks in Malta is not likely to be completed during the timeframe of this review and therefore, personal broadband connections will not have an impact for the purpose of this review.

Consequently, the MCA concludes that the broadband penetration rate in Malta will continue to increase, albeit at a decreasing rate as the market is approaching maturity.

3.7.2 High barriers to entry and potential competition

The wholesale broadband access market is characterised by significant barriers to entry at the network level. The major entry barriers associated with this market are the significant sunk costs involved in building a network with national coverage. The existence of these barriers to entry affects the level of potential competition for the market in question.

Economies of scale and scope

[14] Existing connections 48,500+ New connections 11,500+ Upgrades 13,000 / Population 403,000 =18%

Both Melita Cable and Datastream have been offering services in the market for a number of years. Both operators offer a number of services over their network and both are vertically integrated operators. Over time, both operators have managed to acquire significant economies of scale and scope. Small operators and/or new entrants would find it very difficult to enjoy such economies of scale.

A new entrant would need to take a large share of the market if it is to effectively constrain the incumbent operators. In order to gain a large market share the new entrant will have to compete aggressively, which would make it very difficult for this operator to recoup its high investment costs. This difficulty is further augmented, given that the incumbent operators would also be in a position to compete aggressively with the new entrant.

Sunk cost

Sunk costs are those costs that a new entrant must incur to enter the market but which are not recovered on exit. A potential entrant will only seek to incur these costs if its expected return from such an investment would be sufficient to cover these costs. An existing undertaking on the other hand would have already made its investment and would therefore be in a much better position to compete with the new entrant.

Entering the wholesale broadband access market requires a large upfront investment resulting in significant sunk costs, which would be very difficult for any new entrant to recoup if it decides to leave the market. The presence of such significant costs and the lengthy process to deploy a nationwide fixed network would make it difficult for a new entrant to effectively start competing with existing infrastructures during the timeframe of this review.

New BWA network operators

In October 2005, the MCA assigned three BWA licences to Vodafone Malta Ltd, MobIsle Communications Ltd, and Cellcom Ltd for the deployment of a nationwide BWA network. All network operators were bound by strict deployment timeframes being as follows:

	% National Coverage		
	Cellcom	**MobIsle**	**Vodafone**
12 months – Oct 06	50%	39%	50%
24 months – Oct 07	90%	66%	99%
36 months – Oct 08	99%	90%	
48 months – Oct 09		99%	

All authorised BWA operators have opted to deploy a network based on the WiMax standard. At the time of the submissions made to the MCA, there was a common understanding that the “true” WiMax standard i.e. 802.16e would be ratified some time in 2006 and thus, 802.16e compliant equipment would become commercially available in 2007. Based on this information, the operators planned a staged deployment starting with the “pre-WiMax” standard and eventually evolving to “true WiMax” once the latter is approved. However the Institute of Electrical and Electronics Engineers (IEEE) ratified the 802.16e standard in December 2005 and thus, equipment is now expected to be on the market towards the end of 2006. As a result of this shift in timeframe, to honour the stipulated obligations, the operators would need to deploy “pre-WiMax” equipment for a very limited time span.

Logically, the deployment of such equipment would result in a number of undesirable consequences and therefore, all these undertakings requested the MCA to extend the rollout timeframes in order to start deploying immediately the 802.16e equipment.

Following a detailed assessment the MCA published Decision[15], granting an extension of 6 months over the original timeframes. The new rollout timeframes are the following:

	% National Coverage		
	Cellcom	**Mobisle**	**Vodafone**
12 months – April 07	50%	39%	50%
24 months – April 08	90%	66%	99%
36 months – April 09	99%	90%	
48 months – Oct 09		99%	

By inference from the timeframes above, the rollout of a BWA network by a new entrant is a lengthy and laborious process. Although the investment and deployment timeframes of a BWA network are less onerous than for a cable or PSTN network, the MCA still considers such an investment as significant, which would therefore equate to a significant barrier to entry.

Given the revised deployment timeframes the MCA considers that, during the two-year timeframe of this review, BWA operators would not be able to effectively compete with Melita Cable and Datastream. In fact, Vodafone and Cellcom would achieve national coverage near the end of this review period. Consequently, the MCA believes that it is highly unlikely that any new entrant would be in a position to offer nationwide broadband services within the next two years and effectively compete with the two incumbent operators.

The MCA considers that a new market player would certainly intensify competition in the market, however its impact would not be sufficient to erode the market power held by Melita Cable and Datastream in this market during the timeframe of this review.

3.7.3 Low elasticity of demand

A low elasticity of demand would imply that consumers are not very sensitive to price changes. This may be either due to consumers' own preferences, or due to the lack of substitutes to which they can resort following a price increase.

At a wholesale level, Melita Cable faces no elasticity of demand since all demand is internal. The retail arm of Melita Cable – Onvol – does not face any difficulties in acquiring the necessary inputs for the provision of retail services.

The DSL incumbent Datastream also faces an inelastic demand since its downstream provider Maltanet is able to access the necessary inputs without any problems whilst the third-party ISPs have no other choice than purchasing the wholesale access products that Datastream provide. As a result, the DSL ISPs are captive clients of Datastream and therefore they are not able to pose any constraints on Datastream in the absence of an

[15] http://www.mca.org.mt/library/show.asp?id=820&lc=4

alternative wholesale supplier. The lack of elasticity of demand is therefore conducive to coordination at wholesale level.

3.7.4 Countervailing buyer power

Countervailing buyer power exists where large customers have the ability, within a reasonable timeframe, to resort to credible alternatives following a price increase or deterioration in the conditions of delivery by a hypothetical monopolist.

The MCA considers that there is no credible countervailing buyer power at a wholesale level on the cable operator since all wholesale demand is made up of internally generated demand. Similarly, the DSL incumbent does not face countervailing buyer power from any of the ISPs offering DSL broadband. Its own ISP can have access to all the necessary inputs, whilst third-party providers have to purchase the products that Datastream provides, for which however they do not have any alternative at present.

The MCA considers that the lack of countervailing buyer power at a wholesale level facilitates a sustained coordinated approach.

Q7. Do you agree with the above conclusions regarding the assessment of potential market constraints on tacit coordination?

03.8 Preliminary conclusion and SMP designation

The above analysis suggests that Datastream and Melita Cable[16] jointly (collectively) hold significant market power in the wholesale broadband access market.

The MCA believes that Melita Cable and Datastream have a clear incentive to refuse wholesale access to third-party providers. Consequently, coordination is focused on not granting access to alternative providers in order to maintain control over the retail market. Such a strategy is beneficial for both operators since it enables them to:

- maintain a similar dominant position in the wholesale market;
- create two vertically integrated dominant players in the retail market.
- control competition in the retail market to a desired level and therefore ensure a desired profit level in the long-run; and
- limit potential competition that would likely lower market prices and reduce revenues.

This preliminary conclusion is supported by a number of factors including:

- High and similar market shares;

[16] A reference in this report to Melita Cable plc. and/or Datastream Ltd. shall be deemed to include that undertaking and any undertaking which is associated with, or is controlled by, or controls, directly or indirectly, the undertaking in question and which carries out business activities in Malta, where the activities engaged in (either directly or indirectly) are activities falling within the scope of the relevant market defined above.

- Highly concentrated market;
- Existence of high entry barriers;
- Homogeneous products and prices;
- Evidence of parallel behaviour;
- Limited potential competition during the timeframe of this review;
- No countervailing buyer power; and
- Limited elasticity of demand.

Consequently, the MCA concludes that Melita Cable and Datastream should be designated as having jointly (collectively) significant market power in the wholesale broadband access market.

Q8. Do you agree with the above preliminary conclusion regarding the proposed joint (collective) dominance designation?

Chapter 04 - Regulatory Implications

04.1 Introduction

In accordance with Regulation 10(4) of the ECNSR, where an operator is designated as having significant market power on a relevant market, either individually or jointly with others, in accordance with Regulation 8 of the same ECNSR, the MCA is obliged to impose on such operator appropriate specific regulatory obligations referred to in subregulation (2) of regulation 10 of the ECNSR, or to maintain or amend such obligations where they already exist.

In particular the MCA shall impose, or amend if already imposed, the appropriate of the following obligations:

- Transparency (Regulation 18)
- Non-discrimination (Regulation 19)
- Accounting Separation (Regulation 20)
- Access to, and use of, specific network facilities (Regulation 21)
- Price control and Cost Accounting (Regulation 22)

Any obligations imposed by the MCA upon an operator with significant market power in accordance with the above must:

- be based on the nature of the problem identified,
- be proportionate and justified in the light of the objectives laid down in article 4 of the ECRA; and
- only be imposed following consultation in accordance with article 10 of the ECRA and regulation 6 of the ECNSR.

This section identifies actual and potential competition problems that exist in the wholesale broadband access market and proposes adequate remedies to address these problems.

04.2 Current remedies

Under the previous regulatory framework, the broadband access market currently under analysis formed part of a wider market defined by legislation as the market for Telecommunications Transport Provision.[17] In accordance with its powers under this former framework, the MCA had identified Maltacom plc, Melita Cable plc, Vodafone Malta Ltd and

[17] Referring primarily to Internet and other Data Networks (Service Providers) Regulations, L.N.170 of 1999

MobIsle Communications Ltd (Go Mobile) as having a Dominant Market Position in the Telecommunications Transport Provision market.[18]

Consequently, the following remedies were imposed on these operators:

- To allow an Internet service provider to interconnect with and access its infrastructure.
- To, when requested by an Internet service provider, negotiate interconnection and access agreements with a view to allowing the requesting Internet service provider to interconnect or to access the electronic communications transport provider's system.
- To ensure that interconnection and access are accomplished promptly and efficiently and at charges which are based on principles of transparency and cost-orientation.
- To ensure further that facilities and services provided are of equivalent quality to those provided to any other Internet service provider.
- To ensure tariff structures are transparent and non-discriminatory.
- To establish interconnection on a most favoured customer basis.

All of the above obligations are currently still incumbent on the aforementioned operators.

04.3 Competition problems

The assessment of the competition problems is related to the "possible behaviour"[19] of providers within the time horizon of the market analysis. Thus, National Regulatory Authorities do not need to ascertain that a provider has previously abused market power in order to impose specific obligations. It is sufficient that a competition problem can potentially arise under given conditions.

The MCA also notes that, as stated above, the broadband access market is currently subject to a number of obligations resulting from the transitory provisions of the new regulatory framework. It is also for this reason that concrete competition problems have appeared only to a limited extent. In this light, the MCA shall be examining possible behaviour and strategies that could potentially arise if the market were not regulated.

The MCA has identified a number of existing and potential competition problems that arise due to the significant market power enjoyed jointly by both undertakings, namely Datastream and Melita Cable, in the identified wholesale broadband access market.

[18] See MCA publications "Dominant Market Position in Telecommunications Transport Provider Market - February 2003", as updated by the "Dominant Market Position in the Telecommunications Market: An update of the DMP register – 2002", August 2003

[19] ERG Common Position on the approach to Appropriate Remedies in the New Regulatory Framework

4.3.1 Vertical leveraging

Vertical leveraging refers to a situation where a vertically integrated undertaking that enjoys significant market power – individually or jointly with others – in the upstream market, denies access to an essential input factor with the intent of extending its monopoly power to a related downstream market.

Datastream and Melita Cable currently own the majority of infrastructure in the relevant market and simultaneously provide services at a retail level. For this reason, it is likely in the MCA's view, that both operators will have an incentive to try to leverage market power from the wholesale broadband access market to the retail markets for high-speed Internet access. Market power may be leveraged either by outright refusal to provide access, or by means of price or non-price variables.

4.3.2 Refusal to deal/denial of access

An undertaking with single or collective significant market power has the incentive to leverage its market power by denying access to, or refusing to deal with, undertakings operating upstream or downstream and which compete with the dominant undertaking's retail operation.

The MCA believes that, in the absence of ex-ante regulation, it is probable that undertakings collectively enjoying significant market power will deny other undertakings broadband access services. By barring competitors from a necessary input at the wholesale level, an undertaking with significant market power will, to a certain degree, be able to protect its own service provider operation against effective competition.

The MCA is of the view that therefore, both Datastream and Melita Cable have an incentive to deny other operators wholesale broadband access. In default of an obligation to provide wholesale broadband, denial of access will represent a serious potential competition problem in the broadband access market.

4.3.3 Non-price issues

Operators with significant market power could potentially discriminate in favour of their own retail arm and against downstream competitors, using non-price factors such as the withholding of information, discrimination in terms of quality, delaying tactics, unjustifiable requirements, strategic design of product and discriminatory use of information.

These actions impact upon the quality of competing operators' offerings, raising their costs and restricting their sales. The conclusion of any access agreement can hinge on both price and non-price aspects and as such, price and non-price issues are equally relevant.

It is the view of the MCA that such non-price issues can potentially arise in the wholesale broadband access market.

4.3.4 Pricing issues

A vertically integrated undertaking enjoying, individually or collectively with other undertakings, significant market power in a wholesale market, may potentially use price discrimination to raise the costs of competitors at the retail level over those of its own service provider operation. This will raise its rival's costs downstream and induce a margin squeeze.

The MCA believes that the significant market power enjoyed collectively by Datastream and Melita Cable could potentially create an incentive to price discriminate. Were an obligation is not imposed to curtail such strategies, operators could potentially discriminate between competing undertakings and their own retail arms, by charging alternative downstream providers prices that are higher than those it charges itself internally.

Furthermore, potential leveraging by means of pricing could occur if the undertakings collectively enjoying significant market power cross-subsidise between the upstream and downstream markets. Datastream and Melita Cable will potentially have an incentive to incur a loss at the level of the retail market, whilst making higher profits in the wholesale market. This will foreclose potential competitors from the retail market.

Finally, the MCA is of the view that a third competition problem, which could arise in the context of vertical leveraging, is that of predatory pricing. Datastream and Melita Cable may have an incentive through predatory pricing in the downstream market to put into effect a margin squeeze on competitors that rely on broadband access. The MCA thus believes that there is a risk of margin squeeze between wholesale broadband access and the related retail markets.

4.3.5 Market dominance

Besides possible problems relating to leveraging market powers as delineated above, an undertaking individually or collectively enjoying significant market power in the market for wholesale broadband access, may also potentially resort to exploitative behaviour through excessive pricing or price discrimination.

The MCA believes that the market structure gives Datastream and Melita Cable, as collectively dominant operators, an incentive to overprice especially if ordered to provide access upon request. Apart from securing increased profits, excessive pricing will also serve to increase the costs of a rival operator, thus making it harder for that operator to compete at a retail level.

A further potential competition problem that may result from the market dominance enjoyed by both undertakings is that such undertakings may have an incentive to adopt entry-deterrence strategies. Competition problems of this sort include those where a dominant operator tries to erect new entry barriers to potential market newcomers. Examples of such strategies may include product designs that make switching difficult or expensive, the imposition of foreclosure mechanisms in service contracts, exclusive agreements, over-investment and predatory pricing.

Finally, market dominance may also potentially result in productive inefficiencies due to a lack of competition. Potential problems of this sort would include lack of investment, inefficiency and low service quality.

04.4 Available remedies

As stated previously, the MCA is obliged under the ECNSR to impose at least one of the remedies outlined in the Regulations on undertakings with significant market power. In particular, the following obligations may be imposed:

- Transparency (Regulation 18)

- Non-discrimination (Regulation 19)
- Accounting Separation (Regulation 20)
- Access to, and use of, specific network facilities (Regulation 21)
- Price control and Cost Accounting (Regulation 22)

04.5 Principles applied in the selection of remedies

In accordance with regulation 37(2) of the ECNSR, the MCA is obliged to ensure that any remedy imposed on undertakings enjoying significant market power shall be based on the nature of the problem identified and be proportionate and justified in the light of the objectives laid down in Article 4 of the ECRA. Remedies imposed shall operate in such manner as to protect end-user interests whilst promoting effective competition in the relevant markets.

The MCA is obliged to impose the least burdensome and most effective remedy or remedies to address the potential competition problems identified in this market. However, depending on the competition problem being addressed, an interaction between diverse remedies may be necessary. Thus, the available remedies detailed above are complementary in that they support and reinforce each other.

04.6 Proposed remedies

The MCA has established that the relevant market for wholesale broadband access is not effectively competitive. As a result of the significant market power enjoyed collectively by Datastream and Melita Cable in the said market, the MCA is required at law to impose appropriate remedies.

The MCA is of the opinion that the remedies it is proposing to impose are based on the nature of the competition problems it has identified in the relevant market, and are proportionate and justified in light of the objectives set out in Article 4 of the Electronic Communications (Regulation) Act.

Nonetheless, the MCA will continue to monitor market developments and, where appropriate, may issue further directions refining or altering these remedies.

4.6.1 Access

In principle, agreements on any type of access should be reached following commercial negotiations between the parties. However, as stated above, on the basis of the SMP position enjoyed in the market, Datastream and Melita Cable have an incentive to refuse to allow competitors to purchase wholesale products. Mandated access to network infrastructure may be a justified and proportionate remedy to increase competition at the wholesale level and consequently also at the retail level.

The MCA believes that the imposition of an access remedy in the wholesale broadband access market will address the core potential competition problem by encouraging new investment in infrastructure. By reducing barriers to entry in the market and by increasing investment incentives, an access remedy will, even in the short term, allow alternative network or service providers to achieve infrastructure-based competition and compete in the

market. This increase in competition will in turn result in further consumer benefits by providing more choice, by driving prices down and by providing a platform for more enhanced ranges of services.

For these reasons, the MCA proposes to impose an obligation on Datastream and Melita Cable to meet all reasonable requests for access[20] to, and use of, specific network elements and associated facilities. The said undertakings shall, in addition, be required to provide - to undertakings requesting access as well as to the MCA – all information that may be necessary for implementing a request for access.

According to regulation 21(4) of the ECNSR, when considering whether to impose obligations relating to access and when assessing whether such obligations would be proportionate to the objectives set out in the Act, the Authority shall, in particular, take into account the following factors:

(a) the technical and economic viability of using or installing competing facilities, in the light of the rate of market development, taking into account the nature and type of interconnection and access involved;

(b) the feasibility of providing the access proposed, in relation to the capacity available;

(c) the initial investment by the facility owner, bearing in mind the risks involved in making the investment;

(d) the need to safeguard competition in the long term;

(e) where appropriate, any relevant intellectual property rights; and

(f) the provision of pan-European services.

Without prejudice to the generality of the access obligation imposed above, the MCA has examined the following forms of access in further detail so as to establish the scope of the access obligation according to the aforementioned criteria set out in regulation 21 (4) of the ECNSR:

4.6.1.1 Resale services

On the basis of the considerations in regulation 21(4) of the ECNSR, in imposing an obligation of access, the MCA has assessed the interest of the infrastructure owner in having its own network against the need of alternative providers for access to necessary facilities for providing competing services. A remedy that increases competition in the short term should not reduce the competitors' incentive to invest in alternatives which in turn may increase competition in the long term.

[20] Access is defined as "*the making available of facilities and, or services, to another undertaking, under defined conditions, on either an exclusive or non-exclusive basis, for the purpose of providing electronic communications services. It covers inter alia access to network elements and associated facilities, which may involve the connection of equipment, by fixed or non-fixed means (in particular this includes access to the local loop and to facilities and services necessary to provide services over the local loop), access to physical infrastructure including buildings, ducts and masts; access to relevant software systems including operational support systems, access to number translation or systems offering equivalent functionality, access to fixed and mobile networks, in particular for roaming, access to conditional access systems for digital television services; access to virtual network services*", The Electronic Communications (Regulation) Act Cap.399, Article 2

The MCA is of the opinion that pure resale products, whilst allowing a service provider to start up with very minimal investment, will in the short term risk reducing the incentive to invest in alternative inputs which may increase infrastructure competition in the long term. A simple resale product is not a substitute for wholesale broadband access, since it does not permit new operators to differentiate their service from network owners' own retail products.

Nonetheless, the MCA is mindful also of the consideration that under the former regulatory framework and under the relevant transitory provisions, various undertakings have purchased resale products from Datastream and currently provide retail services to their customers on this basis. The MCA notes that it may not be beneficial to competition in the market to immediately remove the obligation on Datastream, as an undertaking collectively enjoying significant market power, to provide resale products. Rather, so as to ensure healthy development in the market and also to ensure continued service to relevant consumer groups, it would be preferable if such competing undertakings are given the incentive to progress from a mere service based competition to infrastructure competition.

Thus, because resale products are not included within the definition of the broadband access market[21], the MCA proposes to decide that Datastream and Melita Cable will not have an obligation to accede to new requests for access for pure resale products. In the context of new requests therefore, only requests for products or services within the definition of the relevant market are to be considered. However, the MCA proposes to direct that Datastream shall be obliged to maintain the provision of any resale services currently provided to alternative providers. Without prejudice to the above, access to all other products and services, even resale products, may be concluded on a commercial basis.

4.6.1.2 DSL Bitstream access

The various forms of bitstream access characterised by the point or points at which the network owner hands over traffic to the other competing undertakings have already been described above in the market definition.[22] The MCA is of the view that regulation which will result in alternative bitstream service providers at the first three levels (Levels 1, 2, 3 as detailed above) will have a positive bearing on the competition in the retail market, particularly with respect to beneficial prices and increased product diversity.

The MCA proposes therefore that the access obligation imposed on Datastream shall include an obligation to provide bitstream access with respect to access to the DSLAM, to the ATM (or corresponding technology level) and to the IP level.

4.6.1.3 Cable broadband access

The various forms of cable broadband access have also been illustrated in the market definition section.[23] With respect to the first form of access to the CMTS, the MCA is of the view that such a form of access is more akin to local loop unbundling rather than broadband access. For this reason, the MCA does not believe that at this point an obligation to accede to requests for access to the CMTS should be imposed upon Melita Cable.

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[21] See Section 2.7 above

[22] See Section 2.5 above

[23] Ibid.

However, with respect to the second and third options relating to access, the MCA is of the view that the provision of such access facilities will be beneficial to the market and ultimately for consumers. For this reason, the MCA proposes to determine that the scope of the access obligation with respect to Melita Cable shall include access at the Aggregation Point and at the Service Provider Edge.

4.6.1.4 Co-location and other products required for broadband access

To the extent that co-location or other related products or services may be necessary for the provision of wholesale broadband access to function effectively and appropriately, the MCA is of the view that these elements are also to be covered by a remedy imposed on undertakings collectively enjoying significant market power. Therefore, on this basis, to the extent that the said facilities are so necessary, the MCA proposes to determine that an access obligation imposed on Datastream and Melita Cable shall include the obligation to meet all reasonable requests for such facilities.

Conclusion on access obligation

The MCA proposes to impose an access obligation as described above upon operators enjoying SMP in the wholesale broadband access market. This access obligation shall include the obligation on Datastream to provide bitstream access and the obligation on Melita Cable to provide cable broadband access. Datastream and Melita Cable will not be obliged to provide new resale products or services, however Datastream shall be obliged not to withdraw the provision of any resale products or services currently provided to alternative operators. Both operators shall also accede to reasonable requests for co-location or other related products or services as may be necessary for the provision of wholesale broadband access to function effectively and appropriately.

Because an undertaking collectively enjoying significant market power, even with an access obligation, will have an incentive to resort to delaying tactics to delay the processing of other requests, the MCA proposes that in connection with the above obligations a further obligation is imposed that negotiations will not be unreasonably prolonged. In addition, Datastream and Melita Cable will be obliged to have reference offers as specified below.

Q9. Do you agree with the above preliminary conclusion regarding the imposition of the access obligation?

4.6.2 Non-discrimination

A potential competition problem highlighted above is that an undertaking enjoying, individually or collectively, a position of SMP in a market, may have an incentive to provide wholesale services on terms and conditions that discriminate in favour of a particular undertaking in such manner as to have a detrimental effect on competition. It is the MCA's view that such an undertaking will have an incentive to give internal downstream operations a lower price than the ones offered to competitors, and thus be able to subject competitors to a margin squeeze. Undoubtedly, such a competition problem may have an adverse impact on competition in the downstream markets.

In this light, the MCA is of the view that it is necessary that the access obligation delineated above be supplemented with a non-discrimination obligation. The MCA believes that such a non-discrimination obligation shall counteract price parameters as well as target non-price

parameters, such as the withholding of information, delaying tactics, undue requirements, low or discriminatory quality, strategic design of products, and discriminatory use of information, which would disadvantage competing providers and in turn, consumers.

Having been designated as operators collectively enjoying a position of significant market power, the MCA thus proposes, in accordance with regulation 19 of the ECNSR, to impose upon Datastream and Melita Cable an obligation of non-discrimination. The MCA is of the view that the non-discrimination obligation does not, in itself, inhibit undertakings from differentiating in their commercial dealings, including offering different terms and conditions to different access seekers, when this is based on objectively justifiable reasons. Thus, the obligation will ensure that undertakings with SMP are not able to unjustifiably discriminate between themselves and other operators so as to gain unfair competitive advantage.

Q10. Do you agree with the above preliminary conclusion regarding the imposition of the non-discrimination obligation?

4.6.3 Transparency

Regulation 18 of the ECNSR authorises the Authority to impose transparency obligations on undertakings enjoying significant market power in relation to interconnection and/or access. This obligation would require operators to make available to the public specified information, such as accounting information, technical specifications, network characteristics, terms and conditions for supply and use and prices. The primary function of transparency obligations is to make other remedies, in particular access and non-discrimination, more effective.

The MCA believes it is proportionate and justified to supplement the access obligation also by imposing a transparency obligation on undertakings enjoying significant market power in the wholesale broadband access market. The imposition of this remedy would guarantee that access seekers and third-party providers have access to all the necessary information for the provision of access.

Moreover, in particular because of the non-discrimination remedy, the MCA proposes to require that both operators enjoying collectively significant market power publish a reference offer, which shall be sufficiently unbundled to ensure that undertakings are not required to acquire or pay for facilities which are not necessary for the services requested. The reference offer shall give a description of the relevant offerings broken down into components according to market needs and shall provide the associated terms and conditions including prices.

The MCA believes that the reference offer should include, in particular, a description of services offered, general contractual terms and conditions, price rates for the individual service elements, any discounts and criteria for discounts, capacity limitations on delivery, technical information including interfaces and standards, an agreed quality of service level and related provision for compensation in case of failure to meet such levels and agreement on the provision of maintenance services. The reference offer shall be published on the respective websites of Melita Cable and Datastream. To simplify the negotiation process and to prevent undue delay of the process, the reference offer shall, as much as possible, comprise documentation for a complete agreement.

The Authority will be able to impose changes to reference offers to give effect to the obligations imposed according to this Decision and under the Act. The Authority may also

specify in further detail the precise information to be made available, the level of detail required and the manner of publication.

Thus, the MCA proposes to impose the transparency obligation on Datastream and Melita Cable as specified under regulation 18 of the ECNSR. The MCA believes that the imposition of transparency obligations shall aid in giving the market confidence that services are not provided on a discriminatory basis and helps avoid any possible disputes and accelerate negotiations between existing and potential operators. This obligation will make the access requirements more effective and make it easier for the Authority to ascertain whether non-discrimination obligations are being met. The MCA believes that the requirements outlined are not excessively burdensome and will promote sustainable competition in the market.

Q11. Do you agree with the above preliminary conclusion regarding the imposition of the transparency obligation?

4.6.4 Price control and cost accounting and accounting separation

Regulation 22 of the Electronic Communications Networks and Services (General) Regulations authorises the imposition of obligations relating to price control, including obligations for cost orientation of prices and the imposition of cost accounting systems and accounting separation.

The predominant potential competition problem of denial to access may be sustained by the constructive refusal to provide access on the part of a broadband access provider by adopting anti-competitive pricing strategies. These may include, amongst others, price discrimination, cross-subsidisation and excessive pricing. The significant market power held jointly by Datastream and Melita Cable may create an incentive on the part of the dominant operators to prolong, even indefinitely, the conclusion of an access agreement by demanding excessive pricing.

Furthermore, as stated above, Datastream and Melita Cable have an incentive to overprice resulting from their enjoying a collective dominant position. Apart from securing increased profits, excessive pricing will serve to increase the costs of a rival operator, thus making it harder for that operator to compete at a retail level.

The MCA has evaluated whether the remedies imposed above would be sufficient to counteract these potential competition problems. The MCA is of the view that these remedies, by themselves, are insufficient to prevent against competition problems.

For this reason, the MCA proposes that direct regulatory action, in the form of a price control obligation, is required so as to ensure the timely conclusion of access agreements and in order to prevent anti-competitive pricing strategies. A price control obligation will ensure that prices are tied to cost information obtained from cost models or separated accounts. The MCA proposes that such a price control shall be achieved on the basis of Cost Accounting Systems and Accounting Separation.

In this light, the MCA proposes to require a cost accounting system in order to calculate efficient wholesale pricing on the basis of underlying costs. In all cases, the MCA shall endeavour to ensure that sufficient return on capital is allowed so as to encourage innovation in network infrastructure. The MCA also proposes to require dominant operators to provide accounting separation. Accounting separation will have numerous similarities with cost

accounting but its main purpose will nearly always be to follow up on obligations of non-discrimination.

The MCA thus proposes to impose obligations of price control and cost accounting and accounting separation. These shall be immediately effective from the date of publication of the final Decision. The MCA shall grant a reasonable time period for the operators to implement such obligations. In all cases, the MCA proposes that it shall allow operators to primarily negotiate the price and other terms and conditions of wholesale broadband access commercially in good faith. Should commercial negotiations fail, the MCA shall intervene as necessary to guarantee acceptable terms and conditions.

Q12. Do you agree with the above preliminary conclusion regarding the imposition of the price control and cost accounting obligations and the accounting separation obligation?

04.7 Conclusion

The MCA proposes to impose the following obligations on Datastream and Melita Cable from the date of publication of the final Decision:

1. Access obligation
2. Non-discrimination obligation
3. Transparency obligation
4. Price Control and cost-accounting obligation
5. Accounting separation obligation

The MCA believes that these remedies are based on the nature of the competition problems it has identified in the relevant market and are proportionate and justified in light of the objectives set out in Article 4 of the Electronic Communications (Regulation) Act.

Finally, the MCA proposes that it shall keep a reasonably close watch on market developments following this review. The MCA reserves the right, if it deems it necessary or appropriate, to undertake a new market review at any given time in response to changing market conditions.

Chapter 05 - Submitting Comments

All comments are welcome; however it would make the task of analysing responses easier if comments were referenced to the relevant question numbers from this document. The consultation period will run from the 25th July 2006 to the 1st September 2006, during which the MCA welcomes written comments on any of the issues raised in this paper.

The MCA appreciates that many of the issues raised in this paper may require respondents to provide confidential information if their comments are to be meaningful. Respondents are requested to clearly identify confidential material and, if possible, to include it in a separate annex to the response.

Having analysed and considered the comments received, the MCA will review this analysis and publish a report on the consultation which will, inter alia, summarise the responses to the consultation.

In order to promote further openness and transparency, the MCA will publish the names of all respondents. Moreover, in the interests of transparency, all representations will be published, except where respondents indicate that a response, or part of it, is confidential.[24] The MCA will take steps to protect the confidentiality of all such material from the moment that it is received at the MCA's offices. In the interests of transparency, respondents should avoid applying confidential markings wherever possible.

All responses must arrive at the MCA no later than 16.00hrs of the 1st September 2006. Submissions received after this time will not be taken into account. Extensions of the consultation deadline will only be permitted where the Authority deems fit, following a written request made by the interested party.

All comments should be made in writing and, where possible, sent by email to info@mca.org.mt. However, copies may also be posted or faxed to the address below. If any parties are unable to respond in one of these ways, they should discuss alternatives with:

Chief of Policy and Planning

Malta Communications Authority
Valletta Waterfront,
Pinto Wharf,
Valletta VLT 01,
Malta, Europe

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[24] In accordance with the MCA's confidentiality guidelines and procedures.

Appendix 1

Retail Service Provider	Product	Download/ Upload Speed [1]	Download limit (GB)	Email accounts	Monthly Cost (LM) [2]	Setup Costs (LM) [3]
Keyworld	ADSL	256/256	Nil	3	12.99	51
	ADSL	2048/256	8	3	13.99	51
	ADSL	2048/256	18	3	17.95	51
	ADSL	2048/256	Nil	3	17.95	51
OnVol	Ultralite - Cable Internet	128/128	1	1	5.95	25
	Lite - Cable Internet	2048/256	7	1	12.83	25
	Sonic - Cable Internet	4096/256	10	1	20.47	25
Waldonet	Homeconnect	256/256		3	13.85	41
	Homeconnect	2048/256		3	20	51
NextWeb	Basic	2048/256	1	1	9.9	41
	Entry	256/256	7	1	13	41
	Entry	2048/256	7	1	14.45	41
	Deluxe	2048/256	15	1	20	41
	Business Entry	4096/256	7	1	21	50
	Business Deluxe	4096/256	Nil	1	25	50
Maltanet	ADSL	2048/256	1	3	9.95	45.77
	ADSL	2048/256	8	3	12.5	45.77
	ADSL	2048/256	12	3	13.85	45.77
	ADSL	2048/256	24	3	20	45.77
	Business ADSL	4096/256	8	3	15	45.77
	Business ADSL	4096/256	Nil	3	26.7	45.77
Kemmunet	Domestic ADSL	2048/256	Nil	1	23.4	46.17
	Corporate ADSL	4096/256	Nil	1	30.47	51.3
Melitanet	Home Fast Internet	256/256	Nil	1	13.5	43.5
	Home Fast Internet	2048/256	Nil	1	17	43.5
	Business Fast Internet	2048/256	Nil	1	26	47
Net4U	Bronze ADSL	256/256	Nil	1	11.99	46
	Silver ADSL	2048/256	Nil	3	16.4	46
	Silver Business ADSL	4096/256	Nil	3	22.88	61
Vanilla	Classic	256/256	2	5	11.95	46
	Classic	2048/256	12	5	13.5	46
	Classic	2048/512	12	5	26.95	46
IT&T	Residential	2048/256	Nil	3	24	
	Business	4096/256	Nil	5	28	
OnDNet	Basic	256/256	Nil	1	11.66	19.95
	Broadband	1024/256	Nil	2	18	19.95
	Broadband Plus	2048/256	Nil	3	34.66	19.95
Webwaves	Home Economy	256/256	3	10	12.99	
	Home Economy	2048/256	3	10	14	
	Home Unlimited	256/256	8	10	14.99	
	Home Unlimited	2048/256	8	10	16.99	
	Business Unlimited	4096/256	Nil	10	33	
Bellnet	Economy Package	256/256			12.85	
	Economy Package	1024/245			17	
	Economy Package	2048/256			29.75	
	1st Class Package	256/256			16.5	
	1st Class Package	1024/245			26	
	1st Class Package	2048/256			46	

Source: Websites of ISPs as at 30th May 2006

(Lm1 = €2.33)

1. Upload / Download speeds are only guranteed on best effort basis.
2. Monthly cost is inclusive of VAT.
3. Setup cost includes activation and installation charges. These charges are normally not charged by the ISP due to ongoing special offers.