Wholesale Broadband Access Market

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

Consultation Document

11th April 2008

Contents

Executive Summary

In accordance with Article 9 of the Electronic Communications (Regulation) Act, the Malta Communications Authority (MCA) is obliged, 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.

This review sets out the MCA's proposal for the identification of a wholesale broadband market and an assessment of market power. In line with its obligations at law, the MCA invites any interested party to forward their comments within the period ending on Friday 30th May 2008. Arrangements for submitting comments are explained in more detail in Chapter 5.

Background on previous notification

In December 2006 the MCA notified a proposed decision on the 'Wholesale broadband access' market in Malta with the main conclusion being that the DSL and cable incumbents held joint dominance in this market. During the Phase 1 of the notification the EU Commission had issued a serious doubts letter stating that the MCA failed to provide sufficient evidence on the finding of joint dominance and subsequently opened a Phase 2 investigation.

During the Phase 2 investigations, the MCA held numerous meetings with the EU Commission and provided additional evidence to support its findings. The MCA also requested an ERG expert review team to review the case. The review team compiled an opinion, which amongst other conclusions stated that whilst the Maltese wholesale broadband market presented problems in terms of wholesale access, the MCA needed to provide additional evidence to support concerns raised by the EU Commission. In the end the Commission was still of the opinion that the MCA conclusion was not proven beyond reasonable doubts and had initiated proceedings to adopt a Veto decision. Given the circumstances prevailing in March 2007, the MCA decided to withdraw the notification to enable it to try to address these concerns.

Following a number of meetings with the EU Commission and a redrafting of the analysis, the final draft report was about to be published in November 2007. However, in light of a spate of price/quality movements by interested operators just days before the intended publication of this report, the report had to be withheld and reviewed in order to take account of these developments.

Throughout the entire process the key argument underlying this analysis has been and will remain one: the ongoing availability of wholesale access to service providers. This objective could best be achieved by ensuring access to the networks of the two major broadband providers in Malta, thereby creating the environment for a competitive wholesale access market. Whilst it is acknowledged that at face value the competitive situation in the retail market is showing signs of strengthening, it is our concern that the longer term risks of an oligopoly, with all the underlying implications on consumer choice, remain.

Time and again both major operators have made it clear that they consider wholesale access to service providers – and any related regulation - an unnecessary burden that they should not be made to shoulder. This attitude seemingly flies in the face of the assumption that, once a market is competitive at a retail level, pent up demand at wholesale level would either be soaked up or

be non-existent and access would be granted voluntarily by network operators to anybody seeking it.

The MCA is unable to prove joint dominance in the parameters of the current market framework and dynamics. Nonetheless this Authority harbours concerns that leaving the market to fend for itself at this stage carries significant risks. It would seem reasonable to assume that a 'hung' decision, that is one that cannot definitively state that a market is either competitive or not, should result in the application of the prudence concept and the application of a modicum of remedies, however light. This is unfortunately not permitted under the current EU framework. Moreover, the excessive burden of proof required in the review of possible joint dominance cases, renders any market situation that is not an absolutely clear-cut case virtually impossible to prove. In such circumstances it is even more problematic to apply the prudence concept.

Ultimately it is acknowledged that the EU framework has been tailored with the intent of enhancing liberalisation, competition and sector growth. The MCA acknowledges that in many such respects the Framework has been effective. Nonetheless the MCA feels that in exceptional cases such as this, the application of the Framework carries the significant risk of producing a perverse effect that could result in longer-term dilution of competition in the market.

The MCA has been actively working towards the attainment of lasting competition in this market. In this respect the MCA has granted three BWA licences to interested operators, one of which has launched commercial operations. The foundations for lasting competition have been laid. However, the MCA feels that it is still premature to withdraw wholesale regulation when competition is still at its early stages. The MCA feels that it is not as yet appropriate to do away with regulation in this market. The Commission deems otherwise.

There are three key reasons why the MCA has reason to believe that the time is not yet ripe to withdraw regulation:

1. The third operator currently operating a WiMax network, has not yet had enough time to take root. It is difficult at this point to foresee the extent, or otherwise, of its success. Indeed the larger operators have an interest not to allow this operator to grow to the extent where it would appropriate significant market share.

2. Horizontally integrated undertakings may act with a different mentality with respect to undertakings that are not similarly integrated, especially when the product portfolio lends itself well to being offered in bundles. Thus the unwillingness to provide access in market A may be due to the fact that a directly serviced client in this market would also give the operator the ability to leverage its relationship and make offers relative to markets B, C etc. to the same client.

These factors cannot be taken into account under the current framework as they do not constitute tangible proof, especially where the case is a joint dominance one. It is common knowledge that in such instances the burden of proof on the NRA is extremely high. Indeed the proof sometimes requested – such as for example tangible proof of pent-up demand or market player disputes - overspills into the realm of ex-post regulation, defeating the purpose of ex-ante regulation.

Ultimately all this argumentation needs to be seen in the context of the longer-term objective, that is, consumer benefit. In the immediate to short term it would seem that this is being maximised via better price/quality offerings coming

from the market. This phenomenon was particularly apparent during November 2007, when improved price/quality offerings where introduced right on the eve of publication of the revised analysis of this market.

Despite this apparent market shake up, one has to see whether long term infrastructure competition will effectively be achieved and sustained. Such an achievement will greatly impinge on the benefit end-users derive from broadband services which in turn will determine the long-term success for the country in this area.

Summary of proposals

A. 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 national characteristics the MCA proposes that the relevant wholesale broadband access market:

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

B. SMP Determination

Single Dominance

In its analysis of single dominance, the MCA considered a number of factors such as market shares, economies of scale and scope, vertical and horizontal integration, and countervailing buyer power.

Throughout its analysis, the MCA has not found any compelling evidence that any market payer enjoys a significant advantage over the others in the market. On the contrary the MCA found that Melita Cable and GO appear to have a similar position in the wholesale market.

Consequently, the MCA considers that from the evidence available at present there is no clear evidence that supports the finding of single market dominance at retail or wholesale level.

Joint Dominance

Given the similar position held by Melita Cable and GO at wholesale level, the MCA carried a further assessment for the potential finding of joint dominance.

The MCA has looked into all the joint dominance criteria identified and analysed all the information available at hand. The MCA found a number of criteria that still point towards the finding of joint dominance such as:

- High and similar market shares;
- Highly concentrated market;
- Similar costs and prices;
- High profits;
- Vertical and Horizontal integration;
- Market transparency;
- Market approaching maturity; and
- Lack of countervailing buyer power;

Nevertheless, following the recent changes in the products and prices offered by Melita Cable and GO, and following the entry in the market of Vodafone in June 2007 certain market conditions have changed.

Following a change in the price structure of Vodafone in September 2007 and the price changes of Melita Cable and GO in November 2007, a number of factors have been found to be inconclusive on the possible finding of joint dominance. These factors include:

- increased price competition;
- entry of a new WiMax operator and the potential entry of a further two operators;
- improvements in the retail packages - price/speed relationship;
- increase in number of packages;
- the constraining effect of Vodafone on a potential coordinated strategy; and
- Vodafone's obligation to provide wholesale access.

In view of the findings listed above, the MCA concludes that despite some potential market problems particularly in the provision of wholesale access, there is lack of sufficient evidence to determine that Melita Cable and GO are at present, or can within the timeframe of this review, sustain a successful coordinated outcome.

Chapter 01 Introduction

The EU regulatory framework for electronic communications networks and services entered into force 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:

- 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 citizens of the European Union.

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 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 ECNSR 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 2003 the EU Commission published its first Recommendation on relevant markets, which identifies a set of eighteen 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 ECNSR).

In December 2007 the EU Commission adopted its revised Recommendation on relevant markets. The revised Recommendation presents a much short list of markets which NRAs are required to analyse for the purpose of ex ante regulation.

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 ECNSR).

As required by Regulation 6 of the ECNSR, 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 ECNSR 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. The MCA is also taking the utmost account of the Recommendation on relevant markets and the SMP Guidelines.

[1] Link to market review methodology:
http://www.mca.org.mt/infocentre/openarticle.asp?id=513&pref=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 11th April 2008 to the 30th May 2008 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 cooperation 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. 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;

Chapter 04 provides a discussion of the general principles associated with the imposition or removal of remedies; and

Chapter 05 outlines the procedure for submitting comments to this consultation.

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 all Internet Service Providers (ISPs) for the provision of retail broadband services.

[2] http://www.mca.org.mt/infocentre/openarticle.asp?id=656&pref=9

Chapter 02 Market Definition

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 on relevant markets.

In this regard the MCA clarifies that for the purpose of this review it is still referring to the Recommendation of the 2003 given that this notification is part of the first round of market reviews. Nevertheless, the MCA has also taken into account the new Recommendation published in December 2007 and ensures that the market definition presented hereunder is also compatible with the text of the new Recommendation.

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.

The MCA 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 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 on relevant markets (2003 and 2007), 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 Historical background to the broadband sector in Malta

2.1.1 Geographic backdrop

Latest statistics show that the total population of Malta stands at approximately 403,600. According to National Statistics Office[3] figures, there are approximately 128,000 residential units and 31,000 non-residential units.

This statistic is even more significant in the context of the size of Malta, which has a surface area of just 316km. This means that the island's population, although small, is highly concentrated. Indeed Malta, with a population density of 1,274 per square kilometre is among the most densely populated countries in the world and certainly, the most densely populated in the EU.

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

These particular characteristics have conditioned the development of the Maltese electronic communications sector that, albeit small in scale, has in the past decade experienced significant growth in output as well as in the variety of services offered.

The small size of the population, which is a market condition tending to diseconomies of scale has, to a significant extent, been offset by the limited geographical area, which results in a high population density and permits national coverage with relatively limited resources.

Thus Malta's unique characteristics have, to an extent, come to play a significant role in the current state of play. Traditionally Malta was serviced by two fixed incumbents capable of offering multiple services over their nationwide DSL and cable network. This is therefore a unique outcome arising from a unique situation.

As from June 2007 Vodafone Malta Ltd. also launched its WiMax network over which it is already offering a wireless broadband and IP telephony services. Later this year Vodafone are to achieve nationwide coverage, and this would increase the number of ubiquitous broadband networks in Malta to three.

2.1.2 Historical backdrop

The presence of two traditional ubiquitous incumbents was not only a consequence of Malta's size. The fact that both Maltacom and Melita Cable enjoyed a legally binding monopoly for a substantial amount of time prior to Malta's accession into the EU, was also a determining factor. Maltacom's position is that enjoyed by the traditional longstanding telephony incumbent. In 1995 the retail ISP market was created, with the granting by Government of a number of ISP licences. This limited market opening remained a notable exception for an appreciably long period of time. All other services under Maltacom's umbrella, in particular the fixed telephony service, remained a monopoly until January 2003, when a number of ISPs started to offer international call services using VoIP technology.

Melita Cable, on the other hand, commenced operations in Malta in 1991. The Maltese Government also granted Melita Cable a national monopoly, this time for the provision of Cable TV services. The monopoly was granted for a period of 15 years (subsequently reduced when TV transmission services were liberalised in 2001). The Maltese Government facilitated the deployment of Melita's cable network via the insertion of apposite provisions in legislation, to the effect that Melita Cable could also pass its infrastructure over private property (whether underground or overhead) without the need to pay remuneration. This legal facilitation enabled quick deployment of Melita Cable's infrastructure to all parts of Malta.

Up until 2000 when these two operators started offering broadband services both networks co-existed without overlap, given the technology-specific applications that were run over each. In both cases, the incumbent was protected from competition in its primary field. In real terms Maltacom had a clear field in the provision of fixed telephony until the end of 2002, whilst Melita Cable enjoyed monopoly status in the TV broadcast transmission market until mid-2005, when the first DTTV operator launched its service.

During this significantly long period of time, both organisations had uncontested access to all Maltese subscribers in the provision of their respective services. Thus, Malta has had not one but two fixed network incumbents, albeit for

different services, for a significantly long period of time. This monopoly period has given both operators a big head-start over any aspiring competition.

As indicated earlier both these operators entered the broadband market at the same time in 2000. Both operators are today vertically and horizontally integrated, and in a position to offer converged services and triple / quad play bundles. The incumbent cable TV operator today provides cable TV, fixed telephony and broadband services over its network. Furthermore, with its recent acquisition of the third 3G mobile operator, Melita Cable is expected to be able to offer mobile telephony services in the near future.

Maltacom already operates a fixed, mobile, data and DTTV network (after its acquisition of Multiplus Ltd. – the first DTTV operator), and is therefore able to provide multiple service offerings that can include quad-play services.

Both fixed networks pass over 95% of homes in Malta and both have a connection to the majority of households in Malta, due to having enjoyed monopoly status until quite recently.

Liberalisation and technology convergence has therefore meant that each of the two operators has now ventured into the other's traditional monopoly. Maltacom entered into the TV transmission business and Melita Cable entered the fixed telephony business, following protected interconnection negotiations with Maltacom.

No other operator or service provider is currently in a position to replicate the extent of the two operators' vertical and horizontal integration. It is plausible to envisage that in the foreseeable future, these two operators' respective positions in the Maltese electronic communications sector will grow even stronger as their horizontal product offering widens.

The only other operator that can potential have a network which provides multiple services is Vodafone, which owns a 2G and 3G mobile network and is currently in the process of deploying a WiMax network, over which it has already started to offer broadband and fixed IP telephony. Nevertheless, the extent of Vodafone's horizontal integration is still fledgling compared to that of the two traditional incumbents.

2.1.3 Regulatory backdrop

Maltacom, the fixed incumbent operator has been hosting independent ISPs on a dial-up basis since 1995, when Internet Services where introduced in Malta. At that time Government was already planning to liberalise the telecommunications sector and therefore it ensured that the Internet Services market would not be subject to any exclusive privileges.

When broadband was introduced in 2000 Government sought to secure on-going access for independent ISPs so that these could provide both dial-up and broadband retail services. It mandated access obligations on both the fixed telephony incumbent and the cable TV incumbent. It also mandated structural separation between the wholesale and retail arms of the two operators.

The cable TV incumbent strongly resisted this access obligation, and the law was eventually amended so that the obligation on the cable operator would only kick in, when and if, the cable operator's retail service provider attained a market share of 25% in the relevant market.

In 2003, the Malta Communications Authority, in accordance with national legislation obtaining at the time, conducted a market analysis and found that retail arm of the cable provider had attained a retail market share in excess of 25%. It therefore mandated access to the operator's network, again in accordance with the then obtaining national legislation.

The operator appealed this decision and refused to grant access to independent ISPs. The EU Commission also expressed doubts as to the validity of the national legislation in question in light of the new (2003) EU framework and asked the MCA to discontinue seeking a finding of cable dominance under any rules other than the new ones promulgated in the said Framework, which Malta had not as yet transposed.

In the meantime the fixed telephony operator had continued to comply with its obligations at law and continued to grant access to the independent ISPs, including the cable operator's ISP, which was therefore in the unique position of being able to offer its subscribers both cable and ADSL based broadband services.

In 2004, Malta adopted national legislation transposing the 2002 EU framework for electronic communications.

Over time, the cable operator's share of the Internet service provision market has continued to grow so that today the market is evenly split between cable connections and ADSL connections. The key difference between the two vertically integrated operators, is therefore, that Maltacom having continued to comply with its obligations at law does not enjoy 50% of the retail market as it has to share this portion of the market with independent ISPs, whereas Melita cable enjoys 50% of the wholesale market (self-supply) implying 50% of the retail market.

Prior to 2004, Maltese law mandated structural separation between retail and wholesale arms of operators. Following the transposition and adoption of the 2002 EU framework this obligation was lifted and subsequently in 2005 Maltacom[4] merged its retail and wholesale operations. Following this merger independent ISPs started to experience increased pressures from Maltacom with respect to the provision of wholesale access. In 2007 Melita Cable also merged with its retail ISP OnVol.

This brief, yet important, historical backdrop to the development of fixed networks in Malta, should serve to put this market review exercise in a better perspective, that takes into account the peculiar national characteristics that shape up the Maltese broadband market.

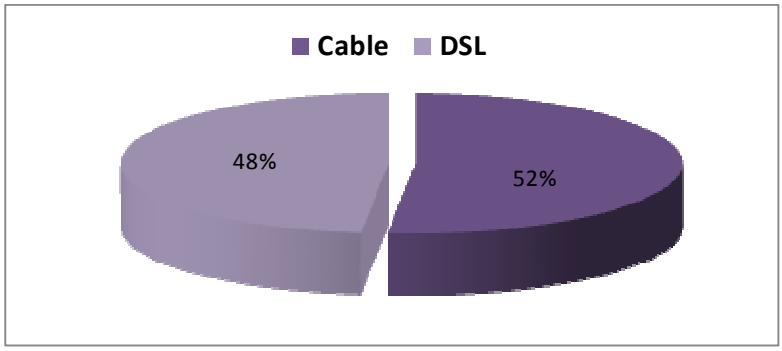
02.2 Statistical background

There are two predominant forms of broadband delivery technologies available in the Maltese market: DSL (Digital Subscriber Line) and Cable Modem Access. In June 2007 Vodafone Malta Ltd. launched the first WiMax broadband service in Malta. Vodafone and GO Mobile also provide 3G broadband to a small number of end-users.

[4] As of 2007 Maltcom has changed it company name to GO. Hereinafter any reference to Maltacom or GO would signify the same entity.

In 2000, both Datastream Ltd[5] and Melita Cable plc[6] had commenced provision of broadband access through DSL and cable modems respectively. As at September 2007, more than 75,300 broadband connections were deployed. This equates to an estimated penetration rate of 47% in terms of residential and non-residential units, and 18.7% in terms of population.

In terms of the overall retail market share split between technologies, this currently stands at approximately 35,900 DSL connections and 39,400 cable modems giving a 48:52 split respectively. DSL is available via a number ISPs, whilst cable broadband is only provided via the cable operator's own ISP, *Video on Line (Onvol)*[7].

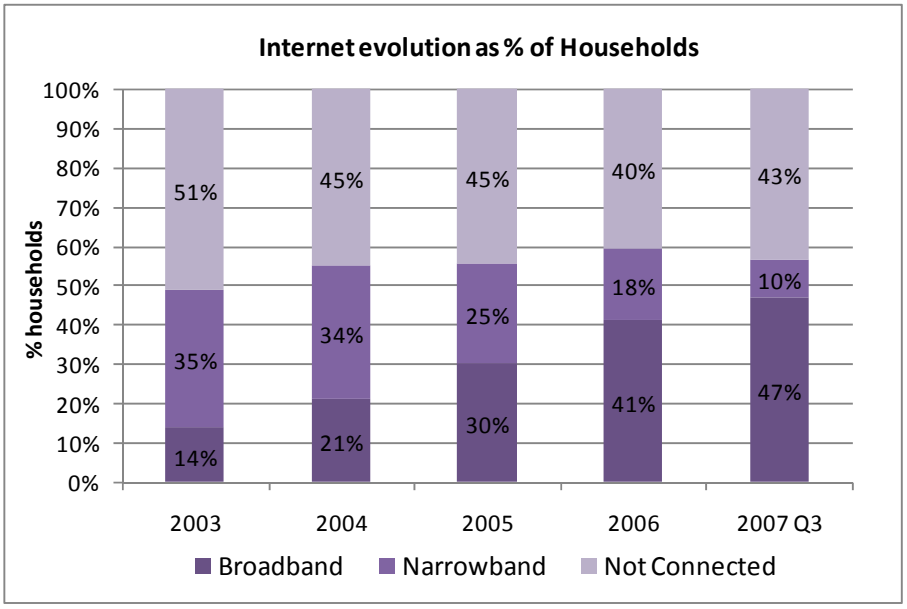


As at September 2007, there were approximately 90,500 total Internet connections in Malta. Therefore, around 43% of Maltese residential and non-residential units still do not have an Internet connection. The remaining 57% access the Internet either via a broadband or a narrowband connection as depicted in the diagram below.

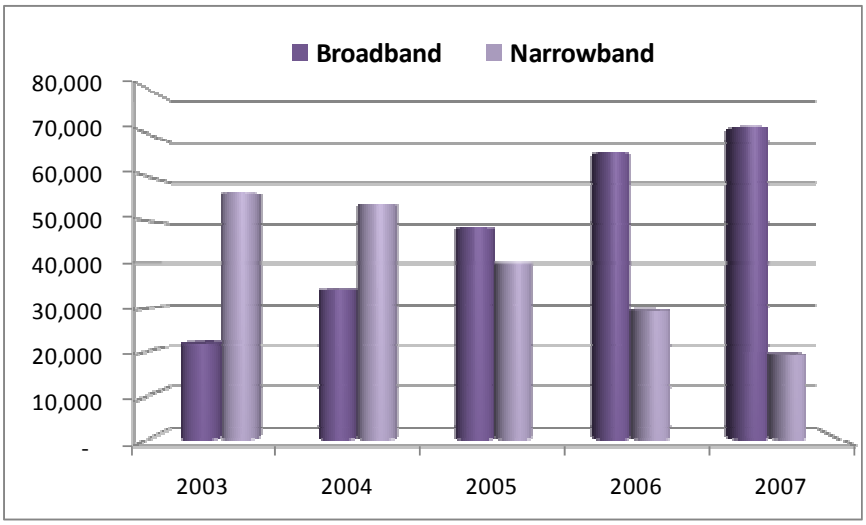
[5] Hereinafter referred to as DataStream. DataStream was a fully owned subsidiary of Maltacom plc., in charge of providing wholesale data services. In 2006, DataStream was merged as part of Maltacom plc. and now operates under the brand name GO.

[6] Hereinafter referred to as Melita Cable.

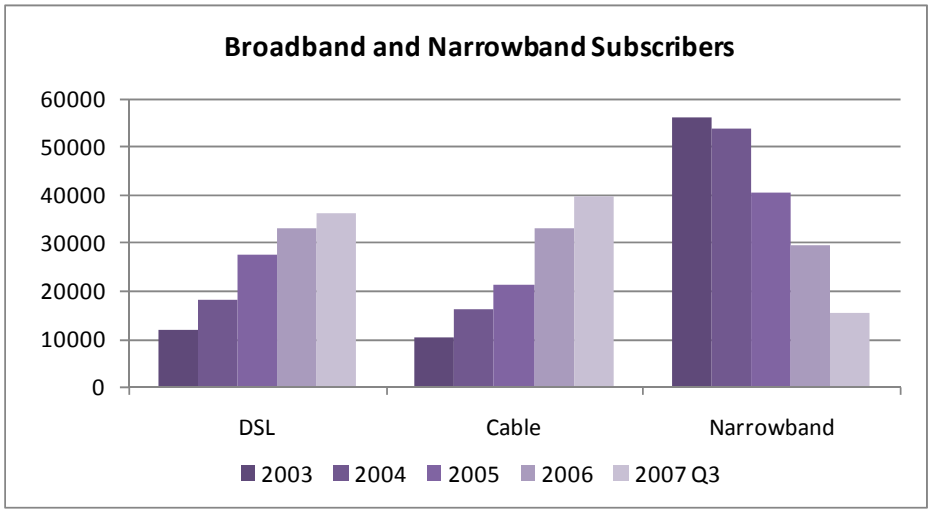
[7] Hereinafter referred to as Onvol. Video on Line was a fully owned subsidiary of Melita Cable plc., which in 2007 was merged into Melita Cable. Melita Cable still operates at a retail level using the brand name Onvol.



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 shown below. As at September 2007, the share of broadband and narrowband stood at 79:21 respectively.



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. As at September 2007 the market share of WiMax was still negligible for presentation in the graph. The evolution of Internet connections by type of technology is depicted hereunder.



Over the past 2 years a number of important commercial developments occurred. In end of 2005 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. The latter company was further merged with its parent company Maltacom, in 2006. In 2007, Maltacom carried out a re-branding exercise and broadband products are now marketed under the brand GO[8].

In 2007, Melita Cable also merged its retail ISP, Video on Line (Onvol), however to date still operates at retail level under the brand name Onvol.

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. In June 2007, Vodafone Malta Ltd. was the first to launch a WiMax broadband service, and has as March 2008 achieved more than 75% coverage.

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

The Recommendation on relevant markets 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.

02.4 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

[8] www.go.com.mt

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 (Market 12). In the revised Recommendation of December 2007 this market is still present, and is also named wholesale broadband access market (Market 5). Consequently the MCA considers that the following analysis is in compliance with the two versions of the Recommendation.

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 *'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 further refers to wholesale broadband access services that include what is known 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.

2.4.1 Narrowband and broadband access services

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

2.4.1.1 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 additional 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 greater flexibility for users with a budget-controlled system normally associated with narrowband packages.

2.4.1.2 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.

2.4.1.3 Preliminary conclusion

Due to different functional characteristics and different price structures, 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.

2.4.2 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 12-24 months, as shown in the table below.

Technology	Present	Future*
Digital Subscriber Line	Yes	Yes
Cable Modem	Yes	Yes
Broadband Wireless Access	Yes	Yes
Fibre to the Home	No	Unlikely
3G / HSDPA	Yes	Yes
Satellite Broadband	Yes+	Yes
*Beyond timeframe of review +Negligible		

It is important to point out that all broadband technologies will be examined as part of this review. The table below shows the number of different networks present in Malta.

Technology	Current Networks	Future Networks	Present Coverage (%)
Digital Subscriber Line	1	1	95+
Cable Modem	1	1	95+
Broadband Wireless Access	1	3	75+
Fibre to the Home	0	0	
3G / HSDPA	2	3	99 & 70+
Satellite Broadband	Several	Several	100

In terms of satellite broadband, so far, services are provided by undertakings outside the Maltese territory. Numbers of satellite broadband subscribers in Malta are negligible, 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 regard to 3G, both Vodafone and GO Mobile have launched 3G services, including data services. GO Mobile has already achieved nationwide coverage, whilst Vodafone achieved more than 70% coverage. To date both operators offer data speeds of up to 3.6Mbps. However, speed is dependent on a number of issues, such as vicinity to base station and number of concurrent users, which could result in lower connection speeds.

As pointed out in the tables above, Vodafone already deployed the first BWA network, whilst the other two licence holders are expected to start deploying their network over the coming months. In all three cases, completion of the network deployment is at the latest expected by 2009.

In their submissions, all the BWA operators stated they would be deploying their networks based on the upcoming 802.16e (WiMax) standard. However, given the delay in the approval of this mobile standard at an international level, Vodafone opted to deploy its network based on the 802.16d standard, which limits mobility.

International statistics show that penetration of BWA networks is still very low, with most of the deployment of WiMax networks largely starting during 2007 in many countries. 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 in the future.

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. Vodafone's WiMax product has over the last quarter of 2007 increased in popularity however it still remains far behind the wired services in terms of market share. Consequently, the subsequent analysis will focus mainly on the DSL and Cable technologies.

2.4.2.1 Demand-side substitutability

Functional substitutability

The retail broadband access market in Malta has been characterized by a significant number of retail service providers. Currently, there are around 11 Internet Service Providers (ISPs) that provide retail broadband services. All ISPs in the market are able to sell DSL broadband connections. However, only 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, both cable and DSL broadband services exhibit the following characteristics:

- Downstream Speeds – vary from 256kbps to 6Mbps
- Upstream Speeds – both providers offer 128kbps to 512kbps
- Payment Terms – Post-paid (cable & DSL & WiMax), pre-paid (DSL only)
- Pricing – Equivalent DSL/cable/WiMax packages have very similar prices.

- Prices vary according to speed and download limits (€13-€45 per month)
- Prices have remained relatively stable since 2001, with recent reductions in past 6 months. Speeds and download limits have increased considerably.
- Connection, installation and modem fees are typically waived through ongoing special offers.

Consumer evidence

In the first quarter of 2005 and 2007, the MCA conducted research into broadband users perceptions[9]. 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% (2005) and 52% (2007) of respondents claimed to have sufficient information regarding services. 87% (2005) and 75% (2007) of respondents are aware of the prices they are paying for ADSL and Cable services.

Churn: The overall churn level between broadband technologies has been of 12% (2005) and 16% (2007) with a nearly symmetric churn level amongst technologies. In 2005: ADSL to Cable – 6% and Cable to ADSL – 6.5%. In 2007: ADSL to Cable – 9% and Cable to ADSL – 7%.

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

Switching Capability: Only 11.4% (2005) and 8% (2007) of respondents think it is difficult 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, in 2005 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. In 2007, a similar result was obtained with 15% saying they do not consider them substitutable, 34% saying they are substitutable and 52% do not know.

A similar response was obtained to the question as to whether end-users consider Cable broadband as an appropriate substitute to ADSL. In 2005 only 19% and in 2007 14% 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

[9] 2005 survey results - http://www.mca.org.mt/infocentre/openarticle.asp?id=642&pref=48

2007 survey results - http://www.mca.org.mt/infocentre/openarticle.asp?id=1079&pref=33

  - Similar modem, installation and monthly costs
  - Similar Quality of Service
  - Similar Terms & Conditions
  - Same applications & content can be accessed;
- NO switching costs since modem deposit and installation fees waived;
- Coverage of both cable and DSL network is almost ubiquitous;
- Churn is present and equally flowing from one technology to another;
- Service packages track & mirror each other (price/bandwidth/download limits).

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

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% (2005) and 62% (2007) 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% (2005) and 43% (2007) 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 - VOL. 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% (2005) and 40% (2007) 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 the cable ISP could lead consumers to switch to a DSL provider.

With respect to the recently introduced WiMax services, the evidence so far has shown that when the prices of WiMax services were higher than that of cable and DSL products, very limited churn was observed. On the other hand, when Vodafone matched the prices of DSL and cable products its subscriber base grew significantly in a period of 3 months. Given the lack of evidence on churn patterns due to its recent introduction, it is debatable whether the majority of consumers would consider WiMax a feasible alternative to wired services following a small but significant price increase in the latter services. Nevertheless, it is acknowledged that a good number of consumers have already opted for the WiMax service and therefore consumers have an additional service to resort to in case of a price increase by traditional incumbents.

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 DSL and Cable products are good substitutes.

2.4.2.2 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 to negotiate access with existing network operators. Alternatively, a new entrant would need to replicate a broadband infrastructure, which would imply a 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 new third-party ISPs would find it difficult to negotiate access.

In the absence of any regulation, supply substitution on the cable network is unlikely to be present whilst on the DSL infrastructure wholesale access agreements depend on the willingness of the incumbent to negotiate and the ISPs' bargaining power.

Building an alternative network would involve significant costs and therefore a quick entry is not possible. With respect to the WiMax network an ISP could potentially migrate to this network however this option will only be possible in the future.

2.4.2.3 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 ISPs ability to negotiate access will be significantly reduced.

In view of the above, the MCA is of the opinion that DSL and Cable broadband access products are substitutable and therefore fall in the same retail market. At present there is limited evidence of switching patterns by consumers from existing wired services to the WiMax service. Nevertheless, latest figures show that when prices of WiMax have fallen consumers have indeed opted for this service. This implies that at the retail level consumers view WiMax as an additional substitute to DSL and cable broadband.

2.4.3 Residential and business customers

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

2.4.3.1 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.

2.4.3.2 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.

2.4.3.3 Preliminary conclusion

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

2.4.4 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, namely cable, DSL, WiMAx technologies; and

- Includes all business and residential customers.

02.5 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.

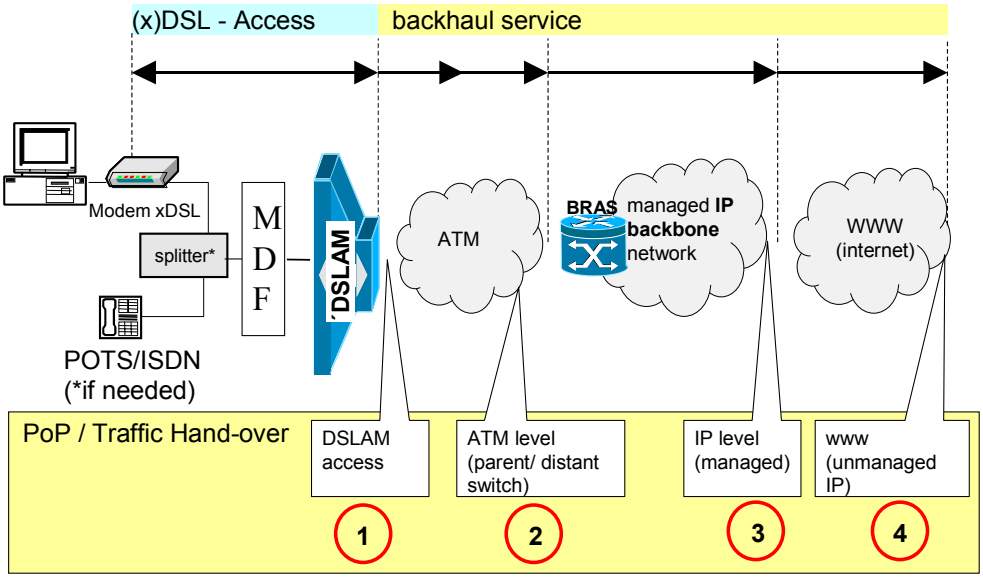
The demand for this wholesale service is derived from the demand for retail broadband services. The MCA considers that the relevant wholesale market will be as broad as the relevant retail market defined earlier on. Given this, and also on the basis of the analysis outlined at the retail level, it follows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

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

2.5.1 Are wholesale products available over different technologies equivalent?

2.5.1.1 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[10] 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[11]. The new entrant is able to offer an end-user product with different technical characteristics as it can alter

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

[11] Principle of technological neutrality.

the Quality of Service (QoS) parameters such as the overbooking factors provided by the incumbent.[12]

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. Since in this option the incumbent runs the BRAS, it has the possibility to monitor the end-user and controls the virtual private channel (VPC).

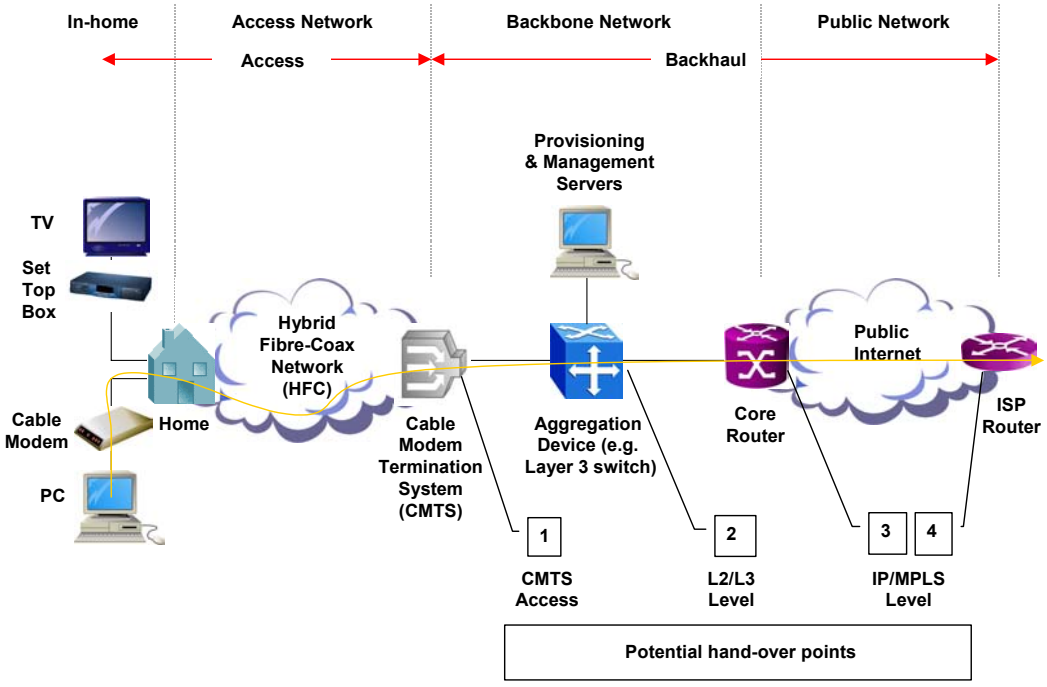
Option 4 – Resale: The incumbent provides the DSL access link plus a backhaul service and also provides the connectivity to the public IP network of the World Wide Web.

At this level, the product the incumbent sells to the new entrant is technically the same as the one which the incumbent sells to its own customers.

2.5.1.2 Cable Bitstream access

The 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 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.



[12] 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.

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 the selection of network equipment, system parameters and service differentiation and 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 would 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: Here, the new entrant is effectively 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.

2.5.1.3 Shared Access over cable

The cable network is based on a shared access system as opposed to the DSL network, however bitstream or wholesale broadband access services are not provided at the physical layer. While the shared cable infrastructure would render cable unbundling extremely difficult, this argument does not apply for wholesale broadband access. DSL networks are also shared past the DSLAM and hence, there is also a need for dimensioning and management.

In the late 1990s, regulatory decisions in the United States[13] and Canada[14] led to cable operators beginning to investigate ways of implementing "open access systems". The technology that was eventually utilised by the MSOs was IP-centric policy-based routing (PBR) solutions, generally rejecting the layer-2 tunneling technologies typically used to offer multi-ISP access in the DSL market. PBR involves implementing policies and rules in IP routers or switches to manage network traffic and services.

Consider the following example: a cable modem user types "www.google.com" on the web browser to visit the site. The first router on the network receiving the request looks up the destination IP address for Google so it may forward the packets it received. With multiple different ISPs connected to the cable network, how does the router link to the right ISP backbone to reach the Google Web site?

[13] By the FTC related to mergers of some of the largest multiple service operators or MSOs

[14] In 1999 the Canadian Radio and Television Commission (CRTC) issued Telecom Decision CRTC 99-8 that obliged the country's four largest MSOs -- Rogers Cable, Videotron Communications, Shaw Communications, and Cogeco Cable Canada -- to file firm tariffs to provide competitive ISPs with wholesale access to their cable facilities http://www.crtc.gc.ca/archive/ENG/Decisions/1999/DT99-8.HTM

The easiest way is to implement a policy that requires the router to identify the subscriber's source IP address and then send their traffic to the ISP backbone that is associated with it. To deliver class of service, another policy must be implemented on the network to prioritise packets carrying specific content e.g. video or telephony. By using these kinds of policies, a network operator can sell various levels of service to different ISPs and their subscribers. Technically, policies that require specific quality of service (QoS) treatment are implemented through DOCSIS 1.1 (or later versions) controls on the cable modem access network and then on the core network with techniques, such as multi-protocol label switching (MPLS) and DiffServ, or ATM virtual circuits (VCs).

A key challenge associated with PBR is scalability, that is, ensuring that the network can handle the routing and switching load. To do so, high-performance routers are required on the network since applying complex policies consumes far more processing power and memory than traditional destination-only routing. In initial MSO multi-ISP technology trials, a single gateway router is used on the metro network to manage service flows via PBR and interconnect with ISPs. However, in order to handle thousands of cable modem subscribers without service degradation, PBR functionality must eventually be distributed to the network edge, preferably in an integrated DOCSIS CMTS or IP switch/router.

In a PBR-based multi-ISP environment, the MSO directs traffic to ISPs based on each subscriber’s PC public IP address, a technique called source routing. This means that ISPs must provide MSOs with large blocks of IP addresses. To ensure that subscribers are routed to the ISP of their choice, the MSO configures its DHCP servers to bind the media access control (MAC) address of the customer's PC to the IP address block of the appropriate ISP.

This entire scenario led to equipment vendors realising the potential business opportunity and hence, these responded by providing specific solutions to achieve precisely this. The technology to provide wholesale broadband access via cable has therefore been available for several years now. There is nothing uncertain or untried about the underlying technology. So much so, that major vendors of cable broadband access equipment all have white papers and marketing material available detailing how such a solution can be achieved. The documents included in Appendix 1 indeed demonstrate that wholesale broadband access via cable is not an untried technology but is, in fact, a viable option that can be implemented without major changes to network architectures or provisioning systems. Of course there is also an element of "chicken and egg" here. The technology has not yet been deployed on a widespread basis, except in those jurisdictions where there is a regulatory requirement for open access.

In a wholesale broadband access scenario, the Cable Operator will remain responsible for all spectrum management issues. It is never expected that third parties will require direct access to frequencies on the HFC network. Wholesale broadband access will be provided at the IP or MPLS levels and hence anything taking place at the physical layer is irrelevant.

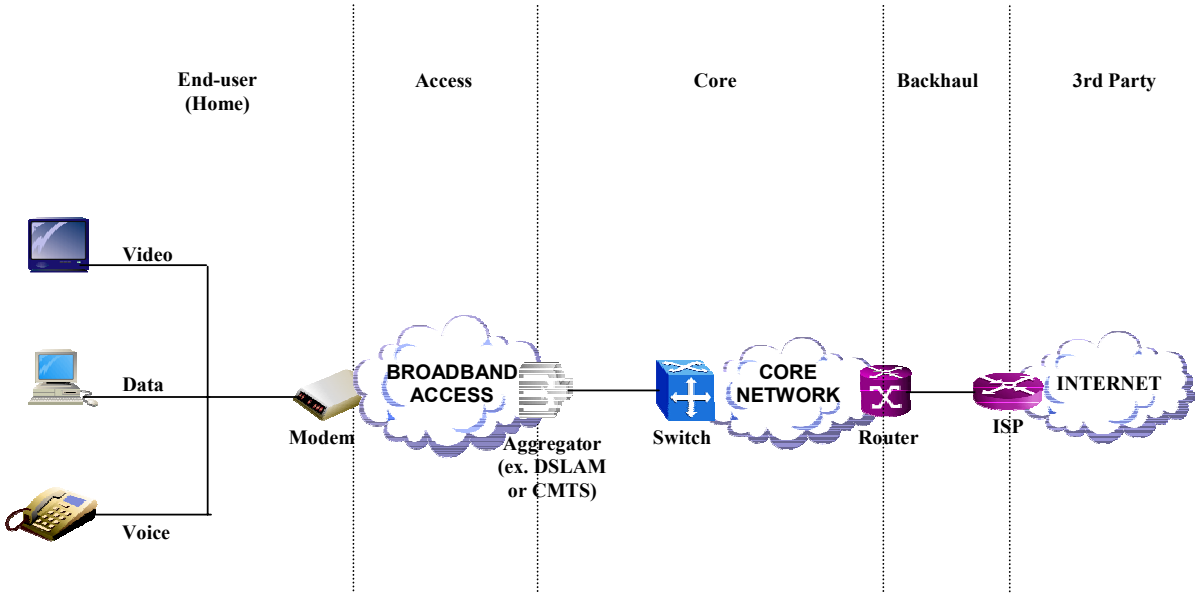
The foregoing paragraphs described how cases of open access originated in the US and Canada. The Canadian regulator gives very specific details as to how interconnection takes place and also the costing methodologies used[15]. The CRTC has confirmed to the MCA that the wholesale tariffs have been filed and have been available for a number of years now. In fact, a number of ISPs have taken up these wholesale offers.

[15] http://www.crtc.gc.ca/archive/ENG/Decisions/2004/dt2004-69.htm

There are also other instances of provision of commercial wholesale cable broadband access in Israel, Finland, the UK and Singapore. For example, in Singapore, Asia's largest non-telco ISP – Pacific Internet (PacNet) – has signed an agreement with StarHub Cable Vision, where the latter is to provide open access to its cable network[16]. Appendix 2 provides additional supporting evidence which confirms that open access over cable networks has been implemented commercially in these countries.

2.5.1.4 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[17]:



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

[16] http://www.prnewswire.com/cgi-bin/stories.pl?ACCT=104&STORY=/www/story/11-12-2003/0002056365&EDATE

[17] It is to be noted that BWA licensees are already committed to offer open access facilities to third parties. Given the similarity of BWA and cable networks with respect to dimensioning and management, this clearly indicates that a shared access medium can provide wholesale broadband access.

	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.

Another reason why the MCA believes that there must be cost equivalence in broadband networks is that DSL and cable wholesale/retail prices are similar. If this was not the case, i.e. the network element costs for cable and DSL were significantly different, then sustained cross-subsidisation or predatory pricing is taking place by one or the other in order to maintain wholesale/retail prices that are similar too.

This similarity has been the case since the introduction of broadband services in Malta where prices have been very similar. This view is reinforced by the fact that DSL and cable broadband prices are relatively similar in all countries where both are present and competing. If the cost structures were fundamentally different, one technology would since have disappeared since its higher costs would have rendered it uncompetitive.

A document from Cisco Systems titled "Cisco Broadband Solutions" (see Appendix 1) shows that the same devices can be used in both DSL and cable networks. The scale and size of the Melita Cable and GO networks are also similar and so, it stands to reason that there is a large degree of system cost equivalency.

2.5.1.5 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.

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

It has been argued 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.

2.5.2.1 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 at present have an alternative substitute. However, if the cable operator provides wholesale broadband access to third parties, ISPs would be able to acquire an alternative wholesale access product.

Wholesale access on WiMax is also possible. However, until Vodafone reaches nationwide coverage, and until the network is ready to take additional load from alternative providers, wholesale access on WiMax is an option which will be available in the near future. Nevertheless, the MCA believes that wholesale access in WiMax is possible (potentially within the timeframe of this review) especially since Vodafone has an access obligation as part of its licence conditions.

Within this context the most immediate alternative for DSL at present is cable wholesale access. In this respect access over the cable network 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.

- ***CPE costs***
  One factor that certainly contributed to the rapid increase in broadband take-up over the past couple of years, is the waiving of installation fees and modem deposits. The modem therefore remains the property of the wholesale provider and not of the ISP or end-user. This implies that switching fees would be negligible for the end-user and retailer as far as customer-premise equipment is concerned.

- ***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.

Thus, should Melita Cable, for one reason or another, e.g. in response to a hypothetical increase in DSL wholesale access prices by GO or through regulatory obligations, decide to provide wholesale broadband access via cable, it would be possible for an existing ISP to shift its existing subscriber base to cable in the short term and without incurring excessive costs. It would also be possible for a new entrant ISP to decide to only utilise wholesale broadband access via cable.

While the MCA strongly believes that these two scenarios are viable, it decided to ask the question to a number of ISPs that are currently limited to making use of wholesale broadband access via DSL. The document in Appendix 3 explains the changes and adaptations that ISPs felt would be necessary, in order for a typical ISP to switch to a wholesale broadband offering via cable. The conclusion of this document is that it would not be an insurmountable problem for any reasonably well-architected ISP to affect such a switch. In fact, the limiting factor in such an event would be the speed with which the cable operator could deal with the necessary truck rolls in order to install the new wholesale cable modem connections. Though this, of course, cannot be considered a problem!

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).

2.5.2.2 Supply substitutability

The MCA also considered whether existing/new undertakings will easily enter the market at no significant high costs and in the 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.

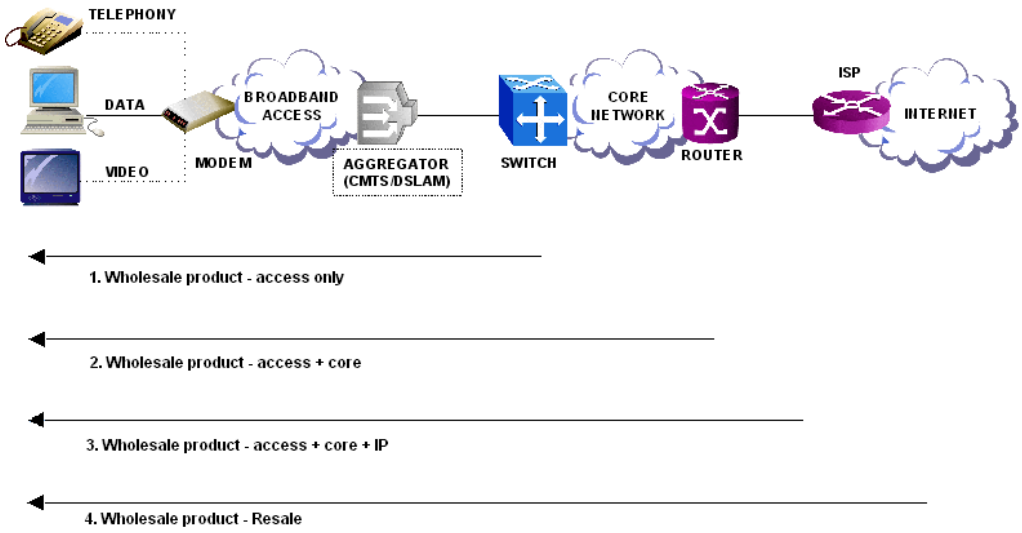
In the time horizon of this review there is also the potential for three (or more) BWA networks to be developed. In fact Vodafone have already entered the market and launched commercial services. The MCA does not believe that Vodafone would shift its production to offer DSL and/or cable services over the timeframe of this review following a hypothetical price increase by the DSL or Cable operators, and vice versa.

2.5.2.3 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.

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

Broadband access can be provided on a wholesale basis in a number of ways as depicted below.



2.5.3.1 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 that used to be provided by the DSL network operator in Malta was 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. The MCA is informed that this product has been discontinued in 2006 and no resale products are present in the market.

2.5.3.2 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, DSL and WiMax 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 used for the provision of self-supply DSL. 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 (with the exception of MITTS Ltd.). 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. The WiMax operator has recently started operating and has to date only offered wholesale services internally.

At the retail level, self-supply cable, self-supply DSL, third-party DSL and WiMax 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 the 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. This same also applies for WiMax products.

2.5.3.3 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, Vodafone for WiMax) 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 a "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.

The statements made in the preceding two paragraphs warrant further clarification. This service permits MITTS end-users such as home workers employed by the public service to access the MITTS Intranet, as well as the public Internet via cable modem. It is to be stressed that:

- the IP addresses assigned to end-users are allocated from MITTS' address space via MITTS' own DHCP servers;
- access to the public Internet is via MITTS' international IP transit links;
- data traffic to and from MITTS is kept separate via a Virtual Private Network; and
- MITTS and Melita Cable have invested in dedicating resources to establishing the service.

By inference this leads to the conclusion that the service is actually provided on a wholesale and not a resale basis. MITTS provides the wholesale service to various Ministries, Government Departments, Local Councils and Public Entities. While it is difficult to ascertain on a definite basis the exact network topology and architecture used to underpin the delivery of this service, the MCA is in possession of a Melita Cable document that outlines exactly how the company could easily deploy cable bitstream access. The latest available statistics show that there are 361 cable modem MITTS users availing themselves of the wholesale access service (with a corresponding 391 wholesale DSL users).

It is assumed that the service provided to MITTS is similar, if not identical, to the solution as proposed in the document. This document and the service contract between the two parties are attached in the confidential Appendix 4.

From the documentation provided, it is clear that the wholesale access solution is not in any way specific to MITTS but rather, can be used with any other local ISP. The only additional investment required on the part of an interconnecting ISP would be that of the label edge router, the cost of which, for a typical Maltese ISP, should not exceed a few thousand Euros.

The fact that MITTS has invested in an interconnecting router and its own provisioning servers that provide addresses out of its own IP space, that an IP-VPN has been set up between the 2 organisations and that MITTS then bundles its own Internet and Intranet services, all point towards a wholesale broadband access arrangement, rather than a simple resale scenario.

The MCA is making a clear statement that the Melita Cable network, as it stands today, is technically capable of providing wholesale access at least at an IP or MPLS level at the service provider edge (equivalent to handover point 3 in the ERG Cable bitstream document).

The ideal handover point for cable wholesale access would be at the service provider edge via an interconnect router. This would correspond to handover point 3 as per the ERG cable BSA document. Therefore, this technical solution is perfectly compatible with a wholesale broadband access scenario and is not just simple resale. Access to provisioning systems can certainly be granted on a trusted basis, where various service profiles can be made available to interconnecting ISPs.

The fact that MITTS is the Government ISP has no bearing on the technological or commercial setup, where the principle of wholesale broadband access is being used. In this instance, it is clear that an end-user connected to MITTS can choose between cable or DSL for an equivalent provision of the same service.

The setup is precisely in line with a cable wholesale broadband access scenario using IP or MPLS handover. Melita does not, so far and to the MCA's knowledge provide a commercial wholesale broadband access service to third parties, except to MITTS. The MITTS contract clearly supports this (see Confidential Appendix 4).

The MCA is convinced that the Maltese situation is unique, with a single cable operator that has nationwide presence and a large broadband market share. The technical and economic evidence compiled by the MCA gives a clear indication that cable should be included in the relevant market, otherwise a market distortion will result.

2.5.3.4 Other considerations

To quote Cave, Stumpf & Valletti: "*Only in the case where a rival firm has reached a network roll-out and geographical coverage comparable with the existing operator(s), where the necessary spare capacity is available, wholesale billing and account management systems exist, and where switching costs are low, supply substitution appears to impose a strong enough pricing constraint on the existing wholesale products. In this case, the rival firm's self provided inputs could be included in the same relevant wholesale market, together with the incumbent's wholesale offerings.*"

Disaggregating this statement and considering each point:

- *Network rollout and geographical coverage* – this is basically identical for cable and DSL in Malta;
- *Availability of spare capacity* – this is clearly not an issue in Malta due to increasing market shares and ability to respond immediately to bandwidth doubling or new service offers by the other party;
- *Wholesale billing and account management systems exist* – this is not a problem for Datastream or Melita since these systems already exist or can easily be implemented;
- *Low switching costs* – these are almost negligible at retail level and contained at wholesale level.

It is therefore clear that the situation in Malta is evidently different from that experienced in other EU countries. All conditions required for the inclusion of cable in the market are fulfilled and ample evidence is provided in this regard. The MCA therefore feels that the proposed market definition is a true and fair analysis of the unique and particular circumstances in Malta, whilst respecting the principles laid out in the Commission's Recommendation on relevant markets.

2.5.3.5 Preliminary conclusion

The MCA therefore considers that, in line with the Commission Recommendation on relevant markets, 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.

02.6 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 DSL and cable 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. The WiMax network is currently covering more than 70% of the national territory and by the end of 2008 it is expected to be a nationwide network.

Based on the above characterisation 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.

02.7 Preliminary Markets

Following the analysis presented above and after taking into consideration all the responses received during the national consultation, 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, namely DSL, Cable and WiMax; and
- Includes all wholesale broadband access products and services provided to third-party ISPs, via all existing broadband networks.

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 EU Framework for the Electronic Communications Sector and Article 4(8) of the ECRA, SMP has been 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."

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.

In this revised SMP analysis the MCA is taking the utmost consideration of numerous submissions by interested parties, the Commissions' serious doubts letter and draft Veto decision, and also the recommendations of the ERG expert review team report all of which were produced during Phase 2 of the original notification (February – March 2007) of this market review.

The MCA is cognisant that conditions at retail level are an important element in the assessment of the wholesale market, especially since most of the transactions happening at retail level are a result of the internal supply of the two vertically integrated DSL and cable incumbents.

Consequently, the MCA is hereby providing a revised and more comprehensive analysis of the retail and wholesale broadband market conditions in Malta. In this analysis, where applicable, the MCA is presenting an integrated analysis of the retail and wholesale market conditions for each of the SMP criteria identified by the Commission in its guidelines on market analysis and SMP. The MCA believes that such an approach would ensure that the analysis captures all the linkages between the upstream and downstream market, and the dynamic factors that shape the broadband market in Malta.

03.2 Assessment of Single Market Dominance

This section considers whether single dominance is likely to exist in the wholesale broadband access market.

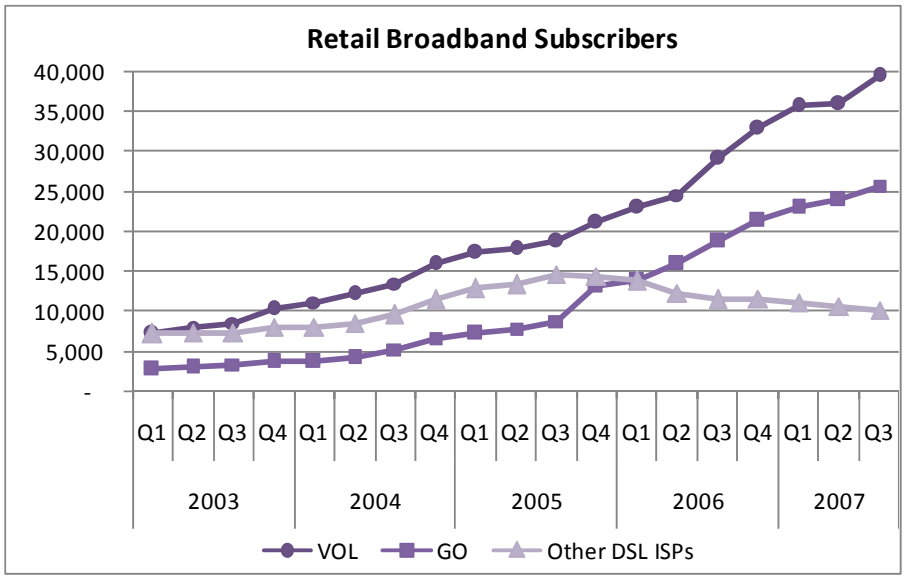
3.2.1 Market shares

Single dominance can be assessed using a number of criteria, 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."*

As at September 2007, there were around 13 ISPs offering retail narrowband and broadband services to residential and/or business users. 11 ISPs offer DSL broadband, whilst only the vertically integrated cable ISP offers cable broadband services. Vodafone has started offering a broadband wireless service over its WiMax network in June 2007.

The graph below depicts the number of broadband subscribers at a retail level spilt between: cable broadband connections provided by the cable ISP (OnVol), DSL connections provided by the DSL incumbent ISP (GO) and the remaining DSL connections provided by third-party ISPs.



The graph clearly shows that the cable ISP, OnVol has the highest number of subscribers with more than 39,400 end-users, whilst GO has around 25,700 DSL subscribers. Third-party ISPs have in total 10,100 subscribers.

In terms of retail market shares these translate to:

	2004		2005		2006		2007	
	Q1	Q4	Q1	Q4	Q1	Q4	Q1	Q3
VOL	48.8%	46.7%	46.2%	43.6%	45.3%	50.0%	51.2%	52.3%
GO	16.1%	19.6%	19.4%	26.9%	27.4%	32.6%	32.9%	34.1%
Other DSL ISPs	35.1%	33.7%	34.4%	29.5%	27.3%	17.5%	15.8%	13.5%

The table above illustrates the trends in market shares of the various players in the retail market. Whilst in Q1 2004 third party ISPs had a market share of 35.41% in the third quarter of 2007 the share dipped to 13.5%. Conversely, GO increased its share from 16.1% in Q1 2004 to 34.1% in Q3 2007. The cable ISP

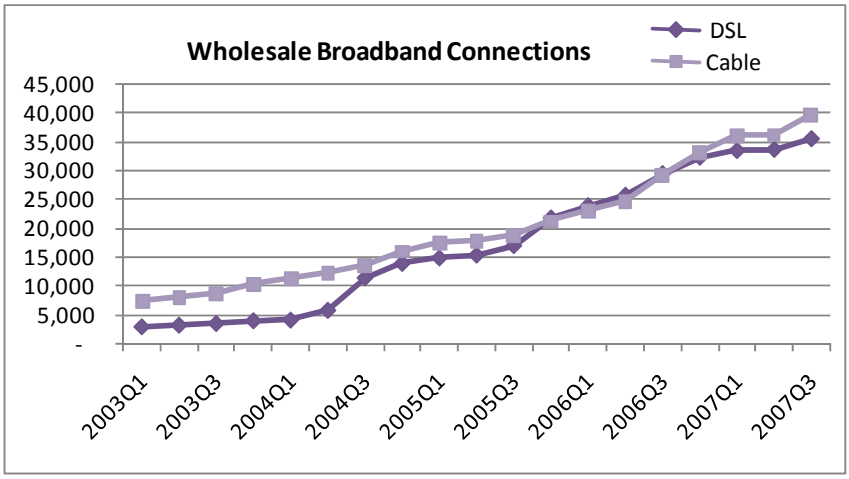
OnVol continued to increase its market share from 48.8% to 52.3% and continued to consolidate its position as the largest ISP in Malta.

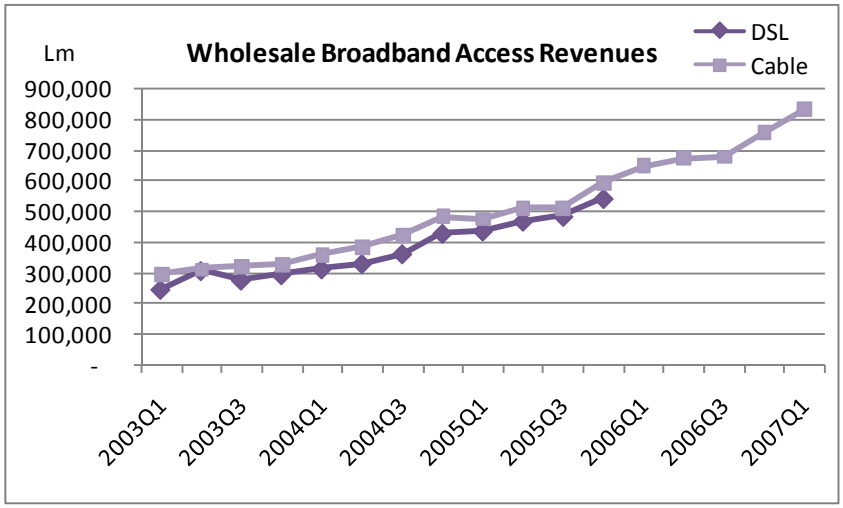
Whilst OnVol slowly increased its share by around 4% over the past 4 years, third party ISPs lost a great part of their subscriber base to GO, which managed to more than double its market share over the past years. The inverted trend of market share between GO and third party ISPs is likely to continue in the future.

In July 2007 Vodafone launched its broadband services over its WiMax network. Vodafone initially did not offer broadband services as a stand-alone service, but rather a package including broadband bundled with either fixed IP telephony and/or a mobile subscription. However, in September 2007 Vodafone withdrew these unpopular product bundles and offered four new packages. Two packages include broadband as a stand-alone service, whilst another two packages include broadband and fixed telephony as a bundle. Up until September 2007, the take-up of this service was low with negligible impact on market share.

At wholesale level, market shares of the upstream providers GO and Melita Cable are more symmetric than at retail level.

The graphs below illustrate the wholesale market shares in terms of access lines and corresponding revenues for GO and Melita Cable.





Both the market shares in terms of access lines and wholesale revenues[18] indicate that GO and Melita Cable have similar position in the market. The trend over the past years shows that, at a wholesale level, the market is split fairly equally between the two incumbents. The MCA believes that such a trend is likely to persist during the timeframe of this review.

The identified market shares both at retail and wholesale levels do not provide evidence that any operator enjoys single dominance in the wholesale broadband access market.

3.2.2 Economies of scale and scope

Melita Cable and GO enjoyed a legal monopoly until the liberalisation of the sector, which took place in 2001 for cable television and in 2003 for fixed telephony services. In the broadcasting transmission market, Melita cable enjoyed a de facto monopoly until 2005 when Multiplus (subsequently taken over by GO) entered the market with its digital terrestrial services. This enabled Melita Cable to establish a very strong position in the provision of cable television and GO in the fixed telephony services markets 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 to the traditional services, and therefore created increased economies of scope for both operators.

Although the underlying technology for the cable and DSL 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 both companies 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 having access to almost all households; and also that the market is evenly split between the two broadband technologies.

The Maltese market presents a unique situation where both the cable and DSL network operators face similar demand and supply market conditions due to the size of the market, network coverage, and the history of the broadband market such as in network deployment and service offerings. The MCA therefore considers that at wholesale level both GO and Melita Cable are likely to face similar economies of scale and scope in the provision of broadband services.

Given that third party DSL ISPs do not own a network but rather make use of GO's DSL infrastructure, it is unlikely that ISPs will benefit from economies of scale and scope similar to GO. On the other hand OnVol and GO are vertically integrated ISPs, and consequently will enjoy the economies of scale and scope acquired in the upstream market.

Vodafone has only entered the market during the past year. Although some elements of the network, such as billing infrastructure, are being used for both

[18] Since Maltanet merged with Maltacom (now both GO) in December 2005, no data for wholesale revenue from its internal ISP has been provide to the MCA. GO claims that they do not account for any internal transfer charges between upstream and downstream operations provided by the same entity. GO however submits data on revenues from wholesale services provided to third parties. Similarly, since Q2 2007 OnVol merged with Melita Cable, and the latter claims that no internal transfer charges are accounted for within the same company.

the mobile and broadband services, it is unlikely that Vodafone enjoys similar economies of scale and scope in the provision of broadband services compared to the traditional incumbents.

3.2.3 Vertical and horizontal integration

The two strongest ISPs at the retail level are the vertically integrated ISPs – OnVol, which is the downstream provider of Melita Cable and GO, the DSL ISP of GO. With retail market shares of 52.3% and 34.1% respectively, OnVol and GO capture approximately 86% of the retail market. Although the market share of GO is lower than that of OnVol, the difference has been narrowing significantly over time and is expected to continue to narrow down in the near future.

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

Furthermore, Melita Cable and GO are also horizontally integrated and are present in the telephony and television distribution markets. Through multiple service offerings both Melita Cable and GO can gain additional broadband subscribers through leveraging from other markets. This further accentuates the strong position that these operators have in the broadband market.

3.2.4 Countervailing buyer power

As stated earlier, GO is currently the only operator providing wholesale broadband access to third parties. As there are no alternative wholesale providers of broadband services, third-party ISPs cannot effectively exert any countervailing buyer power on GO. Furthermore, should the current regulatory regime be withdrawn, independent ISPs would find it more difficult to gain wholesale access.

The downstream ISPs of Melita Cable and GO cannot be considered as suitable candidates for exerting countervailing buyer power on the upstream providers. It is reasonable to assume that OnVol and GO do not exert any countervailing buyer power to acquire the required wholesale inputs at the desired terms and conditions. This is now further true since both GO and Melita Cable merged their downstream providers in one entity without any internal distinction between wholesale and retail operators.

Therefore, since there are no alternative wholesale broadband access providers, ISPs cannot exert any credible countervailing buyer power on GO and/or Melita Cable.

3.2.5 Preliminary conclusion on the analysis of single dominance

In its analysis of single dominance, the MCA considered a number of factors such as market shares, economies of scale and scope, vertical and horizontal integration, and countervailing buyer power.

Throughout its analysis, the MCA has not found any compelling evidence that shows that OnVol, GO, Vodafone or any other ISP enjoys a significant advantage over the others in the retail market. Although OnVol has a very high market share in relation to the other ISPs, this does not automatically equate to single

dominance. The presence of GO, Vodafone and a number of other DSL ISPs in the market, gives end-users the ability to switch from cable to DSL broadband services if OnVol had to abuse from its position.

Melita Cable and GO appear to have a similar position in the wholesale market. The MCA considers that at a wholesale level Melita Cable and GO:

- have highly similar market shares;
- enjoy a similar level of economies of scale and scope;
- are vertically and horizontally integrated providers; and
- do not face any credible countervailing buyer power.

Consequently, the MCA considers that from the evidence available at present there is no clear evidence that supports the finding of single market dominance at retail or wholesale level.

Nevertheless, the MCA is of the opinion that given the similar position held by Melita Cable and GO at wholesale level, this market merits a further assessment for the potential finding of joint dominance.

03.3 Assessment of Joint 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 in an ex ante assessment, 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:

1. whether the characteristics of the market make it conducive to tacit coordination; and
2. whether such form of coordination is sustainable, i.e.
   a) 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

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

In the case of the Airtours/First Choice merger decision, the Court of First Instance applied these principles in its judgment[19]. In its decision, the Court sets out three necessary conditions for the finding of a collective dominance position:

1. 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.

2. 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 coordinated practice would be met by competitive reactions by other firms. The most important criterion to meet this condition is retaliatory mechanisms.

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

03.4 Characteristics conducive to tacit coordination

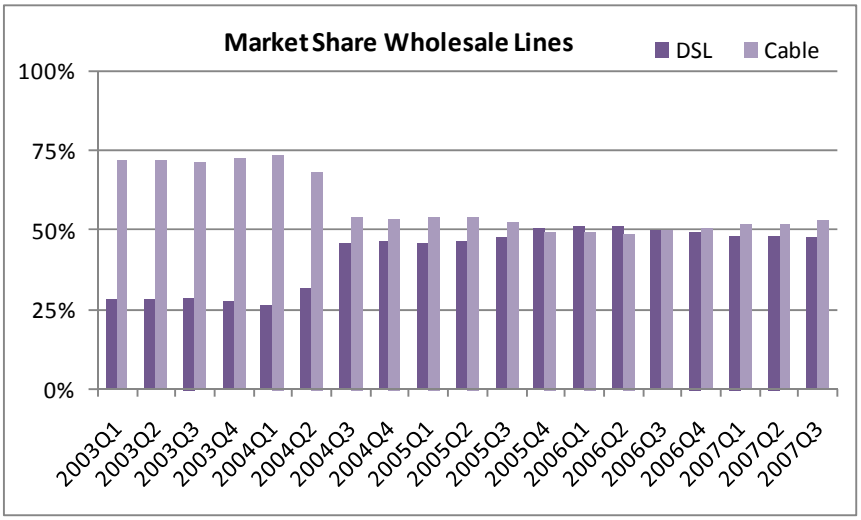
An oligopolistic firm seeking tacit coordination with another firm would firstly need a clear incentive to do so and secondly, would also need to have the ability to enter into such coordinated practices. What follows is an analysis of criteria that can potentially illustrate that the wholesale broadband access market in Malta presents characteristics that facilitate coordination.

3.4.1 Similarity in market share

As already discussed above, the market shares of GO and Melita Cable for wholesale broadband services are almost equal. The diagrams below illustrate this trend.

Market Share - Wholesale Broadband Access Lines									
	2004Q1	2004Q4	2005Q1	2005Q4	2006Q1	2006Q4	2007Q1	2007Q2	2007Q3
GO	26.5%	46.5%	46.1%	50.6%	50.9%	49.5%	48.2%	48.2%	47.3%
Melita Cable	73.5%	53.5%	53.9%	49.4%	49.1%	50.5%	51.8%	51.8%	52.7%

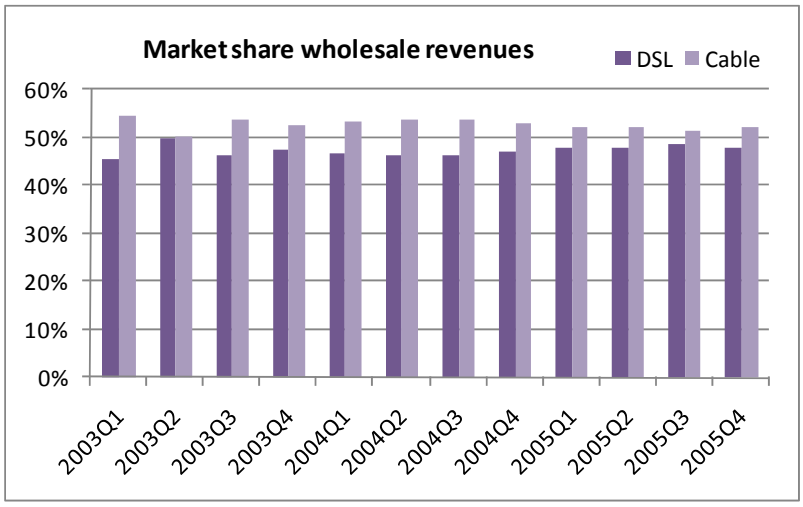
[19] Case T-342/99 - Airtours plc. vs. Commission, 6 June 2002



In terms of access lines as at September 2007, Melita Cable and GO had a 52.7% and 47.3% market share respectively. The similarity in market share of wholesale access lines has been observed since 2005. Prior to 2005, GO had a much smaller market share due to the fact that it used to offer wholesale resale services to independent ISPs. Given that wholesale resale products are not considered as part of this market, these lines where not included for measuring the market share. However, over time GO substituted the resale offer with wholesale broadband access offers, and consequently the market share has reflected this transition. Today, Melita Cable and GO share the market evenly and this trend is likely to continue in the foreseeable future.

A similar scenario is depicted below for market shares in terms of wholesale revenues.

Market Share - Wholesale Broadband Revenues						
	2003Q1	2003Q4	2004Q1	2004Q4	2005Q1	2005Q4
GO	45.6%	47.3%	46.5%	47.1%	48.0%	47.8%
Melita Cable	54.4%	52.7%	53.5%	52.9%	52.0%	52.2%



With respect to wholesale revenues GO and Melita Cable have been sharing the market more or less on an equal footing since 2003. Given that up till 2007 there were only 2 networks providing wholesale broadband services in the market, and each of these networks had a fairly equal number of retail broadband connections, it is reasonable to arrive at such a conclusion.

The data sequence for wholesale revenues stops as at December 2005, which coincides with the merging of Maltanet with DataStream (both are now part of GO). Following the merging of the upstream and downstream operations of GO, no data was provided on the internal transfer charge by GO. The company claims that no wholesale charges are transferred or accounted for within the same entity. Similarly in January 2007 OnVol merged with Melita Cable and since than Melita Cable did not provide any data on wholesale revenues since these are not accounted for within the same company.

Nevertheless, the MCA still believes that since retail prices are similar for both incumbents, and since no major network changes have occurred, the wholesale revenues of GO and Melita Cable continued to be similar.

3.4.2 Homogeneous products

Melita Cable and GO 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 both operators are able to provide similar services as described earlier on in the document.

3.4.2.1 Retail products

At retail level all ISPs provide very similar broadband services in terms of download/upload speeds and download limits. The table below depicts the broadband products that the major ISPs in Malta provide to retail customers.

Service Provider	Product	Download/ Upload Speed [1]	Download limit (GB)	Email accounts	Monthly Cost (LM) [2]	Monthly cost (€uro)
OnVol - (Cable)	Ultralite+ - Internet	256/256	2	3	6.95	16.19
	Red - Internet	2048/256	10	3	5.95	13.86
	Blue - Internet	5120/512	20	5	13	30.28
	Lite - Internet + Telephony	2048/256	20	3	8.90	20.73
	Sonic - Internet + Telephony	5120/512	30	4	15.95	37.15
	Business - Internet + Telephony	6144/512	Nil	7	23.91	55.70
Waldonet	Starter Pack	2048/512	12	3	5.95	13.86
	Entertainment Pack	2048.512	Nil	3	9.87	22.99
	4096kbps unlimited	4096/512	Nil	5	19.32	45.00
	Business 4096kbps (8GB)	4096/512	8	5	14.98	34.89
	Business 4096kbps Unlimited	4096/512	Nil	5	26.67	62.12
NextWeb	Basic	2048/512	2	1	5.95	13.86
	Basic Plus	2048/512	5	1	6.95	16.19
	Basic Plus	4096/512	5	1	9.90	23.06
	Entry 16GB	2048/512	16	1	10.95	25.51
	Entry 16GB	4096/512	16	1	12.50	29.12
	Power 22Gb	2048/512	22	1	12.50	29.12
	Power 22Gb	4096/512	22	1	14.50	33.78
	Delux 30GB	2048/512	30	1	15.50	36.11
	Delux 30GB	4096/512	30	1	18.50	43.09
	Delux 30GB	6144/512	30	1	20.00	46.59
	Freedom	2048/512	Nil	1	9.95	23.18
	Freedom	4096/512	Nil	1	17.95	41.81
	Freedom	6144/512	Nil	1	21.95	51.13
GO	2MB	2048/512	12	1	5.95	13.86
	2MB	2048/512	25	1	8.90	20.73
	4MB	4096/512	12	3	9.95	23.18
	4MB	4096/512	25	3	12.50	29.12
	4MB	4096/512	40	3	13.85	32.26
	6MB	6144/512	25	3	15.80	36.80
	6MB	6144/512	40	3	20.00	46.59
	Business ADSL	4096/512	8	5	12.71	29.61
	Business ADSL	6144/512	Nil	5	22.63	52.71

Source: Websites of ISPs as at 30th December 2007

1. Download/upload speeds are in kbps and are only guranteed on best effort basis.
2. Monthly cost include 18% VAT.

Up till November 2007 there were two DSL product offerings in the market, the 512/512kbps product and the 4096/512kbps product. The cable operator offered a number of products ranging between 128/128kbps up to 4096/512kbps. All products with the exception of the business packages had very strict download limits. A historical depiction of broadband packages and prices is provided in Appendix 5.

During the yearly IT fair held in November 2007, both GO and Melita Cable revamped their product line-up, offering new products with increased speeds and download limits. Furthermore a number of packages have been reduced in price.

The most noteworthy development was the upgrading of nearly all low-end tier packages to minimum download speed of 2MB, with the exception of the 256kbps product of OnVol. This upgrade meant that all always-on connections in Malta are now fully broadband services. In addition, GO and Melita Cable attached a 12GB and 10GB download limit respectively to this product whilst leaving the price set at €13.86.

Another important development was the launch of 5MB and 6MB download speed products substituting the existing high-end 4MB products. Here again both incumbents are offering significant increases in download limits with no change in price. GO maintained the existing 4MB products though at lower prices.

These changes imply that consumers are now getting better value for money both in terms of lower retail prices and also in terms of price/speed ratio. Such an overall revamp of broadband speeds, download limits and price reductions was unexpected since no significant change in prices or packages was observed during the past 2 years. The MCA assumes that these changes are not a one-off incident, but rather an intrinsic feature of the market as a result of increased competition.

Independent ISPs such as Waldonet and Nextweb have also increased their product offerings in line with GO's offerings. However, it is worth noting that all independent ISPs can only offer retail broadband products with download and upload speeds as offered by GO. ISPs can only at present differentiate their retail product with respect to download limits and contention ratios. This limitation is greatly hindering the ability of ISPs to offer a variety of products in the market.

Both GO and independent ISPs are still offering a pay-per-use Internet connection with a speed of 1024/256kbps. Users can purchase a bundle of hours depending on their expected usage. However, this package has now become obsolete since the introduction of the 128kbps product (today the 2MB product). The minimum cost per month to maintain the pay-per-use package is €17.47 as opposed to the monthly cost of €13.86 of the latter. Given that the 2MB product is an always-on connection as opposed to the pay-per-use product, the attractiveness of the latter has further decreased.

Following this latest spate of changes, consumers are now presented with a larger selection of broadband packages than before. Historically Melita Cable and GO had only offered 2 main products in the market. The price range has also widened to accommodate a larger section of the Maltese population. Broadband growth figures confirm that when the low price point of €13.86 was launched in May 2006, new subscriptions soared upward, implying that price-sensitive users (low-income families, dial-up users) where attracted to broadband.

The launch of a 6MB broadband product has also increased the choice for users who require a fast broadband connection. Coupled with increased download limits, these users are now better served in their requirements. Although in other EU countries such as the UK, France and Netherlands the range of high-speed broadband products is far greater, the launch of the 6MB product is a step in the right direction. The MCA expects all network operators to continuously upgrade their network in order to support higher broadband speeds, which will be essential for future broadband usage. In this respect the MCA believes that network operators have still a long way to go in improving existing high-speed offerings.

Vodafone is also offering wireless broadband at a speed of 2048/512kbps, with various download limits ranging from 10G to 40G, with a price range from €13.86 to €30. Users therefore have an additional broadband service provider offering a similar broadband service to the traditional DSL and cable services.

In conclusion the MCA believes that following the recent changes in broadband packages, and following the entry of Vodafone as a new operator, the present range of broadband offerings is adequate in order to fulfil the need of a wide range of users. Prices of a number of broadband packages have also been significantly decreased over the past few months, which implies that consumers

are getting better broadband packages at a cheaper price. Nevertheless, the MCA is of the opinion that the prices of lower-end packages should be further reduced so as to increase the affordability of broadband for everyone. This should also be coupled with continuous upgrades in higher-end packages, which would ensure that Maltese consumers have adequate broadband packages, comparable to those available in other EU countries.

The government has also very recently announced a scheme called 'blueskies'[20] whereby households who did not have a broadband Internet connection as at December 2007, are eligible to apply for this offer which subsidises the cost of a €13.86 connection to just €3 per month. Government is promoting this initiative in conjunction with a number of ISPs to allow unconnected households and the remaining dial-up users to upgrade to broadband. This scheme will subsidise price of the broadband connection for a period of one year, following which end-users will have to pay the full commercial price. The scheme is intended to attract those households that are very price sensitive and have up till now forgone the use of broadband Internet.

3.4.2.2 Wholesale products

As discussed in the market definition section, both GO, Vodafone and Melita Cable are capable of providing wholesale broadband access services to their downstream and independent ISPs. Although using different network components, vertically integrated ISPs are able to provide similar retail broadband offerings.

Melita Cable currently offers wholesale access exclusively to its downstream ISP and to MITTS Ltd. Despite numerous requests from other ISPs, Melita Cable has to date refused to grant access to independent ISPs, with the noted exception.

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.

GO offers a number of wholesale access products both to its own downstream ISP and also to independent ISPs. A technical description of these DSL wholesale access products has already been provided in Section 2.5.3 above.

GO is currently making use internally of a full bitstream access product named 'Emerald' (hand over point at ATM level), however independent ISPs have limited choice in the type of wholesale access that they obtain. GO determines the prices and conditions of these access services. These ISPs are therefore not in a position to provide a fully different retail broadband product from that offered by GO. ISPs can only differentiate the downloading limits and contention ratios, but not upload and download speeds.

In conclusion the MCA believes that since Melita Cable does not provide wholesale access to independent ISPs, and GO has only limitedly offered wholesale access products, ISPs are constrained to emulate the product offerings of GO. The range of retail products offered by independent ISPs clearly demonstrates that whilst these ISPs can only emulate GO's packages, GO and OnVol are able to dictate pricing and speeds.

[20] Link to Government site on 'Blueskies scheme' - http://www.miti.gov.mt/site/page.aspx?pageid=3180

The MCA believes that this situation greatly hinders the competitive edge of independent ISPs, which could potentially stimulate more competition in the market.

3.4.2.3 Ability to replicate products

Although Melita Cable and GO 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. Over time, both firms have 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.

This has been the case in a number of instances, where both GO and Melita Cable doubled the speed of their connections:

- In October 2004, both operators upgraded the download speed of their main package from 128kbps to 256kbps and from 512kbps to 1024kbps, and both introduced download limits at the same time.
- In June 2005 OnVol upgraded its products from the 512kbps to 2048kbps and from 1024kbps to 4096kbps, whilst GO upgrade all its 256kbps and 1024kbps products to 2048kbps.
- In May 2006, GO again upgraded all its products from 2048kbps to 4096kbps, and during that month OnVol also launched the 128kbps product. GO replicated this offer in September 2006.
- In March 2007 GO doubled the speed of its 128kbps connection to 256kbps, and in June 2007 OnVol launched a new product with a 256kbps connection.
- In November 2007 Melita Cable and GO upgraded their lower tier products from 128 and 512kbps respectively, to 2048kbps at same price. Several increases in download limits on all products and launch for the first time of a 6MB product.

From the list above it is clear that both operators have sufficient excess capacity and the necessary infrastructure to replicate the moves of each other within a short time span.

Given that both operators enjoy national coverage and target the entire market, Melita Cable and GO tend to face the same demand and supply market conditions. Similar market characteristics would likely be countered with similar responses and actions, which may give rise to coordinate market strategies.

By engaging in similar practices, both operators are able to shape the market and limit the level of competition to a desired level. Engaging in individual behaviour would put unnecessary pressure on both operators. Consequently, given the symmetrical position that both undertakings enjoy in the market, there is an incentive to engage in similar behaviour to limit competitive pressures.

Such behaviour was largely observed up till late 2007. As the tables in Appendix 5 show, all upgrades, changes in price and/or download limits where effected by Melita Cable and GO within a very short time span from each other. Furthermore, price reductions where an exception rather than a common practice. This indicates both companies where very attentive of the strategies they were using.

Nevertheless, the MCA notes that the recent wave of price reductions and increases in broadband speeds would seem to indicate an element of competition. Although for several years price reductions where a rare occurrence, the latest developments and the entry of Vodafone in the market may have triggered both incumbents to revise their strategies.

The MCA is therefore unable to present conclusive evidence that GO and Melita Cable are engaging in coordinated practice to limit price competition at a desired level, despite the fact that the incentive remains present.

3.4.3 Lack or reduced scope of 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 has been characterised by a duopolistic market structure for many years, where the cable and DSL incumbents face similar demand and supply conditions, which consequently is reflected in the similar portfolio of retail services offered by both operators.

Independent ISPs served for many years as a good alternative to the two vertical incumbents. However ISPs were never in a position to pose a credible constraint on retail prices, since they could only at best mirror the prices set by GO.

The entrance of Vodafone seems 'prima facie' to have upset any coordinated incentive to limit price competition, although it is as yet early to conclusively say whether such entry is in effect the causative factor of recent price changes and, if so, whether it will have long lasting effects.

3.4.3.1 Price trends

The tables depicted in Appendix 5 outline the historic price trend of DSL and Cable broadband services since their initial offering in 2001.

Melita Cable

Starting with the prices of cable broadband provided by OnVol, over the past 6 years there was no reduction in prices. On the contrary there was an increase in price in January 2004 which is attributable to a 3% increase in VAT. The first decrease in price for a cable product was registered in April 2007 for the high-end residential product named Sonic, whereby the price decreased from €47.68 to €37.15. It is pertinent to note that this decrease was coincident with the issuance of the Commission's draft Veto decision on the first notification of the market review of Market 12.

Since the introduction of cable broadband, OnVol increased significantly the download speed on a number of occasions without changing the price. However in June 05 following a quadruple increase in download limit, OnVol introduced download limits which were never imposed prior to this date. This implied that whilst a user could now download data at a much faster rate, the amount of data that could be downloaded was limited[21]. This limitation greatly impinges on the

[21] OnVol includes only downloads and does not measure uploads (as of 17/10/2005). The traffic volume only includes the foreign-based communication. Traffic between the end-users' computer and other computers in Malta that participate in "MIX" (Malta Internet Exchange) is not counted. Bandwidth usage is not measured nor recorded between 11:00pm and 7:00am.

ability of end-users to download continuous streams of data required for example for online radio, TV streaming or playing online games.

An important development from OnVol was the introduction in May 2006 of the low-end 128/128k product priced at Lm5.95. This product was presumably targeted mainly at dial-up users, which could not afford paying a high price for a high-speed broadband connection. With this low price point OnVol was in a position to attract a large number of dial-up users that beforehand were never going to upgrade to a broadband connection given the high costs.

This offer proved to be a very attractive option for many customers, including existing broadband customers who unfortunately decided to downgrade their existing 2MB or 4MB connection to a 128K connection. It is reasonable to deduce that this downgrade was mainly the result of the lower price point. The large number of customers that downgraded their broadband product clearly proves that consumers view existing broadband prices as expensive and were therefore willing to sacrifice quality in order to pay a significantly lower price.

Following a total absence of price reductions for many years, in November 2007 Melita Cable revamped its product line up, decreased the prices of most of its exiting connections and upgraded the speed and download limits of its all its packages. The biggest change was within the low-end 128/128k product, which was upgraded to a 2048/256k product and its download limit was increased from a mere 1GB to 10GB keeping the same price of €13.86. This significant change is positive both in terms of quality for consumers and also in terms of broadband penetration rate, which will increase significantly as a result of this upgrade.

Another change was the reduction in price of the existent 2048/256k from€29.89 to €20.73, which now also includes a 20GB download limit instead of just 7GB. Melita Cable also launched a new product called Blue which includes a 5120/512k connection and 20GB download limit at a price of €30.28.

Melita Cable also upgraded the business package with an upgrade in speed from 4096/512k to 6144/412k, coupled with a concomitant decrease in price from €65.71 to €55.7. This is the first time that a product with a speed greater than 4MB has been offered in the Maltese market.

GO

A similar picture can be portrayed for GO when analysing the pricing structure for ADSL packages. Similarly to OnVol, between February 2005 and August 2005 GO increased significantly the download speeds but introduced download limits for all of their packages, whilst maintaining the same prices[22]. At that point end-users could only acquire a 2MB connection from GO, and the only choice that was offered was on the download limit.

In May 2006 GO further doubled the speed of all broadband packages from 2MB to 4MB, and soon after in September 2006 it replicated OnVol's 128/128k package. In March 2007, again coincident with the draft Veto proceedings by the Commission on the MCA's notification of Market 12, GO increased the download limits and doubled the download speed of the 128/128k package to 256k/256k. In July 2007 GO again doubled the download speed and limit of the lower end package from 256/256k to 512/512k and from 1GB to 2GB respectively.

[22] GO does not measure data traffic downloaded during Off-Peak hours between 00.01 – 05.59am.

Similar to Melita Cable in November 2007, GO improved its product line up, through upgrades in speed and download limits. The biggest change was within the 512/512k product, which was upgraded to a 2048/256k product and its download limit was increased from a 2GB to 12GB at the same price of €13.86 or to 25GB at €20.73.

GO also offered generous upgrades in terms of download limits to all its existing 4096/512k products and left all prices unchanged. An important development for GO was the launch of the 6144/512k product with a download limit of 25GB or 40GB priced at €36.8 and €46.59 respectively. As opposed to Melita Cable, GO is the first provider to offer the 6144/512k product to its residential customers apart from the business customers.

For its business packages GO discontinued the 4096/512k 8Gb download limit product, and instead upgraded its unlimited 4096/512k package to 6144/412k at no increase in cost.

Patterns

Although there is no clear pattern in establishing who amongst GO or OnVol makes the first move in changing broadband packages, it is clear that both operators tend to match each other's offer with relative ease and in a short span of time. Up till the beginning of 2007 both operators adopted a very cautious approach on price reductions, as evidenced by the very few occurrences of such reductions since 2001. The pattern established by these operators was to increase the download speeds and/or limits as opposed to reduction in prices.

A historical review of prices would therefore conclude that although significant improvement has been registered in terms of download speeds, prices have remained largely unchanged and as of 2004 strict download limits have been introduced.

Nevertheless, during 2007 Melita Cable and GO seem to have departed from this muted price competition strategy, and have decreased their prices a number of times, increased considerably download limits and also launched new and improved product offerings.

It is pertinent to note that these significant changes did not happen as a coincidence. The past year was a particular one for the broadband market in Malta since the MCA was in the process of making the case to the EU Commission on the need to regulate Melita Cable and GO (via a re-notification of this market, following the withdrawal of the previous notification) to amongst other things enforce open access agreements. This implied that both operators were under the constant threat of regulation. Coupled with this was the entry of Vodafone with its WiMax broadband offerings, which could potentially exert an element of competitive pressure. Consequently, the MCA believes that this sequence of events induced Melita Cable and GO to react to changing market conditions.

3.4.4 Profitability

The several aspects discussed above would show that GO and Melita Cable face similar market constraints and have attained an almost symmetrical position in the wholesale market. In the retail market OnVol has attained a 52% market share, whilst the DSL market share is split amongst GO and a number of independent ISPs. Nevertheless, over the past years GO has successfully managed to raise its market share at the expense of independent ISPs, as depicted earlier on.

Appendix 6 (Confidential) illustrates the financial situation of the main market players in the broadband market. As the MCA does not have access to accurate financial data through separated accounts, and given the lack of structural separation between wholesale and retail operations of GO and Melita Cable, the Authority could not undertake a detailed financial analysis.

The information depicted in the first table is compiled from the published accounts of both network operators. The ROCE figures reported by the undertakings, show that Melita Cable and GO are making high profits.

Although, the figures of GO (previously Datastream) include revenues from non-broadband services, it is clear that at wholesale level GO has been making very high profits during the past years. In contrast, at retail level GO (previously Maltanet) was not making profits. These statistics can also shed light on the way GO has been pricing its wholesale services. The fact that GO was registering wholesale profits in excess of 100% whilst incurring losses or negligible profits at retail level, points to a likely situation where independent ISPs were being charged a high wholesale price for broadband access.

Melita Cable accounts are somewhat less clear to interpret given certain anomalies in the figures reported and as explained in the notes to the table. On its part Melita Cable was registering very high profits at a retail level through its retail ISP OnVol, but more realistic profits at wholesale level. During the past two years, the accounts show that OnVol has being making record profits.

Given that Melita Cable and GO provide similar services at similar prices, it is interesting to note, even from the limited data available, how these two companies allocate the profits in a different way. GO places a higher allocation on the wholesale side given that it offers wholesale services to other ISPs, whilst Melita Cable attributes profits to the retail operation since it faces no direct competition on cable broadband. Irrespective of the accounting policies used by these operators, it is clear that Melita Cable and GO are making high profits in the provisioning of broadband services. At the same time, the accounts provided by GO would indicate that independent ISPs are likely to be facing considerable difficulties in making a reasonable return on their retail activities.

The second table provided in Appendix 6 further illustrates the strength of the two vertically integrated ISPs in comparison with the independent ISPs. The table shows the projected revenues of all broadband service providers in Malta for 2006 and 2007. It is clear that the discrepancy between the profits made by independent ISPs and the vertically integrated ISPs is very significant. The graph depicts the revenue of all service providers for 2006 and 2007. Following a specific request to both operators to provide detailed accounting information, the figures of OnVol and GO for 2007 are not available as these are being reported as an aggregate figure for the group, and therefore such a figure is not informative for the purpose of this analysis.

Despite the consolidation and merging of three of the 'largest' independent ISPs in the market, their financial situation is not comparable to that of OnVol or GO, and the projections for the year 2007 are not getting any better. Another development to note is the closure of four small ISPs during 2006. Although the MCA believes that consolidation in the broadband market is required, this should not be a consequence of unaddressed market failure.

In conclusion, the MCA believes that GO and Melita Cable are earning high profits (either at retail or wholesale level), which is not a good indication of a fully

competitive market. On the other hand, independent ISPs, despite merging to become more efficient and attain a larger subscriber base, are still experiencing a rapid and continuing decline in market share and revenues. Although diseconomies of scale have a great impact on the profitability of small ISPs, it is also pertinent to note that ISPs have been facing great difficulties to obtain decent wholesale inputs from network operators to be able to compete effectively.

3.4.5 Similar cost structures

As discussed in the market definition section, although Melita Cable and GO deploy different technology platforms, the retail and wholesale broadband services that these provide are very similar or identical. 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 were 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 2.5.1.4 above, the MCA detailed a number of common elements that both Melita Cable and GO utilise to provide broadband services. Although some of the components are different, their intended uses and functionality are very similar. In fact, these network components are treated very similarly on a commercial basis. Furthermore, where differences in the network setup exist, such as the managing of shared capacity for the provision of cable broadband, the difference in cost is not significant and does not materially impinge on the cost structures of the operators.

The MCA is of the opinion that none of the broadband providers has a competitive advantage, such that it is able to provide broadband related products and services at a significantly lower cost than its competitor. Although deploying different technology platforms, the similarity in infrastructure used in the provision of broadband services points towards the conclusion that Melita Cable and GO face similar cost structures in the provision of wholesale and retail broadband services and will continue to do so during the period of this review.

3.4.6 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, while those in which the HHI is in excess of 1800 points are considered to be highly concentrated.

Despite the large number of ISPs present at retail level the HHI index shows that the market is highly concentrated.

HHI Index - Retail Connections					
	2004Q4	2005Q4	2006Q4	2007Q2	2007Q3
OnVol	*2209*	*1901*	*2500*	*2600*	*2735*
GO	*400*	*724*	*1056*	*1156*	*1163*
Other DSL ISPs	*1156*	*870*	*306*	*225*	*182*
HHI	**3765**	**3495**	**3863**	**3981**	**4080**

Since the end of 2004 the index continued to increase as the market share of independent ISPs is shrinking. From the individual trends it is clear that GO is increasing its presence in the market at the expense of ISPs. The retail index is over time moving towards the index obtained for the wholesale connections provided in the next table, implying that the retail market is becoming more concentrated.

As at September 2007, the number of wholesale cable broadband access lines was around 39,400 whilst the number of wholesale DSL access lines stood at 35,300, which corresponds to a wholesale market share of 52.7% and 47.3% respectively. Given these figures the HHI index in September 2007 stood at 5015. as depicted in the table below.

HHI Index - Wholesale Connections					
	2004Q4	2005Q4	2006Q4	2007Q2	2007Q3
GO	*46.5%*	*50.6%*	*49.5%*	*48.2%*	*47.3%*
Melita Cable	*53.5%*	*49.4%*	*50.5%*	*51.8%*	*52.7%*
HHI Index	**5025**	**5001**	**5001**	**5006**	**5015**

The HHI index indicates that the wholesale market is highly concentrated. This high concentration is likely to remain stable during the timeframe of this review. Based on this trend, the MCA concludes that market shares are likely to remain stable over the next year, with each operator sharing an approximate equal number of wholesale broadband connections.

One important development to consider is the entry of Vodafone as a third broadband operator in June 2007. Despite the number of operators has increased from 2 to 3, due to the present negligible market share of Vodafone there was no significant impact on the HHI index.

Recalculating this index including Vodafone's wholesale share, would result in an HHI index of 4996. This result shows that the concentration remains high in the wholesale market.

Given the low take-up so far of the new wireless service the MCA believes that during the next year the impact of Vodafone on the HHI index will be very limited.

The MCA also believes that even in the event that new BWA operators enter the market within the next year, the HHI index would still indicate that the market is

highly concentrated, although more operators would imply more choice for the customer.

3.4.7 Lack of technical innovation and maturity of technology

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

Developments in the Euro-DOCSIS and ADSL standards are 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.

In 2007 Vodafone was the first BWA licence holder to deploy its WiMax network using the d-standard. This adds on to the two existing 3G HSDPA networks owned by GO and Vodafone over which both operators are offering broadband download speeds of up to 3.2Mbs. GO has already announced that in the near future it is expected to increase the download speed up to 7.2Mbs. The emergence of wireless Internet solutions has therefore brought innovation in a market dominated by traditional wired services.

The MCA considers that with respect to the provisioning of DSL and cable broadband services the technology has now matured. The newly available wireless technologies are still in their infancy stage and further innovation is expected in the near future. There is also the potential for another new 3G HSDPA network, which is likely to be launched by Melita Cable itself late in 2008, and also for 2 other BWA networks.

The MCA therefore concludes that even though DSL and cable are now relatively mature technologies, the broadband market presents signs of technical innovation with the new emerging wireless networks. The emergence of these new technologies will also likely stir the traditional incumbents to continue to invest and upgrade their network in the future.

03.5 Sustainability of 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 any deviations; and b) an effective retaliatory mechanism with which members of the oligopoly can retaliate, following deviation by one its members.

3.5.1 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 breaches the agreement to the detriment of the others.

The prices at the retail level are publicly known through advertising campaigns and are published on the operators' respective websites. Movements in retail prices are immediately known by the other operator and also by consumers. 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 on a yearly basis during the month of October/November. 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 the highest number of new connections is registered during the last quarter of the year.

Consequently, a deviation in terms of retail price movements would be immediately noticed and would call for a reaction by the aggrieved party. The latter is most likely to take parallel action and counter the deviation.

With regards to the pricing of a wholesale access agreement, this would be less transparent given that the deviating party would have negotiated the agreement in private with the service provider. Nevertheless, if the aggrieved operator decides to counter the offer and provides access to interested service providers, the wholesale price offered by the first mover would become known through negotiations. On the other hand, if a network operator decides to change the price of an existing wholesale access agreement, the other operator would likely notice the change in price soon after, given that the reduction will likely be reflected in lower retail prices. The aggrieved operator can then decide whether to counter such reduction in its retail prices as well.

However, in this particular market transparency at a wholesale level is mainly focused on the supply of access, rather than the actual pricing at which this access is provided. This is because Melita Cable does not grant wholesale access to third parties, and therefore the focal point of a coordinated outcome is access rather than pricing.

When a wholesale agreement is provided (or not) by one of the operators it will be immediately visible by the other operator. Therefore if one of the operators deviates from the coordinated outcome by granting (or refusing) access to third parties, the other operator would immediately notice and seek remedial action.

The MCA therefore believes that the market for wholesale broadband access in Malta presents sufficient transparency and detection mechanisms that would sustain a coordinated outcome. The ability to detect deviations in this market is further enhanced given that there are clear elements of transparency in the retail broadband market.

3.5.2 Retaliatory Mechanism

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.

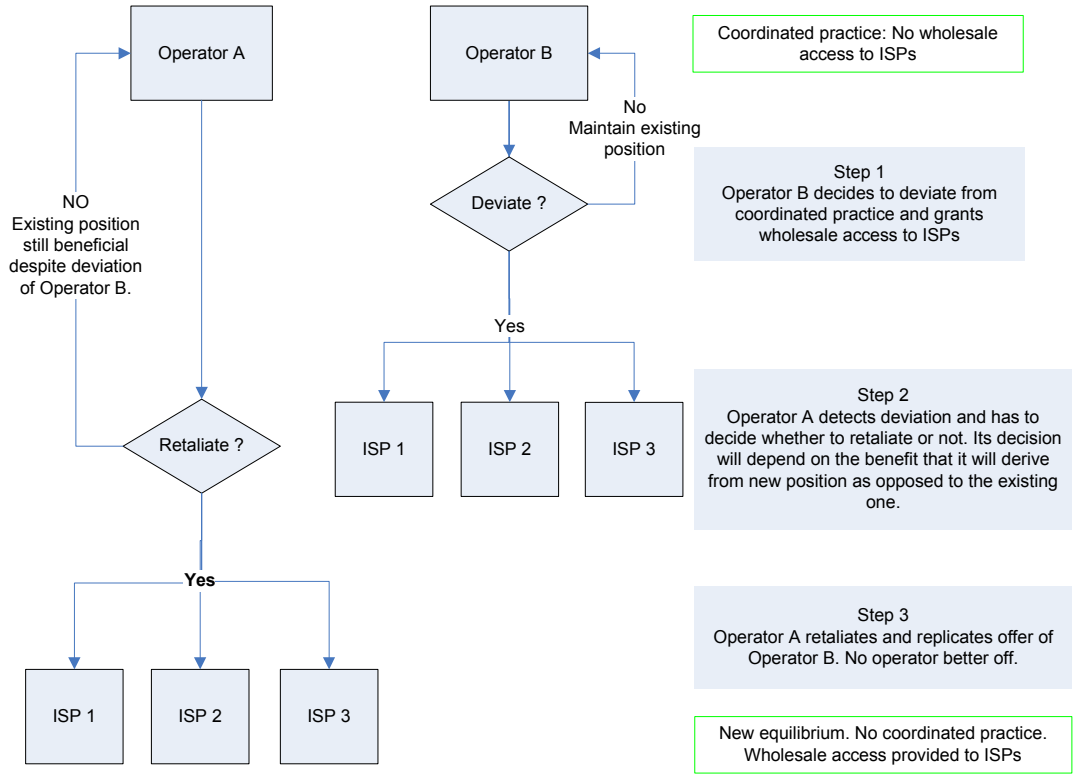
An effective punishment mechanism in an electronic communications market would commonly be the threat of resorting back to a state of normal competition. If the members of the oligopoly hold a sufficiently similar position in the market, a deviation from an agreed outcome and a reversion to normal competition would be detrimental to both. It would therefore be more profitable for both companies to choose a coordinated outcome, rather than a competitive one.

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 lower overall profits.

At the wholesale level coordination happens with respect to access to third party ISPs. The following sections analyse the likely course of action that a deviating and aggrieved party would take in the event of a deviation from the coordinated outcome, under various circumstances.

3.5.2.1 Greenfield scenario

In a hypothetical scenario where two operators face similar market constraints and no regulation is present in a market (Greenfield scenario), a deviation from a coordinated practice would call for retaliation by the aggrieved party. The diagram below illustrates the likely course of action of the two parties.



In a hypothetical Greenfield scenario the retaliatory mechanism can be observed clearly. When operator B decides to deviate from the coordinated outcome and grant wholesale access to ISPs, operator A has to decide whether to retaliate or not. The decision to retaliate implies that the new position would be more beneficial for operator A as opposed to maintaining the current position. If operator A retaliates by offering access, the final outcome would be that both operators have attained a new equilibrium position where no coordinated outcome is present. Following the retaliation, no operator is gaining any added benefit over the other.

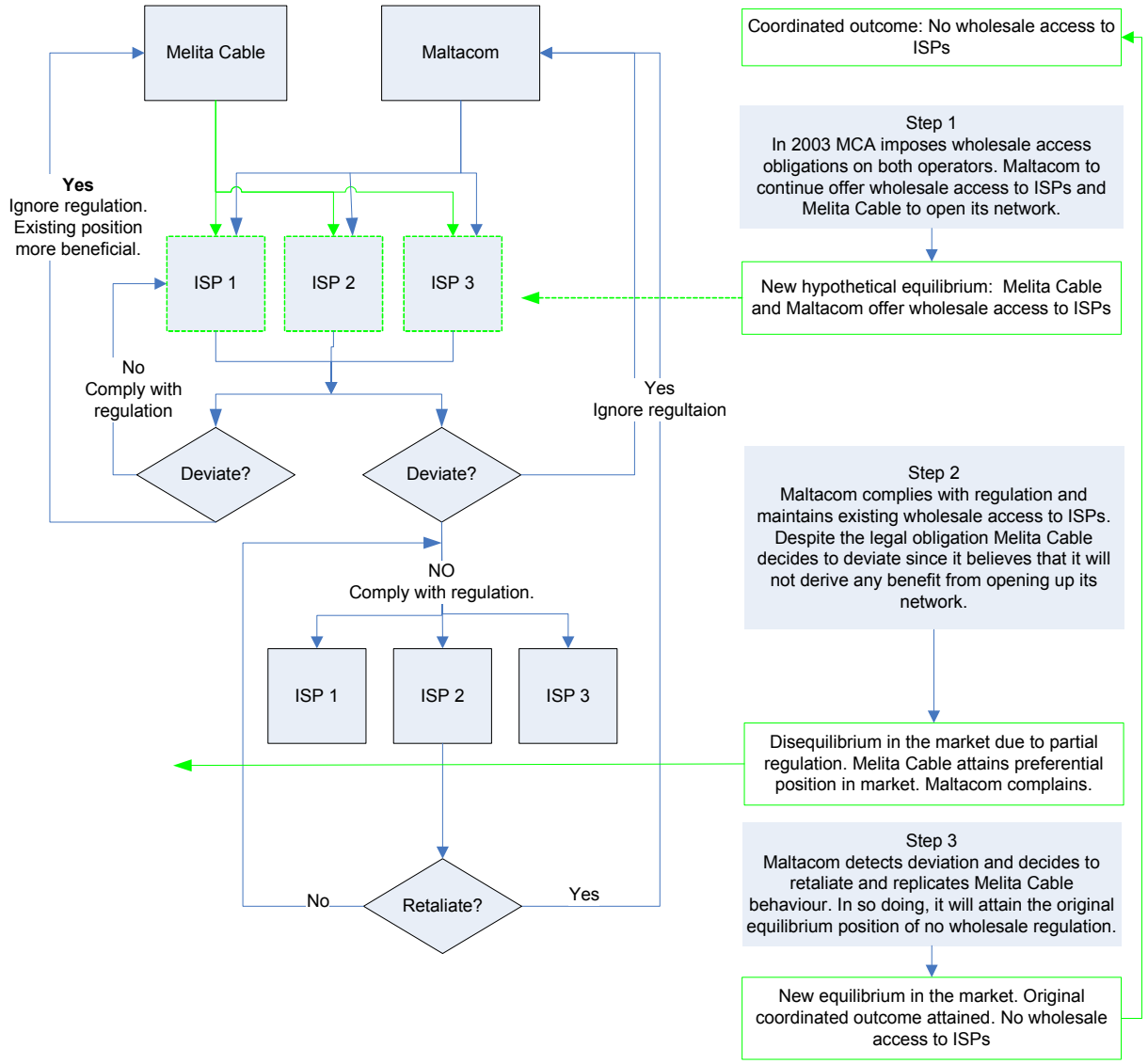
3.5.2.2 Present Case - Partial Regulation

At present the MCA imposes wholesale access obligations on both GO (at the time Datastream) and Melita Cable as per the 2003 decision. To date only GO is abiding by these regulations and Melita Cable has maintained its monopoly in cable broadband provisioning.

Following the MCA decision, GO continued to offer wholesale access to ISPs since it assumed that Melita Cable would now also start offering wholesale access to ISPs.

However, when Melita Cable ignored the regulation and deviated from its obligation at law, GO found itself in a disadvantaged position compared to Melita Cable. Whilst the latter continued to supply cable broadband services exclusively through its retail ISP, GO had to share the DSL market share with other ISPs. Following Melita Cable's deviation by not providing wholesale access, the logical reaction from GO was to seek remedial action through retaliation by itself evicting independent ISPs from its network in order to attain a similar monopolistic position as Melita Cable.

Given this scenario, the MCA safely assumes that the desired position in the market for both GO and Melita Cable is that of a vertically integrated operator without any wholesale access obligations. Given these market conditions the retaliatory mechanism in the Maltese market operates as depicted below.



As depicted above, and as amply demonstrated by market data discussed earlier, the best outcome for both operators is one where no wholesale access is provided and GO and Melita Cable are free to supply the market through their retail ISP exclusively.

Following the imposition of wholesale regulations in 2003, the two incumbents were required to comply with the obligation and provide wholesale access to ISPs. The MCA had found both operators as being dominant and therefore opening up their network would have resulted in added benefits to end-users. This hypothetical scenario would have put GO and Melita Cable in the same position in the market, i.e. independent ISPs would have had the ability to offer both retail cable and DSL broadband services, and finally end-users would have had increased choice and better quality of service. However Melita Cable deviated

from the new market equilibrium by appealing the MCA decision[23]. The EU Commission had at the time informed the MCA at the imposition of an open access obligation on Melita Cable went against the principles of the 1998 EU framework, and therefore the MCA could not enforce its obligation on Melita Cable.

Within this scenario, it was logical for Melita Cable to refuse any request for access since it was in a better position to provide cable broadband services in the entire market exclusively, without the need of independent ISPs.

When GO detected the deviation by Melita Cable, it was clear that GO was now standing at a disadvantaged position. This was further exacerbated by the fact that Melita Cable was rapidly gaining significant market share at a retail level, without granting access to ISPs.

Consequently GO decided to retaliate to Melita Cable's action, by engaging in various discriminatory practices with the sole intention of squeezing independent ISPs from the market. Such a strategy would allow GO to attain the same position of Melita Cable i.e. that of providing no wholesale access. Therefore, in the end both Melita Cable and GO would attain the original preferred position of no wholesale access obligations.

3.5.2.3 Future Scenarios

Taking a forward-looking approach, within the next year or more, two possible scenarios can be envisaged; one where no coordination will take place, and a second scenario where coordination may still take place by Melita Cable and GO.

Given the entry of Vodafone in the market it is much more difficult for Melita Cable and GO to sustain a coordinated outcome. Any strategy adopted by the colluding parties would have to support not only the transparency of actions and any possible retaliation mechanism, but also the actions of Vodafone as an outside party to agreement.

During the first months of operation Vodafone sustained a pricing strategy which was much more expensive than that of Melita Cable and GO. This resulted in a negligible take-up of the BWA service, and consequently neither Melita Cable nor GO made any changes to their products. However when Vodafone became more aggressive and reduced its prices, both the cable and DSL incumbents quickly followed with even bigger changes. This indicates that a coordinated strategy on price is highly unlikely to be sustained in the future.

With respect to wholesale access the coordination can still be achieved if all the three operators agree not to provide wholesale access to third parties. This would effectively mean that the new entrant Vodafone would need to join the existing operators and follow their strategy. Given that Vodafone have as part of their licence conditions an obligation to provide wholesale access to third parties, the achievement of a coordinated strategy on lack of wholesale access is made further difficult.

The MCA therefore believes that a coordinated strategy between Melita Cable and GO on wholesale access has been made more difficult to achieve with the entry of the third operator Vodafone.

[23] This appeal has not yet been determined.

03.6 Potential market constraints

In assessing the sustainability of 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.

3.6.1 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.

The MCA has found that the broadband market experienced a strong period of growth and has now reached maturity. The maturity of the market is confirmed by the fact that the growth rate in broadband connections had been positive but decreasing over time. This decreasing growth rate is further likely to be observed over the next two years.

At the outset it is pertinent to note that the increase in broadband connections has been driven mainly by upgrades from existing dial-up connects. Whilst broadband figures continued to increase significantly, total internet connections in Malta have only increased marginally, as further explained below.

Starting with the assessment made by the MCA more than a year ago in the previous analysis of this market, the actual figures observed today confirm the Authority's calculations at the time. Calculations were based on data obtained through a consumer survey carried out in January 2005, and actual data observed as at December 2005.

In summary the MCA had estimated that based on the results of the consumer perceptions survey, the potential growth of broadband subscriptions over the two-year timeframe of the review was of 24,500, of which 13,000 subscriptions were to be upgrades from dial-up connections. The MCA had also concluded that the growth of broadband subscriptions was largely dependent on the ability of service providers to attract dial-up users.

The actual figures available today show that from December 2005 till September 2007 broadband subscriptions increased by 26,800 as depicted below.

	2005Q4	2006Q1	2006Q2	2006Q3	2006Q4	2007Q1	2007Q2	2007Q3
Narrowband	40,225	38,884	38,195	35,374	29,436	20,436	19,068	15,211
Broadband	48,546	50,614	52,668	59,374	65,804	69,798	71,494	75,351
Total Internet	**88,771**	**89,498**	**90,863**	**94,748**	**95,240**	**90,234**	**90,562**	**90,562**

The table also shows that whilst the total number of Internet connections increased marginally, narrowband subscriptions decreased by 25,000 from 40,225 to 15,211[24]. This implies that the vast majority of the increase in

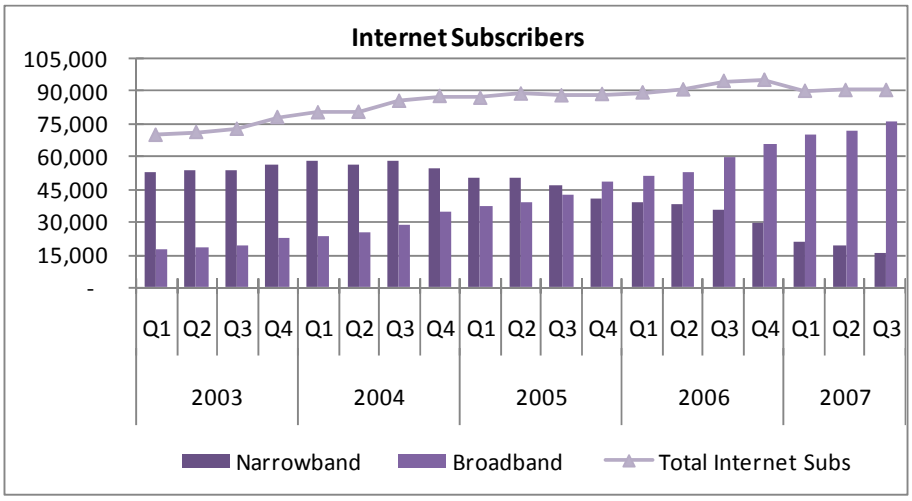
[24] The total number of Internet connections is obtained from the National Statistics Office. Due to the large number of small ISPs, it is very difficult to report accurate figures of dial-up connections. In fact the MCA believes that dial-up connections are over-estimated. ISPs do not make a distinction between active and inactive dial-up accounts, and tend to report all the accounts that still have some hours available for use by the client. This implies that the dial-up figure includes inactive accounts owned by end-users that are now using a broadband connection.

broadband subscriptions is attributable to upgrades from existing dial-up connections. The number of new broadband connections is only estimated to be around 2000.

The MCA also notes that the major drop in narrowband subscribers, and corresponding increase in broadband connections, started in the third quarter of 2006. This coincides with the launch of the 128/128kbps package by Melita Cable and GO at a low price point of €13.86. The major feature that attracted so many dial-up users to upgrade to an always-on product was precisely the low price point of this product. The figures therefore confirm the thinking of the MCA that broadband growth was largely dependent on price sensitive users, namely existing dial-up users.

The recent scheme named 'Blueskies', which was launched by the Government of Malta to attract dial-up users and households which do not currently have a broadband connection, also proved that a low price is a determining factor for broadband take-up. In total more than 6000 applications were posted to obtain a broadband connection for a discounted monthly fee of €3 for a whole year. The positive response should further increase the broadband maturity rate.

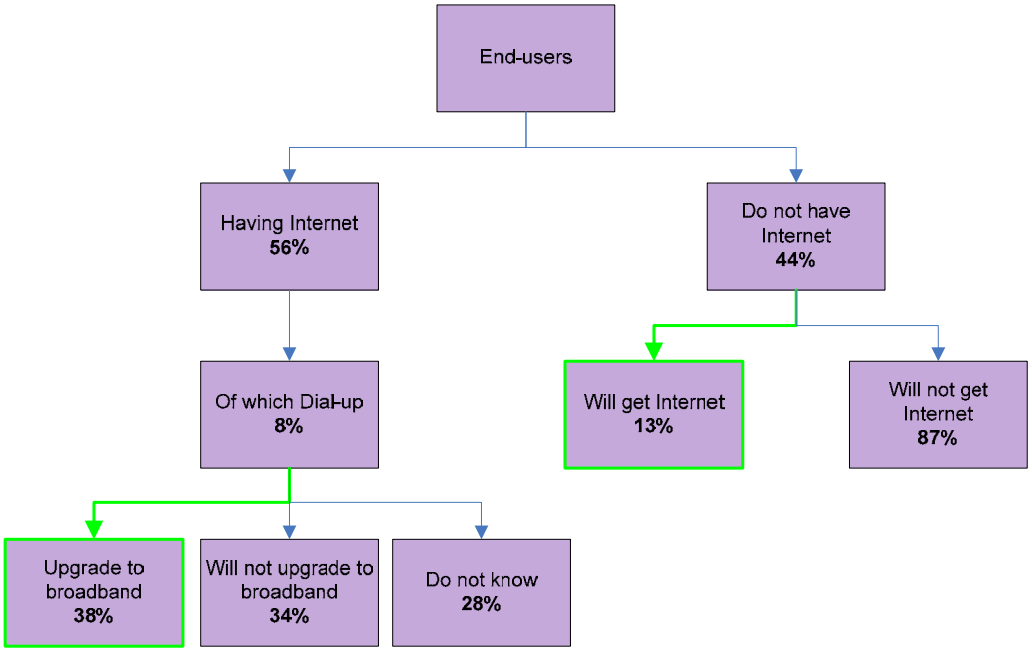
Another important factor to note is the relative stability in the total number of Internet connections, which has set at around the 90,000 mark since the end of 2004. The graph below depicts the evolution of Internet services over time.



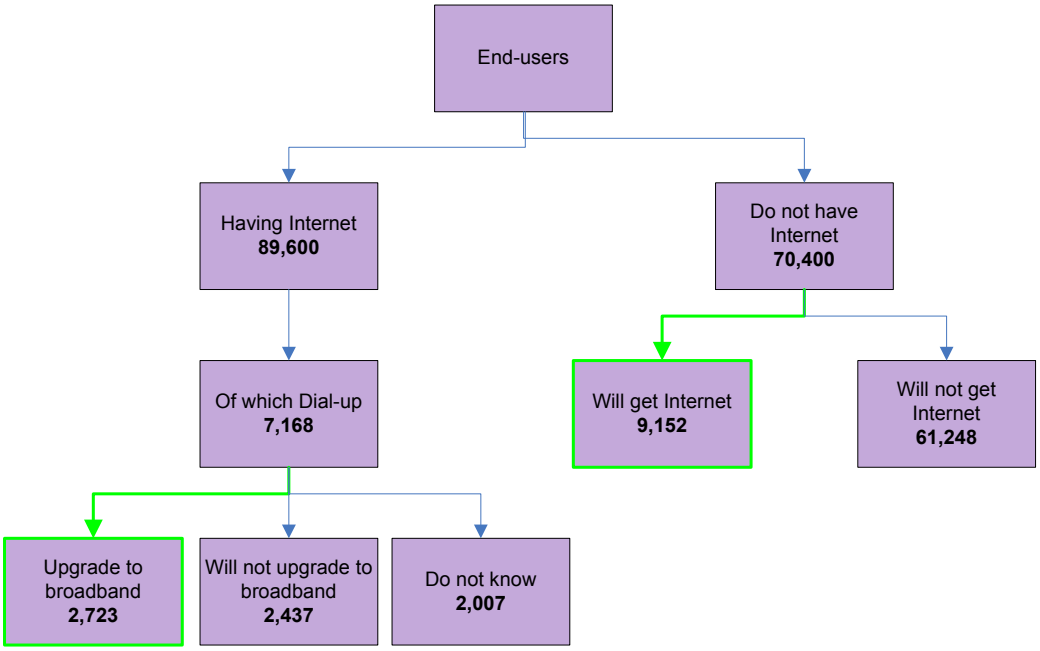
As clearly illustrated above, during the past three years there was no significant expansion in the total number of Internet connections. On the contrary, the demand for Internet services has stabilised, which indicates market maturity. Broadband growth is therefore not fuelled by new demand, but rather by existing Internet users who are upgrading their dial-up service. Consequently, unless the structure of the market changes, broadband growth is likely to stall once the remaining dial-up connections are upgraded.

In this regard, the MCA can update the estimated potential growth in broadband connections for the next few months. This revised estimate is based on the results of a new customer survey carried out in January 2007[25]. The following table presents the findings of the survey responses with respect to the latent demand for broadband services.

[25] http://www.mca.org.mt/infocentre/openarticle.asp?id=1079&pref=33



As at January 2007 there were approximately 160,000 residential and business units in Malta. By applying these percentages obtained from the survey to the number of residential and business units, we will express the survey results in actual numbers as depicted below.



Assuming the survey is representative, out of the 89,600 end-users having an Internet connection as at January 2007, 7,168 still own a dial-up connection. Out of these only 2,723 have stated that they are going to upgrade to broadband. The others stated that they are either undecided or are not getting a broadband connection. The main reasons given for not getting a broadband connection were

that they do not use Internet often (68%) and that broadband is still too expensive (13%).

Out of the remaining 70,400 that do not yet have an Internet connection, only 9,152 stated that they have plans to get a connection. Out of these 9,152 only 30% stated that they would surely get a broadband connection, however for the sake of this estimation the MCA is assuming that all the 9,152 potential customers will choose a broadband connection.

Based on the findings of the survey the MCA therefore concludes that growth in broadband connections within the near future would amount to approximately 12,000[26].

From the actual (observed) data, it transpires that from January to September 2007, more than 5000 dial-up connections had already been upgraded to broadband. These therefore pull down the potential new number of connections for the next months from 12,000 to around 7,000. Given that this estimated figure is only a small fraction of total broadband connections the MCA concludes that the broadband market is mature.

This conclusion is further corroborated by two main structural factors that are a characteristic of Malta and have a major impact on potential broadband growth. The first factor is the level of computer and Internet literacy among households that presently do not have an Internet connection. The growth of broadband connections is directly dependent on the number of households that a) own or are going to purchase a computer and b) are able to operate the computer and Internet.

Through recent numerous public and private initiatives, Malta has registered significant progress in increasing the rate of computer and Internet literacy. However, a good number of households are still not interested in using a computer and/or Internet.

The second important factor that limits broadband growth, in particular the penetration rate, is the relatively low number of households as a ratio of population in Malta as opposed to other European states.

It is widely acknowledged that due to cultural factors, Maltese youngsters tend to live in their parents' house for a longer period than their counterparts in other Member States. In contrast with the majority of European states where young people tend to start living on their own at a young age, the number of single-person households in Malta is relatively much lower. Given that to date, broadband is still regarded as a household service rather than an individual service, the potential for broadband growth is also negatively impacted by this cultural phenomenon.

Considering all of the above, the MCA believes that the broadband market is mature and has reached a stage where it can sustain a coordinated outcome.

3.6.2 High barriers to entry

The wholesale broadband access market is characterised by significant barriers to entry at the network level. The major entry barriers associated with this market

[26] Of which 2,723 upgrades from existing dial-up connection, and 9,152 potential new connections.

are the significant sunk costs involved in building a network with national coverage.

3.6.2.1 Economies of scale and scope

Melita Cable and GO have been present in the market for a large number of years, and throughout the years they have expanded their operations to offer a wide range of services. Melita Cable and GO have also deployed their networks under very favourable conditions, which the Government had at the time deemed reasonable to provide to foster network deployment and stimulate the communications market.

Today GO can provide quad play services whilst Melita Cable is currently in the process to deploy its 3G mobile network and is also expected to be able to offer quad-play services by the end of 2008.

Being vertically and horizontally integrated operators, both Melita Cable and GO are significantly advantaged over smaller service providers. Over time, through multiple service offerings, both operators have managed to acquire significant economies of scale and also enjoy cost savings through economies of scope. Small operators and/or new entrants would find it very difficult to enjoy such benefits and compete accordingly.

3.6.2.2 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.

Entering the wholesale broadband access market requires a large upfront investment resulting in significant sunk costs. 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 in the short term.

Duplication of any of the existing wired networks is highly improbable with within the timeframe of this review. However, there is a good possibility that broadband wireless access networks are deployed within the next two years. Although the deployment of a nationwide wireless network still involves high upfront costs, these are relatively much less than for a wired network. The MCA has assigned three licences for the deployment of a broadband wireless networks. Vodafone launched its services in June 2007 and is currently in the process of achieving nationwide coverage. The other 2 licensees have still not started deployment. A detailed analysis of broadband wireless networks is provided in the next section.

The emergence of wireless technologies has decreased considerably the costs and timeframes associated with the deployment of broadband networks. The geographic size of the Maltese Islands all helps to achieve a nationwide coverage in a relatively short period of time. Nevertheless, the MCA still considers that the deployment of an access network is a major investment and involves significant barriers to entry.

3.6.3 Potential competition

3.6.3.1 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%	

* Months count from October 2005, date of original assignment

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 was expected to be on the market towards the end of 2006. As a result of this shift in timeframe, in order 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 have resulted 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 a Decision[27], granting an extension of 6 months over the original timeframes. The new rollout timeframes were as follows: -

	% 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%	

Following this extension, two applicants namely MobIsle Communications Ltd. and Cellcom Ltd. requested an additional extension to these deadlines. In determining whether to grant or refuse these requests for extension, the MCA took utmost account of the main objectives underlying the assignment process, the reasons behind the extension granted in May 2006, the responses received, as well as the technical developments that had taken place in the intervening time and those which were likely to take place subsequently. In view of this the MCA deemed the requests for an additional extension unjustified[28].

[27] http://www.mca.org.mt/infocentre/openarticle.asp?id=820&pref=6

[28] http://www.mca.org.mt/infocentre/openarticle.asp?id=1016&pref=6

However, to make up for the lapse of time from the date the initial request for a further extension was filed to the date of publication of the said decision, a 3-month extension was granted for the first lag of the rollout period, without changing the deadline for full deployment. The final rollout and coverage obligations were therefore as follows:

	% National Coverage		
	Cellcom	**MobIsle**	**Vodafone**
21 months* – July 07	50%	39%	50%
30 months – April 08	90%	66%	99%
42 months – April 09	99%	90%	
48 months – Oct 09		99%	

* Months count from October 2005, date of original assignment

On its part Vodafone did not request a further extension and in June 2007 launched its WiMax services over its new network. To date Vodafone has achieved more than 70% coverage whilst MobIsle Communications Ltd. and Cellcom Ltd. have not yet deployed their network. The MCA is currently enforcing the deployment timeframes according to the licence conditions for the other two licensees.

In spite of MCA action being taken to enforce deployment timeframes, Cellcom Ltd. and MobIsle Communications Ltd. have not yet announced plans for deployment of their network. The MCA concludes that the potential impact of these two licensees will be limited within the next two years. A further important consideration to note is the fact that MobIsle Communications Ltd. has in the past months increased the visibility of its 3G broadband data packages targeted for mobile users over its HSDPA network. Although GO clearly markets these products for users on the move and not for traditional home use, the 3G offerings have been further improved following Vodafone's broadband WiMax offers.

3.6.3.2 Vodafone's WiMax network

In June 2007 Vodafone became the first BWA licensed operator to launch WiMax services over its network. As at the date of launch Vodafone's network had 50% coverage, with targeted nationwide coverage to be achieved by April 2008. The network makes use of the WiMax fixed mobile standard (d-standard) since the mobile (e-standard) was still not widely available at the beginning of 2007.

Although the entry of Vodafone in the market has increased the number of operators to three, the real impact and constraining effect that its entry had on Melita Cable and GO needs to be assessed in detail. The mere entry of an operator in the market does not automatically translate in a constraining effect on the existing incumbents.

The MCA believes that there are a number of important factors that determine the amount of influence that Vodafone will have on the market and particularly on the strategies that existing operators deploy, including the:

- overall attractiveness of the product in terms of price–speed ratio including the download limit;
- impact of bundles on the potential take-up of this service
- price of service compared to the existing broadband offerings;
- cost of initial set-up;
- extent of the coverage area within the timeframe of this review;
- reliability of connection compared to the wired services; and

- capacity constraints of base-stations.

Upon launching their service in June 2007, Vodafone was offering three packages intended for home users and one package for the business community. The table below summarises the main features of the packages.

@home 4months	@home 1year	Online Account	@office
Price: Lm15 (€34.94) / month One time equipment charges: • CPE Retail Price - Lm125 (€291.17) • Router Retail Price - Lm45 (€104.82	Price: Lm19.73 (€45.96) / month One time equipment charges: • Deposit on CPE & Router - Lm50 (€116.47)	Price: Lm85.86 / €200.00 (Paid upfront) Lm50 Deposit on CPE & Router	Price: Lm30.03 (€69.95) / month One time equipment charges: • Deposit on CPE & Router - Lm50 (€116.47)

The first distinct feature to note is that Vodafone did not offer wireless broadband Internet as a stand-alone product, but rather in bundles including mobile and/or fixed telephony services. Therefore as opposed to the cable and DSL broadband services, which can be acquired as an individual service or as part of a bundle, Vodafone opted exclusively for bundled services offerings.

All home packages included a connection speed of up to 1Mb/256kbps. The 4 month and 1 year home packages had a 10GB download limit per month, whilst the online account package had a download limit of 60GB for the duration of the account (unspecified). Similar to DSL and cable services, download limits are not metered during the night. The business package had a connection speed of up to 2MB/256kbps and a download limit of 20GB per month.

In terms of pricing, although it is difficult to compare the cost of Vodafone's WiMax broadband with that of cable and DSL services given that the former is available only in bundles, it is clear that for a user wanting a broadband connection only, the prices quoted by Vodafone for a 1MB/256kbps connection with 10GB download limit are higher than those offered by OnVol and GO. When considering also that both OnVol and GO offer free fixed IP telephony services with their broadband connections, the difference in price becomes more pronounced. Furthermore, on a price-quality ratio OnVol and GO both offer higher download speeds at cheaper prices. The high upfront costs charged by Vodafone are also too high compared to the zero cost for installation and modem offered by Melita Cable and GO.

In September 2007, Vodafone removed all these packages and instead introduced 4 new packages. These new packages resemble much more the existing DSL and Cable packages both in terms of price and speeds.

Package	Price	Speed	Download limits
L	€13.86 (Lm5.95)	1MB/256k	10GB Broadband only
XL	€26 (Lm9.87)	2MB/256k	10GB Broadband & Fixed telephony
XXL	€23 (Lm9.87)	1MB/512k	20GB Broadband only
XXXL	€30 (Lm12.88)	2MB/512k	20GB Broadband & Fixed telephony

All of these packages are offered with a free modem and cordless phone for bundles including fixed telephony.

In November 2007, during the IT fair Vodafone upgraded the speed of all the four packages to 2MB/512k and doubled the download limits of the XXL and XXXL packages from 20GB to 40GB, at no extra cost.

3.6.3.3 Impact of Vodafone's market entry

The entry of the third network operator in the market has to be analysed from a number of perspectives.

Logically, the main factor to consider is the fact that end-users have now an additional network provider offering wireless broadband connections. This development in itself puts Malta in a desirable position compared to other EU states in that Malta has 3 national (Vodafone soon to achieve nationwide coverage) networks providing cable, DSL and WiMax broadband. Therefore end-users have a choice between different broadband technologies, especially since the packages offered by Vodafone resemble the DSL and cable offers in terms of speeds and download limits.

The pricing aspect is also extremely important to assess the impact that Vodafone had on the market. When in June 2007 Vodafone launched its service with the bundle packages, the price of each bundle was not comparable with existing broadband connections. Furthermore, end-users had to fork out a substantial amount of upfront cost to purchase/hire the CPE. All these factors have contributed to a low take-up of the services. Within this context, neither Melita Cable nor GO made any changes to their existing broadband packages.

However, in September 2007 Vodafone changed its strategy and started offering broadband services as an individual service. Vodafone also started to offer the CPE for free and decreased the prices of its packages in line with those charged by Melita Cable and GO. At this stage it was clear that Vodafone wanted to be considered as a competitor of existing wired services.

In October 2007, Melita Cable upgraded the low-end package from 128/128k to 2MB/256kbps. This was then followed by several upgrades and price decreases from both Melita Cable and GO in November 2007. Although upgrades are a custom during the IT Fair in November, this year's changes have been of a significant nature. The MCA believes that these changes where influenced amongst others by the entry of Vodafone and also by the threat of heavy regulation, given that these developments occurred at a time when the MCA was to issue its revised market review report of the wholesale broadband access market.

Reliability of the wireless connection is a determining factor for end-users. From tests carried out by the MCA the reliability of the wireless connection has been satisfactory so far, and the download and upload speeds were very similar to those marketed by Vodafone. However, the reliability and strength of the signal depends on a number of factors such as the atmospheric conditions, location and topography, distance from base-station, thickness of walls and other factors. All of these factors will impinge on the reliability of each individual connection and ultimately on the level of satisfaction of each particular customer. The MCA has so far not received any complaints on the Vodafone broadband service.

The MCA therefore concludes that following the launch of the new packages in September 2007, Vodafone can be considered a feasible alternative to DSL and cable. In this respect, Melita Cable and GO have also upgraded their packages making them more attractive to end-users. Even though the market share of Vodafone is still very low, the presence of this third network operator has in some way triggered a reaction from the traditional incumbents.

3.6.3.4 Potential 3G and LLU operators

A further potential constraint on the behaviour of Melita Cable and GO is the advent of broadband provided over 3G networks. Vodafone and GO which are the incumbent mobile operators have already deployed their HSDPA networks and are offering various data plans. Melita Cable itself is in the process of deploying its own 3G network and it plans to launch commercial services later this year.

Vodafone launched its HSDPA service in December 2006 and has offered a number of plans largely targeted for business users. The prices of these services are above those of cable and DSL broadband services. The take-up of these services has therefore been very low, and limited to a particular business segment of the market. The MCA also believes that since Vodafone itself now operates a WiMax network, it will not engage in pricing strategies that will constrain its WiMax service.

On its part GO faces a more sensitive situation than Vodafone, since GO has access to a 3G HSDPA network, the DSL infrastructure and also a potential new WiMax network. Therefore GO has three channels through which it can supply broadband services. The MCA believes that it is reasonable to assume that GO will not jeopardise its position in the broadband market with its existing DSL service by engaging in practice that will constrain itself. The MCA believes that through its HSDPA offerings GO is targeting a particular segment of business users that require mobile broadband services, without however negatively impacting the much larger market share made up of traditional DSL broadband users. In fact GO has to date not started the deployment of its BWA network and has instead focused on offering HSDPA products to target mobile broadband users and counter Vodafone's HSDPA and WiMax offers.

The MCA therefore believes that within the timeframe of this review neither Melita Cable nor GO will face any credible constraints from existing 3G operators. Nevertheless, the existence of 3G broadband packages provided further choice for users on the move.

The potential for LLU operators materialising in Malta is remote and clearly not within the timeframe of this review. Although the obligation on GO to publish a RUO has been in place since 2004, no request from any potential service provider wishing to avail itself of an LLU solution, has been made so far.

The deployment of LLU in Malta is quite unlikely given the very high sunk costs associated with this kind of investment, especially in the light of the deployment of three wireless networks.

Given the present size and maturity of the broadband market, it is very difficult that a new LLU operator would be able to operate profitably unless it is able to acquire a large share of the market in a short timeframe. Given the strong market position of Melita Cable and GO, it is unlikely that a new LLU operator would be able to achieve such a goal.

The MCA therefore safely assumes that within the next year or so there will be no new LLU operator in Malta and therefore there will be no potential market constraints on Melita Cable and GO.

3.6.4 Low elasticity of demand

A situation whereby a service provider faces a low elasticity of demand would imply that its 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 retail level consumers are price sensitive and given the increased choice of broadband products and service providers, network operators face a high level of elasticity of demand.

In the wholesale broadband access market the situation is quite the opposite, since Melita Cable and GO face a very low elasticity of demand. Melita Cable faces no elasticity of demand since it does not grant wholesale access to ISPs and therefore it does not face any constraints on wholesale demand; neither does it pose a constraint on GO as a potential substitute for ISPs requesting wholesale access.

GO on its part should theoretically face an elastic demand curve, however given the lack of alternative wholesale access products independent ISPs are bound to acquire their services from GO. Consequently, GO is able to dictate terms and conditions without ISPs having any influence on its decisions.

Following the market entry of Vodafone, GO could start facing an elastic demand curve since ISPs can obtain wholesale access from the new entrant. Nevertheless, Vodafone have already stated that at present they are not in a position to entertain any wholesale access agreements, until their network is fully deployed and running efficiently.

In conclusion, the absence of an alternative wholesale supplier independent ISPs are captive clients of GO. The current market structure ensures that there is very low elasticity of demand.

3.6.5 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 exerted on the cable operator at a wholesale level since all wholesale demand is made up of internally generated demand. This is evermore true since Melita Cable merged its retail and wholesale operations in 2007.

Similarly, GO does not face countervailing buyer power from any of the ISPs offering DSL broadband services. Since GO has merged its downstream and upstream operations, there is clearly no need for countervailing buyer power to be exerted within GO to get any wholesale service required. On the contrary, independent ISPs are bound to purchase wholesale access from GO at the set terms and conditions, and do not have the ability to exert any countervailing buyer power in the absence of a credible wholesale substitute.

The MCA considers that at wholesale level Melita Cable and GO face no countervailing buyer power from ISPs.

03.7 Preliminary conclusion on SMP

Following the analysis carried out above and after taking due consideration of the comments provided throughout the previous notification process, the MCA maintains the view that there are a number of characteristics that enable Melita Cable and GO[29] to sustain a coordinated outcome. However following the entry in the market of Vodafone, a number of criteria above would make it somewhat problematic to reach a conclusive finding of joint dominance within the current regulatory framework.

3.7.1 Criteria pointing towards joint dominance

The MCA believes that a significant number of criteria point towards the finding that Melita Cable and GO have an incentive to coordinate, in particular on the refusal of wholesale access to independent ISPs.

The evidence presented above shows that there are certain market conditions which would enable both operators to engage in a coordinated outcome. Through the refusal of wholesale access, Melita Cable and GO would limit market entry of potential downstream providers and maintain control over the retail market.

Such a strategy is beneficial for both operators and is supported by the following criteria:

- High and similar market shares;
- Highly concentrated market;
- Similar costs and prices;
- High profits;
- Vertical and Horizontal integration;
- Market transparency;
- Market approaching maturity; and
- Lack of countervailing buyer power;

Nevertheless, following the recent changes in the products and prices offered by Melita Cable and GO, and following the entry in the market of Vodafone certain market conditions have changed.

3.7.2 Criteria that do not point towards joint dominance

As discussed earlier on up till November 2007 the MCA had not observed any particular change in market conditions, such that a coordinated outcome could not possibly be maintained. This was in consonance with the findings of the MCA in the original review carried out more than a year ago.

[29] A reference in this report to Melita Cable p.l.c. or GO p.l.c. 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.

Following the launch of Vodafone's WiMax service in June 2007, GO and Melita Cable were largely unaffected. However when Vodafone launched new product offerings in September 2007 both GO and Melita Cable took counter actions and upgraded most of their products coupled with price decreases a few weeks later in November 2007.

These changes suggest that the lack of price competition observed during past years has been somewhat affected, and that the entry of a new operator has given a jolt to the market. These price reductions came after a long absence, and were to a certain extent unexpected given the significance of some reductions. The threat of regulation which was pending on GO and Melita Cable, was probably another factor that induced the latest spate of package upgrades

Following these changes the MCA observes that the retail market has made a further step forward in terms of product choice and also price/speed relationship. The number of broadband packages increased and also the range of speeds offered has increased with the new 6MB product. Thus it seems that even in terms of broadband speeds Melita Cable and GO are now looking at offering better packages, which would enable Maltese customers to enjoy similar services available to other EU customers. Having said this, the MCA points out that in many countries much higher bandwidth speeds are already being offered to consumers. Therefore in the near future, operators should seek to offer higher broadband speeds subject to market demands.

Another important factor to be considered is the constraint posed by Vodafone's entry on a coordinated strategy by GO and Melita Cable. Although the entry of Vodafone does not necessarily imply that the market is now competitive, a third operator in the market does make a coordinated outcome less probable. The experience so far shows that Melita Cable and GO did not made any drastic changes until Vodafone changed its packages to make them more competitive.

The MCA therefore believes that in terms of broadband pricing and choice, the market entry of a third operator may have reduced the likelihood of coordination between the two major players.

On the other hand, as far as the provision of wholesale access is concerned, the MCA still believes that voluntary access to independent ISPs will be problematic. Melita Cable has throughout the years systematically refused any access to its network (with the exception of MITTS, where it had no alternative in reaching the end client) and there are no signs that would point to a different conclusion for the future. On its part GO has also made clear, through its contributions to past consultations, that it is not going to sustain for much longer the burden of carrying ISPs on its own. The MCA is therefore concerned that in the absence of regulation ISPs might face more difficulties in obtaining wholesale inputs.

On the other hand, the entry of Vodafone and their commitment to provide wholesale access might alleviate this problem. Although, such access in the immediate future is unlikely to be offered the MCA believes that Vodafone will soon be in a position to honour its licence obligations to make a commercial offer for wholesale broadband access. It is nonetheless conceded that the imponderables surrounding such an event are substantial.

Another factor that has to be considered at this juncture is the potential for two new broadband wireless access networks, one of which should be deployed by Cellcom, a consortium of independent ISPs that is today obtaining access from GO. The MCA believes that the deployment of a new BWA network by Cellcom would alleviate the problem of wholesale access for ISPs. The MCA assumes that

when Cellcom deploys its network, it will offer a commercial wholesale access offer to other ISPs. Although no date has been announced on the deployment of the BWA networks of Cellcom and GO, the MCA hopes that this would start in the near future.

3.7.3 Proposed conclusion

In view of the findings above, the MCA concludes that although there are still some identified market problems particularly on the provision of wholesale access, there is lack of sufficient evidence to determine that Melita Cable and GO are at present, or can within the timeframe of this review, sustain a successful coordinated outcome.

Although the MCA believes that their may still be a good case for regulation at wholesale level, it is not possible for Authority to prove beyond reasonable doubt that Melita Cable and GO are engaging in a coordinated strategy to refuse wholesale access. Given the insufficiency of evidence, the MCA has no option but to declare that, within the constraints posed by the current regulatory framework, no operator in the wholesale broadband access market enjoys a demonstrated SMP position.

Chapter 04 Regulation

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 the MCA is obliged to impose on such operator appropriate regulatory obligations, referred to in subregulation (2) of Regulation 10 of the ECNSR, or to maintain or amend such obligations where they already exist.

However, in accordance with Article 9(2) of the ECRA, where the MCA concludes that a finding of dominance cannot be ascertained, the MCA is not allowed to impose or maintain any specific ex ante regulatory obligations.

In the case where no SMP designation is made and where regulatory obligations already exist in the market, the MCA, in accordance with Regulation 10(3) of the ECNSR, is to withdraw such obligations placed on undertakings subject to an appropriate period of notice to be given to all parties affected by such a withdrawal of obligations.

04.2 Existing obligations

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.[30] In accordance with its powers under this former framework, the MCA had identified Maltacom plc, Melita Cable plc, Vodafone Malta Ltd and MobIsle Communications Ltd (Go Mobile) as having a Dominant Market Position in the Telecommunications Transport Provision market.[31]

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; and

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

[31] 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

- to establish interconnection on a most-favoured customer basis.

All of the above obligations are presently incumbent on the aforementioned operators.

04.3 Proposed withdrawal of regulation

The MCA has carried out a detailed analysis of the market conditions in the wholesale broadband access market as set out in Chapter 3 of this document.

The main conclusion of this analysis is that the MCA did not find any conclusive evidence as to whether any undertaking in this market has single dominance or collective dominance with another undertaking.

Given this conclusion and under the provisions of Article 9(2) of the ECRA, the MCA has no legal power to impose new regulations, and/or maintain any of the existing regulations in this market.

Consequently the MCA is proposing to withdraw all existing regulations as established under the MCA decision entitled "Dominant Market Positions in the Telecommunications market" published August 2003. This is being proposed without prejudice to any other general obligations of undertakings at law.

However, the MCA is cognisant that the withdrawal of obligations in this market will affect a number of market players. In order have a smooth transition from a fully regulated market to a non-regulated market the MCA is proposing that, in accordance with Regulation 10(3) of the ECNSR, the existing obligations will be withdrawn 12 months following the adoption of the final decision concerning this market.

The MCA believes that this notice period is justified and sufficient to allow for all stakeholders to make necessary arrangements for the new regulatory approach to this market.

04.4 Monitoring and reviewing of the market

The MCA considers that given the dynamic nature of this market and the fact that all existing regulation is being withdrawn, it is vital to keep a very close watch on the progress of this market.

To this end the MCA intends to analyse market trends and developments on an ongoing basis, and remains committed to issue a new market analysis at any point in time in response to any deterioration in the competitive level of the market. The MCA is also determined to take emergency remedial action, in accordance with its powers at law, should a significant problem in the market occur as a result of the removal of any of the present obligations, in order to safeguard competition and protect the interest of end-users.

Chapter 05 Submission of Comments

The MCA welcomes written comments and representations to this report during the national consultation period. The consultation will run from the 11th April 2008 till the 30th May 2008.

The MCA appreciates that respondents may provide confidential information in their comments. This information is to be included in a separate annex to their response.

After due consideration of the comments and representations received, the MCA will review this analysis and publish a report summarising the responses to the consultation.

For the sake of openness and transparency the MCA will publish the names of all respondents to this consultation. To this end, all representations will be published, except where respondents indicate that a response, or part of it, is confidential[32]. Respondents should however avoid applying confidential markings wherever possible.

All responses must be submitted to the MCA by no later than the 30th May 2008. Late submissions will not be taken into account.

Extensions to the consultation deadline will only be permitted in exceptional circumstances and where the Authority deems fit. The MCA reserves the right to grant or refuse any such request at its discretion. Requests for extensions are to be made in writing within the first ten (10) working days of the consultation period.

All submissions should be made in writing and sent by email to pvella@mca.org.mt. Hard copies may also be posted or faxed to the address below.

Chief Policy and Planning
Malta Communications Authority
Valletta Waterfront, Pinto Wharf,
Valletta FRN 1913
Malta
Europe
tel: +356 21 336840
fax: +356 21 336846

[32] In accordance with the MCA's confidentiality guidelines and procedures - http://www.mca.org.mt/infocentre/openarticle.asp?id=544&pref=1

Appendix 1

This appendix contains:

(i) a whitepaper from Motorola titled "Eliminating Open Access Technology Barriers; and

(ii) technical and marketing material from Cisco Systems describing "Open Access" solutions.

See attached file entitled 'Appendix 1.zip'

Appendix 2

This Appendix includes:

1. An article taken from the Cable Datacom News edition of October 2003 explaining how multiple ISP access via cable broadband was achieved in Israel;
2. A presentation outlining how Elisa in Finland provide cable bitstream access;

   See attached file entitled 'Appendix 2.zip'

3. Links outlining the wholesale access deal agreed to between AOL, Freeserve and NTL in the UK

   http://goliath.ecnext.com/coms2/summary_0199-1662224_ITM

   http://www.theregister.co.uk/2002/12/05/ntl_and_aol_in_cable/

   http://www.theregister.co.uk/2002/05/13/ntl_to_offer_wholesale_broadband/

4. Links to the commercial pages of StarHub in Singapore outlining terms & conditions for local and wholesale cable broadband access

   http://www.starhub.com/business/wholesale/cablemodemopenaccess/index.html

   http://www.starhub.com/business/wholesale/cablemodemopenaccess/widearea.html

5. Links and information from the CRTC regarding open access in Canada

   In "*Point of interconnection and service charge rates, terms and conditions for third-party Internet access using cable networks*", Telecom Decision CRTC 2004-69, 2 November 2004, as amended by Telecom Decision CRTC 2004-69-1, 24 November 2004, and Telecom Decision CRTC 2004-69-2, 3 February 2005 (Decision 2004-69), the Commission approved on an interim basis point of interconnection (POI) rates and service charges for the interconnection of ISPs to the networks of the larger cable carriers. In addition, the Commission approved the POI locations proposed by the larger cable carriers.

   http://www.crtc.gc.ca/archive/ENG/Decisions/2004/dt2004-69.htm

Appendix 3

This appendix explains the changes and adaptations that ISPs would need to make in order to switch to a wholesale broadband offering via cable.

See attached file called 'Appendix 3. zip'

Appendix 4 (Confidential)

This appendix contains:

(i) the Melita Cable document that outlines exactly how the cable bitstream access can be deployed; and

(ii) the service contract between MITTS and Melita Cable

Appendix 5

The tables below illustrate the historic price evolution of the two main network operators.

OnVol															
Date of price/package change (approx.)	Ultralight		Blue		Ultralight +		Lite		Sonic		Business			
	Speed	Price €			Speed	Price €	Speed	Price	Speed	Price €	Speed	Price €	Speed	Price €
March 2001							128	29.12	512	46.47	512	64.06	1024	103.68
October 2003							128	29.12	512	46.47	512	64.06	1024	103.68
January 2004 *							128	29.89	512	47.68	512	65.71	1024	106.38
October 2004							256	29.89	1024	47.68	4096/256k unlimited	65.71		
June 2005							2048/256k 7GB	29.89	4096/256k 10GB	47.68				
May 2006	128/128k 1GB	13.86												
April 2007									4096/256k 10GB	37.15				
June 2007					256/256k 2GB	16.19								
	Red													
November 2007	2048/256k 10GB	13.86	5120/512k 20GB	30.28			2048/256k 20GB	20.73	5120/512k 30GB	37.15	6144/512k unlimited	55.70		
*In January 2004 their was an increase in VAT of 3%														
All prices above in Euro and inclusive of VAT.														
With the exception of the Red and Blue packages, all other packages have free IP telephony bundled														

GO

Date of price/package change (approx.)											ADSL 512		ADSL 1024		Business			
											Speed	Price €	Speed	Price €	Speed	Price €	Speed	Price €
March 2001											512	45.42	1024	83.74				
								Basic			Fast		Turbo					
								Speed	Price €		Speed	Price €	Speed	Price €				
February 2003								128	31.45		512	45.42	1024	82.11				
January 2004 *								128	32.26		512	46.59	1024	84.32				
November 2004								256	32.26		1024	46.59	2048	84.32				
February 2005								256/4GB	32.26		1024/11GB	46.59	2048/20GB	84.32				
								Basic		Fast 4GB		Fast 11GB		Turbo					
								Speed	Price €	Speed	Price €	Speed	Price €	Speed	Price €				
March 2005								256/4GB	32.26	1024/4GB	34.59	1024/11GB	46.59	2048/11GB	84.32				
			1GB		8GB		12GB					20GB						
			Speed	Price €	Speed	Price €	Speed	Price €				Speed	Price €					
August 2005			2048/256k 1GB	23.18	2048/256k 8GB	29.12	2048/256k 12GB	32.26				2048/256k 20GB	46.59					
May 2006			4096/256k 1GB	23.18	4096/256k 8GB	29.12	4096/256k 12GB	32.26				4096/256k 20GB	46.59		4096/256k 8GB	34.94	4096/256k unlimited	62.19
	128k																	
	Speed	Price €																
September 2006	128/128K 1GB	13.86																
	256k		2GB		10GB		16GB					30GB						
	Speed	Price €	Speed	Price €	Speed	Price €	Speed	Price €				Speed	Price €					
March 2007	256/256k 1GB	13.86	4096/256k 2GB	23.18	4096/256k 10GB	29.12	4096/256k 16GB	32.26				4096/256k 30GB	46.59		4096/256k 8GB	29.61	4096/256k unlimited	52.71
	512k																	
	Speed	Price €																
July 2007	512/512k 2GB	13.86																
November 2007	2MB		12GB		25GB		40GB		25GB			40GB						
	Speed	Price €	Speed	Price €	Speed	Price €	Speed	Price €	Speed	Price €		Speed	Price €					
	2048/512k 12GB	13.86	4096/512k 12GB	23.18	4096/512k 25GB	29.12	4096/512k 40GB	32.26	6144/512k 25GB	36.80		6144/512k 40GB	46.59				6144/512k unlimited	52.71
	2048/512k 25GB	20.73																

All prices above in Euro and inclusive of VAT.

**In January 2004 their was an increase in VAT of 3%*

Appendix 6 (Confidential)

This appendix outlines the financial performance of market players in the broadband market.