The provision of wholesale fixed broadband access in Malta

Definition, assessment of SMP & regulation of relevant markets

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Executive Summary

The Malta Communications Authority ('MCA') is hereby publishing for consultation its preliminary conclusions on the regulatory treatment of the provision of wholesale fixed broadband access in Malta. This is in accordance with article 9 of the Electronic Communications (Regulation) Act, Chapter 399 of the Laws of Malta, obliging the MCA to carry out regular reviews of competition in communications markets.

The MCA invites interested parties to submit their feedback within the period ending 24th July 2020. Arrangements for submitting comments are explained in more detail in Chapter 8 to this document.

Background

The wholesale fixed broadband access market in Malta is characterised by two operators, namely Melita and GO. These two operators are vertically integrated and have their own access network infrastructure in place, over which a suite of retail electronic communications services are supplied. The chances that another undertaking replicates the network set-up and coverage of GO and Melita cannot happen within a short time frame. This is because the roll-out of a competing infrastructure would require a significant financial outlay with a huge sunk cost element. GO and Melita can however open up their networks and grant access to third parties on a commercial basis, opening up a path for service based competition.

In the field of broadband, which the current report is investigating, Malta's experience with service-based competition has been far from ideal. Several undertakings have over a span of twenty years sought access via GO and Melita. However, entry via the granting of access always materialised under the threat of regulatory intervention.

It is in this context that the MCA is re-examining its regulatory stance with respect to the field of fixed broadband in Malta. To this effect, the current review shall outline the MCA's proposals on how the relevant markets should be defined and the extent of competition in the defined markets. The MCA's proposed regulatory approach would then be based on these findings.

Definition of the relevant retail market

Given that the market is captive, made up almost exclusively from internal supply by Melita and GO for own retail purposes, the intensity of retail competition closely mirrors that at the wholesale level. To this effect, the MCA first defines the relevant fixed broadband market and subsequently look at the degree of competitive performance of Melita and GO in this market.

The MCA's first proposal concerns the definition of the retail fixed broadband market. The MCA considers that this market encompasses the following:

- fixed broadband products supplied over GO's copper-DSL network;
- fixed broadband products supplied over GO's fibre network; and
- fixed broadband products supplied over Melita's HFC DOCSIS 3.1 network.

The relevant product market consists of fixed broadband offered stand-alone and fixed broadband offered in a bundle alongside fixed telephony and pay TV. Fixed broadband products offered to business and residential users form part of this market.

Fixed broadband products supplied over fixed wireless technologies and over the 4G/4.5G network are not deemed part of the relevant product market.

The current conditions of competition in the identified retail market are deemed to be geographically homogenous with the market in question subject to a national pricing constraint. The relevant retail market is therefore national in scope.

Assessment of competition in the retail fixed broadband market

The MCA started the assessment of competition in the retail fixed broadband market by examining market maturity, prices and the variety of retail offers. In its opinion, these are the three main parameters that best describe current competition dynamics in the retail fixed broadband market.

The MCA concludes that the retail fixed broadband market in Malta will be characterized by limited and predictable growth within the timeframe of this review, for the following reasons:

- Most households and businesses already have a fixed broadband internet connection and 91% of fixed broadband end-users purchase the service in a bundle.

- The MCA also foresees that demand for fixed broadband arising from labour migration inflows is likely to subside given the adverse macroeconomic effects resulting from COVID-19.

On the issue of prices and variety of retail offers, the MCA's assessment determines the following:

- GO and Melita have historically held to a strong price alignment, with the two operators also charging similar prices.

- Price reductions have been rare and GO and Melita sought to maintain 'price floors' for their monthly access fees across their fixed broadband product portfolio. Prices are set in such a way as to enable the upselling of fixed broadband in triple-play offers in combination with fixed telephony and television.

  The pricing strategy adopted by both Melita and GO is tailored to stimulate take-up of fixed broadband in a triple play setting.

- GO and Melita have also restricted choice in their fixed broadband stand-alone line-up and / or their product portfolio of fixed broadband in dual-play offers.

- Retail fixed broadband prices in Malta are higher than the EU average. This finding emanates from a cross-country analysis carried out by the EU Commission.

- GO's and Melita's pricing behaviour and the resultant fixed broadband prices reflect a strategic choice by these two operators to tacitly coordinate in order to preserve market share stability and to sustain the common interest of higher profitability.

  GO and Melita submitted profitability data to the MCA, following a specific request on this aspect raised by the MCA. Based on this data, the MCA comes to the conclusion that the reluctance shown by Melita and GO to compete on price is not dictated by concerns of low profitability. In fact, EBITDA margins improved for GO and Melita over the years. In addition, profitability of these operators exceeds the level necessary to adequately service debt and equity. This means that the operators' investment has not weighed negatively on profitability levels and cannot be deemed as a factor limiting the ability of Melita and GO to compete on price.

Following the assessment of current market competition dynamics, the MCA assesses the major structuring factors of the market. This assessment is carried out in the context of a dominance analysis. In this regard, the MCA does not determine single-firm SMP in the retail fixed broadband market. This is because Melita and GO enjoy a similar position in this market, with no operator enjoying a significant competitive advantage over the other. GO and Melita are both horizontally and vertically integrated and are deemed to be in a position to benefit equally from economies of scale and scope. Both operators enjoy national coverage and are effectively at the same level from a technological standpoint, with no network technology exhibiting a marked superiority over the other. GO and Melita also employ an integrated approach to the marketing, sales and retailing activities for their retail product range of electronic communications products and services.

The MCA considers that the structural characteristics of the market provide an incentive for Melita and GO to seek coordination in the retail fixed broadband market and thus to determine the desired level of competition in this market. The characteristics of the market are underscored by a symmetric position of GO and Melita - in terms of market shares, cost structures, and product homogeneity - and the perseverance of a reduced scope to compete of price.

Given also the observed long-term pricing practices for fixed broadband, the MCA considers that GO and Melita would have an incentive to coordinate on setting retail prices at the desired level, absent regulation, to maximize profits. Coordination on the setting of retail fixed broadband prices at the desired level would benefit long-term profitability of the incumbents. Melita and GO know that a departure from the coordinated price would ultimately reap short-term benefits but long-term losses in terms of profitability.

The MCA also underlines that the market exhibits the necessary conditions for coordination on price to be sustainable. Prices implemented by Melita and GO in the retail fixed broadband market are sufficiently transparent, thus serving as an effective and immediate retaliatory mechanism against any attempt by one operator to undercut the other. In a duopolistic market setting with fully transparent prices, the implementation of a price reduction by one party would entice the other party to retaliate and reduce the price to punish the observed deviant behavior. The MCA is also of the opinion that there is a very low risk for external factors to disrupt the coordinating behavior of GO and Melita in the retail fixed broadband market.

Overall, absent regulation, a loss of consumer welfare would occur in the retail market under investigation, mainly in terms of more restricted choice, consumers having to purchase products that they do not necessarily require, or even higher prices, particularly due to the potential loss of competitive pressure from alternative providers.

It is on this basis that the MCA concludes that GO and Melita have joint significant market power in the retail fixed broadband market.

Definition of the relevant wholesale market

The MCA defines the relevant product market on the basis of a demand-side and supply-side substitutability assessment to identify the products encompassing the relevant wholesale market. Direct pricing pressures at wholesale level and indirect pricing pressures arising via the underlying retail market are taken into account. The MCA underlines that demand for wholesale access services is derived from demand within the downstream retail market, which means that the relevant wholesale market(s) would be as broad as the relevant retail markets.

The MCA considers that wholesale access via copper DSL, wholesale access via fibre and wholesale access via cable DOCSIS 3.1 form part of the same relevant market. Self-supply of wholesale access is considered to form part of the market. The MCA outlines numerous similarities for these access network infrastructures, with the concept of access network, aggregation point, core network and Internet access being common elements. The MCA also considers that there is indirect pricing pressure coming from the underlying retail markets. This is because a SSNIP implemented by a hypothetical monopolist for wholesale access via cable or wholesale access via copper DSL / FTTH would be reflected in the retail fixed broadband prices of the operator implementing the SSNIP. The MCA's market research shows that the fixed broadband products supplied by Melita and GO are considered by Maltese end-users as being similar to very similar. It therefore follows that the implementation of the SSNIP at wholesale level would in principle lead end-users to switch to the cheaper option. Such switching would exercise indirect competition pressure on the hypothetical monopolist. As for the different access options available over the different access network infrastructures, the MCA reaches the following conclusions:

- Physical unbundled access (LLU and SLU), wholesale bitstream access, and virtual unbundled access on the copper network form part of the same relevant market. The different types of copper-based access are functionally equivalent, leading to similar products at retail level.

- Wholesale access supplied via GO's copper DSL network and wholesale access supplied via GO's fibre network (bitstream and VULA) form part of the same relevant market. The wholesale access products that could be offered via the copper-DSL and via the fibre networks are functionally equivalent notwithstanding the technical distinctions between physical and virtual unbundled access services. Substitutability would materialize one-way in the event of a SSNIP, from copper-based access to fibre-based access and not vice-versa, given the superiority in terms of the quality of services supported by fibre. In this context, the MCA does not consider access to GO's copper DSL network as a future-proof form of access.

- Wholesale bitstream access supplied via Melita's cable network forms part of the same market for wholesale access supplied via GO's FTTH network. These types of access are deemed to be functionally equivalent. The substitutability of cable-based access and fibre-based access rests on (i) the consideration of potential direct constraints if Melita opens wholesale access to its network and (ii) strong indirect constraints emanating at the retail level. One further argument on the functional similarity of cable and fibre technologies is that Melita's upgrade of its coaxial-based network to the DOCSIS 3.1 standard has effectively enabled much higher data rates and downstream bandwidth over this technology platform.

The MCA proposes to define a wholesale fixed broadband access (WFBA) market consisting of the following wholesale access products:

- unbundled access (including shared access) via the copper network;
- virtual unbundled access to the copper network;
- bitstream access via the copper network;
- virtual unbundled access to the fibre network;
- bitstream access via the fibre network; and
- bitstream access via the cable network.

The MCA considers that the relevant wholesale fixed broadband access market in Malta is national in scope.

Assessment of competition in the wholesale fixed broadband access market

The MCA considers that Melita and GO have a similar position in the WFBA market, with no operator enjoying a significant competitive advantage over the other in the provision of the relevant services. The MCA is hereunder outlining the main reasons for this conclusion:

- GO and Melita have highly similar market shares that are envisaged to remain stable in terms of magnitude over the next few years;

- Melita and GO are vertically and horizontally integrated operators and none of the two enjoys a competitive advantage over the other in terms of economies of scale and scope; and
- GO and Melita operate in a WFBA market that has high barriers to entry and do not face any credible CBP.

Given the above, the MCA is of the opinion that both GO and Melita demonstrate the same ability to shape the extent of competition in the relevant wholesale market. A finding of single-firm SMP cannot therefore be attributed.

It is also for the reasons outlined above that the MCA examines whether there is joint SMP in relevant WFBA market. In this regard, the MCA finds that the WFBA market is highly concentrated, given the duopolistic nature of the market underscored by the presence of Melita and GO. The MCA also finds that the WFBA is characterized by product homogeneity and similar cost structures. The MCA considers that GO and Melita share common interests in the WFBA market, to such an extent that the relevant market is conducive to tacit collusion.

The MCA also shows that GO and Melita not only have an incentive to coordinate in the WFBA market but also that the market itself presents an opportunity for GO and Melita to actually coordinate their behavior. This is because GO and Melita have the same ability to shape the market and the level of competition to the desired level. Given also their long-term market presence, GO and Melita established a standard pattern of interaction, with similar responses and actions to address demand and supply in the relevant market. This also explains the strong alignment observed at retail level in terms of prices implemented by these two operators. Effectively, the duopolistic market setting enabled Melita and GO to share the market both in terms of size (i.e. in terms of wholesale lines) and profitability. The WFBA market is also mature, with limited growth predicted over the next few years.

Further to the above, the MCA considers that the WFBA market presents sufficient transparency to sustain coordination by GO and Melita on the refusal to grant access. The ability to detect and discipline deviations is further enhanced given that there are clear elements of transparency in the retail fixed broadband market.

Absent regulation, GO and Melita not only have an incentive to coordinate on the refusal to grant access but are also able to do so effectively given the following:

- Coordination on refusal to grant WFBA is sufficiently transparent for both Melita and GO to effectively detect deviations from this coordination mechanism.
- GO and Melita have at their disposal an effective retaliatory mechanism with which to dissuade a potential deviation from tacit coordination on refusal to grant access.

Refusal to grant access is therefore the focal point of coordination for GO and Melita in the WFBA market. Absent regulation, GO and Melita would also be able to interact with each other to coordinate on refusal of access with a high degree of internal and external stability.

The MCA therefore concludes that, absent regulation, GO and Melita have joint SMP in the WFBA market.

Proposed regulatory approach

The MCA considers that GO and Melita have an incentive and possibility to coordinate on a focal point in the wholesale fixed broadband access market, by way of refusing to grant access. Given their joint SMP in the relevant market, the MCA identifies the risk that these two operators limit competition and reduce consumer welfare by way of implementing price-related and non-price actions. To this effect, the MCA is proposing the following regulatory obligations, which it considers as necessary to address the potential shortcomings arising in the wholesale fixed broadband access market as a result of the joint SMP enjoyed by GO and Melita in this market:

- Access obligation;
- Non-discrimination obligation;
- Transparency obligation;
- Price control and cost-accounting obligation;
- Accounting separation obligation;

The MCA believes that these remedies are based on the nature of the competition problems it has identified in the relevant market and are proportionate and justified, in light of the objectives set out in Article 4 of the ECRA.

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

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1 Introduction

The MCA carries out SMP-based market reviews on a regular basis to examine how competition is evolving in the relevant electronic communication markets.

In line with this requirement, the MCA carried out a review of the market for the provision of wholesale fixed broadband access in Malta.

The definition of this market takes into account the Recommendation on Relevant Markets published in 2014 (hereafter referred to as the 'Recommendation') and is outlined in Chapter 5. The wholesale market for fixed broadband access includes the previously analysed markets under the 2007 Recommendation, namely the market for wholesale unbundled infrastructure access (now included as Market 3a in the Recommendation) and the market for wholesale broadband access (now included as Market 3b in the Recommendation).

Prior to the definition and analysis of the wholesale fixed broadband access market, the MCA defines the relevant retail fixed broadband market in Chapter 3, which is followed by an assessment of competition in this retail market in Chapter 4. The competition assessment at retail level is carried out in a 'Greenfield approach' - on the assumption that no wholesale regulation is applicable in relevant wholesale markets.

1.1 Legislative and regulatory background

The MCA is responsible for the regulation of the Maltese electronic communication sector and the supervision of compliance with the sector's regulations. This section provides a general insight of the main legislative tools and regulatory principles upheld by the MCA to carry out these tasks.

1.1.1 The EU Regulatory Framework for the regulation of electronic communications

The current EU regulatory framework for electronic communications[1] encompasses five Directives:

[1] Directive 2009/140/EC of the European Parliament and of the Council of 25 November 2009 amending Directives 2002/21/EC on a common regulatory framework for electronic communications networks and services, 2002/19/EC on access to, and interconnection of, electronic communications networks and associated facilities, and 2002/20/EC on the authorisation of electronic communications networks and services and Directive of the European Parliament and of the Council of 25 November 2009 amending Directive 2002/22/EC on universal service and users' rights relating to electronic communications networks and services, Directive 2002/58/EC

- Directive 2002/21/EC on a common regulatory framework for electronic communications networks and services ('the Framework Directive'), which provides the overall structure for the regulatory regime governing the provision of electronic communications products and services and sets out the fundamental rules, policy objectives and regulatory principles that NRAs must follow in regulating relevant markets;
- 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 authorization of electronic communications networks and services ('the Authorization 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 ePrivacy Directive'). Particularly of note is Article 8 of the Framework Directive, which stipulates that the key policy objectives of the NRAs shall be the promotion of competition, the development of the internal market and the promotion of the interests of citizens of the European Union.

1.1.2 The Maltese legislative framework for the regulation of electronic communications

The Directives comprising the EU Regulatory Framework were first transposed into Maltese legislation on the 14th of September 2004 and subsequently amended on various occasions in part to reflect changes to the regulatory framework introduced by the EU[2].

The relevant national legislation comprises the Malta Communications Authority Act (Cap 418) (hereinafter referred to as the 'MCA Act'); the Electronic Communications (Regulation) Act (Cap. 399) (hereinafter referred to as 'ECRA'); and the Electronic Communications Networks and Services (General) Regulations of 2011 (hereinafter referred to 'ECNSR').

concerning the processing of personal data and the protection of privacy in the electronic communications sector and Regulation (EC) No 2006/2004 on cooperation between national authorities responsible for the enforcement of consumer protection laws.

[2] The EU regulatory framework was initially implemented under Maltese law following the enactment of Act VII of 2004 which amended various laws including notably the Malta Communications Authority Act and the Electronic Communications (Regulation) Act. The changes introduced were complemented by subsidiary legislation notably the Electronic Communications Networks and Services (General) Regulations [S.L.399.28].

The local regulations guiding each stage of the market review process are described below.

- Regulation 5 of the ECNSR stipulates that the MCA tailors its market definition on national circumstances, taking utmost account of all applicable guidelines issued by the European Commission in accordance with Article 15 of the Framework Directive and taking into account the relevant recommendations issued by the European Commission.
- Regulation 6(2) of the ECNSR 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'.
- Regulation 6(4) of the ECNSR states that 'where an undertaking has significant market power on a specific market, it may also be deemed to have significant market power on a closely related market, where the links between the two markets are such as to allow the market power held in one market to be leveraged into the other market, thereby strengthening the market power of the undertaking'.
- Regulation 5(4) of the ECNSR underlines that the MCA is obliged to impose regulatory obligations if an operator is designated as having SMP on a relevant market, either individually or jointly with others, as referred to in regulation 5(2) of the ECNSR.
- Where such obligations already exist in the market(s) under investigation, a new finding of SMP would lead the MCA to maintain or amend the existing regulatory conditions accordingly. If, on the other hand, the finding of SMP cannot be ascertained, the MCA would have to withdraw such regulation, in accordance with regulation 5(3) of the ECNSR, subject to an appropriate period of notice given to all parties affected by such withdrawal.
- Regulation 4 of the ECNSR states that the MCA carries out its market reviews and in doing so may seek the advice of the competent authority responsible for completion ('National Competition Authority' or 'the NCA').

1.1.3 A New Code to regulate electronic communications

The new European regulatory framework concerning electronic communications entered into force on 21 December 2018. The EU Official Journal of Directive (EU) 2018/1972 of the European Parliament and of the Council of 11th December 2018 establishes the European Electronic Communications Code (the 'EECC')[3], which consolidates the existing EU legal framework for electronic communications: the Framework Directive, the Access Directive, the Authorization Directive, and the Universal Service Directive.

The Code maintains the principle of significant market power (or 'SMP') regulation, whereby NRAs would designate one or more undertakings with SMP and regulate relevant markets accordingly on the basis of their determination of market power in market analyses.

Access seekers not participating in the co-investment may still seek access to the co-invested fibre network.

EU Member States have two years to incorporate the EECC into national law. The EECC came into force in December 2018. This means that Malta will incorporate the provisions of the EECC into national law by December 2020.

1.2 The market review methodology

The analytical framework of the current review encompasses three main stages:

- The definition of the relevant retail and wholesale markets;
- An assessment of the state of competition in each relevant market; and
- A proposal for regulatory intervention would be made in case SMP is determined. A proposal to withdraw regulatory intervention would be made in case no SMP is determined in relevant markets that are regulated at the time of assessment.

The market review is forward looking in nature, taking into account expected or foreseeable technological or economic developments over a reasonable horizon.

[3] Link to EU Directive 2018/1972: http://data.consilium.europa.eu/doc/document/PE-52-2018-INIT/en/pdf

The MCA takes into account guidance on the market review process are provided in the EU Directives, the ECRA, and the ECNSR and in additional documents issued by the European Commission.

1.2.1 The Recommendation on Relevant Markets

The Recommendation lists a set of markets in which ex ante regulation might be warranted. The latest version of the Recommendation was published in October 2014[4], following those published in 2003 and 2007.

Whilst the Recommendation seeks to promote harmonisation across the European Union by ensuring that the same product and service markets are subject to a market analysis in all Member States, NRAs are still able to regulate markets that differ from those identified in the EU 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 EU Recommendation (Regulation 6 of the ECNSR).

The current Recommendation includes four wholesale markets that are deemed as being susceptible to ex ante regulatory intervention, including the markets 3a and 3b related to the provision of access to data and related services at a fixed location.

It is relevant to underline at this juncture that the latest MCA decisions related to markets for access to data and related services at a fixed location were published in 2013 and hence the defined markets at the time reflected the 2007 EU Recommendation on relevant markets. In this respect, the MCA defined a market for '*wholesale infrastructure access*' and a market for '*wholesale broadband access*'.

- More specifically for the wholesale infrastructure access market, the MCA defined the relevant product market as the market for wholesale unbundled access, including shared access to metallic loops and sub-loops made available for the purpose of providing broadband and voice services. The relevant geographic market was deemed to be national in scope.

[4] Link to EU Recommendation on relevant markets: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014H0710&from=EN

- For the wholesale broadband access market, the MCA defined the relevant product market as including all self-supplied wholesale broadband products supplied over the copper, cable and wireless networks and those wholesale access products supplied via existing broadband networks to third-party ISPs. The relevant market was again deemed to be national in scope.

The EU Recommendation on relevant markets published in 2014 includes the market for wholesale infrastructure access as Market 3a, which refers to '*wholesale local access provided at a fixed location*'. The market for wholesale broadband access is included in the EU Recommendation as Market 3b, which refers to '*wholesale central access provided at a fixed location for mass-market products*'.

The Explanatory Note to the EU Recommendation[5] sheds additional light on the delineation between the Market 3a and Market 3b, whereby it states (on page 43) that it '*appears appropriate also to include access based on non-physical or virtual products in the WLA market when they exhibit functionalities equivalent or comparable to the key features of physical unbundling … i.e. where their functionalities are comparable to those of LLU as regards the parameters of relevance to access seekers*'.

1.2.2 The EC Communication on the SMP Guidelines

In 2002, the Commission published guidelines on market analysis and the assessment of significant market power under the EU regulatory framework for electronic communications networks and services (the 2002 SMP Guidelines). These guidelines are addressed to the National Regulatory Authorities (NRAs) that have to take them into utmost account when defining relevant markets and assigning telecommunications operators with SMP in view of imposing on them appropriate regulatory obligations to redress competition problems identified on a forward looking basis.

In 2017, the European Commission initiated a review of the SMP Guidelines of 2002, in view of the new EECC set to be implemented by 2020[6]. The new guidelines on Significant Market Power in the telecoms sector were officially published on 26th April 2018.

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[5] Link to Explanatory Note: https://ec.europa.eu/newsroom/dae/document.cfm?doc_id=7056

[6] Link to the EU Commission Communication on SMP Guidelines: https://ec.europa.eu/digital-singlemarket/en/news/communication-smp-guidelines

The MCA will take these guidelines into utmost account when assessing whether the retail and wholesale markets under investigation in the current review are effectively competitive or otherwise (refer to Regulation 6 of the ECNSR).

1.3 Public consultation

The MCA hereby invites interested parties to submit their feedback on the relevant findings and regulatory proposals outlined in the current review, until the 24th of July 2020. This consultation period is appreciably longer than is normally the case in order to cater for the inevitable disruption caused by the COVID-19 pandemic and therefore give ample time to interested parties to send in responses.

The MCA will consult on the main findings of this review with the National Competition Authority ('the NCA'), as indicated under Article 4 of the MCA Act and in view of a cooperation agreement signed by the MCA with the Office of Fair Competition, succeeded by the Office for Competition forming part of the Malta Competition and Consumer Affairs Authority ('the MCCAA'), on 20th May 2005. The MCA will be publishing any comments forwarded by the MCCAA at a later stage in the response to this consultation document.

As required by Regulation 7 of the ECNSR, the MCA will notify the findings of this market review as a draft measure to the European Commission and to other NRAs following the closure of the national consultation phase. The Commission would thereafter issue an opinion on the notified draft measure in view of its compatibility with Community law. The MCA will publish the relevant decision following the publication of the Commission's notice.

2 The market and regulatory context

This chapter provides the backdrop to the current analysis, with a focus on the national factors influencing the way in which electronic communications market structures developed in Malta over the last 20 years. The relevant ex ante regulatory developments are also outlined.

2.1 Malta's geography and size

Malta is the smallest state in the EU. The national territory covers a surface area of 316 square kilometers across two populated islands. Population statistics published by the National Statistics Office (hereafter, the 'NSO') show a total of 475,000 people living in Malta by the end of 2018. This translates into a population density of approximately 1,503 persons per square kilometer. Being the country with the smallest national territory in the EU, Malta ranks as the most densely populated in the EU.

2.2 Developments in market structure

The MCA's regulatory oversight has been instrumental in ensuring a smooth transition from a legally monopolistic environment to a fully liberalised market, post 1st January 2003. A primary objective of the MCA was and remains the promotion and safeguarding of competition in order to maximize consumer welfare through improved value for money, innovation and choice.

2.2.1 The monopoly years

Prior to Malta joining the EU, GO (formerly known as Maltacom) and Melita enjoyed a legally binding monopoly for several years in their primary field of operation, being fixed telephony for GO and cable TV transmission for Melita.

- Fixed telephony

  The fixed telephony segment effectively remained GO's monopoly until the end of December 2002. This monopoly ceased to be effective as from 1st January 2003, when international gateway services, data services and the fixed telephony sector were also opened to new entrants. As a result of this opening, a number of ISPs started to offer packet-switched voice services (exemplified by VoIP) for international calling purposes using VoIP technology.

- Television

Melita, on the other hand, commenced operations in Malta in 1991 to broadcast TV over a cable network. The Maltese Government also granted a national monopoly in this segment to this operator for a period of 15 years. The Maltese Government facilitated the deployment of Melita's cable network via the insertion of apposite provisions in legislation, to the effect that Melita 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 infrastructure to all parts of Malta. Of note is that Melita enjoyed monopoly status in the TV broadcast transmission market for several years, with this operator being the only provider of television services in Malta between 1992 and 2005. The television segment was effectively liberalized in May 2005, when the MCA assigned GO plc. (then Maltacom plc.) and Multiplus Ltd. eight channels on lease for eight years, with the possibility of an extension for another eight years for the development and implementation of digital terrestrial Television transmission. Multiplus was the first provider to effectively offer digital terrestrial television services. GO eventually acquired Multiplus in 2007.

No operator or service provider, other than GO and Melita, is currently offering linear pay TV services in Malta.

- Broadband

The Maltese Government licensed a number of Internet Service Providers (ISPs) in 1995 to offer Internet services. GO, the fixed incumbent operator, hosted these independent ISPs on a dial-up basis.

When broadband was introduced in the year 2000, Government sought to secure on-going access for independent ISPs so that these could provide both dial-up and broadband retail services. For this reason, the Government mandated access obligations on both the fixed telephony incumbent and the cable TV incumbent and also 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.

Relevant to underline is that, in 2003, the MCA conducted a market analysis and found that the retail arm of Melita – OnVol - had attained a retail market share in excess of 25%. This market analysis was carried out in accordance with national legislation applicable at the time. As a result of its findings, the MCA mandated access to Melita'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, GO (then Maltacom) 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 and the structural separation obligation was lifted. Subsequently, in 2005, GO (at the time known as Maltacom) merged its retail and wholesale operations. Following this merger independent ISPs started to experience increased pressures from GO with respect to the provision of wholesale access. In 2007, Melita Cable also merged with its retail ISP OnVol. Over time, the cable operator's share and GO's share of the retail broadband market continued to grow, whilst ISPs consistently lost market share and eventually left the market so that today the market is almost evenly split between the two vertically integrated operators, Melita and GO. An alternative provider has recently entered the market, namely Vodafone Malta, via wholesale regulated access.

- Mobile telephony

This sector was also monopolized for a number of years. In fact, Vodafone Malta started operations in Malta in 1990, with its position as the monopoly mobile operator ending in 1999 - ten years earlier than envisaged - following the granting of a second mobile communications licence in 1999 to Mobisle Communications Limited, a subsidiary of GO (Maltacom at the time). This licence was granted and issued on condition that the parent company of Mobisle, namely GO, divests its 20% shareholding in Vodafone Malta within six months of Mobisle's launch. Mobisle launched its GSM network in December 2000, branded as GO Mobile. Thereafter, this second operator grew rapidly, with the gap registered between subscribers on either network steadily declining during the period 2000- 2005. In fact, at the end of 2005, GO Mobile registered a 48 per cent share of the local mobile telephony subscriber base.

A big and positive change in market dynamics materialized in the 2007, when a third network operator, Melita, was granted a licence to provide mobile electronic communications. Following a network roll-out covering the whole national territory, Melita launched their commercial services on their 3G network in February 2009. This development immediately resulted in cheaper prices for consumers as both Vodafone and GO started to react towards Melita's aggressive offers. Also with the help of number portability, thousands of customers started switching to Melita, and many customers also opted to have a second connection with Melita whilst keeping their original connection. Also, in the period 2008 – 2010, a number of mobile virtual network operators (MVNOs) came into operation by adopting the Enhanced Service Provider Model. However, these MVNOs did not manage to sustain and / or build market share.

Overall, the granting of monopoly status in a very small market gave Melita and GO a big head-start over any aspiring competition.

2.2.2 The onset of a duopolistic market setting

The MCA notes that today GO and Melita effectively characterize the duopolistic setting characterizing the fixed broadband, fixed telephony and pay TV segments. Table 1 below shows that Melita has the largest market share in the provision of fixed broadband and pay television services. GO leads in the fixed telephony market. Another operator, namely Vanilla Telecoms holds negligible presence in fixed broadband and fixed telephony segments[7]. The mobile

[7] Until April 2020, another small operator, namely Ozone Malta Ltd., offered fixed broadband and fixed telephony services over wireless technology. This operator has now ceased operations.

telephony scene presents a departure from the duopolistic setting, with Vodafone Malta leading in a three-player market setting.

Market shares in electronic communications service provision				
End 2019	**GO**	**Melita**	**Vodafone Malta**	**Others**
Fixed telephony	54.04%	41.67%	4.01%	0.25%
Fixed broadband	46.34%	48.81%	4.49%	0.21%
Pay-TV	40.67%	59.33%	-	-
Mobile telephony	37.03%	23.68%	39.29%	-

Table 1: Market shares by operator as at end of 2019

Specifically for the fixed broadband segment, the MCA notes again that the market is shared almost evenly between Melita and GO, with the market shares of these two operators being close to each other as shown in Table 1 above[8].

Melita and GO are vertically and horizontally integrated providers, supplying converged electronic communications services via three different access technologies, namely copper DSL and FTTH for GO and cable DOCSIS 3.1 for Melita.

- GO owns a nationwide copper-based DSL network infrastructure, over which it provides DSL broadband connections supporting download speeds of up to 75Mbps. Over the years, GO has upgraded all its street cabinets to fibre (FTTC) and this operator is also rolling out its fibre-to-the-home (FTTH) network, which would allow for download speeds of up to 1Gbps. FTTH coverage reaches approximately 42% of homes and dwellings (up from 10.4% in 2015). The deployment of FTTH is expected to reach a nationwide footprint over the coming years.

  GO has not indicated when it intends to switch off its copper-based access network infrastructure.

[8] The market shares for the fixed broadband segment account for wireless fixed broadband subscriptions. If figures for fixed wireless are excluded from the market share calculation, the market share figures would be as follows: Melita – 51.8%; GO – 48.1%; Vodafone Malta – 0.1%.

- Melita's network is based on the cable HFC DOCSIS 3.1 standard. Melita has, over the past years, upgraded its network with fibre up to street cabinets and created many additional optical nodes. Melita claims to provide nationwide coverage with download speeds of up to 1Gbps.

A third operator, Vodafone Malta, can now compete directly with these two operators on the basis of products that are offered via regulated access by this operator to GO's network infrastructure. Market entry by this operator materialized in the second half in 2019. The market share highlighted for this operator in Table 1 is mainly accounted for by fixed wireless broadband subscriptions via Vodafone Malta's 4G platform, which is not aimed for universal usage as there is not enough bandwidth to support the service on a nationwide scale. A similar fixed wireless broadband service is offered by GO, which is again not intended for universal usage.

There is also fringe competition in the fixed broadband segment coming from the provision of fixed wireless broadband services. Vanilla Telecoms is offering fixed wireless broadband via wireless network infrastructures on the unlicensed spectrum band. The market presence of the wireless platforms on the unlicensed spectrum band is restricted to a few locations across the Maltese islands and several technical shortcomings also constrain the availability of the service.

Of relevance to underline is that, back in 2007 / 2008, fixed wireless technology was earmarked as a promising alternative to DSL and cable. However, twelve years down the line, the much anticipated platform competition from fixed wireless has failed to materialize. Today, undertakings based on wireless technologies only account for a minute share of the local subscriber base, given the technological and footprint limitations constraining their market presence. The MCA considers that the current fixed wireless services cannot compete with FTTH and cable, particularly in the provision of fast and ultrafast download speeds.

2.2.3 An ex ante regulatory approach adapted to national circumstances

The main regulatory developments concerning the fixed broadband markets in Malta are outlined below.

- In 1995, regulatory measures were introduced enabling a number of Internet Service Providers (ISPs) to offer Internet services in Malta. These ISPs started operations following a contractual agreement they reached with GO (then Maltacom), which accepted to host them on its network for the provision of fixed broadband services.

- In the year 2000, when broadband was introduced, Government sought to secure ISPs with ongoing access to existing access network infrastructures. To this effect, access obligations were mandated on GO and Melita to provide access seekers and existing ISPs with appropriate wholesale offers and thus to safeguard the ISPs' presence in the retail fixed broadband segment. Structural separation between the wholesale and retail arms was also mandated at the time for GO and Melita.

- In 2003, the MCA conducted a market analysis in accordance with national legislation at the time and found that the retail arm of the cable provider had attained a retail market share in excess of 25%. The MCA therefore mandated access to this operator's network, again in accordance with the then obtaining national legislation. Melita 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 2002 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, GO continued to comply with its obligations at law and continued to grant access to the independent ISPs, including the cable operator's ISP.

- The year 2004 heralded the adoption of the 2002 EU framework for electronic communications, following which the MCA lifted the mandated structural separation between retail and wholesale arms of Melita and GO.

  Since then, the MCA's approach to regulatory intervention in the market(s) under investigation was determined on the basis of market reviews and related consultations and decisions.

- In 2006, the MCA carried out the first analysis of the market for wholesale unbundled access (Market 4 / 2007) and the market for wholesale broadband access (Market 5 / 2007), as required by Article 7 of the then Framework Directive and Regulation 6 of the ECNSR.

In the case of wholesale unbundled access, the MCA's 2006 Decision designated GO with SMP in the provision of wholesale unbundled access[9], including shared access to metallic loops and sub-loops made available for the purpose of providing broadband and voice services. The MCA imposed on GO obligations related to access to, and use of, specific network facilities, non-discrimination, transparency, price control, cost orientation and cost accounting.

On 29 December 2006, the MCA notified a proposed decision on the 'Wholesale broadband access' market in Malta. The MCA identified the relevant market at the retail level as comprising narrowband and broadband access services supplied over DSL, cable and other broadband access services supplied in the same retail market. No distinction was made between residential and business broadband demand. Based on the delineation made at the retail level, the MCA established that the wholesale market for broadband access in Malta included wholesale bitstream access provided over all existing platforms, predominantly cable and DSL. The relevant market included self-supplied products. The relevant geographic market was deemed to be national in scope.

The MCA assessed the competitive situation and demonstrated that GO and Melita had joint dominance in the relevant wholesale market given (i) the high barriers to entry to replicate the network infrastructures of both Melita and GO; (ii) both GO and Melita having stable and symmetric market shares; (iii) both GO and Melita enjoying the same economies of scale and scope; as well as (iv) absence of countervailing buying power and vertical integration. Based on characteristics of the market, which the MCA considered as being conducive to co-ordination by Melita and GO, the MCA determined a joint dominance finding in the market for wholesale broadband access in Malta. The MCA decided to impose the regulatory obligations of access, non-discrimination, transparency, and price control including cost accounting obligation and accounting separation obligations on both GO and Melita.

- During Phase 1 of the MCA's notification, the Commission 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[10].

[9] Case MT/2006/0549.

[10] Case MT/2007/0563, Opening of Phase II investigation pursuant to Article 7(4) of Directive 2002/21/EC, 29.1.2007.

- During Phase 2, the MCA held numerous meetings with the Commission and provided additional evidence to support its findings. The MCA also requested an expert team from the European Regulators Group (ERG) to review the case. Among other conclusions, the review team stated that whilst the Maltese wholesale broadband market presented problems in terms of wholesale access, the MCA should provide additional evidence to support the concerns raised by the Commission. In the end, the Commission was still of the opinion that the MCA's finding of joint dominance was not proven beyond reasonable doubt and initiated proceedings to adopt a veto decision. Given the circumstances prevailing in March 2007, the MCA decided to withdraw its notification.

Following a number of meetings with the Commission and a redrafting of the analysis, in light of a price reductions implemented by Melita and GO just days before the intended publication of this report, the MCA found the wholesale broadband access market in Malta to be competitive. In regard of this conclusion the MCA stated that it '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*'. As a result, in June 2008, the MCA withdrew all the regulatory obligations previously imposed on GO and Melita in the relevant market. Eventually, all existing alternative service providers operating via wholesale access had ceased operations as MCA had predicted in its 2006 analysis.

- In 2010, the MCA notified to the Commission details of GO's reference unbundling offer (RUO)[11] concerning aspects such as the provision of information related to the operator's main distribution frames and co-location facilities amongst other aspects. In 2011, the MCA notified the Commission with modifications to the RUO, with respect to migration rules regulating GO's planned transition to a fibre to the cabinet (FTTC) network[12].

The MCA carried out a new round of market analyses in 2012, involving the wholesale unbundled infrastructure access market (Market 4 of the 2007 EU Recommendation on

[11] Case MT/ 2010/1087.

[12] Case MT/2011/1263.

relevant markets) and the wholesale broadband access (Market 5 of the 2007 EU Recommendation on relevant markets).

The relevant MCA notifications outlined a lack of SMP finding for the wholesale broadband access market[13] and a finding of single SMP - on the operator GO - in the market for the provision of wholesale unbundled access services (i.e. Market 4 of the 2007 EU Recommendation on Relevant Markets)[14].

In view of the SMP designation on GO in Market 4, the MCA imposed a suite of ex ante regulatory remedies on GO, including the obligation to offer a Layer 2 wholesale access product referred to as Virtual Unbundled Local Access (VULA). Such access would provide an access seeker with a virtual connection to subscribers over GO's newly deployed fibre network.

The relevant MCA decisions were published in March 2013[15].

- In February 2016, the MCA published a decision document entitled 'Virtual Unbundled Access to Fibre-to-the-Home, Response to Consultation and Decision'[16] focusing on the various technical and economic specifications to ensure equivalence of access, including, amongst other matters, the methodology for setting of wholesale access charges.

- In 2017, the MCA issued another Decision entitled 'Virtual Unbundled Access to Fibre-To-The-Home: Enhancing the Non-Discrimination Obligation'[17]. In its Decision, the MCA laid out a number of Key Performance Indicator (KPI) requirements to be monitored and

[13] Case MT/2012/1375

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[14] Case MT/2012/1374

[15] MCA Decision concerning the Wholesale Broadband Access market: https://www.mca.org.mt/sites/default/files/attachments/decisions/2013/final-decision-market-analysis-of-the-wholesale-broadband-access-market-market-5-060313.pdf

MCA Decision concerning the Wholesale Infrastructure Access Market: https://www.mca.org.mt/sites/default/files/decisions/final-decision-market-analysis-of-the-wholesale-infrastructure-access-market-market-4-060313.pdf

[16] Link to MCA Decision: https://www.mca.org.mt/consultations-decisions/virtual-unbundled-access-fibre-home-response-consultation-and-decision

[17] Link to MCA Decision: https://www.mca.org.mt/sites/default/files/Virtual%20Unbundled%20Access%20to%20Fibre-to-the-Home%20-%20Enahncing%20the%20Non-Discrimination%20Obligation.pdf

submitted to the MCA on a quarterly basis. These KPIs would assist in monitoring whether a number of service level agreements ('SLAs') and service level guarantees ('SLGs') would be met, and whether they could potentially be revised.

- A breakthrough with respect to the actual take-up of the regulated VULA access offer was registered in October 2018, representing the first access arrangement since the exit of ISPs several years earlier, following withdrawal of regulation in 2010. Vodafone Malta notified the MCA that it reached agreement with GO for take-up of the VULA access offer. Eventually, Vodafone Malta introduced retail fixed broadband services, making use of GO's fibre network. Of relevance in this respect is that the MCA constantly monitors the VULA wholesale charges, KPIs and SLAs and SLGs associated with the VULA offer.

2.3 Market structure outcomes

The preceding overview of market developments and regulatory outcomes underscores the long-standing nexus between retail competition and the adequacy of wholesale regulation when it comes to the provision of fixed broadband in Malta.

There are no wholesale only operators supplying fixed broadband in Malta. Additionally, the incumbents GO and Melita account for around 99% of wholesale fixed broadband access, given their ubiquitous presence in the retail fixed broadband market, in which these operators almost evenly share the subscriber base. This strong characterization of the market by GO and Melita intensified after 2008, following the disappearance of the smaller ISPs from the retail market.

To this effect, the MCA takes into account several important analytical and regulatory insights from past experience when carrying out the current review:

- Given that the market is captive, made up almost exclusively from internal supply by Melita and GO for own retail purposes, the intensity of retail competition closely mirrors that at the wholesale level. To this effect, the MCA will look at the degree of competitive performance of Melita and GO in the retail fixed broadband market prior to focusing on the adequacy of the regulatory approach at wholesale level.

- The purpose behind the MCA's consistent approach to regulatory intervention at wholesale level was and remains that of promoting retail market competition. Experience has shown that competitive outcomes in Malta's fixed broadband markets improved even at the mere threat of regulatory intervention, such as when service providers reduced prices in 2008, just weeks before the MCA issued its decision concerning the wholesale broadband access market.

- Whilst the MCA has not regulated the wholesale broadband access market in Malta since June 2008, its regulatory intervention in the closely related wholesale infrastructure access market today offers an opportunity for stronger competition, emanating from the presence of a new provider of fixed broadband via regulated access.

- The VULA regulatory remedy has been in place since 2016, although having been effectively imposed since 2013[18]. Market entry followed in 2018/2019 without disruption to investment plans for the period.

[18] Link to MCA VULA Decision entitled 'Virtual Unbundled Access to Fibre-to-the-Home. Response to Consultation and Decision': https://www.mca.org.mt/consultations-decisions/virtual-unbundled-access-fibre-home-response-consultation-and-decision..

3 Retail market definition

The MCA's methodology to define relevant markets pays utmost regard to the EU's Recommendation on Relevant Markets and the Commission's revised SMP Guidelines. In this context, the market definition exercise is based on an analysis of demand and supply substitutability among different products and services that could potentially form part of the same relevant market(s) under investigation. This exercise is also forward-looking in nature and takes into account national circumstances, included that:

- There are two operators in Malta having nationwide infrastructure coverage. The operator GO offers fixed broadband over the copper/FTTH network and Melita offers fixed broadband over with the cable HFC network based on the DOCSIS 3.1 standard.

- The fringe provision of fixed broadband by alternative providers over fixed wireless technology utilizing the unlicensed spectrum band and the 4G network.

3.1 Methodology

There are two dimensions to the market definition exercise, namely (i) the product market dimension; and (ii) the geographic market dimension.

3.1.1 The product market dimension

For a product to be considered in a relevant market, the MCA tests its substitutability with alternatives, both on the demand-side and the supply-side, through the application of the Hypothetical Monopolist Test (the 'HMT Test'). This test serves as a measure of the retail and wholesale reaction to a '*short but significant non-transitory increase in price*' (SSNIP) in any of the products and services that are considered at this stage of the current analysis. This test effectively seeks to determine the forms of direct pressure that could hinder a hypothetical monopolist from implementing a 5 to 10% increase in price for any of the products under investigation.

Demand-side substitutability

Demand-side substitutability measures the ability or willingness of consumers to consume an alternative product given changes in prices of the product under investigation. It thus determines the range of products that are viewed as mutually substitutable by retail consumers and wholesale customers.

- *Retail level*

  At the retail level, demand-side substitution will be mainly determined by assessing the extent of interchangeability of different products on the basis of functionality and price. Products deemed interchangeable to a small or a relatively small degree would not form a part of the same market.

  The 2014 EC Recommendation outlines that, at the retail level, fixed broadband services are available over several technological platforms including:

  - broadband over copper-based DSL networks (through a variety of DSL-variant and VDSL technologies);
  - broadband over fibre networks (FTTC, FTTB, and FTTH);
  - broadband over cable networks (standard or upgraded);
  - broadband over satellite and terrestrial TV networks;
  - broadband over non-fixed-line technologies (WiFi, WiMAX and mobile); and
  - retail high-quality products such as leased lines or equivalent copper-based or fibre-based connections (for example, LLU and Ethernet connections) and Virtual Private Networks (VPNs).

- *Wholesale level*

  The demand-side analysis at the wholesale level would determine whether other network operators can pose a direct pricing constraint on a hypothetical monopolist providing wholesale access at a fixed location in Malta. The question here is whether it is technically and economically feasible for network operators to offer substitutable wholesale products in the immediate-to-short term.

  Substitutability at the wholesale level may also materialize from indirect pricing pressure coming from the underlying retail market(s) i.e. as a result of competitive constraints at the retail level that may exist in the absence of wholesale regulatory intervention. Looking at indirect pricing pressure, the MCA investigates whether it would be profitable for a hypothetical monopolist to implement an increase in price at wholesale level considering substitution at retail level.

Supply-side substitutability

Supply-side substitutability measures whether, in the immediate to short term, suppliers would respond to a SSNIP implemented by a hypothetical monopolist by switching (or extending) their line of production to offer the relevant products or services without incurring considerable additional costs.

3.1.2 The geographic market dimension

With respect to the geographic market definition, the Recommendation states that '*a relevant geographic market comprises an area in which the undertakings concerned are involved in the supply and demand of the relevant products or services, in which area the conditions of competition are similar or sufficiently homogenous and which can be distinguished from neighbouring areas in which the prevailing conditions of competition are appreciably different*'. The MCA defines relevant geographic markets on the basis of an interchangeability assessment between products and services following a SSNIP. The MCA applies two main criteria in its assessment of the geographic dimension of the market definition exercise, namely: (i) the area covered by the network; and (ii) the scope of application of legal and other regulatory instruments.

3.2 The relevant retail product market

In 2013, the MCA identified the copper DSL and cable platforms to be ubiquitous, with the respective product portfolios forming part of the same relevant market. Fixed broadband services based on FTTH were also considered to form part of the market, whilst WiMAX was excluded given that no retail clients to this service were recorded at the time.

There were several developments since 2013 that are relevant to the current assessment:

- GO upgraded all street cabinets to fibre (FTTC) and is gradually rolling-out the FTTH network, which now reaches 42% of local homes and dwellings. GO also maintained its copper DSL infrastructure, over which it offers DSL broadband. No vectoring techniques are implemented.

- Melita fully upgraded its cable network standard, from DOCSIS 3.0 to DOCSIS 3.1 standard. This upgrade started in 2017 and was completed in April 2019. Melita is in a position to offer download rates of up to 1Gbps across all the national territory.

- All privately owned ISPs that made use of GO's wholesale broadband access offer to offer retail fixed broadband services to local households and businesses ceased operations. The Maltese Government's own (non-commercial) ISP, the Malta Information Technology Agency (MITA), remains active by offering services only to Government agencies.

- Vodafone Malta concluded a VULA agreement with GO in 2018 and launched new fixed broadband products in 2019 via the regulated VULA access offer.

- GO and Vodafone Malta offering 4G-based wireless broadband over the licensed spectrum.

- Vanilla Telecoms has been operating for a number of years in the unlicensed frequency bands to offer wireless fixed broadband. This operator's service is only available in certain locations of the national territory and is subject to certain technical limitations.

- WiMAX technology was considered as a promising alternative in the fixed broadband sphere back in 2013.

In view of the above-mentioned developments, the MCA will look at the evidence of demand-side and supply-side substitution by taking into account the following considerations:

- whether retail fixed broadband services offered over copper DSL, FTTH, cable and fixed wireless form part of the same relevant market;

- whether two separate retail fixed broadband markets need to be identified for residential and business segments;

- whether the relevant product market comprises fixed broadband products offered in a bundle;

- whether retail high-quality products such as leased lines or equivalent copper-based or fibre-based connections (namely Ethernet connections and WDM connections) form part of the relevant market comprising any of the above; and

- whether mobile broadband services are a substitute to fixed broadband services.

3.2.1 Substitutability for products offered over copper DSL, FTTH, cable and fixed wireless

The MCA is hereby assessing the characteristics of the different fixed broadband products that are currently on offer in Malta.

3.2.1.1 Functionality

From a functional perspective, fixed broadband products supplied by GO, Melita and Vodafone Malta (which is active in the market via regulated wholesale access on GO's FTTH network) allow for similar functionality. Irrespective of whether the fixed broadband product is offered stand-alone or in a bundle, download speeds of up to 1Gbps are attainable over the FTTH and cable DOCSIS 3.1 network platforms. In those areas where FTTH is not available, GO also offers fixed broadband DSL products over copper technology where FTTH is not yet available. These products allow for download speeds of up to 75MBps.

These operators offer fixed broadband products to residential and business users, stand-alone or in a bundle with other electronic communications services. The business product portfolio exhibits features and speed characteristics that are largely similar to the product portfolio of residential users, although other features such as multiple email addresses and web hosting facilities may be added by these businesses, on an opt-in basis. This is evident from the information provided in Table 3 and Table 4 below, which show that the download and upload speeds on offer and the payment terms that are involved are similar to those observed for residential users.

On the other hand, the fixed broadband product portfolio for wireless platforms operating in the unlicensed spectrum bands and over the 4G platforms is characterized by far lower download speeds than is the case for copper DSL, cable and fibre-based services. This is mainly due to the wireless nature of the services and constraints in the transmission resulting from physical barriers and/or climatic factors. Additionally, wireless fixed broadband is subject to data download caps due to the inherent nature of the wireless access channel (limited spectrum bandwidth). No data download caps apply in the case of fixed broadband products supplied over copper DSL, FTTH and cable.

3.2.1.2 Payment terms and pricing structure

The payment terms for copper DSL, fibre and cable fixed broadband products are the same, with Melita, GO and Vodafone Malta offering their respective products subject to monthly access fees. The end-user could either opt to purchase a fixed broadband product – stand-alone or in a bundle - for a 24-month contract term agreement or on month-on-month payment conditions. Monthly access fees would typically be cheaper in case of purchases on a contract. Also, prices for the different copper DSL, fibre and cable broadband products - stand-alone or in a bundle - vary according to download speed, with monthly access fees being higher for products featuring the highest download speeds.

It is relevant to underline that local fixed broadband service providers typically offer the lower speed products as a stand-alone plan and high speed products in a bundle. In reality, however both low speed and high speed fixed broadband products can be offered stand-alone or in a bundle. The distinction is more a result of the strategy employed by GO and Melita to upsell their bundle product portfolio.

One-time connection fees, installation fees and modem fees are generally waived when fixed broadband products are purchased on a contract term agreement and / or in a bundle subscription. Also, in almost all instances, the purchase of fixed broadband in a bundle would entail a certain level of price discount and other ongoing special offers. This policy is common for GO, Melita and Vodafone Malta.

The above-mentioned payment terms and pricing structures apply for business users and residential users, although there could be minor add-on features for business clients, including email addresses and web hosting facilities, which are however available on an opt-in basis.

The payment terms for fixed broadband products offered over wireless technology are largely the same as in the case of the wired fixed broadband options. For example, cheaper monthly access fees would apply when the purchase is bound by a contract. However, connection fees, installation fees and modem fees apply in most cases and the implementation of data caps entails a two-tiered pricing approach for wireless-based fixed broadband products.

3.2.1.3 Prices and the SSNIP test

The MCA considers whether a hypothetical monopolist of either copper DSL, fibre, cable and fixed wireless broadband products would profitably maintain a SSNIP (i.e. a 5 to 10% increase in price).

Residential users

Starting with the residential segment and focusing on the monthly access fees for the entry-level fixed broadband products outlined in Table 2 (including entry-level dual play and triple play plans featuring fixed broadband[19]), the MCA notes as an example that a 10% SSNIP implemented on Melita's stand-alone 30Mbps product (purchased without contract) could theoretically entice the end-user to switch to other fixed broadband products, either from its direct competitors or from the same operator. For example, the end-user could opt for Melita's 100Mbps product offered in dual play or triple play plans, bound by a 2-year contract term agreement. Alternatively, the end-user could opt for a dual-play offer including fixed broadband and fixed telephony offered by Vodafone Malta and GO. In all these instances, the market price is lower than the theoretical SSNIP price for Melita's 30Mbps stand-alone product purchased without a contract.

Melita - 30Mbps – Stand-alone		**Vodafone Malta – 100Mbps (only FTTH areas)**	**GO – Dual Play – 75Mbps / 100Mbps**	**GO – Triple play – 75Mbps /100Mbps**
Current price No contract	SSNIP price	Current price 2-year contract	Current price 2-year contract	Current price 2-year contract
€29.99	€32.99	€25.00	€25.00	€30.00
		Melita – dual play – 100Mbps	Melita – triple play – 250Mbps	Melita – 30Mbps – Stand-alone
		Current price 2-year contract	Current price 2-year contract	Current price 2-year contract
		€35.00	€32.99	€19.00

Table 2: Price outcome and end-user choices in the event of a SSNIP

[19] Mobile telephony could also be added on an opt-in basis by the end-user to the dual-play and triple-play plans. However, such bundle iterations are not considered in the assessment given that the end-user would still need to sign a separate contract for the mobile subscription. No bundle subscriptions including fixed broadband are currently offered under a single contract.

Of note is that GO's FTTH and copper DSL product line-up does not currently feature a stand-alone fixed broadband plan, such as been the case until November 2019 with the 'Rapid 35' plan offered at a monthly access fee of €40 (without contract).

GO currently offers a 4G-based fixed wireless 'Plug'n'GO' plan instead, supporting a download speed of 35Mbps and featuring a 400GB data cap, as indicated in Table 3. The MCA considers that although the price of this plan, at €25 monthly when purchased on a 2-year contract, fits in the 'chain of substitution' pricing dynamic, the applicable 400GB data cap clearly points to a two-tiered pricing element characterizing this plan.

This means that the final price paid by the end-user (especially the data hungry end-user) may be significantly higher than the one being advertised. If, on the other hand, the end-user has a data consumption profile that does not exceed the cap, then of course this product would be accommodating specific functionality requirements of an end-user segment that is distinct from the end-user segment opting for fixed broadband on copper DSL, FTTH and cable.

The same reasoning applies in the case of the 4G-based 'Plug and Play' plan offered by Vodafone Malta, which again features a two-tiered pricing given the existence of a data cap[20]. The situation with fixed wireless plans offered by Vanilla Telecoms is even more distinct in that these plans are only available in a very few locations across the Maltese Islands and therefore price comparisons are not deemed necessary.

FIXED BROADBAND PACKAGES – RESIDENTIAL USERS Entry-level product features and prices					
Fixed broadband product features	**Type** **(broadband = BB; fixed telephony = FT, pay TV = TV)**	**Download speed**	**Upload speed**	**Monthly access fee**	
				Month-on-month	**2-year contract**
Melita – Internet Fibre Power 30	BB	30Mbps	1.5Mbps	€29.99	€19.00
Melita – Internet Fibre Power 100 - Cable	BB + FT	100Mbps	6Mbps	€35.00	€25.00
Melita – Flexi Bundle - Cable	BB + FT + TV	250Mbps	15Mbps	€34.99	€32.99

[20] The 4G-based plans offered by GO and Vodafone Malta are also available to business users.

Vodafone Malta – Plug & Play – Fixed wireless[21]	BB + FT	35Mbps	15Mbps	Not applicable	€30.00 to €45.00
Vodafone Malta – Fibre Internet – 100Mbps	BB + FT	100Mbps	15Mbps	Not applicable	€24.99
GO – Plug'n'GO – Fixed Wireless[22]	BB	35Mbps	15Mbps	€30.00	€25.00
GO – Mix and Match - Copper	BB + FT	75Mbps	15Mbps	€30.00	€25.00
GO – Mix and Match Turbo- Fibre	BB + FT	100Mbps	15Mbps	€30.00	€25.00
GO – Mix and Match Turbo – Copper	BB + FT + TV	75Mbps	15Mbps	€35.00	€30.00
GO – Mix and Match - Fibre	BB + FT + TV	100Mbps	15Mbps	€35.00	€30.00

Table 3 - Residential fixed broadband packages as at the end of March 2020

Further to the observations related to the residential segment, the MCA is of the opinion that the 'chain of substitution' pricing dynamic applies across the whole range of the fixed broadband product portfolio supplied, irrespective of whether the product is offered stand-alone or in a bundle. This 'chain-of-substitution' pricing dynamic also reflects the product and pricing strategies adopted by Melita and GO since 2013, whereby both operators implemented prices for stand-alone fixed broadband to stimulate take-up of fixed broadband in dual play and triple play plans alongside fixed telephony and / or pay TV.

In fact, Table 3 above shows that there are various instances where the price paid by the end-user for a fixed broadband product purchased in a dual-play or triple-play bundle alongside fixed telephony and / or pay TV would be the same than the only available stand-alone fixed broadband product on the market purchased without contract. In the case of Melita, the monthly access fee for a fixed broadband product purchased stand-alone without contract term is €29.99. Meanwhile, purchasing the entry-level triple-play offer on a contract term basis from the same

[21] Data cap of Up to 400GB downloads at 35Mbps.

[22] Data cap applies at 400GB per month applies.

operator would entail the same financial outlay of €30 per month on a contract term basis. The monthly access fee for GO's entry-level triple-play offer also stands at €30.

There are also instances where a triple-play bundle subscription with Melita or GO would also be cheaper than would be the case if the end-user purchase the products comprising the bundle on a stand-alone basis. For example, in case of a purchase from GO involving a wireless fixed broadband service stand-alone and a pay TV service stand-alone (both subject to a 24-month contract term agreement), the monthly financial outlay would be of €35, compared to a monthly access fee of €30 for a triple-play product purchased from GO, encompassing fixed broadband, fixed telephony and pay TV. A triple-play plan comprising the same elements from Melita on a 24-month contract agreement would cost €32.99, which is again cheaper than the sum of the financial outlay on the stand-alone purchases. This explains why just around 9% of fixed broadband subscriptions are purchased outside a bundle, i.e. stand-alone.

The MCA does note however that end-users also have the possibility to register (on an opt-in basis) their mobile telephony subscription together with the bundle subscription, when the bundle and the mobile telephony service are provided by the same operator. Nevertheless, the mobile telephony product would still involve a separate contract and would typically feature as a separate element for billing purposes rather than in the total bill for the bundle. Also, whilst some additional allowances may apply for the mobile telephony subscription, the registration of this subscription together with the bundle would not effectively create an obvious advantage for the end-user to purchase the bundle and the mobile telephony subscriptions from the same provider.

Given the above, the MCA considers that a hypothetical monopolist of fixed broadband provided stand-alone to residential users cannot profitably implement a SSNIP for the product. This is because stand-alone fixed broadband product would fall within the same 'chain of substitution' pricing dynamic that encompasses fixed broadband provided in dual-play and triple-play bundles alongside fixed telephony and pay TV. This also means that fixed broadband products offered stand-alone and fixed broadband products offered in dual-play and triple-play bundles with fixed telephony and pay TV form part of the same relevant market.

Business users

A further consideration at this stage is whether the 'chain-of-substitution' pricing dynamic extends to the fixed broadband product portfolio for business users. The MCA notes that starting from the implementation of a 10% SSNIP to Melita's dual-play plan 'Internet Fibre Power 100' offered to residential users combining a 100Mbps connection and fixed telephony, the resulting price would be €38.50 per month. This SSNIP-based price is higher than the monthly price of €35 charged by GO to its business clients for the entry-level dual-play bundle plan comprising fixed telephony and 100Mbps fixed broadband. The latter plan is priced at €35[23].

FIXED BROADBAND PACKAGES – BUSINESS USERS Entry-level product features and prices					
Fixed broadband product features	**Type** **(broadband = BB; fixed telephony = FT, pay TV = TV; MT = mobile telephony)**	**Download speed**	**Upload speed**	**Monthly access fee**	
				Month-on-month	**2-year contract**
Melita – Business Fibre Power - cable	BB	250Mbps	20Mbps	€65.00	€55.00
Melita Business Flexi Duo – Cable	BB + FT	500Mbps	20Mbps	€65.00	€55.00
Melita Business Flexi – Cable	BB + FT +TV	500Mbps	20Mbps	€72.80	€60.99
Vodafone Malta – Plug & Surf – Fixed wireless[24]	BB + FT	35Mbps	15Mbps	Not applicable	€30.00 to €45.00
Vodafone Malta – Fibre Internet - 100Mbps	BB + FT	100Mbps	15Mbps	Not applicable	€41.00
GO – Plug'n'GO – Fixed Wireless[25]	BB	35Mbps	15Mbps	€30.00	€25.00

[23] This price is exclusive of VAT. However, VAT on fixed broadband in Malta is refunded to businesses.

[24] Data cap of Up to 400GB downloads at 35Mbps.

[25] Data cap applies at 400GB per month applies.

GO – Business Infinity Small - Copper	BB + FT	75Mbps	10Mbps	€47.20	€41.30
GO – Business Infinity Small - Fibre	BB + FT	100Mbps	10Mbps	€47.20	€41.30
GO – Business Infinity Medium – Fibre	BB + FT + TV	100Mbps	10Mbps	€64.00	€59.00

Table 4 - Business fixed broadband packages as at the end of 2019

Based on figures for businesses presented in Table 4, the MCA considers that the implementation of a SSNIP to the different prices on offer would also effectively confirm the theoretical dynamic of switching between operators and between stand-alone fixed broadband and fixed broadband offered in dual-play and triple-play offers supplied alongside fixed telephony and pay TV. For example, a SSNIP to GO's dual-play offer comprising fixed broadband and fixed telephony without contract would be constrained by Melita's dual-play plan on a 2-year contract. A SSNIP implemented for Melita's dual-play offer would then be constrained by Melita's own triple-play offer or by GO's triple-play offer on a 2-year contract term.

The MCA therefore considers that the relevant product market comprises fixed broadband stand-alone and fixed broadband in a dual-play or triple-play bundle with fixed telephony and / or pay TV offered to residential users and business users.

The MCA also notes that not all businesses resort to standard fixed broadband. In fact there are a few large corporations that purchase tailor-made packages of fixed broadband featuring higher bandwidth capabilities (symmetric bandwidth) and quality of service, alongside with the guarantees covered by Service Level Agreements (SLAs). Hence the term high-quality connectivity products such as Traditional Interface leased lines, Ethernet-based leased lines and Wavelength Digital Multiplexing (WDM) solutions. These high-quality connectivity products are generally more expensively priced than the standard fixed broadband plans and packages and fall outside the 'chain of substitutability' pricing dynamic highlighted above. In these circumstances, the MCA considers that such tailor-made solutions do not form part of the relevant fixed broadband product market.

Price elasticity

Another relevant consideration at this stage is the potential price elasticity between fixed broadband products that are currently on offer. One potential approximation to price elasticity could be generated by reference to diversion ratios, which are in themselves directly related to own- and cross-price elasticities of the products that are on offer. Upon calculating the diversion ratios for the fixed broadband segment on the basis of developments in subscriber market shares, the MCA could argue that the products supplied by Melita and GO may be considered as close substitutes. By extension, Vodafone Malta's product portfolio is also a close substitute to Melita's given that this operator is active in the retail provision of fixed broadband via regulated access to GO's FTTH network.

	Proportion of business lost by GO to...		Proportion of business lost by Melita to...		Proportion of business lost by others to...	
	Melita	Others	GO	Others	GO	Melita
2014	96.94%	3.06%	97.01%	2.99%	50.66%	49.34%
2015	96.83%	3.17%	96.87%	3.13%	50.28%	49.72%
2016	94.21%	5.79%	93.93%	6.07%	48.71%	51.29%
2017	91.23%	8.77%	91.09%	8.91%	49.56%	50.44%
2018	89.70%	10.30%	90.05%	9.95%	50.96%	49.04%
2019	88.77%	11.23%	89.49%	10.51%	51.85%	48.15%

Table 5 - Diversion ratios for fixed broadband on the basis of market share developments

Table 5 indicates that any lost business by Melita has mainly been gained by GO and vice versa in the years 2014 to 2019[26]. Lost business by either Melita or GO to wireless-based service

[26] The MCA has carried out an indicative exercise whereby it used market shares of local operators as a proxy measure to estimate the diversion ratios in the fixed broadband segment. The main assumption of this approach is that losses in subscribers of one of the local operators, say operator (A), would translate into gains for operators (B) and (C), in proportion to movements in their market shares. To this effect, the formula used in deriving the diversion ratios would distribute the losses of operator (A) across competitors (B) and (C). Ultimately, this means that if operator (A) is no longer in business, (A)'s customers would scatter to other market suppliers in proportion to those suppliers' existing market share.

Formula used: [Market share of MNO (B) / (100% - Market share of MNO (A)] i.e. taking B's market share and dividing it by the difference between 100% and A's market share (20% / (100% - 10%)). On the basis of this formula, MNO (B) would capture 22% of any business lost for MNO (A)

Sources: (i) http://www.crai.com/sites/default/files/publications/Economic-Tools%20for-Evaluating-Competitive-Harm-in-Horizontal-Mergers.pdf (ii) http://www.oxera.com/Oxera/media/Oxera/downloads/Agenda/Diversion-ratios.pdf?ext=.pdf.

providers has only marginally increased over the years and is not sufficiently strong as to indicate that the fixed wireless broadband services that are offered in Malta are close substitutes to the ‘wired’ fixed broadband services supplied by the largest providers. The reasons for this have already been outlined at an earlier stage, mainly that the wireless based services are not available nationwide and are subject to technical limitations, alongside the lower download speeds and the data caps that are in place. Meanwhile, the gains for Vodafone Malta on the back of FTTH broadband would become evident in the years to come given that this operator only launched its respective product portfolio in the second half of 2019.

Consumer and business perception surveys also offer a practical method to assess substitutability. In 2019, the MCA carried out such research into broadband users’ perceptions for households in Malta. From all survey respondents, 41 per cent say that they consider the fixed broadband services offered by Melita and GO as being functionally ‘similar’ and another 39 per cent say they consider these service as being functionally ‘very similar’.

The supply-side perspective

From a supply-side point of view, the assessment of substitutability requires that undertakings that are not currently active in the provision of fixed broadband products can, following a retail price increase by a hypothetical monopolist, become active and start offering such products at no significant high costs in a relatively short term and with relatively small investments.

The MCA considers that if a hypothetical monopolist implements a SSNIP for its fixed broadband product, an undertaking may consider the possibility to be active in the retail market for the provision of fixed broadband. However, market entry by alternative providers would be subject to the availability of wholesale broadband access with existing network operators. Market entry based on the deployment of own network infrastructure would entail significant sunk costs and would take a long time to materialize.

Conclusion on the substitutability of DSL, fibre, cable and fixed wireless broadband

From the analysis above the MCA confirms substitutability between fixed broadband products offered over copper DSL, fibre and cable technology. Functionally, the product characteristics for fixed broadband products supplied over DSL, fibre and cable technologies are largely similar. End-users also perceive the relevant products as being ‘similar’ to ‘very similar’, as confirmed by market research carried out by the MCA in 2019. This research shows that 41% of respondents consider that the fixed broadband products offered by Melita and GO are ‘similar’ and an additional 39% of respondents consider the same products as ‘very similar’. From a functional and pricing perspective, a SSNIP implemented by a hypothetical monopolist supplier of any of these services could in principle entice residential and business users to switch between products supplied by Vodafone, Malta, Melita and GO.

In addition, the ‘chain of substitution’ pricing dynamic holds across the whole range of fixed broadband products offered to residential and business users, in stand-alone or bundle format. The MCA therefore considers that fixed broadband products offered to residential users and fixed broadband products offered to business users fall within the same relevant market.

Also from the examination of the functional characteristics of the broadband services offered via wireless solutions, the MCA determined that the relevant download and upload speeds are not sufficiently similar with those available over DSL, fibre and cable technologies. Also, wireless technology used for fixed broadband cannot support ubiquitous supply of network capacity nationwide and the service quality is subject to limitations given the wireless nature of the service. Therefore fixed broadband supplied over wireless platforms does not form part of the relevant product market.

3.2.2 Substitutability of fixed broadband services and mobile broadband services

The MCA examines whether mobile broadband services form part of the relevant fixed broadband market, particularly in view of the observed rise in take-up of mobile broadband services and the corresponding surge in mobile data usage. The assessment will compare the functional characteristics and the prices of the two services, such as to determine the potential for end users to switch between a mobile broadband service and a fixed broadband service.

The possibility for substitution between mobile broadband and fixed broadband is particularly relevant to the current review, given that GO, Melita and Vodafone Malta are already offering these two services to the end-user, in a bundle or stand-alone basis. Furthermore, investment by all local MNOs in the nationwide roll-out of 4G and 4.5G network infrastructures has made it possible for local service providers to keep improving their respective mobile broadband service, both in terms of overall service quality, particularly download / upload speeds.

Demand-side substitutability

Once a mobile service is activated, the end-user may access mobile broadband services on several devices, such as laptops, tablets and / or smartphones.

It is relevant to underline that 4G and 4.5G coverage is nationwide in Malta, with indications that the maximum download speed could theoretically reach up to 200 Mbps. However, there could be factors that limit the actual speeds that are attained / achieved by the end-user. This may especially be the case in view of the high population density of the Maltese islands. For example, a big or abrupt rise in the number of end-users using the same mast for mobile internet services may slow the mobile broadband download speeds to far less below the theoretical benchmarks. Also, achievable download speeds would be less than the theoretical maximum speeds when demand for mobile internet services would rise at such a rate as to put pressure on the available capacity. This may explain why two MNOs, namely Melita and Vodafone Malta, have recently launched post-paid plans with unlimited data but at 2Mbps download speeds in order to avoid potential capacity constraints resulting from the continued rise in mobile broadband usage. Unlimited data plans with 4G/4.5G are also on offer from these operators, but at a much higher monthly access fee.

The above goes to suggest that, from a demand-side functional perspective, the mobile broadband service cannot guarantee the overall level of quality that is consistently guaranteed by the fixed broadband service. Also, the end-users' quality experience with the mobile broadband service may vary significantly, depending on where the end-user is located. For example, mobile broadband speeds would vary depending on the number of end-users utilizing a particular mast / transmitter and depending on whether the end-user is indoors or outdoors. It may be argued that capacity is also shared over a fixed amount of clients for cable-based fixed broadband. However, capacity sharing in the latter case would only happen to a much lesser extent that could be the case for mobile broadband. Meanwhile, the fixed broadband service cannot replicate the mobility feature that characterizes a mobile telephony subscription.

Also of significance from a functional perspective is that, based on offers available in Malta, the allowed data usage via mobile broadband is typically subject to a data cap, whilst the data usage allowed via fixed broadband is always unlimited. In the last quarter of 2019, local MNOs introduced a number of unlimited mobile broadband offers to some of their post-paid plans. However, opting for such plans may come at a significant monthly price premium for end-users, which could be reduced if end-users opt for mobile telephony plans that allow for lower speeds than what could be attained over 4G and 4.5G mobile network infrastructures.

Further to the above, a mobile subscription is deemed as being more of a personal service, whilst the fixed broadband service is more of a household or business service aimed to address the data connectivity requirements of more than one person. This means that access to the mobile broadband service in a household or business can only be considered to constitute a proper substitute for fixed broadband if all household members or all members of a business would opt to have their own mobile subscription with mobile broadband access instead of the fixed broadband service.

Another difference between fixed broadband and mobile broadband is that the former service is typically purchased in a dual or triple play bundle with fixed telephony and / or pay-TV. In fact, 91% of all fixed broadband subscriptions at the end of 2019 were purchased in a bundle. In contrast, just around 10% of all mobile subscriptions were purchased in a bundle. The latter figure supports the argument that the mobile telephony service is a personal one. Meanwhile, the high rate of purchases of fixed broadband in a bundle goes to show that it would be very difficult for the end-user to substitute the mobile broadband service with the fixed broadband service, unless of course local service providers start offering a bundle of mobile broadband with fixed telephony and pay-TV instead, which has never been the case to date.

Also, as already outlined in the previous section, mobile telephony is not yet effectively integrated with bundles of electronic communications services. In fact, mobile telephony subscriptions are covered by separate contract to bundle subscriptions, with end-users having the possibility to terminate the contract of the mobile component independently of the fixed component.

Ultimately, therefore, a SSNIP for fixed broadband is unlikely to materialize in immediate switching from fixed broadband to mobile broadband. Hence, the MCA considers that, from a demand-side perspective, mobile broadband and fixed broadband are not substitutable, but rather that the two different data services complement each other. This situation is unlikely to change within the timeframe of this review.

Supply-side substitutability

The MCA notes that two out of three of the local MNOs - namely Melita and GO - already have their own fixed network infrastructure in place. The other MNO, namely Vodafone Malta, has a mobile network in place with a wired and wireless backbone network. However, it is not considered possible for this operator to invest in a fully-fledged nationwide fixed access infrastructure in the short term and at relatively low costs. Effectively, the deployment of a nationwide access network infrastructure or the adaptation of the mobile network to a fixed network requires significant investments and cannot be realized within the timeframe of this review.

The above goes to suggest that supply-side substitution of mobile broadband to fixed broadband would not plausibly materialize within the timeframe of this review.

Also of significance to note is that local service providers have not yet outlined a clear timeline as to when they plan to deploy 5G as a successor to the current 4G / 4.5G network infrastructure. However, the MCA considers that the full roll-out of 5G network(s) will not materialize within the timeframe of this review[27].

Conclusion on the substitutability between mobile broadband and fixed broadband

The MCA considers that mobile broadband products do not form part of the relevant product market for fixed broadband. Mobile broadband deployed on the existing LTE technology can be attributed with a level of similarity to fixed broadband when it comes to its functional characteristics. However, given the current scenario, the mobile broadband service cannot offer the same level of guarantee associated with the fixed broadband service, especially in an environment where data consumption rises at a very fast pace. Also, demand for mobile broadband is likely to depend on the personal requirements of the individual, as opposed to fixed broadband which is typically purchased to accommodate the requirements of different people in a household or business unit. Furthermore, fixed broadband is typically purchased in a bundle with other services, which further dilutes the possibility of immediate switching to mobile broadband in the event of a SSNIP. From a supply-side standpoint, the deployment of a nationwide access network infrastructure or the adaptation of the mobile network to a fixed network requires significant investments and cannot be realized within the timeframe of this review.

3.3 The relevant geographical market

As underlined by the EC Communication entitled '*Guidelines on market analysis and the assessment of significant market power under the EU regulatory framework for electronic communications networks and services*', the relevant geographic market comprises an area in which the undertakings concerned are involved in the supply and demand of the relevant

[27] Given that all currently assigned spectrum is service and technology neutral, one of the operators opted to roll-out network infrastructure which is also 5G-ready. 5G services are still not available, on a commercial basis, in the Maltese market. It is MCA's understanding that industry is looking for a tangible use case which delivers incremental profits that could not have otherwise been achieved using existing technologies before committing to commercial 5G. The MCA is planning to issue the framework for the rights of use of the 5G pioneer bands during the first quarter of 2020 and subject to market demand, it will subsequently expect a progression towards full commercial services.

products or services, in which the conditions of competition are sufficiently homogeneous, and which can be distinguished from neighboring areas in which the prevailing conditions of competition are significantly different. Areas in which the conditions of competition are heterogeneous do not constitute a uniform market.

The MCA considers that the current conditions of competition in the provision of retail fixed broadband products are deemed to be geographically homogenous. The relevant market is subject to a national pricing constraint, as all authorized network operators offer fixed broadband services at prices without differentiating by reference to geographic location of the client. Further to this, end-user preferences and purchasing patterns are uniform across the national territory.

3.4 Proposed retail market

According to the analysis carried out and evidence available, the MCA's preliminary conclusion on the retail market is that it encompasses the following:

- fixed broadband products supplied over GO's copper DSL network;
- fixed broadband products supplied over GO's fibre network; and
- fixed broadband products supplied over Melita's HFC DOCSIS 3.1 network.

The relevant product market consists of fixed broadband offered stand-alone and fixed broadband offered in a bundle alongside fixed telephony and pay TV. Fixed broadband products offered to business and residential users form part of this market.

Fixed broadband products supplied over fixed wireless technologies and over the 4G/4.5G network are not deemed part of the relevant product market.

The current conditions of competition in the identified retail market are deemed to be geographically homogenous with the market in question subject to a national pricing constraint. The relevant retail market is therefore national in scope.

4 Assessment of competition in the retail fixed broadband market

Having defined the retail market, the MCA now assesses the level of competition in the retail market. The assessment starts with an evaluation of the current market competition dynamics, including on market maturity, prices and choice.

The assessment of current market competition dynamics is then followed by an assessment of the major structuring factors of the market in the context of a dominance analysis.

4.1 The dynamic factors characterizing competition in the retail fixed broadband market

The MCA considers three main parameters, which in its opinion, best describe the current competition dynamics in the retail fixed broadband market, namely:

- the extent of market maturity owing to national circumstances;
- the level of retail fixed broadband prices and the intensity of price changes; and
- the variety of offers on the market.

These parameters are evaluated in detail in the following sub-sections.

4.1.1 Market maturity

Fixed broadband take-up in Malta has been on an upward trend for several years. However there are indications that the market is now close to approaching full maturity.

The 2019 MCA consumer perception survey for fixed broadband shows that 98% of households in Malta have a fixed broadband connection at their residence[28]. This survey is the latest in a series of similar surveys carried out every two years by the MCA since 2011. Chart 6 depicts how the response rate changed when it comes to the availability of fixed broadband in Maltese households. The rate of increase was significant between 2007 and 2015 and there was still some way to go in order for household take-up of fixed broadband to get close to the 100% threshold. From 2017 onwards, however, the fixed broadband penetration rate by household

[28] This means that just 2% of local households do not have a fixed broadband connection at their residence. Of note is that none of the respondents without a broadband connection say he / she would be getting the service in the near future.

In addition to the above, another survey carried out in 2019 focuses on expats living in Malta. The number of expats totaled around 73,000 by the end of 2019. Almost 87% of survey respondents (expats aged 18 years or above) say they have a fixed broadband at their place of residence.

exceeded the 90% benchmark and now stands just around two percentage points short of maximum take-up. This goes to suggest that future growth in take-up of fixed broadband will correspond to natural growth rate in terms of the number of Maltese households, which typically corresponds to an average annual growth rate of 3%[29].

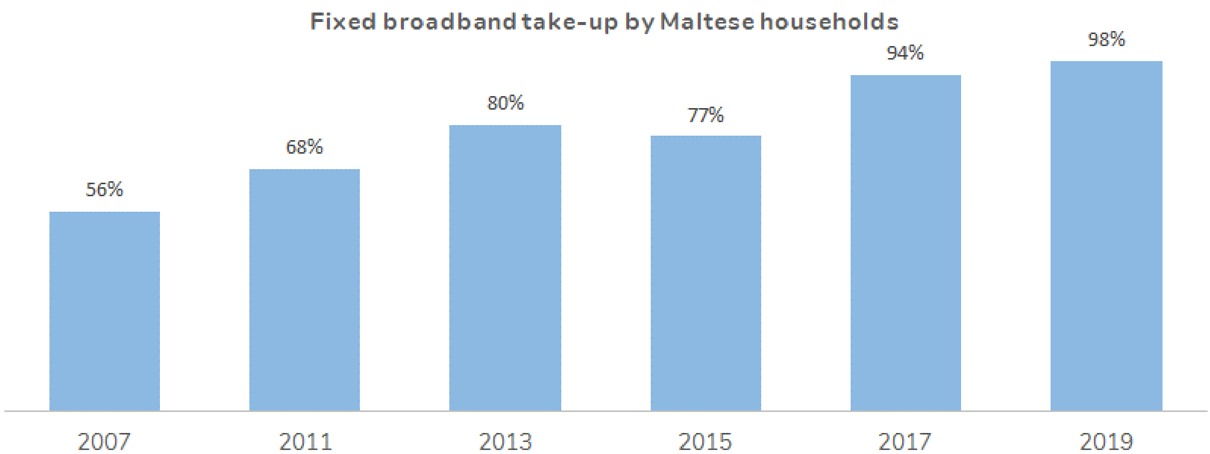

Chart 6 – Growth rate in retail fixed broadband subscriptions

The MCA also notes that there are fewer businesses in Malta than households. In fact, the number of businesses totaled 113,256 in 2018 compared to around 186,000 households[30]. The latest MCA business perception survey, carried out in 2016, shows that 86% of all businesses had a fixed broadband connection at their premises[31], representing an 11-percentage point increase when compared to 2014. The MCA is of the opinion that the last few years have seen further growth in take-up of fixed broadband by businesses and that the proportion of businesses with a fixed broadband subscription now stands above the 90% benchmark. Of note is the significant number of businesses in Malta that are family run. In this case, the fixed broadband connection for these end-users serves a dual purpose - the needs of both the household and the business.

[29] Reference to National Statistics Office publication on Regional Statistics: https://nso.gov.mt/en/publicatons/Publications_by_Unit/Documents/02_Regional_Statistics_(Gozo_Office)/Regional%20Statistics%20MALTA%202019%20Edition.pdf

[30] Reference to National Statistics Office publication on Business Demographics: https://nso.gov.mt/en/News_Releases/View_by_Unit/Unit_B4/Business_Registers/Documents/2019/News2019_067.pdf

[31] Results garnered from survey questions on fixed broadband show that 88% of respondents with a fixed broadband connection, comprising in their large majority small businesses, purchased standard off-the-shelf plans from their service providers and the remaining 12% are purchasing tailor-made plans. 84% of respondents with a fixed broadband connection reported having a single connection at their premises, whilst 13% reported having two or more connections.

The MCA therefore estimates that the rate of growth in fixed broadband subscriptions for the business segment will most likely slow down in the coming years.

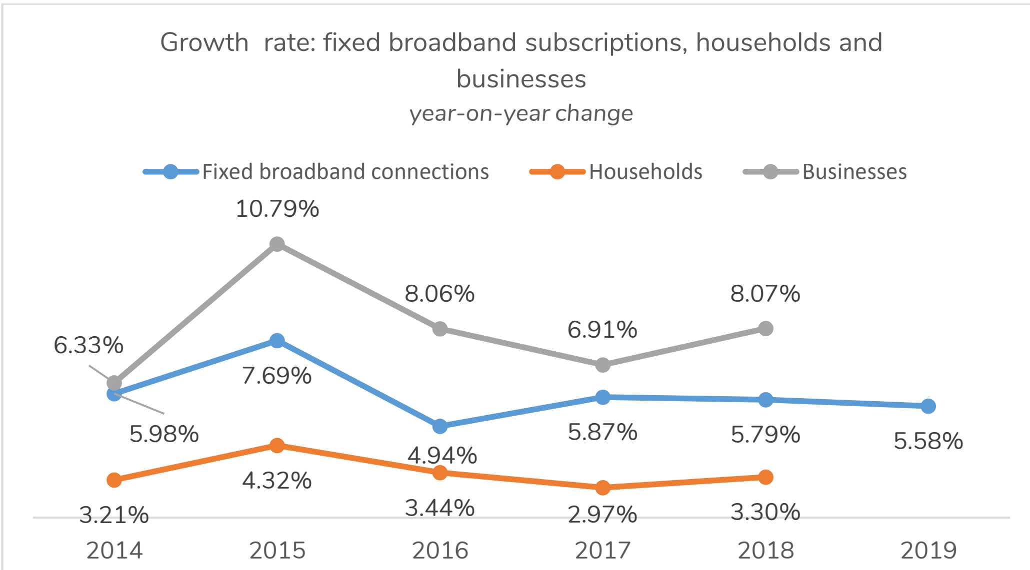

Chart 7 – Growth rate in retail fixed broadband subscriptions

Another consideration at this stage is that the MCA had already predicted in 2013 that the retail fixed broadband market in Malta was close to saturation in terms of subscriptions. On page 21 of its 2013 Decision on the wholesale broadband access market, the MCA states that '*while the retail market may soon plateau in terms of lines, additional revenue growth may be expected … (as) the market is now evolving under a new growth paradigm: towards higher speeds and more bundling*'.

The issue here is therefore whether this '*new growth paradigm*' remains a relevant consideration going forward. The MCA is of the opinion that this will not be the case for the following reasons:

- Demand for retail fixed broadband has been stable since 2017, as depicted in Chart 7 above. Meanwhile, different surveys carried out by the MCA already show a very high take-up of fixed broadband by business and households. In addition, 83.5% of all fixed broadband subscriptions have access to fast and ultra-fast download speeds, compared to just 2.7% recorded in the year of publication of the above-mentioned MCA Decision.

- To date more than 90% of all fixed broadband subscriptions in Malta already form part of a bundle, which means that the bundle segment is unlikely to generate significant additional revenues by way of a significantly higher number of connections over the coming years.
- Of interest is that the expat community in Malta has been rising in numbers very quickly over the last five to six years, buoyed by the positive macroeconomic indicators for Malta and rising demand for labour. However, there are signals that demand for foreign manpower is likely to go down significantly as a result of the economic difficulties that could arise from the COVID-19.

Conclusion on market maturity

The MCA is therefore of the opinion that the retail fixed broadband market in Malta will be characterized by limited and predictable growth over the next few years.

4.1.2 Intensity of price competition and choice

In this section the MCA looks at the historical price developments for fixed broadband in Malta. For the purposes of this exercise, the MCA takes into account fixed broadband offered to residential and business users on a stand-alone basis, in dual-play bundles, and in triple-play bundles. The MCA also addresses the issue of consumer choice, which it considers as one of the main underlying factors explaining how prices evolve over time.

The MCA is therefore to focus on these two elements, making use of several indicators namely (i) historic price levels (in terms of monthly access fees); and (ii) international benchmarking would also provide additional visibility as to the extent of price competition in the retail fixed broadband market in Malta compared to what is happening at an EU level. To this effect, the MCA refers to the comprehensive study carried out on behalf of the EU Commission benchmarking fixed broadband prices across the EU.

Since the observed price levels in Malta materialised in the context of existing regulatory measures, the MCA also outlines its views regarding prospective retail pricing in particular absent regulation.

- Average prices

  The MCA presents a historical review of developments in average prices for stand-alone fixed broadband plans, fixed broadband in dual-play plans, and fixed broadband in triple-play plans. The figures presented under this heading are based on an average of the monthly access fees for plans purchased on a contract and plans purchased without contract[32]. As a standard benchmark for comparative reasons, the MCA refers to entry-level plans in each product segment.

- Price-to-speed ratio (average rate per Mbps)

The MCA presents a historical review on the price-to-(download) speed ratio for plans where fixed broadband is provided stand-alone and plans where fixed broadband is provided in dual-play bundle, typically with fixed telephony.

The 'price' variable corresponds to the monthly access fee for a fixed broadband product whilst the 'speed' factor corresponds to the headline download speed that the product supports. This metric of measurement would therefore equate to the average rate per Mbps. Only stand-alone and dual-play products that are available nationwide are taken into account for the purposes of the current assessment[33].

Of relevance to underline at this stage is that a drop in average rate per Mbps may not only reflect a reduction in monthly access fees but also an increase in download speeds on offer.

- Cross-country benchmarking

International benchmarking would provide additional visibility as to the extent of price competition in the retail fixed broadband market in Malta compared to what is happening at an EU level. To this effect, the MCA refers to the comprehensive study carried out on behalf of the EU Commission benchmarking fixed broadband prices across the EU.

For prices across different countries to be comparable, adjustments in the actual price values are necessary, in terms of purchasing power. This is because, for example, the average income in Malta is less than the average income say in Germany. Hence, a €30 expenditure in Malta would be deemed rather more expensive than a €30 spend in

[32] The assessment of average prices does not however take full account of features such as one-off fees, volume limits, promotional discounts, different contract durations and varying voice minute allowances.

[33] For example, the 100Mbps product offered by GO is not available nationwide so it is not taken into account in the calculated rate per Mbps. This also happens at different points for Melita, such as in the case of products supporting a 1000Mbps download speed, which were not achievable nationwide upon the launch of the respective plans.

Germany. This would go to suggest that, albeit with a similar expenditure, in terms of purchasing power a Maltese customer is paying more money as a percentage of total income than other consumers do in Germany.

The MCA considers that a study carried out on behalf of the EU Commission on retail fixed broadband prices across the EU and other countries, entitled 'Fixed Broadband Prices in Europe 2018'[34], meets all the requisites to serve as a reliable and robust tool to compare price competition in Malta against international benchmarks.

Alongside the cross-national benchmarking of prices, the MCA takes into account the overall quality of the fixed broadband services supplied in the same different countries. To this effect, the MCA will produce rankings based on download and upload figures for different countries available in the 'Speedtest Global Index'.

In this way, the MCA will provide a more holistic overview as to whether the above-EU average prices observed for Malta could effectively be explained by higher download and upload speeds.

4.1.2.1 Developments for fixed broadband offered stand-alone

The MCA observes that GO and Melita implemented a gradual dilution of the stand-alone product line-up over the years. A look at the operators' websites shows that just two stand-alone fixed broadband plans are currently available, with these plans available on a 24-month contract or without contract. The monthly access fee would be higher for the plan without contract.

Melita is offering just one stand-alone plan supporting a 30Mbps download. Meanwhile, GO's existing stand-alone offering is that available via its 4G network (the 'Plug'n'Play' plan), supporting a headline download speed of 35Mbps. GO's plan however falls outside the scope of the retail market under investigation. This explains why there is no bar representing GO in 2019 for Chart 8.

Chart 8 below also shows that, historically, the prices charged for stand-alone offers has been stable since 2016. The only instance where a price reduction did happen was between 2015 and

[34] This study to provides comprehensive data on 2018 retail prices of fixed broadband offers for consumers in the EU28, Iceland, Norway, Japan, South Korea, Canada and the USA.

2016, when Melita implemented a price reduction for its 50Mbps to 100Mbps product range. Thereafter, prices have remained constant throughout.

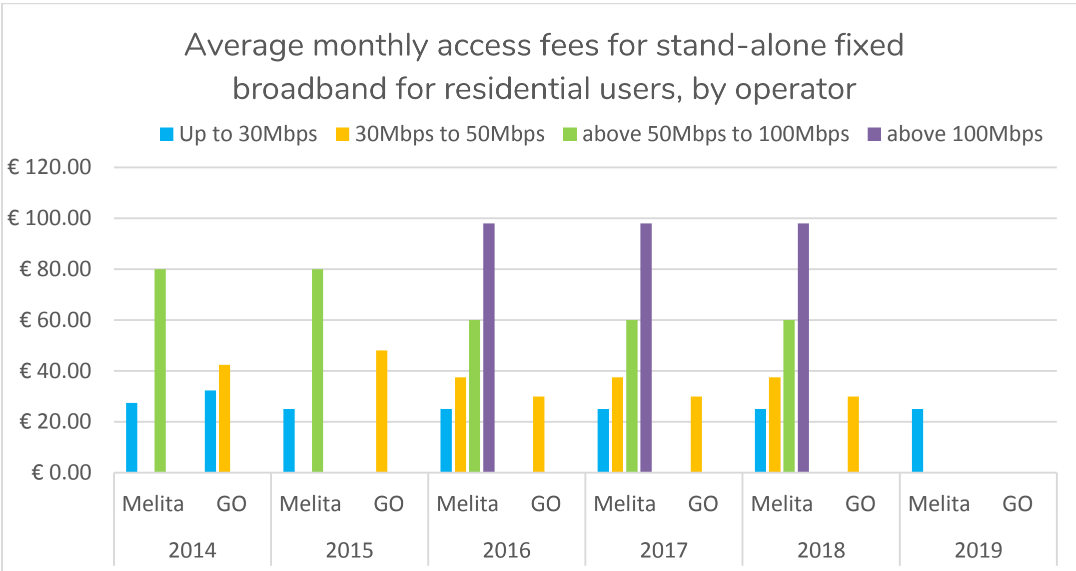

Chart 8 – Average prices for fixed broadband, by download speed (incl. VAT)

The main explanation behind this behavior is that GO and Melita implemented price strategies to stimulate bundle take-up and they did so concurrently and in a similar way, mainly by keeping a price floor and by keeping choice to the minimum.

It is also relevant to observe that the monthly access fee charged by GO and Melita for stand-alone plans have for several years been equivalent to 60% or more of the monthly access fee for the relevant entry-level triple play offerings.

Also, as at March 2020, Melita is charging residential users a monthly access fee of €19.99 (incl. VAT) for its stand-alone 30Mbps product (on a 2-year contract basis[35]) compared to an access fee of €32.99 for a triple play bundle (also with a 2-year contract term), which includes a 250Mbps fixed broadband service, alongside fixed telephony and pay TV. This means that the monthly access fee implemented by Melita for its 30Mbps stand-alone product accounts for 60.6% of the monthly access fee for the entry-level triple play package offered by the same operator.

[35] Melita also offers the stand-alone product without a contract term agreement at a monthly access fee of €29.99 whilst the entry-level triple play product is offered at a discounted monthly access fee of €22.99 for the first two months of the 2-year contract.

There is also a similar example in the case of business users, whereby Melita offers a 250Mbps stand-alone fixed broadband at a monthly access fee of €40 (incl. VAT with 24-month contract). Meanwhile, the entry-level triple play offering for businesses entails a monthly access fee of €55 (incl. VAT), including a 500Mbps fixed broadband connection, an entry-level TV channel line-up and fixed telephony. This means that Melita's monthly access fee for the stand-alone fixed broadband product is equivalent to almost 73% of the monthly access fee for the relevant entry-level triple play offering by this operator.

Meanwhile, as is the case with the residential segment, GO does not offer a stand-alone plan to business users.

Essentially, the above goes to suggest that GO and Melita are in a position to adopt similar strategies to upsell bundles, by keeping retail prices for stand-alone fixed broadband products above the competitive level and/or by diluting choice in this product segment.

4.1.2.2 Developments for fixed broadband offered in dual-play offers with fixed telephony

The MCA notes that the currently available dual play plans including fixed broadband always encompass fixed telephony as the second element of the bundle. The price comparison in this section will therefore focus on these types of bundle offerings.

Double-play bundles of fixed broadband and fixed telephony services are available from Melita and GO. Vodafone Malta also offers these products, by way of the regulated VULA access to GO's network.

Chart 7 below shows that, between 2015 and 2016, entry-level prices in this product portfolio have gone up for the residential segment but remained stable thereafter. Whilst entry-level prices have been largely stable since 2016, download speeds have improved. This upgrade in download speeds is not likely to have come at an additional cost for the service providers, considering that the price of international bandwidth has gone down significantly in recent years.

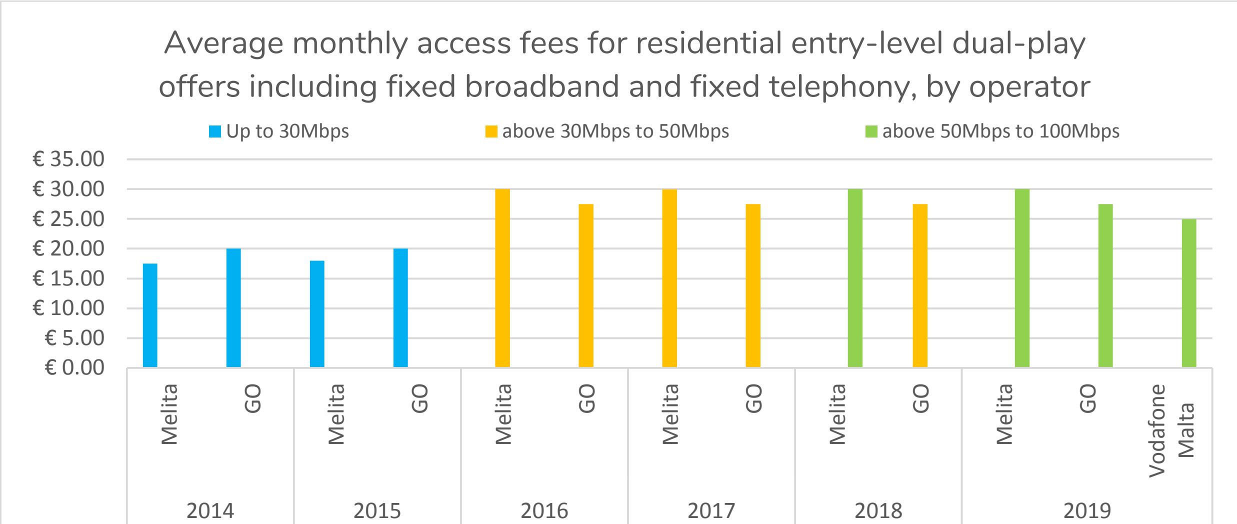

Chart 9 – Average prices for entry-level dual-play offers of fixed broadband and fixed telephony, by download speed (incl. VAT)

Choice in the dual-play product line-up has somewhat improved in 2019 compared to 2018, as a result of Vodafone Malta's entry into the market. It is also relevant to note that Vodafone Malta adopted a somewhat different strategy to GO and Melita when it comes to selling fixed broadband to its mobile telephony clients. Whilst GO and Melita offer a discount on the mobile subscription to their clients in a bundle encompassing fixed broadband with fixed telephony, Vodafone Malta is offering its mobile telephony clients a discount on their dual-play bundle subscription encompassing fixed broadband and fixed telephony. Whatever the case, the mobile subscription would still entail a separate contract.

When it comes to dual-play subscriptions of fixed broadband and fixed telephony for business users, the MCA also notes that the prices implemented by GO remained largely stable since 2015. In the case of Melita, the reductions observed in 2016 and 2018 were overturned in 2019, when this operator introduced a new entry-level price point that is above the long-term average.

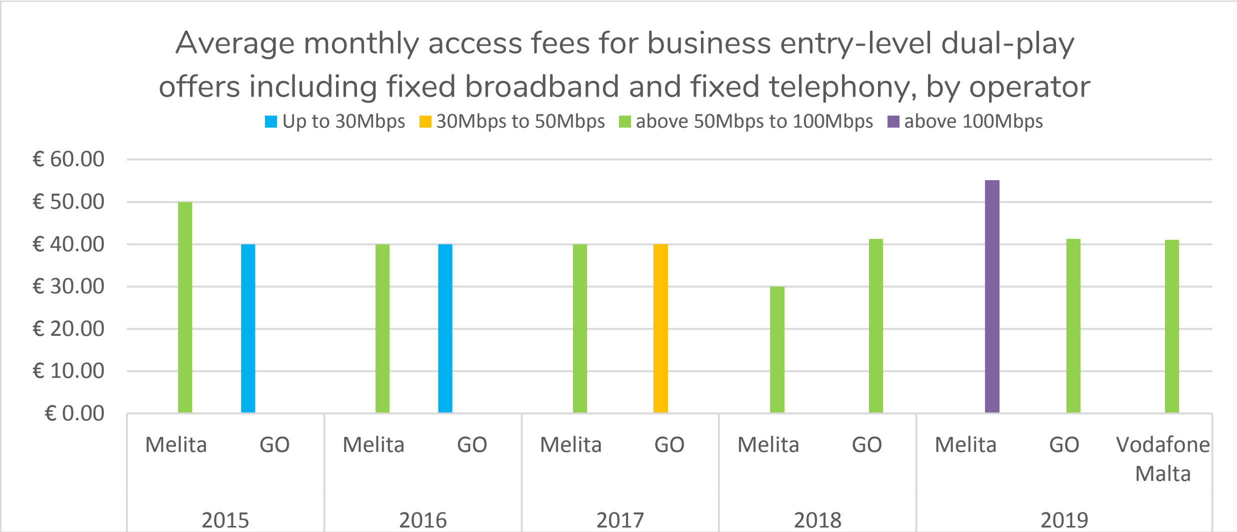

Chart 10 – Average prices for entry-level dual-play offers of fixed broadband and fixed telephony, by download speed (incl. VAT)

It is also relevant to underline that the number of plans with fixed broadband in a dual bundle set-up has also been going down over the years as Melita and GO realigned their marketing efforts to stimulate triple-play take-up. A few years back, GO had a clearly distinguishable dual play brand, the 'Duo Pack' lining up several plans. Currently, however, GO offers only one plan under the 'Duo Pack' brand, which is available specifically for businesses. This plan includes a 100Mbps fixed broadband download speed and unlimited fixed telephony voice call minutes. This operator has also set the fixed broadband and fixed telephony tandem as the default product choice under the 'Mix & Match' bundle offering earmarked to residential users.

Melita does retain a clearly distinguishable dual-play brand (with fixed broadband and fixed telephony) for the business segment, with a three-plan product portfolio. Melita also has one dual play plan for the residential segment.

The MCA therefore considers that competition in the dual-play segment is limited, with GO and Melita showing no incentive to compete on price. In the residential segment, GO's and Melita's price developments are closely aligned, with the two operators raising the price floor in 2016 and maintaining price stability in the following years. Meanwhile, in the business segment, Melita and GO also aligned with each other in terms of price outcomes. A reduction in price implemented by Melita in 2018 was however reversed a year later, with a new price point that is higher than the long-term average. The price outcome is now similar to that prevailing in 2015. The MCA also considers that consumer choice today is not in a stronger position than it has been a few years back, although the MCA observes that download speeds have improved. The MCA however underlines that the observed upgrades in download speeds have likely come at no additional cost to the service provider as the price of international bandwidth has gone down significantly between 2014 and 2019.

4.1.2.3 Developments for fixed broadband in triple-play offers with fixed telephony

GO and Melita have shown no incentive to compete on price when it comes to fixed broadband offered stand-alone and in the case of dual-play plans encompassing fixed broadband with fixed telephony. The MCA considers that this lack of incentive to compete on price alongside other strategies restricting and / or diluting choice served the common purpose of GO and Melita to upsell triple-play bundles. The consumer did get better download speeds, but ultimately the end-user's choices were not dictated by price competition but rather the exigencies of GO and Melita to ensure stability in a mature market in terms of market standing and level of profitability.

Price developments in the triple play segment, where fixed broadband is bundled with television and fixed telephony, again underscores the strategy of GO and Melita seeking stability and thus excluding any possibility of a price war.

As already highlighted earlier in this document, triple play subscriptions - including fixed broadband offered alongside television and fixed telephony - account for around 65% of all fixed broadband clients. Again, the focus in this section is on the entry-level price implemented by GO and Melita for their triple play bundle line-up.

Table 6 below shows that the monthly access fees for entry-level triple play plans offered by GO and Melita have been relatively stable in the years 2016 to August 2019.

The MCA does however note a price reduction implemented by GO for its entry-level triple-play offering, with the launch of the 'Mix & Match' brand by this operator. Effectively, however, the MCA notes that the monthly access fees implemented by GO and Melita for their residential entry-level triple-play plans remain remarkably similar as seen in Table 6 below[36].

[36] GO's 100Mps download speed is only available in areas covered by the FTTH network. Otherwise a 75Mbps download speed is offered.

Entry-level triple play offerings (24-month contract)	Residential	Mar-16	Mar-17	Mar-18	Mar-19	Dec-19
GO	Plan	Silver Home Pack	Ready	Entertainment Queen		Mix & Match - Turbo
	Download / upload speeds	15Mbps / 1Mbps	35Mbps / 1Mbps	100Mbps / 10Mbps	100Mbps / 10Mbps	100Mbps / 15Mbps
	Monthly access fee	€ 33.00	€ 40.00	€ 40.00	€ 40.00	€ 30.00
Melita	Plan	Home Entertainment Pack Surfer	Internet Fibre Power			
	Download / upload speeds	50Mbps / 3Mbps	100Mbps / 6Mbps	100Mbps / 6Mbps	250Mbps / 15Mbps	250Mbps / 15Mbps
	Monthly access fee	€ 35.50	€ 32.99	€ 32.16	€ 32.99	€ 32.16

Table 6 – Entry-level triple play offerings including fixed broadband

In fact, with this recent change, GO placed its price point for the entry-level triple-play plan closer to that of Melita. Even more significantly, GO is now only offering the basic 24-channel line-up with this entry-level plan compared to the 100+ TV channels that featured with the discontinued triple-play plan. GO effectively replicated Melita's offer, both in terms of quality and price. This explains why Melita has not reacted to the change implemented by GO, by either reducing price and / or offering more channels. The MCA therefore considers that the latest price change implemented by GO for its entry-level triple-play offer is more a result of the operators' long-term close alignment of prices than an incentive to compete on price.

As with the case of dual-play offerings, GO and Melita have shown no incentive over the last years to compete on price. True, download speeds for the fixed broadband product have improved, but again this happened in view of the long-term market standing of the two operators and long-term profitability targets. With the entry of a new player on the market, consumer choice improved in the dual-play setting but the situation in the triple-play segment remained the same, considering that Vodafone Malta does not to date offer television services.

Unless, Vodafone Malta or any other potential service provider offers television services, the pricing behavior of GO and Melita in the triple-play segment is unlikely to change. This especially when considering the latest market research on fixed broadband which shows that that just 6% of fixed broadband subscribers switched operator in the previous two years. The churn rate is already constrained by the fact that most end-users with a bundle subscription have to abide with the 2-year minimum contract term period or else pay penalty fees in case they terminate the contract prior to expiry. In addition, being in a bundle was the second most quoted reason by end-users saying they would not switch even though they are dissatisfied or indifferent with the quality of service of the current provider. Also, when asked what they would do in the event of a 10% increase in price implemented by GO and Melita for fixed broadband, 63% of respondents replied that either they will not change current service provider (25%) or do not know what to do (38%).

4.1.2.4 Price-to-speed ratio

The investments in network infrastructures carried out by Melita and GO enabled these two operators to gradually improve the data speeds (download and upload speeds) to the end-user. Melita introduced the 100Mbps download speed sometime in 2011. Even faster speeds were introduced in 2015. Although at a slower pace, GO's data speeds also increased with time. The latter operator eventually started to offer speeds equivalent to those offered by Melita[37].

A historical review of prices suggests long-term reluctance by GO and Melita to compete on price. This implies that therefore outcomes in terms of the price-to-speed ratio are more likely to be influenced by the download speed element. That is, a downward trend in the price-to-speed ratio is mainly a result of improvements in download speeds.

The MCA's calculations on the average price paid per Mbps of download specifically take into account fixed broadband products offered in stand-alone or dual-play plans. In this regard, Chart 11 below shows that the average rate per Mbps has gone down gradually, with the biggest dips coinciding with new download speeds introduced by Melita and GO.

Melita's average rate per Mbps fell from €0.789 at the end of December 2015 to €0.568 at the end of March 2016. It decreased further to €0.305 by the end of 2019. These price drops coincided with upgrades of the maximum achievable (or headline) download speeds from 100Mbps to 250Mbps (at the end of March 2016) to 1000Mbps (by the end of 2019). Meanwhile the average rate per Mbps for GO was down from €1.994 at the end of September 2015 to €1.229 at the end of the same year to €0.254 at the end of 2019. This corresponds to speed upgrades for this operator from 15Mbps to 35Mbps and to 1000Mbps respectively.

[37] At present, the two operators offer download speeds of up to 1000Mbps. GO's 1000Mbps offer is only available in those areas covered by FTTH.

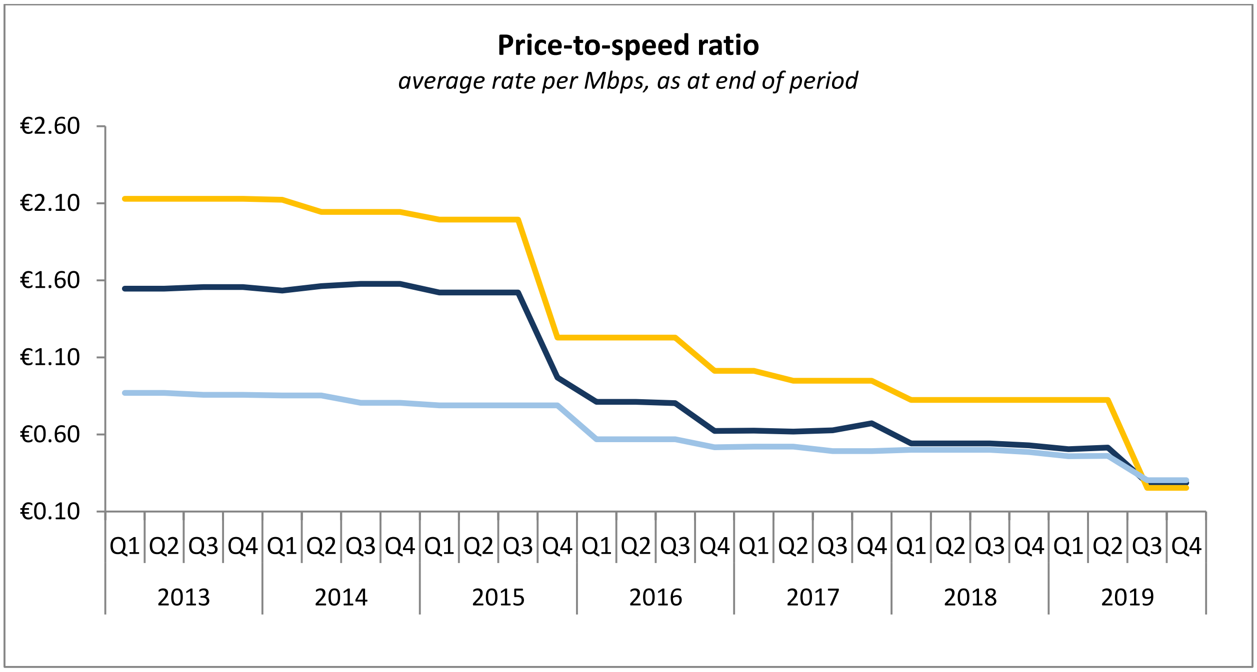

Chart 11 – Average rate of Mbps for stand-alone and dual play offerings

The trends depicted in Chart 11 again illustrate a close permutation between the fixed broadband download speeds offered by Melita and GO. These observed improvements in download speeds are a positive market outcome. However, it is worth emphasizing that while download speeds were going up, the cost of international bandwidth was also simultaneously falling significantly. Consequently, the decrease in price paid per MBps could possibly be a collateral of the downward trends in international bandwidth costs. Indeed, from data gathered by the MCA, the cost per Mbps for international bandwidth has been observed to decrease by more than 50% between 2017 and 2019. Such a drastic change in price adds on to the belief that, ultimately, the observed decline in Chart 11 is actually a result of volume discounts on international bandwidth.

4.1.2.5 Cross-country price benchmarking

The latest study carried out by the EU Commission on broadband prices entitled 'Fixed broadband prices in Europe 2018[38]' underlines in various instances that headline broadband prices in Malta are higher or significantly higher than the EU average but that end-users do not

[38] Link to EU Commission Report: https://ec.europa.eu/newsroom/dae/document.cfm?doc_id=62757

effectively have much choice with respect to price and product offerings and that fixed broadband prices in Malta are higher than the EU average.

The relevance of this benchmarking exercise is that the prices being quoted are adjusted for Purchasing Power Parity (PPP), thus taking into account discrepancies in incomes across different countries. Of note is that the focus in this study is on the offers that are available to residential customers on fixed broadband services.

According to this study, the level of retail broadband prices in Malta are higher than the EU average, with the gap in prices being widest when it comes to products supporting download speeds of above 100Mbps (see Chart 12 below). This corresponds to the earlier finding that higher price points are being introduced on the local fixed broadband market with the launch of ultra-fast broadband connections.

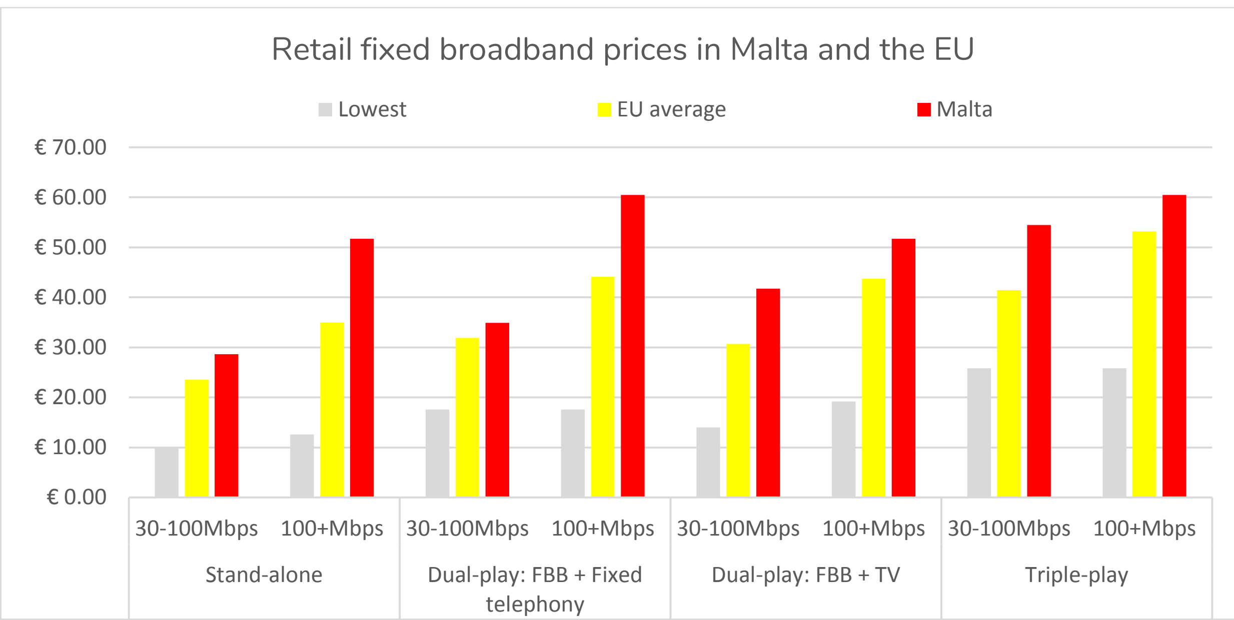

Chart 12 – Fixed broadband prices: Malta vs EU (€, PPP)

More specifically, the report makes a number of statements on the development of fixed broadband prices in Malta. The MCA is outlining the main ones hereunder:

- *'Consumers in Cyprus, Greece, Malta, and, to a lesser extent, in the Netherlands, Slovenia, and Estonia face high speed premiums for this transition, with consumers having to pay significantly above the European average.'*

This statement means that the monthly premium (or the additional monthly financial outlay) that the local end-user would have to pay in order to upgrade from the legacy lower speed to higher speed connections stands significantly above the European average. In this regard, the MCA notes that both Melita and GO phased out low speed connections whilst diluting the stand-alone fixed broadband line-up, leaving no other option to an end-user seeking a high-speed connection other than to subscribe to a bundle offering. With prices for bundle offerings not changing, the end-user upgrading the service would end-up having to pay more per month to get the bundle service.

- '*Broadband prices in 2018 fell somewhat compared to the previous year, seen across speed baskets and service bundles in Malta. For Telephony Double Play in the two lower speed baskets (12-100 Mbps), prices fell by 21%*'. The EU study also states that '*In contrast, for Telephony Double Play and Triple Play in the >100 Mbps speed basket, prices rose somewhat (by 8%)*'. In its overall assessment, the European Commission's study concludes that '*Prices for all bundles in every speed basket are above the European average, positioning Malta among the relatively expensive countries*'.

The finding of lower prices for the dual-play segment in the two lower speed baskets corresponds to the trends observed in Chart 10 above, whereby the MCA observes the rare occurrence of a price reduction in 2018 implemented by Melita for business clients. The situation changed in 2019, when Melita introduced a new higher entry-level price point in this segment with the launch of a new product supporting a download speed above 100Mbps. The MCA also takes note of the EU Commission's study that otherwise fixed broadband prices in Malta, based on the purchasing power parity (PPP) standard, have gone up between 2017 and 2018.

On the state of price-based competition per se, the study underlines that '*The market for inexpensive fixed internet services in Malta appears moderately strongly concentrated with more than half of the least expensive offers in the hands of one provider. GO has 8 of the 12 least expensive offers across all broadband categories (speed baskets and service bundles) in Malta. Melita is the provider of the remainder (4) of the least expensive offers. There is a small spread of prices among the offers of the largest providers in Malta, where none of the highest prices are more than twice as high as the least expensive offer. All large-share fixed internet providers in Malta have at least one of the least expensive offers on the market*'.

This statement goes to suggest that the pricing strategies implemented by GO and Melita are very similar, with no marked differences observed for the monthly access fees asked by GO and Melita for their product offerings, irrespective of these being stand-alone or bundle offerings and / or between entry-level and higher-end offers.

The MCA considers that the main findings in the EU Commission's report further confirm the MCA's earlier findings of restricted choice and a lack of appetite by Melita and GO to acquire market share by means of competitive pricing.

The EU Commission's finding in the above-mentioned report that download speeds in Malta are above the EU's average is again a positive aspect. The MCA does note however that the EU Commission is referring to 'headline' download speeds i.e. advertised speeds. The MCA did also use headline download speeds in its price-to-speed workings. To this effect, the MCA sought to gather additional information on this aspect from other sources, specifically by seeking to compare Malta's actual download (and upload) speeds compared to those that are achieved in other EU countries.

For this purpose, the MCA refers to ongoing global speed tests carried out by Ookla - a company that specializes in internet speed testing – which is behind the 'Speedtest Global Index'.

The MCA notes that, based on figures provided for Malta and other EU countries in this index for February 2020, Malta's fixed broadband download speeds do not feature at the top of the classification, but rather mid-range in the classification of EU countries. There are in fact twelve other EU countries which reportedly registered better download speeds than Malta last February. When it comes to upload speeds[39] Malta classifies amongst the lowest performing countries with respect to this speed indicator. Relevant figures are provided in Table 7 below.

Download speed ranking	Country	Download speed Mbps	Upload speed ranking	Country	Upload speed Mbps
1	Romania	155.28	1	Romania	117.05
2	France	139.95	2	Spain	122.44

[39] Upload capacity is key to various online activities, such as video conferencing services or for uploading a video from a home internet connection. The faster the upload speeds the clearer the picture throughout the video conference and the faster the content would be uploaded.

3	Sweden	134.37	3	Sweden	112.01
4	Spain	132.65	4	Denmark	103.28
5	Denmark	132.61	5	Lithuania	100.94
6	Hungary	129.41	6	Latvia	104.29
7	Luxembourg	117.09	7	France	95.34
8	Netherlands	112.97	8	Luxembourg	76.99
9	Portugal	107.51	9	Hungary	66.20
10	Lithuania	104.99	10	Netherlands	61.82
11	Latvia	98.86	11	Portugal	49.43
12	Poland	97.81	12	Estonia	48.12
13	Malta	97.08	13	Bulgaria	46.66
14	Germany	90.82	14	Finland	38.48
15	Belgium	86.83	15	Poland	35.50
16	Finland	84.48	16	Czech Republic	32.18
17	Ireland	80.21	17	Slovakia	28.39
18	Slovakia	70.74	18	Ireland	27.35
19	Slovenia	70.32	19	Italy	24.57
20	United Kingdom	68.15	20	Germany	23.38
21	Italy	62.70	21	Slovenia	21.81
22	Estonia	62.01	22	United Kingdom	20.94

23	Czech Republic	56.53	23	Croatia	17.20
24	Bulgaria	56.39	24	Belgium	16.95
25	Austria	53.63	25	Austria	16.19
26	Croatia	37.91	26	Malta	15.92
27	Cyprus	27.71	27	Cyprus	6.97
28	Greece	26.84	28	Greece	6.23

Table 7: Download and upload speeds based on tests carried out across the EU

The above goes to suggest that even if local end-users are paying a higher price for fixed broadband than their EU counterparts, especially when it comes to products supporting fast and ultra-fast speeds, the actual internet download speeds that are achieved in Malta are not ahead of those supplied by another twelve EU countries.

Conclusion on price developments and variety of offers

The MCA's overall conclusion on price competition at this stage is that GO and Melita have historically held to a strong price alignment, with the two operators also charging similar prices. Price reductions have been rare and generally GO and Melita sought to maintain 'price floors' for their monthly access fees across their fixed broadband product portfolio. Prices are set in such a way as to enable the upselling of fixed broadband in triple-play offers in combination with fixed telephony and television.

The observed similarity in prices is also attributed to the fact that GO and Melita face similar cost structures. If this was not the case, i.e. if the network element costs for cable and copper / FTTH were so different, then sustained cross-subsidization or predatory pricing would be taking place by one or the other operator in order to maintain the similarity in retail prices. Clearly, an underpricing strategy by one of the operators would result in significant losses and would therefore not be sustainable in the long run.

In addition, end-user choice today is more restrictive than it was two / three years ago, particularly when it comes to fixed broadband offered stand-alone and fixed broadband offered in a dual-play setting.

A cross-country analysis, based on a study published by the EU Commission, also shows that retail fixed broadband prices in Malta are also higher than the EU average. In addition, the pricing strategy adopted by both Melita and GO is tailored to stimulate take-up of fixed broadband in a triple play subscription.

It is relevant to underline at this stage that, notwithstanding GO and Melita operate in a regulated environment, both mirrored each other's in terms of prices, as evidenced by the close alignment and similarity of price outcomes for the triple-play segment that encompasses fixed broadband, television and fixed telephony. The MCA is of the opinion that this happened because, until 2018, GO and Melita have not faced a credible constraint on retail prices from alternative operators. The year 2019 is therefore particularly significant with respect to future price competition and consumer choice, as it is the year when Vodafone Malta launched a fixed broadband product portfolio via regulated access to GO's network infrastructure.

The MCA is therefore carrying out an SMP analysis to further assess whether, absent wholesale regulation, the retail fixed broadband market would exhibit a lack of effective competition by way of single dominance or collective dominance.

4.2 Structural factors characterizing competition in the retail fixed broadband market

The EC Communication on the SMP Guidelines (or the SMP Guidelines) published in 2018 states that '*In carrying out a market analysis in accordance with Article 16 of Directive 2002/21/EC, NRAs will conduct a forward-looking, structural evaluation of the relevant market over the relevant period*'.

In this context, the MCA will further assess the retail market under investigation to determine whether it is '*prospectively competitive in absence of wholesale regulation based on a finding of single or collective significant market power, and thus whether any lack of effective competition is durable*'. This means that the MCA will carry out the assessment of competition on a Modified Greenfield Approach i.e. by assuming that the current wholesale SMP regulation is not in place.

- A finding of single SMP would correspond to a scenario where only one operator enjoys a position of dominance such as to behave independently of competitors, customers and end-users.
- A finding of a joint SMP would correspond to a scenario where more than one operator would be in a position to operate to a significant degree independently of its competitors, customers and end-users.

- The determination of a single or joint SMP position is demonstrable through an assessment of a number of criteria, as described in Sections 3.1 and 3.2 of the SMP guidelines, with market shares providing '*a useful first indication for the NRAs of the market structure and of relative importance of the various operators active on the market*'. The SMP Guidelines outline a non-exhaustive list of criteria that NRAs may assess to determine the existence of SMP, including economies of scale and scope, sunk costs and replicability of infrastructure, vertical and horizontal integration, barriers to switching and countervailing buyer power.

4.3 The risk of single SMP

In this section, the MCA examines whether, in the absence of regulation, there is a risk of single SMP from GO and Melita on the retail fixed broadband market in Malta. The market share analysis (see sub section 4.3.1) serves as the first indicator of the ability of a market player to exercise market power. The assessment of single SMP takes into account other factors, alongside market shares, to capture the specific nature of competition in the retail market under investigation (see sub sections 4.3.2 to 4.3.4).

4.3.1 Market shares

The SMP Guidelines specify that '*According to established case-law, very large market share held by an undertaking for some time — in excess of 50 % — is in itself, save in exceptional circumstances, evidence of the existence of a dominant position*'. The SMP Guidelines add that '*Experience suggests that the higher the market share and the longer the period of time over which it is held, the more likely it is that it constitutes an important preliminary indication of SMP*'.

The SMP Guidelines also flag caution to NRAs in their interpretation of market share outcomes. In this respect the SMP Guidelines state that '*However, even an undertaking with a high market share may not be able to act to an appreciable extent independently of customers with sufficient bargaining strength. In addition, the fact that an undertaking with a strong position in the market is gradually losing market share may well indicate that the market is becoming more competitive, but does not preclude a finding of SMP*'.

In addition, the SMP Guidelines underline that, in specific circumstances highlighted hereunder, NRAs need to be cautious in their interpretation of market share outcomes:

- Where market shares fluctuate significantly over time, thus indicating a lack of market power in the relevant market;
- A shown ability by a new entrant to rapidly increase its market share; and
- A high market share but still benchmarking below the 50% threshold. In this instance, the SMP Guidelines recommend that '*NRAs should rely on other key structural market features to assess SMP. They should carry out a thorough structural evaluation of the economic characteristics of the relevant market before drawing any conclusions on the existence of SMP.*'

For the purposes of this section, the MCA looks at market share developments in the retail fixed broadband market for the years 2014 to 2019.

4.3.1.1 Symmetric and stable market shares

The retail fixed broadband market under investigation is characterized by the presence of two vertically integrated operators, GO and Melita, and a third operator, Vodafone Malta, which is active on the market via regulated VULA access. GO uses the DSL and FTTH network infrastructures to supply retail fixed broadband services and Melita uses the cable network infrastructure. The provision of fixed broadband supplied over wireless platforms is not taken into account in this section, given that fixed broadband supplied over wireless platforms falls outside the scope of the market under investigation[40].

Market shares on the basis of subscriptions

In absolute terms, the difference in the number of subscriptions between GO and Melita stood at 7,000 subscriptions by the end of 2019, with Melita reporting 98,838 subscription compared to 91,784 subscriptions reported by GO. Melita has been recording a bigger number of subscriptions than reported by GO since the end of the first quarter 2018. The situation was different in the preceding two years (Q1 2016 to Q1 2018) as GO enjoyed a lead terms of the number of subscriptions during that period. Then earlier in the years 2014 and 2015, Melita was ahead in terms of the number of fixed broadband subscriptions. In all instances, the difference

[40] The MCA notes that, by the end of 2019, service providers supplying wireless-based fixed broadband accounted for 5.7% of all fixed broadband end-users in Malta.

between the two operators was never significant. This shows that, in terms of retail fixed broadband connections, GO and Melita have a largely similar position in the relevant market.

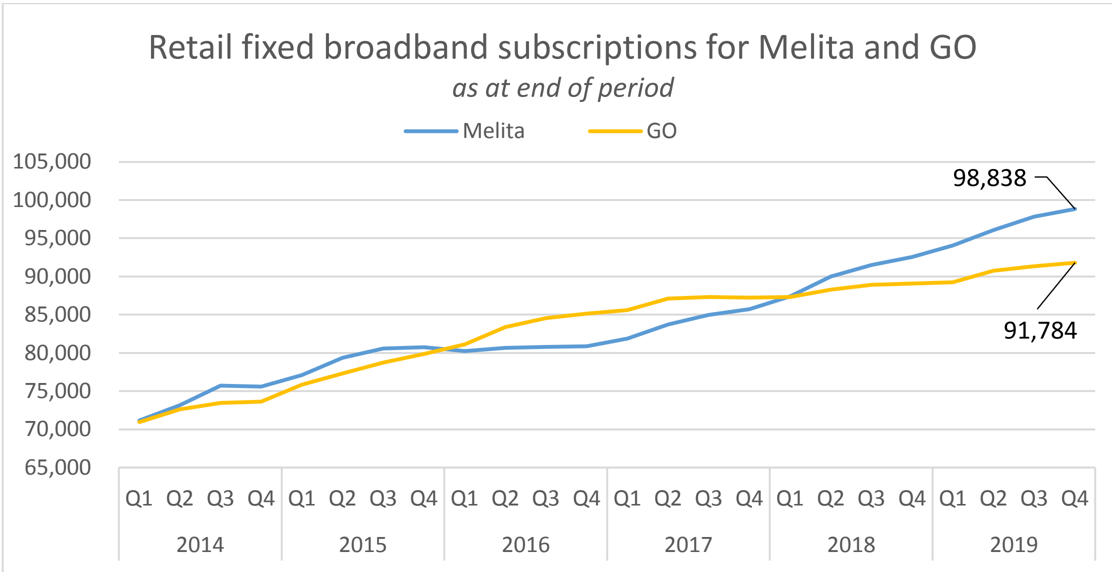

Chart 13 – Number of retail broadband subscription (as at end of period), by operator

Market share movements for GO and Melita correspond to the observed outcomes in terms of retail connections. At the end of 2019, Melita had a market share of 51.8% compared to 48.1% for GO. The remaining share in terms of retail fixed broadband connections was accounted for by Vodafone Malta.

Melita's lowest and highest market share outcomes ranged from 48.9% at the end of September 2016 to 51.8% at the end of 2019. Correspondingly, GO recorded its highest market share of 51.1% at the end of September 2016 and its lowest market share of 48.1% at the end of 2019. This goes to show that the observed gaps in market share for Melita and GO were never significant. Instead, GO's and Melita's market shares developed in a largely stable manner and symmetrically since 2014. This long-term outcome has to do with the fact that, until the third quarter of 2019, no alternative undertaking has been in a position to jeopardize the performance of Melita and GO in the retail market under investigation.

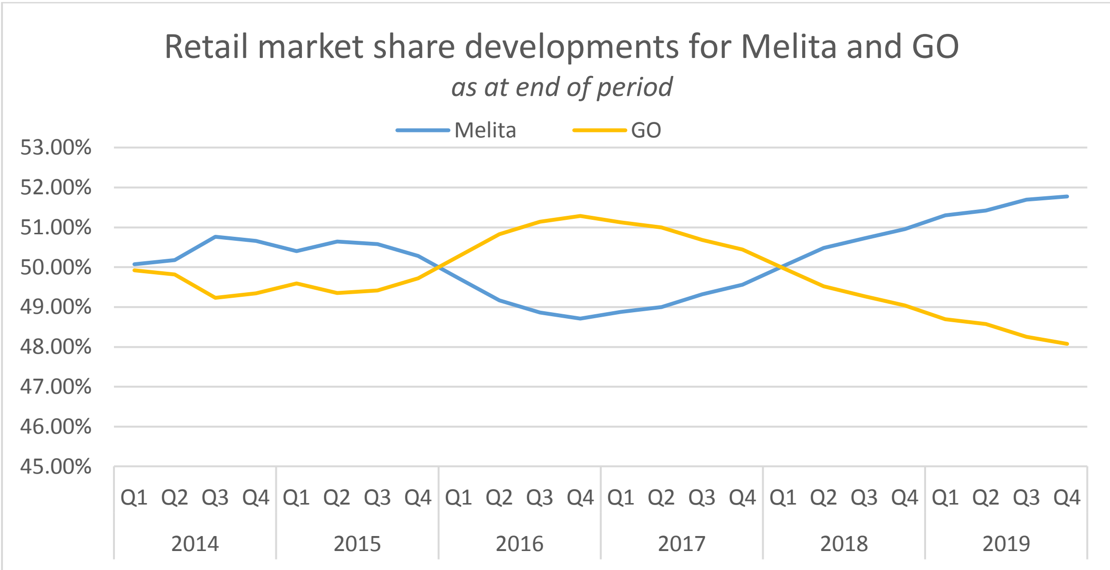

Chart 14 – Market share of retail broadband subscriptions (as at end of period), by operator

Given that Vodafone Malta launched its fixed broadband products based on VULA agreement only in the third quarter of 2019 and considering limited and predictable growth for the market, the MCA considers that, absent regulation, the market shares of GO and Melita would continue to develop symmetrically over the next few years.

4.3.1.2 Comparable network coverage, technological potential, and distribution channels

GO and Melita are comparable in terms of network coverage and have in place a technological set-up that allows for the supply of fast and ultra-fast fixed broadband products. Furthermore, both operators also have sufficient spare capacity in place to accommodate future demand.

- Melita uses the DOCSIS 3.1 standard, which allows for upload speeds up to 1 Gbit/s and download speeds up to 10 Gbit/s irrespective of the location of the end-user. The cable network is nationwide.

- GO's nationwide copper network allows for maximum upload and download speeds of 15 Mbit/s and 75 Mbit/s respectively. GO does not apply vectoring techniques to boost the speeds over of the copper network and has not indicated that such techniques will be implemented in the future. However, in addition to maintaining the copper network, GO is gradually rolling out an FTTH network. The coverage of GO's FTTH network currently stands at around 42% of homes and dwellings located across the national territory. The FTTH network allows for symmetric speeds of up to 10 Gbit/s.

In addition to the above, Melita and GO are vertically integrated, with their fixed network infrastructure and operations activities (which would typically be performed by a wholesale arm) being integrated with their marketing, sales and retailing activities (which would typically be performed by a retail arm). When it comes to the marketing and selling aspect of fixed broadband and other electronic communications services, the MCA notes that both GO and Melita gradually built a nationwide distribution and sales network, with their website serving as an important platform over which to sell their electronic communications products and services.

Furthermore, Melita and GO are also horizontally integrated and are present in the telephony and television distribution segments. This means that GO and Melita can distribute their fixed network costs (such as costs related to the sales. Costs related to the distribution network and billing costs) over various telecom services and thus take advantage of scale and scope benefits on a similar measure. For example, GO and Melita have a mobile network infrastructure in place, which in both cases uses the underlying fixed network (or backbone) of the respective operators. This shared use of the fixed network further reduces the cost of the fixed infrastructure per end-user.

In addition, given their position in multiple markets that are (or may be) horizontally related, GO and Melita may have an incentive to use bundling to leverage market power from one market to another or to create other strategic behavioral problems following the concept of foreclosure. The MCA acknowledges that, by definition, bundling is not detrimental to competition, but given the big role that bundling plays with respect to the retail fixed broadband market, it cannot discount the possibility that such strategy serves to limit competition in the relevant market. Section 4.3.1.3 discusses the bundling issue in more detail.

4.3.1.3 Product commercialization

When it comes to the retail broadband products on offer, the two operators provide a very similar product portfolio and engage in similar commercial practices. For example, these two operators effected upgrades over the years to their download and upload limits. Although there is no clear pattern in establishing which amongst the two operators makes the first move in changing broadband packages, it is clear that GO and Melita match each other’s offers with relative ease and within a very short time span from each other. This pattern of matching offers is also evident from the commercial strategies, contract policies and pricing structures implemented by GO and

Melita to stimulate demand for triple play bundles, where fixed broadband typically features alongside fixed telephony and television. More specifically:

- Fixed broadband is usually, bar one or two exceptions, offered with the fixed telephony service. GO, for example, automatically includes the installation of the fixed telephony connection with every fixed broadband subscription. Meanwhile, Melita always includes the fixed telephony subscription with fixed broadband connections supporting speeds of 100Mbps or more. Operators waive or significantly reduce installation fees only when the customer subscribes to a 2-year contract. Otherwise, installation fees would apply for the two services, i.e. for fixed telephony and fixed broadband, if the customer opts to pay for the service month-on-month without a contract term commitment.
- The MCA identified just two proper stand-alone fixed broadband products offered by Melita and GO as at the end of March 2020. Melita's stand-alone product features a 30Mbps download speed, with a non-contract-based access fee of €29.99 per month. Melita just charges a 10% premium on this price if the customer opts for a triple play offer combining 250Mbps broadband, fixed telephony and television, on a 2-year contract. GO's stand-alone product is offered over the 4G/LTE network, with functionalities that are different to those available with other fixed broadband products offered by this operator in a bundle set-up. For example, the 4G/LTE-based products allows for a 400GB of data download per month compared to unlimited download for fixed broadband in a bundle. This product falls outside the scope of the retail market under investigation, as it has been determined that wireless-based fixed broadband does not pose a direct constraint on the provision of retail (wired) fixed broadband supplied by Melita, GO and Vodafone Malta.
- Advertising material distributed via the operators' website, for example, and customer care personnel constantly refer to the promotional discounts that come into force upon signing to a bundle subscription on a two-year contract term agreement. Ultimately, the sum of the stand-alone prices (or monthly access fees) of the services comprising the bundle that are currently on offer are actually significantly higher than the bundle prices.

The several aspects discussed above provide the main reasons as to why bundle products including fixed broadband have become mainstream in Malta, particularly in the case of triple play bundles encompassing fixed broadband alongside pay TV and fixed telephony. The MCA notes that a questionnaire carried out by BEREC in 2017 identified bundling of fixed broadband with other services as widely spread in Europe, with 74.1% of all fixed broadband subscriptions across 22 country respondents in a bundle. In this study, bundling of fixed broadband in Malta was determined to be well above the average in this respect[41].

The MCA also notes that GO and Melita have attained an almost symmetrical position in the retail bundle segment, exhibiting largely similar outcomes when it comes to take-up of fixed broadband in a bundle for each operator. Melita reported to the MCA that 94.5% of its fixed broadband clients at the end of 2019 had their service purchased in a bundle. GO's proportion of fixed broadband clients with a bundle subscription stood at 94.9%. As shown in Table 8 below, triple play packages including fixed broadband appear to be the most popular type of bundle purchase with clients of the two operators.

Total number of fixed broadband subscriptions in a bundle as at end of 2019		GO	Melita
		89,027	93,302
Dual Play	**Total**	**35,140**	**22,052**
	Fixed broadband + fixed telephony	33,047	18,817
	Fixed broadband + pay TV	2,093	3,235
Triple Play	**Total**	**53,887**	**71,250**
	Fixed broadband + fixed telephony + pay TV	53,887	71,250

Table 8 – Number of fixed broadband subscriptions in a bundle by operator

In terms of the total number of fixed broadband subscriptions in a bundle, GO accounts for 48.8% of all subscriptions whilst Melita accounts for 51.2% of this customer segment.

It is clear from the market developments outlined above that bundling serves as an important feature, if not the most important, marking GO's and Melita's retail market presence. The possibility for these two operators to add other services to their triple play bundles, such as TV content and applications, accentuates their symmetrical and stable presence in the relevant retail market. For example, Melita only offers one basic stand-alone TV product. Simultaneously, this

[41] Link to BEREC report: https://berec.europa.eu/eng/document_register/subject_matter/berec/download/0/8255-european-benchmark-of-the-pricing-of-bun_0.pdf

operator promotes more advanced television options – in terms of a bigger channel line-up and content – applicable with triple play package. GO adopts a somewhat different approach in that it keeps a line-up of three pay TV plans. However, this operator also implements promotional offers and price discounts for television add-ons purchased by clients of its triple-play packages, whilst in some instances several add-ons are not available to stand-alone television clients.

Also in regard of TV-based content, GO and Melita have separately spent significant amounts over the years competing for the purchase of sports content. This has changed in 2018, when these two operators reached a commercial agreement to acquire sports content rights jointly and to launch the Total Sports Network (TSN) packages featuring the same sports channels on both networks. This development further underlines the similarity of television packages offered by GO and Melita in triple play bundle offerings including fixed broadband.

The mobile service is another potential add-on to the triple-play bundles offered by GO and Melita. Currently, both operators are offering the possibility to their triple-play subscribers to get a discount on their monthly access fees for their mobile telephony subscription. Nevertheless, in such instances, neither GO nor Melita is offering the mobile service to these customers under the same contract of the bundle. In fact, a separate contract term agreement would still be in place for the mobile telephony subscription, with commitments under this contract not dependent on the commitments of the contract for the triple-play subscription.

The considerations highlighted above further confirm the extent of similarity in the product commercialization strategies employed by Melita and GO and their dependence on bundling practices to influence consumer choice. Market research carried out by the MCA already outlines specific outcomes that may underscore some of the common interests of the incumbents when it comes to their bundling practices:

- Customer retention: Subscribers to bundle packages sign to a contract term agreement, subject to termination fees in case terminate occurs prior to contract expiry. Non-contract based bundle subscriptions are possible but at a premium monthly charge from both Melita and GO. The overall aim of this strategy is to enhance customer retention.

- Lack of price clarity: When consumers subscribe to several products such as fixed telephony and TV from a single supplier, they find it harder to determine their monthly expenditure by service. In its 2019 research study, the MCA finds that 68% of respondents did not know what their monthly expenditure on the fixed broadband service amounted to, saying that this was difficult to determine given that the service is purchased in a bundle with other telecommunications services. Of those knowing their monthly expenditure, 78% say they spend more than €30.00 per month.

Of note is that 32% of respondents knowledgeable of their monthly expenditure deem the fixed broadband service to be “expensive” whilst 12% deem it “very expensive”.

- Churn reduction: The 2019 market research also shows that just 6% of fixed broadband subscribers has switched operator in the previous two years. The churn rate is already constrained by the fact that most end-users with a bundle subscription have to abide with the 2-year minimum contract term period or else pay penalty fees in case they terminate the contract prior to expiry. In addition, being in a bundle was the second most quoted reason by end-users saying they would not switch even though they are dissatisfied or indifferent with the quality of service of the current provider.

The MCA therefore considers that the extent of bundling in Malta contributes to the incentive for these two operators to coordinate in order to preserve their market standing.

4.3.2 No single SMP

The MCA considers that Melita and GO enjoy a similar position in the retail fixed broadband market, with no operator enjoying a significant competitive advantage over the other. GO and Melita are both horizontally and vertically integrated and are deemed to be in a position to benefit equally from economies of scale and scope. Both operators enjoy national coverage and are effectively at the same level from a technological standpoint, with no network technology exhibiting a marked superiority over the other. GO and Melita also employ an integrated approach to the marketing, sales and retailing activities for their retail product range of electronic communications products and services[42].

Going forward, the MCA expects a stable trajectory for the market shares of GO and Melita, with no significant variations envisaged in the market standing of these incumbent operators.

The MCA is also of the opinion that both GO and Melita demonstrate the same ability to shape the market and the extent of competition. Experience has shown that both operators are capable

[42] Prior to the liberalization of electronic communications markets in 2003, both Melita and GO has enjoyed a de facto monopoly in the provision of different services. This enabled both operators to establish very strong positions in the provision of these services and thus to build significant economies of scale and scope over their respective networks. In addition, the provision of fixed broadband services over the networks of both Melita and GO increased network utilization and increased economies of scale and scope for both operators.

of adopting similar product commercialization and pricing strategies, for example strategies to stimulate take-up of bundle offerings. In this regard, Melita and GO succeeded to position bundles as the market standard, particularly triple-play offers. Consumer perception surveys carried out by the MCA show that the trend towards bundling has diluted the incentive of end-users to switch operator, even in those instances where the quality of service does not match the expected standard. The latest survey for fixed broadband also shows that 80% consider the fixed broadband services supplied by Melita and GO as being similar and that end-users demonstrate little incentive to switch between these two operators.

The MCA is therefore of the opinion that single SMP cannot be determined for the retail fixed broadband market. Given the observed symmetry between Melita and GO at retail level, in terms of market share outcomes and the duopolistic potential to shape the market, the MCA will assess for the potential finding of joint dominance.

4.4 The risk of joint dominance in the retail fixed broadband market

The MCA has determined that GO and Melita hold a similar position in a duopolistic fixed broadband market. To this effect, the MCA will further investigate the risk of joint SMP in this market. The MCA's assessment of joint dominance will take into account both the SMP guidelines and the jurisprudence of the European General Court and the European Court of Justice. The relevant jurisprudence, based on rulings in the Airtours[43] and Impala[44] cases, cite the assessment criteria upon which to determine the risk of joint dominance on the market under investigation.

On joint dominance, the EC SMP Guidelines say that '*A dominant position can be held by several undertakings, which are legally and economically independent of each other, provided that — from an economic point of view — they present themselves or act together on a particular market as a collective entity*'. The SMP Guidelines underline that '*As clearly stated in Airtours, the existence of an agreement or of other links in law is not indispensable to a finding of a collective position of dominance. Such a finding may be based on other connecting factors and would depend on an economic assessment, and in particular an assessment of the structure of the market*'.

More specifically, the SMP Guidelines add that '*A collective dominant position exists where, in view of actual characteristics of the relevant market, each member of the dominant oligopoly in*

[43] Case T-342/99, Airtours/Commission, ECR. 2002.

[44] Case T-464/04, Impala/Commission, ECR. 2006.

question, as it becomes aware of common interests, considers it possible, economically rational, and hence preferable, to adopt — on a lasting basis — a common policy for their market conduct with the aim of selling at above competitive prices, without having to enter into an agreement or resort to a concerted practice within the meaning of Article 101 of the Treaty and without any actual or potential competitors, customers or consumers, being able to react effectively'.

Ultimately, therefore, the designation of joint SMP would ensue from a finding of a situation that is conducive to tacit coordination between the parties involved in the market under investigation. In this regard, the MCA's assessment on the risk of joint SMP (in the absence of wholesale regulation) will seek to determine the fulfillment of three cumulative criteria:

- A market characterized by behavior conducive to tacit coordination

  Determining that each member of a dominant oligopoly exhibits an ability to know how the other members are behaving in order to monitor whether or not they are adopting and maintaining a common policy. In this respect, the Airtours ruling says that '*There must, therefore, be sufficient market transparency for all members of the dominant oligopoly to be aware, sufficiently precisely and quickly, of the way in which the other members' market conduct is evolving*'.

- Sustainability of tacit coordination

  Demonstrating that the situation of tacit coordination is sustainable over time, with an incentive on each member of a dominant oligopoly '*not to depart* from the common policy in the market'. In view of the sustainability of tacit coordination, the MCA will assess whether there is a long-term incentive deterring departure from the common policy, considering that such a departure '*would provoke identical actions from others, so it would derive no benefits from its initiative*'. Implicit in this is the view that a retaliatory mechanism of some kind is in place, so that any firm that deviates from the coordinated practice (or common policy) would entice a competitive reaction from other members of a dominant oligopoly.

- Potential market constraints on tacit coordination

  Gathering sufficient evidence in order to prove the existence of a dominant position by establishing that '*the foreseeable reaction of current and future competitors, as well as customers, would not jeopardise the results expected from the common policy*' since this would affect the stability of coordination.

4.4.1 Retail market characteristics conducive to tacit coordination

The MCA is hereunder identifying a number of structural market characteristics to determine whether the retail fixed broadband market presents a possibility for GO and Melita to seek tacit coordination.

4.4.1.1 Symmetry between the parties

Symmetry between GO and Melita is determined by the extent to which these two operators share common interests. The bigger the extent of common interests, the bigger the incentive for GO and Melita to coordinate their behavior to achieve a common equilibrium.

Symmetrical market shares

In terms of subscriptions, the market shares of Melita and GO has been evolving symmetrically and in a stable manner over the past years. The MCA has already addressed this aspect in more detail in sub section 4.3.1. For ease of reference, Table 9 below illustrates this trend.

Market shares - end of year	2014	2015	2016	2017	2018	2019
Melita	50.7%	50.3%	48.7%	49.6%	51.0%	51.8%
GO	49.3%	49.7%	51.3%	50.4%	49.0%	48.1%
Share difference in favour of GO			2.6%	0.8%		
Share difference in favour of Melita	1.3%	0.6%			2.0%	3.7%

Table 9: Market shares by operator as at end of period

This outcome has to be seen in the context of Melita and GO having been active on the retail fixed broadband market over a long period. In addition, GO and Melita target the same client base, with market research commissioned by the MCA in 2019 showing that 80% of end-users in Malta consider the fixed broadband products of these two operators as being ‘similar’ to ‘very similar’.

No real alternative to GO and Melita found its way to the market until 2018, when Vodafone Malta established presence via the regulated VULA access remedy. Prior to 2018, small service providers operating via wireless technology represented the only alternative market presence to GO and Melita. For the reasons already outlined at market definition stage, these small service providers could not effectively compete with Melita and GO, especially when considering their limited geographic reach (which is restricted to a few locations in Malta) and other technical limitations, such as the very restrictive download speeds.

It is also relevant to underline that no undertaking would be in a position to replicate GO's or Melita's network infrastructure, given the significant sunk costs associated with such an initiative. GO and Melita have on various occasions relayed the message to the public and the MCA that their investments in DOCSIS 3.1 and FTTH are significant and take several years to materialize. Therefore, given the long-standing and ubiquitous presence of two network operators in Malta, access based competition assumes significant relevance with respect to competition in the retail fixed broadband market. Therefore, looking forward, the MCA considers Vodafone Malta as a potential disruptor to the standing of the incumbents in the retail fixed broadband market.

The MCA also underlines that, to date, no undertaking has commercially negotiated wholesale access with GO and / or Melita for providing retail fixed broadband services.

Product homogeneity

Although GO and Melita operate on two different network infrastructures, their product portfolios are available nationwide and are largely identical. In this respect, none of the two operators enjoys a competitive advantage over the other.

Over the years, GO and Melita aligned their commercial and marketing practices, with a clear objective to stimulate take-up of bundled offerings. The two operators demonstrated an ability to match each other's retail offers in short order (typically in less than 12 months), without significantly disrupting each other's market share outcomes. Melita and GO quickly matched any changes implemented by each of the two operators in terms of improved download speeds. This happened in short order and without significant disruption to the overall market standing of the two operators.

Hereunder are some relevant examples that illustrate this behavior in the residential segment.

- In 2011, Melita launched plans with a headline 100Mbps download, whilst GO was at the time offering 15Mbps downloads. Eventually, early 2012 GO upgraded its download speeds to 20Mbps and 35Mbps.
- In 2015 and 2016, GO and Melita also implemented changes in their triple-play line-up, with the fixed broadband element playing a prominent role in the marketing campaign of the two operators.
- More recently, in 2018 and 2019, GO and Melita introduced plans with ultra-fast speeds, as Melita launched the 500Mbps and 1000Mbps plans by the end of 2018 and GO quickly replicating this move three months later.

These moves are highlighted in the Table 10 below, also outlining the market share for each operator at the end of the when the change was implemented.

2011 / 2012	**Changes implemented to the residential line-up**		**Overall market share as at end of year**
Q1 ‘11	Melita	Launch of the 100Mbps download speeds and gradual upgrade of clients to the 100Mbps product portfolio	45.9%
Q1 ‘12	GO	Launch of the 35Mbps product line-up and eventual upgrade to these plans from the legacy 15Mbps plans	49.9%
2015 / 2016	**Changes implemented to the residential line-up**		**Overall market share as at end of year**
Q3’15	Melita	An overhaul of the triple-play bundle line-up and launch of new ‘Home Entertainment’ plans	49.8%

Q3 '16	GO	Promotional offers to its triple-play bundle line-up and the launch of new 'Home Interactive' triple-play line-up	49.8%
2018 / 2019	**Changes implemented to the residential line-up**		**Market share as at end of year**
Q4'18	Melita	500Mbps and 1000Mbps download speeds introduced in new plans of the triple-play 'Flexi Bundle' line-up	48.2%
Q3 '19	GO	300Mbps and 1000Mbps download speeds for plans under the 'Mix & Match' line-up	45.9%

Table 10 – Timelines for changes in residential fixed broadband product line-up

A similar pattern of product matching by GO and Melita has been observed for the business segment, but typically in reverse order to the residential segment. The underlying trend was again that of greater emphasis on bundle subscriptions and improved download speeds, with GO typically being first to launch changes to the product portfolio and Melita following with new plans in short order. The two operators replicated each other in even shorter order than was the case for the residential segment.

2017	**Changes implemented to the business line-up**		**Overall market share - end of year**
Q2'17	GO	Launch of 'Business Infinity' dual and triple-play plans	49.4%
Q3 '17	Melita	Launch of the 'Flexi Bundle' line-up	47.3%

2018 / 2019	Changes implemented to the business line-up		Overall market share - end of year
Q4 '18	GO	300Mbps and 1000Mbps download speeds added to the 'Business Infinity' dual and triple-play line-up	46.4%
Q1 '19	Melita	500Mbps and 1000Mbps download speeds replace legacy speeds in the 'Business Duo' line-up	48.6%

Table 11 – Timelines for changes in business fixed broadband product line-up

Of significance is that, notwithstanding the discrepancy in download speeds on offer by the two operators (observed for several years) market share changes for the two operators were not significant these last six to seven years. More specifically, whilst at first Melita registered some market share gains from 45.9% at the end of 2011 to 47.7% at the end of 2012, GO was again at 48.8% market share by the end of 2013. The market shares of Melita and GO evolved symmetrically from 2013 onwards, as both operators further upgraded their product line-up and matched each other's offers, as illustrated by the examples provided in Table 10 and Table 11 above.

Looking forward, the MCA considers that both operators have the necessary infrastructure in place and sufficient excess capacity to be in a position to replicate each other's moves within a short time span. No operator from the two incumbents is deemed at an advantage in building a significant market share gain on the basis of its product portfolio at the expense of the other.

Similar cost structures

The cost structure of Melita and GO comprises fixed costs (mainly sunk costs related to the deployment and maintenance of their Next Generation Networks or NGNs) and variable costs (associated with the connection of end-users).

The fixed costs incurred by Melita and GO are represented by the new investments and network upgrades carried out by these two operators. In the years 2017 to 2019, Melita invested in setting up its DOCSIS 3.1 infrastructure whilst GO rolled out its FTTH infrastructure. GO is currently around halfway through the deployment of its FTTH network. In addition, whilst the technologies deployed by the two operators are different, the network topologies are largely similar.

Of relevance to underline is that the two operators gave advance notice of their investment and deployment plans, thus enabling each other to predict each other's investment and deployment timelines. In any case, the prospect and actual materialization of the upgraded and new network infrastructures did not result in any disruption to the market standing of each operator. Effectively, GO and Melita consolidated their ability to replicate any service or package that each undertaking provides to its customers, by way for example of improved upload and download speeds.

Notwithstanding the different technology platforms deployed by GO and Melita, the retail services provided by these two operators are very similar, with television, fixed telephony, mobile telephony and fixed broadband featuring in stand-alone and bundle plans provided to both residential and business users. Melita and GO also offer other services, such as those based on dedicated connectivity solutions. This goes to suggest that GO and Melita can therefore distribute their fixed costs and variable costs of production in a similar manner, across a range of retail services that they commonly provide. Furthermore, given their long-term market presence, both GO and Melita built a large client base, with largely symmetrical outcomes in market share for each type of retail service.

The two operators are also vertically integrated, which means that fixed and variable costs are also similarly allocated across the different levels of the supply chain.

The wider the range of services on offer, the lower the average costs to produce the relevant services. Given that GO and Melita supply the same range of services, the two operators face similar average costs of production, including for fixed broadband.

The above goes to suggest that the variable costs of connecting end-users to the network are relatively low and similar for both operators.

Specifically of relevance to fixed broadband prices (and quality) is the cost of international bandwidth, which is an important recurring cost element incurred by local operators to service fixed broadband customers. In this regard, a report by the international analyst firm Telegeography, which specializes on research concerning International bandwidth prices, says that prices for international bandwidth '*are plummeting, with some routes offering 10 Gbps connections for less than US$5,000 per month*'.[45]

The MCA notes that the demand for international bandwidth is normally proportional to the number of retail broadband subscribers that an operator has. It therefore stands to reason that, given their similar market shares, both GO and Melita have the same clout to negotiate on price of international bandwidth with Internet carriers. Ultimately, therefore, a decline in the international bandwidth costs could effectively translate in lower variable costs for Melita and GO, thus making it possible for both operators to compete with each other and try to acquire as many customers as possible by means of competitive pricing.

4.4.1.2 Lack of incentive to compete on price

The MCA already determined that there is a strong alignment in Malta when it comes to retail fixed broadband prices, with GO and Melita maintaining 'price floors' for their monthly access fees across their fixed broadband product portfolio.

A cross-country analysis, based on a study published by the EU Commission, also shows that retail fixed broadband prices are also higher than the EU average. In addition, the pricing strategy adopted by both Melita and GO is tailored to stimulate take-up of fixed broadband in a triple play subscription. The monthly access fees charged by GO and Melita for their triple-play subscriptions are also very similar and have been largely stable for the last six years.

Conclusion on market characteristics conducive to coordination

The MCA considers that the characteristics of the market provide an incentive for Melita and GO to seek coordination in the retail fixed broadband access market and thus to determine the desired level competition in this market. The characteristics of the market are underscored by a symmetric position of GO and Melita in the relevant market - in terms of market shares, cost structures, and product homogeneity - and the perseverance of a reduced scope to compete of price.

4.4.2 The coordination mechanism at retail level

Since 2014, GO and Melita have been mirroring each other in terms of price developments, as evidenced by the close alignment of prices observed for these two operators in sub-section 4.1.2.

[45] Link: https://www.theregister.co.uk/2018/06/06/international_10_gbps_circuit_prices_plummeting/

Prices implemented by Melita and GO have also been largely stable. The MCA notes that this price stability has to be seen in the context of Melita and GO recording improved performance in terms of revenue generation and profitability during the same timeframe. The ability of GO and Melita managing to maintain price stability rests on the fact that new entry in the retail fixed broadband market materialized only recently in 2018 / 2019 by way of Vodafone Malta negotiating VULA access with GO under the regulatory oversight of the MCA. No new entry occurred via the deployment of access network infrastructure, given the high sunk costs associated with such an investment.

Given the observed long-term practices when it comes to pricing of fixed broadband, the MCA considers that GO and Melita would have an incentive to coordinate on setting retail prices at the desired level, absent regulation. Coordination on the setting of retail fixed broadband prices at the desired level would benefit long-term profitability of the incumbents. Melita and GO know that a departure from the coordinated price would ultimately reap short-term benefits but long-term losses in terms of profitability.

Three conditions are necessary for coordination on price to be sustainable in the market under investigation. These are (i) an ability shown by the coordinating operators to monitor to a sufficient degree the adherence to the coordinating strategy by the participants; (ii) a credible and effective disciplinary mechanism to punish deviation from the tacit coordination; and (iii) an inability for end-users and new entrants to jeopardize the results expected from the coordination.

4.4.2.1 A credible disciplinary mechanism to punish deviants

The MCA considers that the prices implemented by Melita and GO in the retail fixed broadband market are sufficiently transparent for the following reasons:

- Melita and GO have been present in the market for a number of years and are robustly equipped to observe and monitor each other's prices. Given that all prices are published on the operators' respective websites, GO and Melita are also in a position to anticipate each other's marketing strategies.
- The duopolistic market setting makes it easier for GO and Melita to implement similar pricing strategies. In this regard, both operators developed a restrictive stand-alone product line-up, whilst setting prices (and also temporary discounts) to stimulate the take-up of bundles. Monthly access fees for bundle offerings are closely aligned.

- Melita and GO share the common interest of a reduced scope for price competition to safeguard long-term profitability.

The transparency of retail fixed broadband prices would serve as an effective and immediate retaliatory mechanism against any attempt by one operator to undercut the other. In a duopolistic market setting with fully transparent prices, the implementation of a price reduction by one party would entice the other party to retaliate and reduce the price to punish the observed deviant behavior. The MCA considers that any underpricing strategy would result in a price war that Melita and GO are reluctant to engage at so as to avoid losses in profitability. Therefore, given that GO and Melita hold a sufficiently similar position as members of a duopoly, the MCA considers that it would be more profitable for both operators to choose a coordinated outcome on price, rather than a competitive one.

Given the foregoing, the MCA considers that the threat of a departure from retail price coordination and the resulting price war serves as an effective disciplining mechanism aimed to support a coordinated strategy in the retail fixed broadband market.

4.4.2.2 Stability enforcing the disciplinary mechanism

The MCA also considers that infrastructure-based competition would not materialize within the timeframe of this review given the high barriers to entry. This is because the costs of rolling out own network infrastructure (on a nationwide scale) remains very significant, with a very large sunk cost element. The MCA already notes that, over and above the issue of significant sunk costs related to the rollout of a network, a new entrant would actually find it difficult to replicate the incumbents' economies of scale and scope, which are accentuated by the fact that both GO and Melita are horizontally and vertically integrated operators.

This means that it is only by way of service-based competition that a direct constraint on GO and Melita can materialize within the timeframe of this review, specifically via wholesale access to the network infrastructures of these operators. The MCA however underlines that the GO and Melita are aware that by granting such access on commercial terms would be effectively leading to the presence of an alternative operator on the relevant retail market that would in turn dilute their direct control of the price variable. Given this, the MCA considers there is a risk that GO and Melita do not grant access to third parties in order to avoid disruption from outsiders.

Based on the foregoing, the MCA comes to the conclusion that, in the absence of regulation, tacit coordination within the retail fixed broadband market would have a high degree of external stability.

From an end-user standpoint, the MCA considers that there is no buyer power on this market that could prevent coordination and that could provide a counterweight to a possible joint dominant position.

Overall, therefore, the MCA is of the opinion that there is a very low risk for external factors to disrupt the coordinating behavior of GO and Melita in the retail fixed broadband market.

4.4.3 Risk of consumer harm

The MCA has in sub-section 4.4.2 that, absent regulation, GO and Melita have an incentive and possibility to coordinate in the retail fixed broadband market by setting prices to the desired level in order to reap benefits in terms of long-term profitability.

The MCA recalls that GO and Melita closely align their pricing behavior, mirroring each other's product line-up and setting prices in such a manner as to stimulate take-up of fixed broadband in triple-play subscriptions (alongside fixed telephony and television). Also for this reason, the two operators have restricted choice in recent years when it comes to the stand-alone fixed broadband product portfolio and the product portfolio featuring fixed broadband in a dual-play setting.

GO and Melita have in fact managed to increase take-up of fixed broadband in triple-play subscriptions, with the proportion of fixed subscriptions in a triple-play plan rising from 46.4% at the end of 2014 to 65.6% at the end of last year.

This development led to a boost in fixed broadband access-based revenues and a corresponding increase in terms of the average revenue per user (ARPU). Chart 15 shows that fixed broadband ARPU was up significantly and consistently between 2014 and 2019.

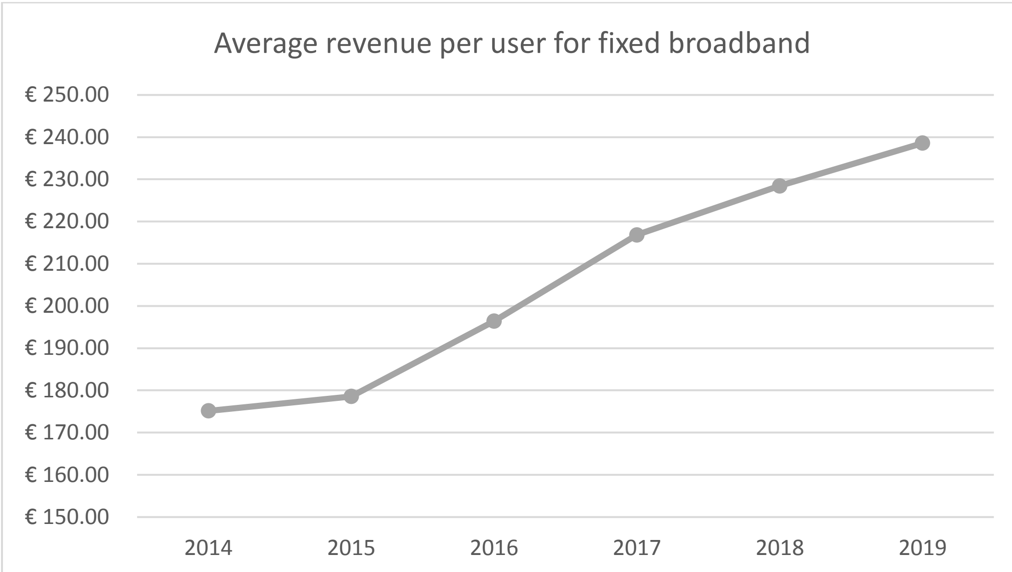

Chart 15 – Average revenues per user, based on access fees for fixed broadband

It is relevant to underline that the overall increase in fixed broadband ARPU materialized at a time when GO and Melita did not face competitive pressure from alternative service providers in the market under investigation. The only source of competitive pressure materialized in the latter half of 2019, when Vodafone Malta established a presence in the retail fixed broadband market based on regulated VULA access. Meanwhile, service providers offering fixed broadband over wireless technology did not pose a sufficiently strong indirect constraint on these two operators, for reasons already outlined in previous chapters of this document. This goes to show that, with no competitive pressure from alternative providers, GO and Melita are able to leverage their own position in the retail fixed broadband market without inflicting competitive damage to each other.

Apart from contributing to an increase in revenues, fixed broadband take-up in triple-play bundles provides stability to both GO and Melita in terms of market share developments. This is because end-users are less likely to switch from Melita to GO and vice-versa, considering that a bundle subscription would effectively entail a change / switch in two other electronic communications products apart from fixed broadband. This is confirmed by market research carried out by the MCA, whereby respondents mention being subscribed to a bundle as one of the main reasons why they would not switch service provider even in the event of a 10% increase in price.

Of note to underline at this juncture is the continued decline in the variable costs related to the provision of the retail fixed broadband service, particularly when it concerns the cost to deliver a Mbit. This corresponds to the afore-mentioned decline in international connectivity costs.

With revenues consistently on an upward trend and variable costs in decline, GO and Melita registered a sustained rise in profitability for the years 2017 to 2019. This has been confirmed by Melita's and GO's submissions to a data request by the MCA on two profitability indicators, namely the EBITDA[46] margin - representing the profitability as a percentage of total turnover - and ROCE[47], which measures the profitability and efficiency of the capital deployed. Several contributors to finance literature underline that, in a capital intensive sector like telecoms, a comparison of ROCE with WACC[48] would serve as a good indicator of the robustness of the profitability levels.

- With respect to the EBITDA margins, the MCA considers that the figures submitted by GO and Melita are indicative of the high profitability.

  It therefore follows that the observed long-term stability in retail fixed broadband prices is not dictated by concerns of low profitability but rather by an ability of GO and Melita to leverage their market position and reap higher profitability without competing against each other on the price level.

- In terms of ROCE, Melita and GO recorded a rising ROCE for the years 2017 to 2019, driven by improved profitability margins. Based on financial literature, the MCA upholds the principle that a ROCE that is higher than the WACC would suggest robust profitability levels. The bigger the margin between ROCE and WACC, the more profitability would be exceeding the level necessary to adequately service debt and equity. In other words, the wider the gap between ROCE and WACC the more operators would be earning returns that are higher than the cost of capital.

[46] The term 'EBITDA' stands for Earnings Before Interest, Tax, Depreciation and Amortization.

[47] The term 'ROCE' stands for Return on Capital Employed is derived by dividing EBIT by the Capital Employed.

[48] The term 'WACC' stands for the Average Weighted Cost of Capital. The WACC calculation is dependent on a number of estimations made for the key variables forming the cost of equity and the cost of debt.

For the purposes of this exercise, the MCA takes into account its own calculated pre-tax nominal WACC rate for the Maltese fixed market. (i.e. excluding the effects of the inflation rate). The WACC rate has this year been revised downwards from 9.65%, which is the rate applicable to the regulatory accounting periods ending on or after 31 December 2012[49], to 6.98%, as indicated by the MCA's relevant decision published in 2020[50].

The MCA notes that GO's and Melita's respective ROCE in 2019 exceeded the fixed market WACC rates by a generous margin, even when taking into account the 9.65% WACC rate calculated by the MCA in 2012. The operators' margins improve even further when the revised WACC rate of 6.98% is taken into account. The MCA therefore considers that the retail pricing strategy adopted by GO and Melita over the past years has not been dictated by the operators' investment.

Given the observed margins between ROCE and WACC, the MCA considers that the investment carried out by Melita and GO has not weighed negatively on profitability levels and cannot be deemed as a factor limiting the ability of these two operators to compete on price.

Given the above, the MCA considers that GO's and Melita's pricing behaviour reflects a strategic choice to preserve the long-term stability in terms of market share outcomes and to sustain the common interest of reaping higher profitability.

Absent regulation, GO and Melita will be able to maintain or even consolidate this strategy by way of further restrictions in product choice, such as by further limiting the dual-play product portfolio to further entice take-up of fixed broadband in triple-play plans. Given that Vodafone Malta is posing a competitive constraint in this product segment, the potential loss of this alternative provider would plausibly pave the way for GO and Melita to mutually implement increases in price, knowing that such behavior would not effectively result in a significant market share loss.

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[49] MCA Decision on the Weighted Average Cost of Capital: https://www.mca.org.mt/sites/default/files/WACC%20Decision%20final.pdf

[50] MCA Decision: https://www.mca.org.mt/sites/default/files/decisions/estimating-the-cost-of-capital-response-to-consultation-and-decision-november-2012.pdf

Therefore, absent regulation, the MCA is of the opinion that a loss of consumer welfare would occur mainly in terms of more restricted choice, consumers having to purchase products that they do not necessarily require, or even higher prices, particularly due to the loss of competitive pressure from alternative providers.

4.4.4 Conclusion on the assessment of joint dominance at the retail level

Observed market trends show that there is a lack of price competition in the market. The prices charged by GO and Melita are closely aligned and similar. The EU Commission's market research carried out in 2018 shows that retail fixed broadband prices in Malta benchmark above the EU average, across all product categories but especially in the case high-speed products in bundle offerings. Meanwhile, the improvements in quality, characterized by higher download speeds, materialized at a time when the cost of international bandwidth fell significantly. By keeping their prices unchanged alongside falling variable costs, profitability levels of GO and Melita increased at a fast pace.

The MCA considers that, absent regulation, GO and Melita would be in a position to coordinate and set prices at the desired level in view of their profitability targets. The retail fixed broadband market is fully transparent in terms of prices and GO and Melita can easily detect each other's pricing behavior. The threat of an immediate tit-for-tat price reduction by the participants in the tacit coordination (which would translate in a decline in profitability) would serve as an effective disciplining mechanism aimed to support a coordinated strategy.

This situation leads to a loss of consumer welfare compared to the current situation. This is caused because GO and Melita have joint SMP in the retail fixed broadband market.

5 Wholesale market definition

The purpose of this chapter is to define the relevant wholesale market(s) encompassing the wholesale inputs that are necessary to supply the products forming part of the retail market defined in Chapter 3.

When defining the relevant wholesale market(s), the MCA takes utmost account of all applicable guidelines and recommendations issued by the European Commission (hereafter referred to as EC), in particular the Recommendation on relevant markets published in 2014 and the accompanying Explanatory Note.

The MCA also takes into account national circumstances throughout its analysis, which may necessitate the MCA to depart from the markets identified in the Recommendation.

The exercise is also forward looking in nature, taking into account possible developments that could materialize within the timeframe of this review.

5.1 The EC Recommendation of Relevant Markets

The EU Recommendation on relevant markets outlines the wholesale markets that have to be taken into consideration in advance for ex ante regulation. As already underlined in Chapter 1 to this document, the first EC Recommendation was published in 2003 and eventually revised in 2007 and 2014. For the purposes of the current review, the MCA takes into utmost account the EC Recommendation published in 2014.

Related to the provision of retail fixed broadband services, the 2014 Recommendation identifies Market 3a, encompassing wholesale local access (hereafter, 'WLA') products and Market 3b, encompassing wholesale central access (hereafter 'WCA') products.

5.1.1 Market 3a – Wholesale local access

According to the Recommendation, Market 3a is the most upstream wholesale data market encompassing access products available at the physical layer (Layer 2) in the following network configurations: (i) point-to-point FTTH architecture; (ii) point-to-multipoint FTTH architecture; or (iii) FTTC/VDSL architecture. Market 3a may therefore encompass access products in the form of the physical unbundling of fibre and copper (local-loop unbundling referred to 'LLU' and/or sub-loop unbundling, referred to as 'SLU').

Furthermore, the 2014 Recommendation presumes that wholesale access products at the non-physical or virtual layer are also a subsidiary of Market 3a. In order to do so, however, the wholesale access products need to comply with certain prerequisites, namely: (i) access occurs locally; (ii) access is generic and provides access seekers with a service-agnostic transmission capacity uncontended in practice; and (iii) access seekers have sufficient control over the transmission network to consider such a product to be a functional substitute to LLU and to allow for product differentiation and innovation similar to LLU.

Moreover, the Explanatory Note accompanying the EC 2014 Recommendation on relevant product and service markets[51], establishes that "*from a forward-looking perspective and in view of the different patterns of CATV rollout and upgrade (e.g. to DOCSIS 3.1 networks) in the Union, NRAs should continue assessing the substitutability of CATV-based networks, with regards to a possible inclusion in the WLA market. Regarding the services provided over LTE, it cannot be ruled out that they could prove sufficiently substitutable to fixed wholesale local access services*".

Therefore, on a general level, Market 3a is deemed to incorporate wholesale access products (physical and virtual) that provide access seekers more control and flexibility in terms of their ability to differentiate and innovate their retail offers. Also, it foresees a possibility where access services over LTE and CATV could potentially be included as an access product in the relevant market, following a market analysis addressing national circumstances.

5.1.2 Market 3b – Wholesale central access

The 2014 Recommendation specifies that, "*where several non-physical access products are offered along the value chain, the key characteristics of such non-physical or virtual access products should be assessed in order to draw clear boundaries between the WLA, the WCA, and the high-quality access market*". In cases where NRAs decide that non-physical or virtual access products with an improved quality of service could be used as an input for the provision of retail products for non-residential customers (as long as these do not fall within the boundaries of the wholesale Market 4), the relevant products could then be included in Market 3b.

[51] Link to Commission Staff Working Document: Explanatory Note accompanying the EC Recommendation on relevant product and service markets withing the electronic communications sector susceptible to ex ante regulation, p. 46: https://ec.europa.eu/digital-single-market/en/news/explanatory-note-accompanying-commission-recommendation-relevant-product-and-service-markets.

The 2014 Recommendation also foresees that, "*given the upgrade of CATV networks to DOCSIS 3, which is expected to continue, it may become increasingly appropriate to include CATV bitstream in the relevant product market, especially when sub-national geographic markets have been defined*".

On a general level, the Explanatory Note to the EC Recommendation also underlines that '*the delineation of the relevant wholesale access markets according to their physical and non-physical nature has become less evident, and the characteristics of the products traditionally used to differentiate the physical loop and sub loop unbundling and WBA markets should be re-assessed*'. Further to this, the EC Recommendation underlines that the upgrade of coaxial-based networks (CATV) to DOCSIS 3.1, which may also incorporate some deployment of fibre closer to the end-user, provides an opportunity for cable operators '*to make economically viable offers of some type of wholesale access products on a commercial basis*'.

5.1.3 Defining wholesale markets in view of national circumstances

The list of markets outlined in the EC Recommendation is without prejudice to the definition of markets by NRAs given their specific national circumstances and the underlying competitive scenarios. In other words, NRAs are able to define and regulate wholesale access markets in a manner that best corresponds to national circumstances.

Also, with reference to EU precedents and the position being adopted by the EC under Article 7, the MCA notes that there is flexibility in defining which products, including cable-based products, are sufficient for satisfying the demand in Markets 3a or 3b.

The flexibility granted by the Explanatory Note to delineate relevant markets rests on two main considerations influencing market definition outcomes:

- an NGA environment underlying the shift away from the active-passive distinction (which is the basis for the differentiation between physical and non-physical access products in Markets 4 and 5 of the 2007 Recommendation on relevant markets), to a distinction based on the characteristics of products (handover point for the handling of traffic, contention and control over the transmission network); and
- a continued upgrade of coaxial-based networks and a bigger presence of cable-based undertakings at retail level.

The adaptation of the market definition to the different national situations is marked to a great extent by the product portfolios of the market providers, the existing network structures and the prevailing competitive situation at the retail level.

5.2 Developments in Malta since the last market review

The MCA takes utmost account of the national circumstances when defining the relevant wholesale market(s). Due consideration is given to developments that took place since the completion of the previous round of market analysis, concluded in 2013, particularly when it comes to the upgrades of local access network infrastructures.

5.2.1 Markets defined by the MCA in 2013

In 2013, the MCA concluded that there is no difference in the end retail broadband product that can be provided via wholesale unbundled infrastructure access and wholesale broadband access. The MCA did however identify a number of factors, from a functionality standpoint, to arrive at the conclusion of two separate wholesale access markets, in line with the 2007 Recommendation on relevant markets as per below:

- The wholesale market for unbundled infrastructure access in Malta

  Market 4 in the 2007 Recommendation essentially comprised a broad market definition encompassing both the full unbundled access to the local loop and the shared access to the local loop. However, the Explanatory Memorandum to the 2007 Recommendation specified that '*the unbundling of cable networks (…) does not appear technologically possible, or economically viable, so that an equivalent service to local loop unbundling cannot be provided over cable networks*'. Meanwhile, the definition of Market 4 given by the Commission in its 2007 Recommendation is not limited to metallic loops and sub-loops and includes all relevant active and passive infrastructures in the basis of the principle of technological neutrality, taking into account of next-generation access networks.

  The MCA's conclusions in 2013 with respect to this market confirmed that unbundled access to the local loop and unbundled access to the sub-loop form part of the same relevant product market in Malta, irrespective of whether such unbundled access is provided over copper or fibre. The MCA did also conclude that wholesale unbundled access to the local loop could not be feasibly provided over the cable network and that in any case such unbundled access would not be the same as unbundled access over copper.

- The wholesale market for broadband access in Malta

  This market corresponds to Market 5 in the 2007 Recommendation. The 2007 Recommendation differentiated wholesale broadband access from wholesale unbundled access on the basis of '*the physical and non-physical nature of the products and the different level of flexibility they give in supplying the retail service, and by means of the location at which access is obtained*[52]'.

  In line with the 2007 Recommendation, the MCA defined a separate market for the provision of wholesale broadband access in Malta, given that it considered such a wholesale service as not being substitutable with wholesale unbundled access (including shared access). This conclusion was taken in view of the fundamental differences between the two services in terms of their functionality at a wholesale level.

As already indicated earlier the 2007 Recommendation has been superseded by the 2014 Recommendation, which includes the market for unbundled access as Market 3a and the market for WBA as Market 3b.

5.2.2 Main players and wholesale access offers in the Maltese market

Malta is characterized by two vertically integrated network operators, Melita and GO, which use their own physical NGA infrastructures to facilitate retail and wholesale services across the whole national territory.

Melita's network is based on the cable HFC DOCSIS 3.1 standard, following an upgrade to the network carried out after 2013. The cable network set-up now facilitates download speeds up to 1Gbps. The figure below shows a simplified depiction of Melita's current HFC network infrastructure.

[52] See Explanatory Note to the 2014 Recommendation, page 38.

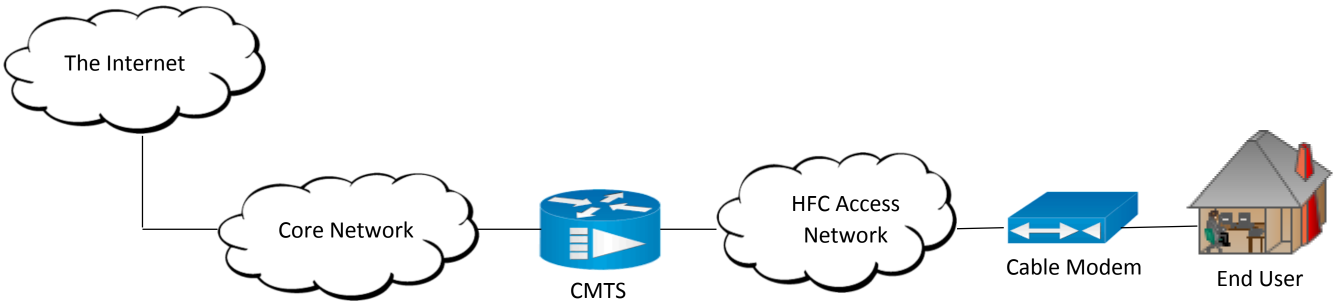

Figure 1: Melita's HFC network Infrastructure

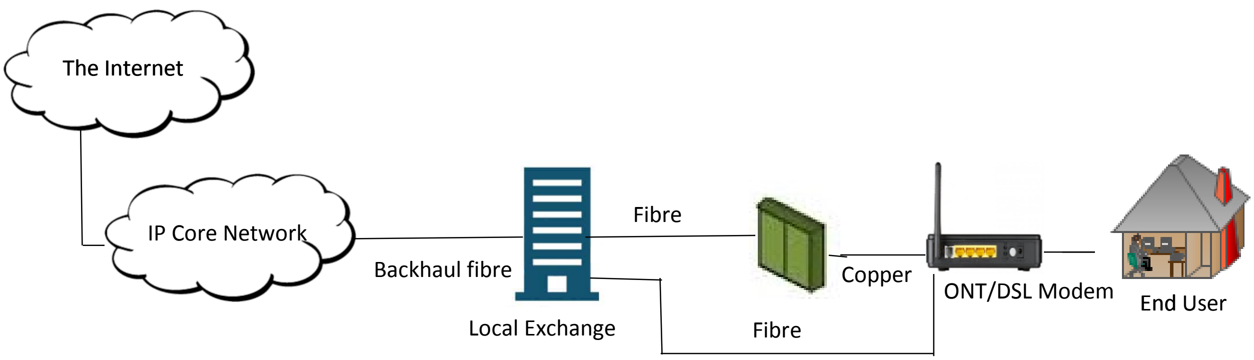

Figure 2: GO's fibre/copper network Infrastructure

GO's access network infrastructure employs both copper and fibre, with the latter segment also supporting GO's LTE mobile broadband network. Since 2013, GO upgraded all street cabinets to fibre (FTTC) and started rolling-out its FTTH network infrastructure, which also facilitates download speeds of up to 1000Gbps. The deployment of FTTH is expected to reach a nationwide footprint over the coming years. According to GO's Annual Report and Consolidated Financial Statements for 2018[53], GO's fibre-to-the-home network deployment is advancing as "*during 2018 we doubled the number of homes passed than that of 2017…now passed 84,000 homes with fibre technology and plan to reach a further 24,000 during the course of 2019*". GO is therefore envisaging an extensive fibre network roll-out in parallel to its copper network. This

[53] Link to GO plc Annual Report and Consolidated Financial Statements for 2018: https://www.stockbroking.com.mt/Filebank/StockbrokingDocs/MT0000090101-announcement-30-04-2019-Annual_Report_and_Financial_Statements_20186369947832040504 68.pdf

fibre deployment and its respective services are accentuating the limitations of the copper network, making it increasingly redundant.

The figure below shows a simplified depiction of GO's current access infrastructure for the copper and fibre networks.

There are no wholesale only operators active in Malta. Both GO and Melita have been self-supplying their own retail arms in the provision of retail fixed broadband services for many years.

Of note is that GO was in 2013 designated with SMP status in the wholesale market for unbundled infrastructure access in Malta. To this effect, the MCA imposed ex ante regulatory obligations on GO to supply wholesale access via local loop unbundling (LLU) and sub-loop unbundling (SLU) and wholesale unbundled access via fibre.

- The LLU and SLU access obligations are meant to provide the access seeker with a direct physical connection to subscribers utilising GO's copper network. The copper LLU and SLU wholesale access products are cost oriented and subject to strict regulatory controls. GO has been obliged, since 2003, to publish a reference unbundling offer (RUO) for LLU and SLU. The RUO[54] sets out that the LLU is available in two different forms namely (i) full unbundling, allowing full control to the ISP over the access line of the end-user; and (ii) shared access, whereby high frequencies are allocated only to the ISP on the end-user's access line.

  In both the case of full unbundling and shared access, LLU may be achieved at different levels in the network, namely, either at the local exchange level (i.e. the standard access to the local-loop) or at the street-cabinet level (i.e. access to the local sub-loop).

  No market entry was ever registered on the basis of the regulated LLU and SLU, also considering the lack of economic feasibility to opt for such access in a jurisdiction the size of Malta.

- Wholesale unbundled access via fibre is a Layer 2 wholesale access product in the form of Virtual Unbundled Local Access (VULA). VULA provides the access seeker a virtual connection to subscribers over GO's fibre network (subject to locations where such fibre

[54] The RUO also provides a detailed description of the technical specifications required of any equipment used on unbundled lines. It also details the technical and tariff conditions of co-location services and all services associated with the connection of equipment by ISPs. As a result, the RUO is organized around metallic path full unbundling, metallic path shared access, metallic path sub-loop full unbundling, metallic path sub-loop shared access and co-location and related facilities.

has been deployed). GO is deploying a FTTH network based on a Gigabit Passive Optical Network (GPON) configuration. This does not allow for physical fibre unbundling.

As part of the VULA Decision, the MCA published another decision with the aim of enhancing the non-discriminatory obligation related to the VULA remedy. In the said decision, the MCA set a number of Key Performance Indicators to be submitted by the access provider to the MCA on a quarterly basis.

In 2018, Vodafone Malta reached an agreement with GO for a VULA-based access via GO's fibre network. Vodafone Malta introduced the relevant fixed broadband packages in August 2019.

The MCA does not currently impose ex ante regulatory obligations for the provision of wholesale bitstream access.

5.3 The methodology to define the relevant wholesale market(s)

The EC Communication on the SMP Guidelines (hereafter referred to as the 'EC Communication') states that "*Market definition is not a mechanical or abstract process but requires the analysis of all available evidence of past market behaviour and an overall understanding of the mechanics of a given sector. In particular, a dynamic rather than a static approach is required when carrying out a prospective, or forward-looking, market analysis*".

The EC Communication adds that "*The starting point of any analysis should be an assessment of relevant retail market(s), taking into account demand-side and supply-side substitutability from the end-user's perspective over the next review period based on existing market conditions and their likely development. Having identified the relevant retail market(s) and established whether absent regulatory intervention upstream, a risk of consumer harm due to a lack of competition in the retail market(s) would persist, NRAs should then identify the corresponding wholesale market(s) to assess whether they are susceptible to ex ante regulation under Article 16 of Directive 2002/21/EC (21). They should start by identifying and analysing the wholesale market that is most upstream of the retail market in which said competition problems have been found, and defining market boundaries by taking into account demand-side and, to the extent relevant, supply-side substitutability of products.*".

5.3.1 The product and geographic market dimensions

There are two dimensions to the wholesale market definition exercise, namely the product market dimension and the geographic market dimension.

The wholesale product market definition exercise shall be based on an analysis of demand-side and supply-side substitution. On the basis of the substitutability analysis, the MCA will define the relevant product market encompassing the products that are deemed substitutable by way of direct pricing pressures at wholesale level and indirect pricing pressures arising via the underlying retail market identified in the previous chapter. Indirect price constraints are relevant as demand for wholesale access services is derived from demand within the downstream retail market (through indirect pricing pressure), which means that the relevant wholesale market(s) would be as broad as the relevant retail markets.

The MCA will also determine the relevant geographic market in which the undertakings supplying The geographic market dimension looks at the coverage area of a network within a specific national territory and the existence of statutory and other regulatory instruments to determine whether these potentially influence market outcomes (in terms of product availability and price) by geographic region.

5.3.2 Substitutability characteristics

The Explanatory Note outlines three key characteristics that NRAs need to assess to determine substitutability between different wholesale access products:

- Actual location of the point of handover

  The point where the wholesale access is being provided may be a distinguishing factor between different types of access.

- Topology and core transmission features

  Based on such aspects, a distinction may emerge on the basis of whether the wholesale access products are contended in nature (i.e. products that do not allow for a service agnostic transmission) or whether the products allow for a generic access service providing access seekers with a service agnostic capacity that is uncontended.

- The degree of flexibility in network control

The extent of control of the network elements and ancillary inputs also serves as a distinguishing characteristic between different wholesale access products.

In addition to the above, the MCA shall take into account the internal supply operations by Melita and GO.

5.4 The methodology to define the relevant wholesale market(s)

In view of the above, the MCA's conclusions with respect to the wholesale market definition exercise will be based on the following considerations:

- whether the different access network infrastructures used for the purposes of supplying wholesale access products for the provision of fixed broadband services at downstream level should be included within the same wholesale market;

- whether the range of wholesale access product options that could theoretically be supplied over each of the different network infrastructures (the copper network; the fibre network; and the cable network) are substitutable;

- whether the competition conditions characterizing the supply and demand of the relevant wholesale access products in Malta are sufficiently homogeneous as to constitute a national market[55].

5.5 Substitutability between access network infrastructures

The MCA notes that both GO and Melita have access network infrastructures in place, these being copper DSL / FTTH in the case of GO and cable DOCSIS 3.1 in the case of Melita.

Demand-side substitutability

Numerous similarities are identified for these access network infrastructures, with the concept of access network, aggregation point, core network and Internet access being common elements. These similarities are outlined in the Table 12 below.

[55] EU Communication on the SMP Guidelines, paragraph 48.

The access network infrastructures of Melita and GO have nationwide reach and have similar network architectures. The MCA notes that, whilst taking into consideration the limited geographical size in which the networks operate, as well as the similarities in terms of backhaul and core network design, the interconnection point requirements in terms of location and quantity for GO and Melita are also considered to be somewhat similar. In itself this would suggest that the interconnection by a wholesale customer (the access seeker) to either Melita or GO would present similar logistical and cost parameters.

In terms of cost structures, the MCA has already argued that there must be cost equivalence between copper DSL / FTTH and cable based on the DOCSIS 3.1 standard. This is because a large proportion of wholesale supply by GO and Melita is captive, as it is provided internally by these operators to provide retail fixed broadband products. In addition, the retail market analysis has shown that GO and Melita implement similar prices for their respective retail fixed broadband product portfolio. If such a similarity in retail prices is not explained by cost equivalence, the implementation of either sustained cross-subsidization or predatory pricing would be taking place.

Network features and elements	Copper DSL / FTTH	Cable DOCSIS 3.1
Coverage	National	National
Theoretical downstream	Up to 1Gbps	Up to 1Gbps
Availability of spare capacity	Yes	Yes
Customer Premises Equipment (CPE)	Modems – owned by GO	Modems – owned by Melita
Physical layer	Trenches / Ducts	Trenches / Ducts
Access Network	Maintenance powering	Maintenance powering
Aggregation / interconnection point	The Optical Line Transceivers (OLT) are located at various exchange sites. The OLT interfaces with the customers optical network termination point (ONT) for the respective coverage area.	Cable Modem Termination System (CMTS) located at the cable head-end operations center. The CMTS aggregates traffic coming from the customer premises equipment spread in the respective coverage areas.
Core network elements	- Switches and routers - Operations Management Systems for key systems in the network	- Switches and routers - Operations Management Systems for key systems in the network

	- Wholesale and retail billing systems in place - Customer relation management systems	- Retail billing systems in place and wholesale billing systems easily implementable[56] - Customer relation management systems
Migration of end-user base	The 'make-before-break' concept allows for possibility that end-user is minimally impacted	The 'make-before-break' concept allows for possibility that end-user is minimally impacted

Table 12: Network elements of the different access network technologies

The MCA's examination at retail level shows that the fixed broadband products supplied by Melita and GO are equivalent in terms of functionality. The respective product portfolios are also subject to the same 'chain-of-substitution' pricing dynamic.

In this context, the MCA considers that there is indirect pricing pressure coming from the underlying retail markets. This is because a SSNIP implemented by a hypothetical monopolist for wholesale access via cable or wholesale access via copper DSL / FTTH would be reflected in the retail fixed broadband prices of the operator implementing the SSNIP. The MCA's market research shows that the fixed broadband products supplied by Melita and GO are considered by Maltese end-users as being similar to very similar. It therefore follows that the implementation of the SSNIP at wholesale level would in principle lead end-users to switch to the cheaper option. Such switching would exercise indirect competition pressure on the hypothetical monopolist.

The MCA has already argued that a large proportion of GO's and Melita's supply of wholesale access is provided internally for own retail purposes. In addition, these two operators enjoy a similar position in the retail fixed broadband market, with the two operators lining up a similar product portfolio and implementing prices that are subject to the same 'chain-of-substitution' dynamic. GO and Melita also have excess capacity with which to meet current and future demand. In principle, therefore, a SSNIP implemented by either Melita and / or GO on the price of wholesale self-supply would trickle down to the retail level. The SSNIP would effectively be met by retail clients switching away from the operator implementing the SSNIP to the direct

[56] This is because Melita has in the past provided wholesale services to MITA, a government agency responsible for the provision of IT services to entities of the Maltese governments. This suggest that wholesale costs incurred by Melita to provide wholesale services are reasonable. With regard to fixed broadband, MITA serves as a state-controlled ISP for government employees.

competitor(s). The SSNIP would therefore be made unprofitable via indirect constraints emanating from retail level.

Supply-side substitutability

New market entry via the deployment of an access network infrastructure is not possible in the event of a SSNIP implemented for wholesale access by a hypothetical monopolist. This is because of the high significant costs and the long timelines involved in the deployment of a new fixed access network infrastructure.

There is indeed very limited or no basis for supply-side substitution even for the existing operators, GO and Melita, given that the two operators are in a position to indirectly constrain a SSNIP at wholesale level via indirect constraints at retail level.

Preliminary conclusion on the substitutability between access network infrastructures

Based on the foregoing, the MCA considers that wholesale access via copper DSL / FTTH and wholesale access via cable DOCSIS 3.1 form part of the same relevant market. Self-supply of wholesale access is considered to form part of the market.

5.6 Potential access options over copper DSL, FTTH and cable

This section will focus on (i) the actual point(s) of handover where wholesale access to a third party could materialize over the different network infrastructures in Malta; (ii) the core transmission features of each network, already considering at this stage that local networks are contended in nature and therefore do not allow access for service agnostic transmission; and (iii) the degree of flexibility in network control permitted by each identified possibility for access.

5.6.1 Copper-based access solutions

GO could facilitate access via the copper DSL network. Local loop unbundling (LLU) and sub-loop unbundling (SLU) could, in principle, be supplied at the local exchange level and the street-cabinet (SC) level. Although access via LLU and SLU would empower ISPs with the full control of the technology, end-to-end, the take-up for these access options never materialized to date.

This is so, notwithstanding the fact that GO is obliged to offer LLU and SLU within a regulated setting.

Virtual unbundled access over the copper DSL network may also be conceded at the exchange or SC level. In addition, bitstream access over copper DSL may be possible given the presence of active equipment at SC level and the point-to-point (PtP) architectural configuration of the network. However, to date, no such wholesale access offers over copper DSL have been finalized.

Given the foregoing, the MCA considers that the different wholesale access options via the copper DSL network can be supplied at the same aggregation point. Also, all forms of access via the copper network are contended in nature.

Copper network	Exchange level	Street Cabinet (SC) level
Physical unbundled access	Possible (subject to copper-based backhaul)	Possible
Virtual unbundled access	Possible (subject to copper-based backhaul)	Possible (where technically possible)
Bitstream access	Possible (subject to copper-based backhaul)	Possible (where technically possible)

Table 13: Wholesale options in case of the copper network

Further to the above, the MCA notes that direct and indirect competitive constraints also exist between the different forms of wholesale access via the copper DSL network. This is because, from a demand-side perspective, every form of access via the copper DSL network allows an alternative operator to offer fixed broadband and voice services to end-users. In case of a SSNIP by a hypothetical monopolist, wholesale customers would in principle substitute from access via SLU to access via LLU and possibly higher up the network level to bitstream and VULA (with extent of control for the wholesale customer rising accordingly). Substitution would not happen the other way round given the high investment needed to achieve unbundled access to the sub-loop and also because such a move would result in a possible degradation of the service. In any case, a SSNIP implemented by a hypothetical monopolist would also be reflected at retail level, which would in principle lead to switching such as to make the SSNIP unprofitable.

From a supply-side perspective, GO offers all forms of access and a SSNIP would therefore result in supply-side substitution only in one direction, from SLU further up the network level.

Conclusion on substitutability between copper-based wholesale access products

Given the foregoing, the MCA considers that physical unbundled access to LLU and SLU, wholesale bitstream access, and virtual unbundling access on the copper network form part of the same relevant market. The different types of access are functionally equivalent, leading to similar products at retail level. However, demand-side substitution happens in just one direction, from physical unbundled access to SLU towards access provided at a higher layer of the copper network.

5.6.2 Fibre based access solutions

GO has upgraded all its street cabinets to fibre (FTTC) and is rolling out its fibre-to-the-home (FTTH) network, which currently reaches approximately 42% of homes and dwellings in Malta. GO is extending its fibre optic network from SC level to the buildings (homes and business premises) using a Gigabit-capable Passive Optical Network (GPON) (point-to-multipoint) configuration[57]. All the dwellings and premises that are not connected to the fibre optic network continue to be served by the copper network.

GO's FTTH GPON[58] configuration intrinsically excludes the possibility for physical fibre unbundling at either the ODF or SC level. Such a configuration entails passive traffic sharing between several end-users and cannot, therefore, be unbundled.

Virtual unbundled access over fibre is conversely possible. Truly so, in 2013, the MCA imposed an obligation on GO to offer virtual unbundled access over fibre, as a Layer 2 wholesale Ethernet solution. More specifically, the existing regulated fibre-based VULA offer foresees a point of handover at the disaggregated (local exchange) level where the access seeker would

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[57] This network configuration uses optical splitters, which are unpowered, that enable a single optical fibre out of the MDF site to serve up to 32 multiple premises. However, research has shown that it is possible to connect a maximum of 64 users per tree in distances of less than 30km; a maximum of 32 users per tree in distances less than 20km; or a maximum of 16 users pre tree for distances up to 30km.

A PON would consist of an Optical Line Termination (OLT) placed at the MDF and a number of ONUs/ ONTs at the end user site.

If, on the other hand, a fibre point-to-point (PTP) architecture had been deployed, the point of handover for access over the FTTH network would have been at the MDF or the SC, supporting a direct link to only one customer.

[58] If, on the other hand, a fibre point-to-point (PTP) architecture had been deployed, the point of handover for access over the FTTH network would have been at the optical distribution frame (ODF), with each fibre leaving the MDF or the SC as a direct link to only one customer.

interconnect directly at the location where the Optical Line Termination (OLT) is stationed. In this context, the access seeker would be allowed to make use of its own backhaul or to procure backhaul aggregation services from the network provider or from a third party supplier. Multicast is also supported by the regulated VULA offer. Multicast traffic is potentially attained through IGMP snooping at Layer 2. Multicasting is the most efficient means of delivering video services in an NGN set-up. It allows the feasible transmission of a single copy of the multimedia stream towards the end customers, replicating it for individual customers (or a subset of the network's users) and, as close as possible to the end user.

In this regard, the MCA took into account several factors when adopting Malta's VULA product, such as the geographic and market size of the Maltese islands. The MCA considers that the adoption of interconnection at an aggregated level best represents national circumstances, with the option that the access network provider actively offers interconnection services at the local exchange wherever technically feasible[59]. The MCA does however understand that it is in principle possible for fibre-based VULA access to be offered at exchange level. To date, one wholesale customer, namely Vodafone Malta, is making use of the regulated VULA access offer available from GO.

Bitstream access over fibre may also be accessed at an aggregated level (at exchange level) or at a disaggregated level (at the location of the OLT). In addition, fibre-based bitstream may also support multicast functionalities.

Given the above, the MCA considers that the different forms of wholesale access via FTTH can be offered at the same aggregation point. All forms of wholesale access via FTTH are contended in nature.

Fibre network	Exchange level	Street Cabinet (SC) level
Physical unbundled access	Not possible	Not possible
Virtual unbundled access	Possible	Not possible
Bitstream access	Possible	Not possible

[59] There could also be other fibre-based VULA variants depending on the access network structure, such as when the PON network is configured as a PTP network. However, GO has not to date indicated that such a configuration will materialize within the timeframe of this review.

Table 14: Wholesale options in case of the fibre network

GO supplies wholesale access via the copper DSL network and wholesale access via the fibre network. In view of the principle of technology neutrality, the MCA considers whether the respective forms of wholesale access form part of the same relevant market.

The MCA notes that similar competitive constraints exist between the different forms of wholesale access supplied via the copper DSL network and the FTTH network. This is because, from a demand-side perspective, these forms of access allow an alternative operator to offer fixe+d broadband and voice services to end-users. In case of a SSNIP by a hypothetical monopolist, wholesale customers would in principle substitute from wholesale access via cooper DSL to wholesale access via FTTH. This is because the FTTH network is a technological evolution over the copper network allowing for much faster speeds and improved quality of service. This means that substitution would not likely happen the other way round given the potential restrictions in the quality of service. In any case, a SSNIP implemented by a hypothetical monopolist would also be reflected at retail level, which would in principle lead to switching such as to make the SSNIP unprofitable.

From a supply-side perspective, GO owns the copper-DSL and the FTTH networks and can in principle offer those forms of access via the copper DSL and fibre networks that are underlined above. A SSNIP by a hypothetical monopolist would therefore result in supply-side substitution only in one direction, from copper-based wholesale access to fibre-based access. The MCA also considers that, given the high sunk costs and long timeframe related to new network deployment, no alternative undertaking would seek to duplicate wholesale access supplied over copper-DSL or FTTH.

The MCA finally notes that GO's FTTH network is foreseen to reach ubiquitous coverage of the national territory around 2025. It is also relevant to underline that GO has sufficient spare capacity available to respond immediately to increased demand, both internally and from third party access seekers.

Conclusion on substitutability between copper-based access products and fibre-based access products

Given the foregoing, the MCA considers that wholesale access supplied via GO's copper DSL network and wholesale access supplied via GO's FTTH network (bitstream and VULA) form part of the same relevant market. The wholesale access products that could be offered via the copper-

DSL and via the FTTH networks are functionally equivalent notwithstanding the technical distinctions between physical and virtual unbundled access services. Substitutability would materialize one-way in the event of a SSNIP, from copper-based access to fibre-based access and not vice-versa, given the superiority in terms of the quality of services supported by FTTH.

5.6.3 Cable-based access solutions

Melita could facilitate wholesale access via its cable network infrastructure, but the shared nature of bandwidth supplied over the cable network would not allow for a potential physical unbundling of this network infrastructure. This is because the physical unbundling of cable at the access point would entail the unbundling of a whole cluster of lines that pertain to the same optical node on the network. Several theoretical options to physically unbundle the cable network have been touted by several sources, such as BEREC. However, the MCA considers that it would not be feasible for Melita to implement physical unbundling of its cable network. Such a move would involve too many complexities at the implementation phase.

Virtual unbundling over cable is also not considered to be possible. This may change once Full Duplex DOCSIS 3.1 (now a part of DOCSIS 4 technology) is available. A study carried out by WIK Consult on behalf of the Dutch NRA in 2018 says that the Full Duplex specs would enable 'symmetrical' access with data rates up to 10 Gbps over the existing HFC networks. Undeniably, this quasi-symmetrical characteristic (10 Gbps downstream and 6Gbps upstream) will overcome the bandwidth scarcity problem in the upstream communication. The latter has been identified as a main reason for DOCSIS not being utilized for the adoption of VULA based solutions.

In converse to the above, wholesale bitstream access over the cable network is technically possible. Such access entails traffic handover at the CMTS locations and/or other handover points located at IP-based optical nodes in the network. The MCA is conversant with the fact that Melita has sufficient spare capacity (internet bandwidth) on a national scale for wholesale self-supply and for wholesale access to third parties. Also, in 2018/2019, Melita turned off its analogue TV platform, thus effectively freeing up more bandwidth for downstream capacity. All this supplements the MCA's belief that bitstream access over cable is viable.

Cable network	CMTS level	Optical Node level
Physical unbundled access	Not possible	Not possible
Virtual unbundled access	Not possible	Not possible
Bitstream access	Possible	Possible

Table 15: Wholesale options in case of the cable network

In view of the above, the MCA notes that wholesale bitstream access via Melita's cable network may be offered at an aggregation point that corresponds to an equivalent aggregation point at which wholesale access via the copper-DSL and FTTH networks is offered. Wholesale bitstream access over cable is also contended in nature, as is the case for wholesale access via copper-DSL and wholesale access via FTTH.

The MCA also considers it relevant to assess at this stage whether similar direct and indirect competitive constraints exist between Melita's wholesale bitstream access via the cable network and GO's wholesale access over the FTTH network. The MCA has already determined that in a scenario where the copper-DSL network co-exists with the fibre network, one-way demand-side substitution would materialize from copper DSL-based access to fibre-based access following a SSNIP. This is because of the significant advancements in technology offered by fibre, both in terms of capacity and data rates, which cannot be substituted by copper.

The MCA is of the opinion that a SSNIP implemented by GO for FTTH-based wholesale access would give rise to direct and indirect constraints emanating from wholesale access via Melita's cable DOCSIS 3.1 network. A direct constraint would arise by way of GO's wholesale customer switching to Melita, if the latter offered the wholesale bitstream access solution.

Meanwhile, a higher price for FTTH-based wholesale access would translate into higher retail prices for FTTH fixed broadband products. Given that Melita's cable DOCSIS 3.1 network is nationwide and that Melita and GO both offer retail fixed broadband products that are functionally equivalent, the SSNIP would, in principle, lead to retail end-users switching from GO to Melita. The assessment of retail prices has also shown that Melita and GO implement very similar prices. So a SSNIP at wholesale level would be immediately apparent to retail clients. This would enhance the effectiveness with which indirect constraints make the SSNIP unprofitable.

The same reasoning would apply, but in reverse order, in the event of a SSNIP implemented for Melita's wholesale bitstream access.

From a supply-side perspective, the MCA considers that no existing and / or new undertaking will duplicate the wholesale provision of fibre-based or cable-based access in the event of a SSNIP implemented for any such access. The significant sunk costs and long timeframes involved in the deployment of a nationwide access network infrastructure are the main factors that would inhibit such entry.

Conclusion on substitutability between FTTH-based wholesale access products and cable-based wholesale bitstream

Given the above, the MCA considers that wholesale bitstream access supplied via Melita's cable network forms part of the same market for wholesale access supplied via GO's FTTH network. These types of access are deemed to be functionally equivalent.

The substitutability of cable-based access and fibre-based access rests on (i) the consideration of potential direct constraints if Melita opens wholesale access to its network and (ii) strong indirect constraints emanating at the retail level. One further argument on the functional similarity of cable and fibre technologies is that Melita's upgrade of its coaxial-based network to the DOCSIS 3.1 standard has effectively enabled much higher data rates and downstream bandwidth over this technology platform. Meanwhile, the fibre-based network still requires significant additional investment by GO for the full materialization of the FTTH phase.

5.7 Proposed wholesale market

The MCA poposes that, in line with the EC Recommendation on relevant market and taking utmost account of national circumstances, the relevant product market consists of the following wholesale access products:

- unbundled access (including shared access) via the copper network;
- virtual unbundled access to the copper network;
- bitstream access via the copper network;
- virtual unbundled access to the fibre network;
- bitstream access via the fibre network; and
- bitstream access via the cable network.

This market is hereinafter referred to as the market for Wholesale Broadband Fixed Access (WBFA).

5.8 Relevant geographic market

The EC Communication on the SMP Guidelines sets out that a relevant geographical market '*comprises an area in which the undertakings concerned are involved in the supply and demand of the relevant products or services, in which the conditions of competition are sufficiently homogeneous, and which can be distinguished from neighbouring areas in which the prevailing conditions of competition are significantly different. Areas in which the conditions of competition are heterogeneous do not constitute a uniform market.*'

The MCA considers that the existing conditions of competition in the provision of wholesale fixed broadband access in Malta are homogeneous at a national level. Melita and GO have deployed access network infrastructures with nationwide reach and are therefore in a position to supply wholesale fixed broadband access on a nationwide scale. Melita has deployed an HFC network based on DOCSIS 3.1 standard across the whole national territory, whilst GO is also deploying the FTTH network alongside the nationwide copper network infrastructure.

Wholesale fixed broadband access products supplied by GO and Melita exhibit similarities in terms of functionality and are subject to strong indirect pricing pressures from each other on the basis of a 'chain of substitution' pricing dynamic determined for the corresponding retail fixed broadband market.

In light of the above, the MCA considers that the relevant wholesale fixed broadband access market in Malta is national in scope.

6 Assessment of competition at the wholesale level

The MCA is hereby outlining its assessment of competition for the wholesale fixed broadband access market in Malta. This market is defined in Chapter 4 and encompasses the following wholesale fixed broadband access products:

- unbundled access (including shared access) via the copper network;
- virtual unbundled access to the copper network;
- bitstream access via the copper network;
- virtual unbundled access to the fibre network;
- bitstream access via the fibre network; and
- bitstream access via the cable network.

6.1 Background to the SMP assessment

The MCA takes into account the methodology and criteria described in the EC Communication on the SMP Guidelines when assessing the level of competition in the relevant wholesale fixed broadband market. Based on this assessment the MCA will determine whether or not one or more undertakings may be designated as having SMP.

The MCA is cognizant that the competition conditions at retail level are an important element in the assessment of a wholesale market. In this regard, the MCA notes that the current wholesale SMP assessment draws significantly on transactions occurring at the retail level of the market. This is because the supply of wholesale fixed broadband access by GO and Melita is almost entirely provided internally, i.e. provided for the purposes of retail fixed broadband services supplied by these two operators.

6.2 The risk of single SMP

The MCA first considers whether a situation of single-firm SMP pertains within the relevant wholesale broadband market. In this context, the MCA examines a number of structuring factors that leave an impact on competition in the relevant wholesale market.

6.2.1 Market shares

The number of wholesale broadband access lines corresponds to the number retail fixed broadband connections supported by the relevant wholesale service, which could be either supplied to third parties or self-supplied for own retail purposes.

At the end of 2019, the number of self-supplied wholesale broadband access lines totaled 190,622. This figure corresponds to the sum total of 98,838 retail fixed broadband subscriptions for Melita and 91,784 subscriptions for GO.

Also at the end of 2019, the MCA recorded 284 wholesale broadband access lines – that are virtually unbundled over the FTTH - by way of a wholesale agreement reached by Vodafone Malta with GO in 2018 under the MCA's regulatory oversight.

Based on the above, the MCA notes that more than 99% of supply on the relevant wholesale market is captive, which means that market share outcomes at wholesale level correspond almost equally to market shares observed at retail level.

6.2.1.1 Market shares based on the number of wholesale lines

Taking into account self-supply (or internally supplied lines), the relative market positions of GO and Melita in the wholesale market under investigation developed symmetrically over the last few years, with the last market share reading of 51% for Melita and of 49% for GO. This outcome is in line with market share findings observed at the retail level.

	2013	2014	2015	2016	2017	2018	2019
Melita	50.3%	50.7%	50.3%	48.7%	49.6%	51.0%	51.2%
GO	49.7%	49.3%	49.7%	51.3%	50.4%	49.0%	48.8%

Table 16: Wholesale market shares based on number of lines

A small number of wholesale lines are externally supplied to Vodafone Malta, which is the operator currently making use of GO's wholesale VULA access offer, which is currently regulated by the MCA. The number of external lines supplied by GO totaled 284 at the end of 2019.

Melita does not offer wholesale access lines to third parties. The market share of this operator is therefore based on the number of internally supplied lines.

No other operator supplies wholesale access lines. The MCA considers that there is no potential for competition on wholesale access from wireless platforms, given the limitations and very limited reach of the technology. Hence these platforms are not taken into account at this stage.

6.2.1.2 Envisaged stability in market share outcomes

The MCA considers that the relative market positions of GO and Melita are unlikely to change within the timeframe of this review for the following reasons:

- No other wholesale supplier is currently active in the market under investigation. This is because the sunk costs involved in network deployment remain very significant, making it extremely difficult for another player to replicate either GO or Melita's infrastructures. In addition, any prospective entry cannot rely on the monopoly rents enjoyed by Melita and GO prior to the liberalization of the telecom markets in 2003. The current legal and regulatory environment is completely different to the one prevailing in the years when GO and Melita started their operations.

  Intrinsically, the cost of exit for Melita and GO is also high, meaning that these two operators have an incentive to retain their market presence and standing.

- Retail market growth is envisaged to be limited and predictably mirroring 'natural' growth for households and businesses (but largely by the household segment given its size), as elaborated at the retail SMP assessment. Considering that the number of retail fixed broadband connections purchased at the retail level effectively determines demand for the number of lines supplied in the wholesale fixed broadband access market, growth for the latter will also develop within the parameters applicable at retail level.

  End-user switching behavior may affect market share outcomes. The retail analysis in the current review has outlined that switching between Melita and GO is limited. Given that around 91% of fixed broadband subscriptions are subscribed to a bundle, which is typically subject to a 2-year contract, the rate of churn will most likely remain unchanged within the timeframe of this review.

- The competitive effect of entry via wholesale access materializes gradually over time. Malta's experience in this regard has shown that it takes several months for an access seeker to go through the process of negotiating an agreement to finally launch fixed broadband products to retail clients. In the VULA access case, Vodafone Malta initiated its negotiations to acquire the regulated offer[60] from GO in 2016. Agreement was reached in October 2018. Eventually, it took around nine months for Vodafone Malta to finalise the technical details of the offer and eventually launch its retail fixed broadband product line-up.

The access seeker also needs time to slowly build market share, even in a regulated wholesale market scenario. From current experience, building market share for a new entrant is no easy task, particularly in a market characterized by two long-established operators with ubiquitous market presence and a strong alignment in their retail-like (sales and marketing) and wholesale-like (network and operation) divisions. Effectively, it took Vodafone Malta an additional six months to build a retail fixed broadband presence represented by 284 clients.

Conclusion on wholesale market shares

Based on the above, the MCA considers that GO and Melita have very similar and high market shares. This is a long-standing structural characteristic of the market under investigation, with comparable market shares recorded by Melita and GO since 2014.

The market share analysis presents the first indication that a finding of single-firm SMP by Melita or GO is difficult to justify within the relevant market.

6.2.2 Other structural characteristics of the market

Given that GO and Melita have very similar and high market shares, the MCA looks at other characteristics of GO and Melita to determine whether any of the two operators enjoys a significant advantage over the other in the WFBA market, such as to support a finding of single-firm SMP.

6.2.2.1 Nationwide and non-replicable infrastructures

GO and Melita deployed their respective nationwide network infrastructures over a number of years. Both operators incurred significant sunk costs to deploy their networks marked by, for example, financial outlays to dig trenches and / or to build poles to lay cable in or above the ground. However, GO and Melita did not just rely on their capital to carry out their initial investments. The two operators benefited from a legal monopoly that was granted to them by

[60] The MCA's VULA decision specifies that the wholesale fibre access rate is first commercially negotiated and then subjected to an economic replicability test.

the Maltese Government in their initial years of operation. This guaranteed revenues and profitability over a stretch of time.

It is mainly because of these financial and legal reasons that the MCA considers GO's and Melita's access network infrastructures as non-replicable.

6.2.2.2 Vertical and horizontal integration

Melita and GO operate independently of each other across the wholesale and retail divisions of their production chain. In this regard, the two operators demonstrate a good alignment between the objectives of their retail and wholesale divisions and offer a comparable product portfolio over their respective networks across different markets.

It is clear that Melita and GO can gain advantage from being vertically integrated. For example, the two operators can transfer their strong position at wholesale level by, for example, refusing wholesale access to third parties or by granting access to third parties subject to disadvantageous conditions and tariffs. This would limit competition at retail level. Vodafone Malta is also vertically and horizontally integrated but with limited presence in the fixed market segment. In fact, this operator is currently providing retail fixed broadband services based on wholesale access supplied by GO, as a direct outcome of the MCA's regulatory intervention.

Given also that GO and Melita are horizontally integrated, with presence across a number of markets, the two operators can leverage their multi-market presence to enhance take-up of their fixed broadband product portfolio.

6.2.2.3 Economies of scale and scope

Melita and GO are long-established and have managed to build a strong client base over time. In this regard, the situation is quite different today than it was in the past. Then, the two operators focused their operations as de facto monopolists, each building subscriber strong holds in specific markets (television for Melita and fixed telephony for GO). However, over time, GO and Melita invested and upgraded their networks. To date, they utilize their ubiquitous networks to supply a range of services, over which the fixed and variable costs of production are distributed in a similar measure.

6.2.2.4 Technological standing

The MCA considers that GO and Melita have networks that offer similar advantages when it comes to the provision of wholesale fixed broadband access.

Nationwide coverage

When it comes to household coverage, Melita reaches 100% of Malta's households[61]. The same could be said for GO, which basically employs the copper and FTTH networks to reach all homes and dwellings in Malta. However, where it to be considered in isolation, GO's FTTH network currently reaches 43% of all homes and dwellings in Malta. GO however indicates that its FTTH network would reach nationwide coverage by 2024-2025. This goes to suggest that the gap in household coverage between Melita and GO will taper off significantly over the coming years.

Similar technical parameters for WFBA

Although the technologies are different, the physical interfaces required to connect to GO's and Melita's networks, by an access seeker, are more or less alike. The same holds for the network equipment necessary to connect the third party access seeker to the network of either of the two operators. Any routing, switching, billing and security components will be largely identical for both cases. Thus, from a network element point of view, the relevant components required by the third party for the proper functioning of the wholesale broadband access service are approximately the same. GO and Melita would then need to gauge the cost of any changes required in their own networks, if any are needed, in order to host the third party access.

WFBA a derivative of retail demand

Melita and GO have a strong and similar presence in the retail fixed broadband market and other retail markets. Given today's high take-up of fixed broadband in a bundle set-up, and given the similar position of Melita and GO in this product segment, no operator is deemed to benefit from a competitive advantage over the other in terms of supply of wholesale fixed broadband access, which is ultimately a derivative of demand at retail level for fixed broadband.

Based on the above, the MCA considers that GO and Melita enjoy similar clout to attract an access seeker, with no operator enjoying a competitive advantage over the other to meet current and potential demand for wholesale fixed broadband access.

6.2.2.5 No countervailing buyer power (CBP)

Almost the entire supply by GO and Melita for wholesale fixed broadband access is captive, as these two vertically integrated providers are supplying the relevant wholesale services for their own internal operations at retail level. Meanwhile, at retail level, the market is shared almost

[61] This is based on Melita's claim that the coverage of its network infrastructure is nationwide.

equally between Melita and GO, which means that wholesale demand is derived almost entirely by demand for the retail fixed broadband products supplied by the two operators.

Of note is that Melita has refused to supply wholesale fixed access when requested by Vodafone Malta years ago and is not currently offering the relevant wholesale service. In addition, as stated earlier, GO is the only operator providing wholesale broadband access to third parties and is currently offering the relevant wholesale service subject to the MCA's ex ante regulatory oversight. Effectively, no operator other than GO and Melita has the necessary access network infrastructure in place to offer wholesale fixed broadband access.

Therefore, absent regulation, access seekers can only obtain wholesale fixed broadband access from GO via regulated access and cannot therefore negotiate to obtain the relevant wholesale service on their own terms.

6.2.3 No attribution of single-firm SMP

The MCA considers that Melita and GO have a similar position in the WFBA market, with no operator enjoying a significant competitive advantage over the other in the provision of the relevant services. The MCA is hereunder outlining the main reasons for this conclusion:

- GO and Melita have highly similar market shares that are envisaged to remain stable in terms of magnitude over the next few years;
- Melita and GO are vertically and horizontally integrated operators and none of the two enjoys a competitive advantage over the other in terms of economies of scale and scope; and
- GO and Melita operate in a WFBA market that has high barriers to entry and do not face any credible CBP.

Given the above, the MCA is of the opinion that both GO and Melita demonstrate the same ability to shape extent of competition in the relevant wholesale market. A finding of single-firm SMP cannot therefore be attributed. The MCA will therefore assess for the potential finding of joint dominance.

6.3 The risk of joint SMP

In the previous section, the MCA has determined that Melita and GO hold a similar position in the WFBA market. Each of these two operators is present in the market with a nationwide access network infrastructure and both operators have sufficient capacity to meet current and future WFBA requirements. GO and Melita also exhibit similarity in their respective wholesale market shares, underscored by a symmetric evolution of this indicator for the two operators over several years. In view of limited and predictable growth prospects, the market position of Melita and GO is likely to remain stable within the timeframe of this review.

The above findings have also to be seen in the context of retail market developments, where the position of Melita and GO evolved symmetrically over time (with market shares are envisaged to remain stable) and where the two operators exhibit a reduced scope to compete on price. The latter is evidenced by the close alignment and similarity of prices implemented by these two operators. The MCA also considers that GO and Melita have an incentive and the possibility to coordinate their retail pricing behavior on a sustainable basis, knowing also that alternative service providers via wholesale access could disrupt their pricing behaviour.

It is for the reasons outlined above that the MCA examines whether there is joint SMP in relevant WFBA market, with the MCA's analytical framework evaluating the following:

- The incentive for GO and Melita to coordinate

  The MCA will examine the structural characteristics of the WFBA market, such as market shares, market concentration; the extent of product differentiation; and cost structures. This would determine whether or not the WFBA market exhibits characteristics conducive to coordination by Melita and GO.

- The sustainability of coordination

  The MCA also assesses market conditions to determine the possibility (or likelihood) for Melita and GO to sustain coordination about denial of access in the WFBA market. In this regard, the MCA will assess market conditions such as the number of operators on the market and their frequency of interaction, the extent of symmetry between the operators characterizing the market, the potential to detect and monitor deviation from the common policy, and the extent to which operators can threaten and punish deviations – would determine the possibility (or likelihood).

- The stability of the coordination mechanism

  The MCA evaluates the possibility of disruption to the stability of the coordination mechanism. In this regard, the MCA considers potential new market entry, growth prospects of the WFBA market, the level of technological maturity, potential for market exit, and reactions from wholesale customers.

The MCA's wholesale joint dominance assessment will give consideration to the criteria set out in the Airtours and the Impala rulings of the Court of Justice of the European Communities. The MCA will also take utmost account of the EC SMP guidelines for assessing joint SMP.

6.3.1 Market characteristics conducive to tacit coordination

The MCA considers that there are a number of factors that support the assumption that GO and Melita have an incentive to coordinate in the WFBA market.

6.3.1.1 A highly concentrated market

The MCA has already determined that both GO and Melita are operating in a duopolistic setting and have high and similar market shares. The similarity in market shares has been observed for several years, with the two operators consistently sharing the market on an equal footing both in terms of wholesale lines and revenue.

The Herfindhal-Hirschman Index (HHI), which is a measure of concentration in a given market[62], indicates that the WFBA access market in Malta is highly concentrated. Table 17 shows that the HHI in 2019 stood at 5000 and that the HHI for the WFBA has been stable long-term.

	2014	2015	2016	2017	2018	2019
HHI	5001	5000	5003	5000	5001	5006

Table 17: HHI for the wholesale fixed broadband access market in Malta

6.3.1.2 Equivalent technological parameters

The WFBA products of GO and Melita are offered over different types of technologies. However, network roll-out and geographical coverage is basically identical for the two operators. Melita's cable-based infrastructure is nationwide, whilst GO is currently rolling out FTTH infrastructure, which stands in parallel to its nationwide copper DSL access network infrastructure. Also, the backhaul and core network elements of the different infrastructures are very similar.

[62] The MCA estimates the HHI by taking the absolute value of the market share of each operator in the WFBA market (for example, 51 if the market share is 51%) and then squares this number. The sum of these values for all operators is the HHI. The HHI can theoretically range from close to zero for a market with a large number of firms of equal size, to 10,000 for a monopoly.

GO and Melita do not have a competitive advantage over each other in terms of the technological possibilities of their network infrastructures. GO and Melita have gradually carried out upgrades to their network infrastructures and further upgrades are possible in the coming years. The MCA also considers that GO and Melita would find no difficulty to meet future internal and external demand for WFBA and that the two operators could adequately address rising bandwidth requirements.

As for switching at wholesale level, the MCA has already underlined that such an exercise would be challenging at the actual switching phase for the end-user. The MCA however considers that the wholesale customer can take measures to minimize inconvenience without incurring significant costs. The MCA considers that, overall, switching fees are likely to be low given that, for example, CPEs are owned by the wholesale provider and given that the wholesale customer's connection at the handover point of different networks is independent of the access network.

6.3.1.3 Similar WFBA product characteristics

There are different access product that could be supplied by GO and Melita in the WFBA market. For example, GO can offer virtual unbundled access and bitstream access over the FTTH network. On the other hand, Melita can deliver bitstream over cable. The main demarcation between these different products is the level of control retained by the wholesale provider (or by extension the level of control assigned to the wholesale customer).

However, notwithstanding the different levels of control retained by the wholesale provider, the different types of WFBA products are all used to support the provision of high speed fixed broadband. Meanwhile, a number of functional characteristics are available across several WFBA products. For example, multicast and unicast functionalities can be offered with VULA over FTTH and the different bitstream products (FTTH and cable). In fact, GO and Melita can adjust their access offers to allow for variants of these functionalities, depending on the extent to which the wholesale customer wants to differentiate its product portfolio from the product line-up of these wholesale providers.

Essentially, therefore, the WFBA products supplied by GO and Melita are largely homogenous in terms of the functionalities that could be supported, and therefore GO and Melita enjoy no superiority over the other in terms of the product portfolio they offer in the WFBA market.

6.3.1.4 Similar cost structures

Over the years, GO and Melita have matched each other's new product offerings in short order, charging retail prices that remained similar over time. The MCA further infers from this trend that the wholesale costs of producing these retail products must also be fairly similar. If the costs of producing retail 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 that one of the operators is charging excessive prices since its costs are much lower than the retail prices.

Conclusion on market characteristics conducive to coordination

The MCA finds that the WFBA market is highly concentrated, given the duopolistic nature of the market underscored by the presence of Melita and GO. The MCA also finds that the WFBA is characterized by product homogeneity, and similar cost structures, the MCA considers that GO and Melita share common interests in the WFBA market, to such an extent that the relevant market is conducive to tacit collusion. The MCA therefore considers that GO and Melita share common interests in the WFBA market, to such an extent that the relevant market is conducive to tacit collusion.

6.3.2 Sustainability of coordination

GO and Melita are symmetrically positioned in the WFBA market, for the reasons outlined in Section 6.3.1 and the MCA considers that GO and Melita have the same ability to shape the market and the level of competition to the desired level. Given also their long-term market presence, GO and Melita established a standard pattern of interaction, with similar responses and actions to address demand and supply in the relevant market. This also explains the strong alignment observed at retail level in terms of prices implemented by these two operators. Effectively, the duopolistic market setting enabled Melita and GO to share the market both in terms of size (i.e. in terms of wholesale lines) and profitability. The WFBA market is also mature, with limited growth predicted over the coming years.

The MCA therefore considers that GO and Melita not only have an incentive to coordinate in the WFBA market but also the market itself presents an opportunity for GO and Melita to actually coordinate their behavior.

The consideration at this stage is therefore the extent to which the coordination between GO and Melita in the WFBA market would be sustainable over time, absent regulation.

There are two main conditions that must be met for a coordination mechanism to be sustainable over time:

- Market transparency

  In this regard the MCA assesses whether the WFBA market provides sufficient transparency to GO and Melita to detect any deviations from tacit coordination.

- An effective retaliatory mechanism

  The sustainability of a coordinated outcome depends on the incentive for GO and Melita not to deviate from the agreed outcome. Hence, the MCA examines whether GO and Melita can effectively discipline a deviation in the WFBA market back to the agreed collusive arrangement at the wholesale level.

6.3.2.1 The collusion mechanism

The MCA has already determined that, at retail level, GO and Melita engage in similar practices and responses to address demand and supply of fixed broadband, with the two operators replicating each other's product portfolio and implementing prices that are very similar. The MCA also determined that, given their similar position at retail level, GO and Melita would, absent regulation, have an incentive to coordinate on price. This is because prices at the retail level are publicly known through advertising campaigns and are published on the operators' respective websites. Movements in retail prices are also immediately observed and known by the operators and retail end-users. With retail end-users now accustomed to the long-term price alignment and the largely similar prices implemented by GO and Melita, a change in price – particularly a reduction in price - would be immediately evident. This would enable the aggrieved party (i.e. the operator holding to coordination) to immediately discipline the deviation by also implementing a corresponding change in price.

GO and Melita are also aware that the only disruption to their coordinating behavior at retail level currently emanates from the competitive pressure of Vodafone Malta, which is active on the relev+ant retail market via the regulated wholesale access supplied by GO. After all, the additional competitor in the retail market via regulated access is likely to take as much subscribers (existing and potential) from GO as from Melita, given the homogenous retail product portfolio of these two operators.

Given the above, the MCA considers that Melita and GO would have an incentive to coordinate in the WFBA market, absent regulation. Effectively, absent regulation, GO and Melita would have the ability and all the power to align their retail prices by either coordinating on the price for WFBA or by coordinating on the refusal to grant WFBA. Therefore, the MCA takes into account two scenarios for potential coordination (or collusion mechanism) by Melita and GO in the WFBA market and examines which one represents their most likely focal point at the relevant wholesale level:

- Scenario 1: This scenario corresponds to a hypothetical market outcome whereby, absent regulation, GO offers WFBA and Melita hypothetically offers WFBA (i.e. Melita departs from its long-standing policy of refusing to grant WFBA). In this context, the MCA assesses the incentive for Melita and GO to coordinate on the setting of the price for WFBA.
- Scenario 2: This scenario depicts a situation characterized by long-term market developments and current market conditions. The MCA assesses whether, absent regulation, GO would offer WFBA as Melita sticks to its long-term policy of not offering WFBA. In this context, the MCA assesses the incentive for GO and Melita to coordinate on the refusal to grant access.

Scenario 1: Coordination on the setting of the price for WFBA

In a hypothetical scenario where GO and Melita provide WFBA, a wholesale customer of WFBA would compete at retail level on the basis of the tariff for WFBA and its ability to differentiate its product portfolio in relation to that of Melita and GO. Based on observed outcomes for the retail fixed broadband market, such differentiation may take various forms, such as (i) new stand-alone products, with new price points and / or new download speeds; and (ii) new bundle offers including innovative techniques to provide TV services. The larger the differentiation, the more likely it gets for the wholesale customer to build market share.

Given that the common interest of both GO and Melita is to avoid losses in retail revenues as much as possible and thus to maximize profit, the hypothetical scenario would see Melita and GO granting WFBA at wholesale tariffs that generate revenues to (at least) offset the lost retail income. It is relevant to underline again at this juncture that the current VULA tariff has been set under the regulatory oversight of the MCA. This means that in a hypothetical scenario where both parties supply WFBA, GO and Melita would likely coordinate to set a price (for WFBA) that is higher than the current regulated VULA rate.

However, the MCA considers that coordination on the price for WFBA would be difficult to maintain in the long term. This is because in a hypothetical scenario where both GO and Melita provide WFBA, the two operators would find it attractive to charge a slightly lower wholesale tariff than the other. In addition, the setting of the WFBA price is not characterized by the level of immediacy and transparency observed with respect the setting of retail prices. This is because the price of WFBA is typically negotiated on commercial terms and would thus be subject to confidentiality. In such a scenario, the WFBA price implemented by the first mover (i.e. the operator deviating from coordination) would only be visible to the aggrieved party when the wholesale customer establishes a presence at retail level and / or when the aggrieved party starts negotiations with other potential wholesale customers. By extension, if the price for WFBA is reduced by a wholesale provider, the relevant change would likely be noticeable after some time by way of lower retail prices for broadband products supplied by the wholesale customer. It is at that point that the aggrieved party would effectively take action to discipline the deviation by implementing a reduction in its own retail prices.

Ultimately, therefore, the MCA considers that Melita and GO would not have an incentive to coordinate on the price of WFBA as such a strategy would only reap short-term benefits to profitability, with negative implications for GO and Melita in terms of profitability long-term.

Scenario 2 - Coordination on the refusal to grant access

For the second scenario the MCA considers that, absent regulation, Melita would stick to the long-term policy of not providing WFBA[63]. The MCA notes that if Melita departs from this policy then the analysis on coordination would end up in the situation outlined for the previous hypothetical scenario. To this effect, the MCA's assessment from this point onwards would look at GO's incentive when it comes to the provision of wholesale access.

GO is likely to consider that Melita will keep to the policy of refusing to grant access. GO would also take into account retail market developments since Vodafone Malta's entry in retail fixed broadband market, via regulated VULA access, and the potential competitive pressure that could emanate as a result of disruptive behavior by this alternative provider. GO would also consider its position compared to Melita, which would not be offering WFBA.

Absent regulation, therefore, GO would have an incentive to engage in various discriminatory practices (considering the contract terms until expiry) with the sole intention of squeezing out

[63] Melita has ignored the 2003 regulation and deviated from its regulation at law and also refused to provide access in 2011 to Vodafone Malta, saying it was not the company's policy to offer such access to third parties.

Vodafone Malta from the market as early as possible. Such a strategy would allow GO to attain the same position of Melita and thus to coordinate with Melita about refusal to grant access. Effectively, the focus of coordination in this second scenario is long-term, with GO and Melita having the opportunity to maintain profitability with the loss of an existent competitor at retail level.

6.3.2.2 Transparency

In practice, GO and Melita have the opportunity to observe each other's behaviour more effectively when coordinating on the refusal to grant access than when coordinating with setting the price for WFBA. This because GO and Melita have been interacting on the WFBA market (and the corresponding retail fixed broadband market) for many years. The two operators are aware that no undertakings would be in a position to replicate their infrastructure over a short period of time and that any new presence in the retail fixed broadband market is only possible via WFBA. In a duopolistic setting, the aggrieved party would therefore immediately notice that the other party is deviating from coordinating about the refusal to grant access.

On the other hand, where GO and Melita to offer WFBA, a deviation in the wholesale price for WFBA would not be immediately noticeable to the aggrieved party. As already explained in sub-section 6.3.2.1, a deviation in the price for WFBA – say through a reduction in the price – would only be noticeable to the aggrieved party by way of reduced retail prices of the alternative provider (or during negotiations with a potential alternative provider seeking WFBA from the aggrieved party).

Given the above, the MCA considers that the WFBA market presents sufficient transparency to sustain coordination by GO and Melita on the refusal to grant access. The ability to detect and discipline deviations is further enhanced given that there are clear elements of transparency in the retail fixed broadband market.

6.3.2.3 An effective retaliatory mechanism

The sustainability of a coordinated outcome depends on the possibility for each member of the duopoly in the WFBA market to effectively retaliate and discipline a deviation from the coordinated outcome. In other words, the potential retaliatory mechanism from an aggrieved party must be deemed sufficiently strong and immediate as to instil trust amongst the coordinating parties that none of them would be better off if it acts independently.

The disciplining mechanism in the WFBA market works at two levels, essentially starting retail and then going up wholesale.

Transparency on retail fixed broadband prices is such that if one party to coordination deviates, by for example undercutting prices to gain market share, the aggrieved party would immediately notice the deviation and retaliate by reducing retail prices as well. The role of the retaliatory mechanism would therefore be to change the aggrieved party to a disciplining party.

The MCA considers that the clear element of price transparency in the retail fixed broadband market allows the disciplining party to hinder the deviating party from registering a gain in market share and would lower overall profitability. The MCA considers that the retaliatory mechanism emanating at retail level serves well the purpose of discouraging deviation from coordination on refusal to grant access. Effectively, the disciplining party could maintain the price reduction until the wholesale customer (i.e. the alternative provider via WFBA) is no longer in a position to operate profitably at retail level and stops operations. After the wholesale customer disappears, the parties to coordination may very well reverse the price reductions in view of long-term profitability targets.

The retaliatory mechanism may also happen at wholesale level, with the disciplining party this time going a step further and mimicking the party deviating to coordination by granting WFBA itself. This is would be more of a long-term retaliatory move, given its non-reversibility should the disciplining party actually tie to contracts with wholesale customers.

However, the MCA considers that given the incentive for Melita and GO to maintain profitability long-term, the retail retaliatory mechanism would be deemed sufficient to dissuade any potential deviation to coordination on the refusal to grant access.

Conclusion on the sustainability of coordination

The MCA considers that, absent regulation, GO and Melita not only have an incentive to coordinate on the refusal to grant access but are also able to do so effectively given the following:

- Coordination on refusal to grant WFBA is sufficiently transparent for both Melita and GO to effectively detect deviations from this coordination mechanism.

- GO and Melita have at their disposal an effective retaliatory mechanism with which to dissuade a potential deviation from tacit coordination on refusal to grant access.

Refusal to grant access is therefore the focal point of coordination for GO and Melita in the WFBA market.

6.3.3 Stability of the coordination mechanism

In the previous sections the MCA determined that, absent regulation, GO and Melita do not only have an incentive to coordinate on the refusal to grant access but are also able to do so given the internal stability of the coordination (in terms of transparency and retaliatory mechanism). In this section, the MCA also examines whether tacit collusion in the WFBA market is further aided externally by a lack of potential constraints that could be the result of:

- High barriers to entry; and
- Lack of countervailing buyer power (CBP).

6.3.3.1 High barriers to entry

Only GO and Melita are currently active in the WFBA market. This duopolistic setting is not expected to change given the high barriers to entry, which are underscored by the significant sunk costs involved in building a nationwide access network infrastructure. Given also the size of the market and limited growth prospects, the risk for a new market entrant of not recouping the high investment costs by way of competing with two long-established operators would also be very high.

The MCA has also determined at earlier stages in this review that the fixed wireless networks in Malta do not translate in a constraining effect on GO and Melita due to several factors, the most important being the very limited footprint / coverage area of the fixed wireless networks and the lower reliability of wireless fixed broadband connections.

Effectively, therefore, the MCA considers that GO and Melita can coordinate in the WFBA market without facing any disruptive behavior from other undertakings.

6.3.3.2 Lack of CBP

Countervailing buyer power would exist in the WFBA market if wholesale customers (access seekers) have the ability to negotiate access on their own terms with wholesale service providers.

The ability to negotiate would of course depend on the choices that are available to the wholesale customer. The larger the number of wholesale providers, the less likely for a wholesale provider to exert market power and the more likely for a wholesale customer to negotiate better terms when acquiring WFBA.

However, to date, the provision of WFBA materialized under the regulatory oversight of the MCA. Melita consistently refused to provide WFBA whilst GO offered the service subject to regulatory intervention. There are also no other operators that are in a position to supply WFBA and no new entry is expected in the supply of WFBA. This means that, absent regulation, wholesale customers of WFBA could only resort to Melita and GO to acquire the wholesale service.

The MCA has however shown that GO and Melita have an incentive to coordinate on refusal to grant access and an ability to refuse to grant access absent regulation. Absent regulation, Melita would stick to the policy of refusing to grant access and GO would adopt the same strategy.

The MCA therefore considers that wholesale customers of WFBA have no CBP to disrupt tacit coordination.

6.3.3.3 Conclusion on the stability of coordination

The MCA considers that tacit coordination in the WFBA market is further aided externally by a lack of potential constraints on GO and Melita as a result of high barriers to entry and a lack of CBP.

6.3.4 A finding of joint SMP at wholesale level

The MCA considers that, in the absence of regulation, GO and Melita not only have an incentive to coordinate on refusing to grant WFBA but also have the possibility to implement such a strategy.

The MCA determined that the characteristics of the WFBA market are such that these are conducive for GO and Melita to reach agreement on the coordination mechanism.

Coordination on refusal to grant access is likely to be the focal point of GO and Melita, given the immediacy with which a deviation to such coordination could be detected and the effectiveness with which the two operators can retaliate to deviation and restore coordination. GO and Melita can also interact with each other to coordinate on refusal of access with a high degree of internal and external stability.

The MCA therefore concludes that, absent regulation, GO and Melita have joint SMP in the WFBA market.

7 Regulatory approach

Following the market analysis, the MCA concluded that GO and Melita jointly hold SMP in the retail fixed broadband market and the wholesale fixed broadband access market. Throughout the retail analysis the MCA has identified the following competition shortcomings:

- The retail market is close to full maturity and future growth is limited and predictable.

- GO and Melita are reluctant to compete on price, with fixed broadband prices having been stable for a long time. Retail prices for fixed broadband services in Malta are above the EU average.

- In various instances, Melita and GO have restricted choice. This is amply evident in the fixed broadband stand-alone segment and in certain instances where fixed broadband is purchased in a dual-play set-up.

The MCA concludes that, at retail level, the two operators would benefit from tacitly coordinating on prices for fixed broadband to maximize profits.

The MCA subsequently determines that, at wholesale level, Melita and GO have an incentive and ability to tacitly coordinate on refusal to grant access to their networks. For the reasons already outlined in Chapter 6, the MCA considers refusal to grant access as the focal point for tacit coordination at the relevant wholesale level. The incentive for this coordination would be to prevent new retail market entry and thus to continue limiting price-based competition at the retail level. The MCA therefore finds Melita and GO jointly dominant in the wholesale fixed broadband access market.

The MCA is of the opinion that, in the absence of regulation, GO and Melita have the opportunity and incentive to limit their competitive behavior in the wholesale fixed broadband access market. The purpose of this chapter is to outline these forms of competition-limiting behavior and to propose appropriate ex ante regulatory measures to prevent potential competition shortcomings from materializing.

7.1 Competition-limiting behavior

The MCA makes reference to two documents when examining the forms of competition-limiting behavior that could potentially be exhibited by Melita and GO in the WFBA market:

- In 2006, the European Regulators Group (known as the 'ERG') published a document entitled '*Common position on the approach to appropriate remedies in the new regulatory framework, ERG (06)*'[64], whereby it outlines three potential ways for an operator or operators with SMP to limit competition including (i) entry deterrence via refusal to grant access; (ii) non-price competition shortcomings such as the withholding of information, discrimination in terms of quality, delaying tactics, unjustifiable requirements, strategic design of product and discriminatory use of information; and (iii) price-related competition problems such excessively high prices and the use of price discrimination to raise the costs of competitors at the retail level over those of its own retail operation (this would raise rival's costs downstream and induce a margin squeeze).

- In 2012, the Body of European Regulators for Electronic Communications (hereafter referred to as BEREC)[65] published a document entitled '*Common position on best practice remedies on the market for wholesale (physical) network infrastructure access (including shared or fully unbundled access) at a fixed location as a consequence of a position of significant market power in the relevant market, BoR (12) 127*'[66]. This document again emphasizes on three potential forms of competition-limiting behavior as identified by ERG.

Overall, the ERG's and BEREC's focus of assessment of the competition shortcomings is related to the *possible anti-competitive behavior* of the SMP provider(s) within the time horizon of the market analysis.

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[64] Link to ERG document: http://www.ictregulationtoolkit.org/document?document_id=2408

[65] BEREC is a group of European regulators which replaced the ERG for electronic communications networks and services. BEREC was established by Regulation (EC) No 1211/2009 of the European Parliament and of the Council of 25 November 2009.

[66] Link to BEREC document: https://berec.europa.eu/eng/document_register/subject_matter/berec/regulatory_best_practices/common_approaches_positions/1127-revised-berec-common-position-on-best-practice-in-remedies-on-the-market-for-wholesale-physical-network-infrastructure-access-including-shared-or-fully-unbundled-access-at-a-fixed-location-imposed-as-a-consequence-of-a-position-of-significant-market-power-in-the-relevant-market

In view of the above, the MCA is hereunder outlining the potential competition problems in the wholesale fixed broadband access market.

7.1.1 Refusal to grant access

GO and Melita have a nationwide access network infrastructure in place over which they offer a suite of electronic communications services including fixed broadband. The MCA considers that new market entry by way of infrastructure-based competition is not possible given the high sunk cost element and long timeframes involved to replicate GO's or Melita's network infrastructures.

New presence in the provision of retail fixed broadband is only possible via access to GO's and / or Melita's access network infrastructure. However, the MCA has already shown in Chapter 6 that the structure of the wholesale market under investigation provides an incentive and the possibility for GO and Melita to leverage their market power by refusing to grant access to undertakings seeking to compete downstream with the joint SMP undertakings.

By barring competitors from a necessary input at the wholesale level, GO and Melita would protect their own retail fixed broadband operation against effective competition.

The MCA notes that the current wholesale access agreement between GO and Vodafone Malta has materialized under the threat of regulation. Neither Melita nor GO have concluded voluntary access agreements with third party undertakings.

Overall, the MCA considers it plausible for Melita and GO to refuse to grant access absent regulation. Where wholesale access is already provided, such as in the case of GO offering regulated virtual unbundled access (VULA) to Vodafone Malta, the MCA considers it plausible that, absent regulation, the SMP operator would implement wholesale actions to dilute the incentive for Vodafone Malta to compete in the retail fixed broadband market (see sub-section 7.1.2).

The effects of the above would be the loss of competitive pressure in the retail fixed broadband market, with such a loss setting the stage for consumer harm in the form of less choice and even higher prices.

7.1.2 Non-price competition shortcomings

Operators with significant market power could potentially discriminate in favour of their own retail arm and against downstream competitors. Absent regulation, the MCA envisages the risk of Melita and GO implementing non-price actions such as the withholding of information, discrimination in terms of quality, delaying tactics, unjustifiable requirements, strategic design of product and discriminatory use of information.

- Withholding of information and discriminatory use of information

  A wholesale provider benefits from firsthand information on, say, its network topology, the number of connections per network location, technical specifications and configuration of its network, and future plans with respect to network set-up and upgrades. Absent regulation, and in a scenario of collective dominance, GO and Melita may choose not to share such information or to withhold parts of such information. This would place the wholesale entrant at a disadvantage when seeking to compete with the retail operations of Melita and GO.

- Delaying tactics

  The wholesale customer (i.e. the access seeker) may lose interest in seeking wholesale access if the respective commercial negotiations are prolonged and / or are not concluded within a reasonable timeframe. The longer the negotiations take to be concluded, for one reason or another, the less likely it would get for the access seeker to start using the service at the most opportune time.

- Discrimination in terms of quality

  GO and Melita may make it very difficult, if not impossible, for an access seeker to compete in the underlying retail fixed broadband market by offering a wholesale service that is of poorer quality then when it is offered for self-supply purposes.

  Discrimination in term of quality may materialize in terms of the availability, delivery and reliability of the wholesale access service offered to the access seeker. Another relevant consideration is the time involved to address disruptions caused by faults and / or quality deficiencies for clients of the undertaking purchasing access.

- Unreasonable terms and conditions

  The negotiation of a wholesale access agreement would go into specific details of operational processes including, for example, the eligibility, ordering and provisioning of the wholesale service. Other negotiated aspects revolve around migration issues, repair and maintenance timeframes and terms of payment and billing procedures amongst others. In a regulated environment, these aspects would be addressed to ensure that terms and conditions offered to the access seeker are reasonable, with the SMP operator(s) required to abide by the terms of the reference offer. Absent regulation, GO and Melita may offer contract terms and conditions to the access seeker that would ultimately inflate the costs for the retail end-user and / or limit the use of the wholesale access service.

- Strategic design

  GO and Melita may consciously implement changes in the network configuration to limit the possibilities and flexibility with which a wholesale customer may acquire and realize access. These changes would effectively render wholesale access over the network infrastructures of the joint SMP operators less attractive or even unusable.

The above-mentioned actions would impact upon the quality of alternative operators' offerings, raising their costs and restricting their sales. This would render alternative service providers less effective to compete in the underlying retail fixed broadband market.

7.1.3 Price-related competition shortcomings

The MCA considers that GO and Melita have an incentive and opportunity to leverage their collective market power by implementing wholesale price-related actions to limit competition. These price-related actions are outlined below.

- Excessively high price

  Melita and GO are two vertically integrated undertakings with joint SMP in the wholesale fixed broadband access market. The MCA determined that these two operators have an incentive and opportunity to coordinate on a focal point at wholesale level by refusing to grant access. However, assuming GO and Melita offer wholesale access, the two operators would have an incentive and opportunity to impose an excessively high price, thus raising the costs of competitors with presence on the retail market via wholesale access. Ultimately, this would be to the detriment of end-users.

- Price discrimination

  The MCA recalls that, apart from its internal stability, GO's and Melita's tacit collusion in the WFBA market is further aided by a lack of potential external constraints. GO and Melita face no direct and indirect CBP. Essentially, this means that GO and Melita can set prices for wholesale access independently of wholesale customers and retail end-users. Therefore, absent regulation, GO and Melita not only have an incentive and opportunity to implement an excessively high price but also have an incentive and opportunity to price discriminate between wholesale rates charged internally (i.e. charges for their own retail operations) and externally (i.e. charges for wholesale customers). Effectively, GO and Melita would charge prices to their wholesale customers that are higher than those it charges itself internally.

Additionally, these two operators can price discriminate between different wholesale customers, by imposing different charges depending on the wholesale customer. GO and Melita are able to access economies of scale and scope that would not be readily available to other service providers competing on the downstream market via wholesale access. Therefore, absent regulation, Melita and GO would be in a position to exercise additional pressure on the margins of these service providers, thus making it even harder for these providers to operate profitably. The profitability margin for wholesale customers could be eroded so much that they ultimately exit the market. By iteration, price discrimination would also discourage new entry via wholesale access.

Again, the MCA believes that via price discrimination, GO and Melita would limit the underlying retail competition to the detriment of end-users.

Conclusion

The MCA considers that the structure of the wholesale fixed broadband access market gives an incentive and opportunity to Melita and GO, as collectively dominant operators, to engage into behavior limiting competition, hinging on both price-related and non-price related actions. Such actions will serve to limit and even eliminate competitive pressures from rival service providers and thus securing profitability.

7.2 Principles upheld when setting regulatory intervention

In accordance with Regulation 5(4) of the ECNSR, the MCA is obliged to impose appropriate regulatory obligations where an operator is designated as having significant market power (SMP) in a relevant market, either individually or jointly with others. Also as referred to in sub-regulation (2) of Regulation 5 of the ECNSR, the MCA shall maintain or amend such obligations where they already exist.

In accordance with Regulation 11(4) of the ECNSR and Article 8.4 of the Access Directive, any obligations imposed by the MCA upon an operator with SMP in accordance with the above must:

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

Overall, the MCA's regulatory approach aims to protect and to safeguard end-user interests, whilst promoting effective competition in the relevant markets. In this context, the MCA will seek to impose/keep in place the least burdensome but most effective remedy or remedies to address the potential competition problems identified in the WFBA market. The ECNSR outlines a set of remedies that are intended to address potential competition shortcomings in one or more markets where an undertaking is designated with single or joint SMP, as per below:

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

The MCA's regulatory approach also takes into account the EC Recommendation on relevant markets, the EC Recommendation on consistent non-discrimination obligations and costing methodologies to promote competition and enhance the broadband investment environment[67], the EC Recommendation on regulated access to Next Generation Access Networks (hereinafter referred to as the 'NGA recommendation')[68], the BEREC Common Position on best practice in remedies on the market for wholesale network infrastructure access at a fixed location[69] and the

[67] Link: https://ec.europa.eu/digital-single-market/en/news/commission-recommendation-consistent-non-discrimination-obligations-and-costing-methodologies

[68] Link: https://ec.europa.eu/digital-single-market/en/news/commission-recommendation-20-september-2010-regulated-access-next-generation-access-networks

[69] Link: https://berec.europa.eu/eng/document_register/subject_matter/berec/regulatory_best_practices/common_approaches_positions/1127-revised-berec-common-position-on-best-practice-in-remedies-on-the-market-for-wholesale-physical-network-infrastructure-

BEREC Common Position on best practice in remedies on the market for wholesale broadband access (including bitstream access)[70].

7.3 Proposed regulatory obligations

The MCA has designated Melita and GO with joint SMP in the wholesale fixed broadband access market. GO and Melita have an incentive and ability to refuse to grant wholesale access to their networks (unless obliged to do so by regulatory intervention) and can also implement price-related and non-price actions to limit competition in the underlying retail market.

Hence, the MCA considers it proportionate and justifiable that regulatory obligations are imposed on both GO and Melita, given that the two operators present an equal risk of implementing wholesale actions to limit competition. The MCA shall also impose the least burdensome but most effective remedy / remedies to address potential competition problems.

7.3.1 Access

In principle, agreements on any type of access should be reached following commercial negotiations between the access seeker and the wholesale provider. The MCA has however determined that, given the structural characteristics of the WFBA market, GO and Melita have an incentive and ability to tacitly coordinate about refusing to grant access to third parties (Chapter 6). The MCA considers that the imposition of an access obligation on GO and Melita is justified and proportionate, as it would provide for regulatory requirements that address the potential competition shortcoming related to potential tacit coordination by GO and Melita on refusal to grant access.

The MCA has also shown that, absent regulation, GO and Melita would present a comparable risk in terms of competition-limiting behaviour. This risk is associated with the possibility of GO and Melita potentially engaging in price-related and non-price wholesale actions that would hinder new market entry, which would in turn limit competition in the underlying retail fixed

access-including-shared-or-fully-unbundled-access-at-a-fixed-location-imposed-as-a-consequence-of-a-position-of-significant-market-power-in-the-relevant-market

[70] Link: https://berec.europa.eu/eng/document_register/subject_matter/berec/regulatory_best_practices/common_approaches_positions/1126-revised-berec-common-position-on-best-practice-in-remedies-on-the-market-for-wholesale-broadband-access-including-bitstream-access-imposed-as-a-consequence-of-a-position-of-significant-market-power-in-the-relevant-market

broadband market. The access obligation would interact with the non-discrimination and transparency obligations to (partly) address the risk of GO and Melita implementing non-price actions to limit competition.

Overall, the MCA considers that the access obligation would contribute to more effective competition at the wholesale level and consequently, also at the retail level. In turn, this would serve the interests of the end-user in terms of more choice and more price-based competition.

The extent of the access obligation

Given the finding of joint SMP, the imposition of an access obligation could in principle require GO to provide access via its copper DSL network and access via its fibre network. Melita could be required to provide wholesale access via its cable DOCSIS 3.1 network. However, the MCA considers that such a regulatory approach would neither be proportionate nor be representative of a fair distribution of the regulatory burden between GO and Melita.

The MCA is of the opinion that, in the current NGA environment, the imposition of an obligation on GO to provide access via the copper network would not be appropriate. This is because the fibre network and the cable DOCSIS 3.1 network allow for fixed broadband product characteristics that are superior – in terms of capacity guarantees and download speeds – to those supported over the copper network. Further to this, no take-up has been registered to date for the current SLU and LLU obligations, notwithstanding that these access obligations have been imposed on GO for many years. The MCA considers that, in the circumstances, copper-based access solutions have been made redundant by GO's FTTH deployment and Melita's upgrade of the cable network to the DOCSIS 3.1 standard. There is indeed no economic rationale for an undertaking to consider taking up an unbundled access offer, given the high upfront investment that would have to be incurred in order to acquire the service. Therefore, in this context, the MCA does not consider access to GO's copper-DSL network as a future-proof form of access. The current LLU and SLU access obligations are considered as having been made redundant by market developments and are therefore to be withdrawn.

The MCA is also keen to ensure a fair distribution of the regulatory burden between GO and Melita. To this effect, the MCA considers that the current VULA-based remedy imposed on GO alongside the opening of the cable network via bitstream access would be adequate to address current and future demand for WFBA. This means that, in the case of GO, the VULA access remedy would be maintained, also considering that such access served to bring about new entry in the retail fixed broadband market. The opening of the cable network would essentially translate into a new access platform for alternative providers. The availability of both an FTTH-based and cable-based access options would place alternative providers in a better and more informed position when it comes to the selection of the access option that best represents their interest in establishing retail market presence.

The MCA's proposed approach with respect to access-based regulation is also cognizant of the fact that the market mechanism could be stifled by excessive intervention. Hence, the MCA is not hereby proposing to impose bitstream access over FTTH. This would allow for the possibility of the market mechanism producing voluntary agreements outside the MCA's regulatory oversight. For example, GO may consider offering wholesale bitstream access over fibre if a potential wholesale customer makes a request for such access.

Given the above, the MCA considers that the imposition of an obligation on Melita to provide bitstream access via the cable DOCSIS 3.1 network the imposition of an obligation on GO to provide VULA-based access over FTTH would contribute effectively to safeguard end-user interests and to promote effective competition. More specifically, the proposed access-based regulatory intervention would contribute to the following:

- A bigger likelihood of new entry in the underlying retail fixed broadband market;
- Stronger service-based competition, which would ultimately benefit the end-user in terms of more choice and more effective price-based competition.

The MCA does also recognize that GO's FTTH network is still not nationwide. Therefore, in accordance with regulation 15 of the ECNSR, the MCA is directing GO to maintain the offer for a virtual unbundled access product where the FTTH network has been deployed.

Regulatory requirements to negotiate in good faith

The access obligation provides for regulatory requirements to be imposed on GO and Melita in terms of the reasonableness and fairness principles that have to be maintained throughout negotiations on WFBA with access seekers.

The respective access obligations require GO and Melita to negotiate in good faith with access seekers that make a reasonable request for access. Where negotiations fail and disputes arise, the MCA shall intervene to determine whether such a request was reasonable or otherwise. This assessment will take into consideration the technical and commercial terms under which the request has been made, as well as the access seeker's necessity for such a wholesale access input.

The obligation on Melita and GO to negotiate on the respective access offer shall come into effect (or be maintained in the case of GO) from the date of publication of the Decision corresponding to the current consultation exercise.

The technical aspects and terms and conditions upon which Melita would be obliged to offer access would be addressed in a separate process as detailed in Section 7.3.3 below.

7.3.2 Non-discrimination

Melita and GO have been designated as operators with joint SMP in the wholesale fixed broadband access market. The MCA therefore considers the risk that these two operators provide wholesale services on terms and conditions that discriminate in favour of their own retail market presence and / or in favour of a particular undertaking, in such manner as to have a detrimental effect on competition.

In this light, the MCA is of the view that the access obligation delineated above needs to be supplemented with an obligation of non-discrimination in the provision of access. The MCA believes that such a non-discrimination obligation shall tackle price-related parameters as well as non-price parameters, such as the withholding of information, delaying tactics, undue requirements, low or discriminatory quality, strategic design of products, and discriminatory use of information, which would disadvantage competing providers and, in turn, consumers.

In accordance with regulation 13 of the ECNSR, the MCA is therefore maintaining/imposing upon GO and Melita an obligation of non-discrimination requiring GO and Melita to:

- apply equivalent conditions in equivalent circumstances to other undertakings providing equivalent services; and to

- provide services and information to access seekers under the same conditions (including timescales) and of the same quality as provided for own downstream purposes.

The technical aspects and terms and conditions upon which Melita would be obliged to implement non-discrimination would be addressed in a separate process as detailed in Section 7.3.3 below.

7.3.3 Transparency

Regulation 12 of the ECNSR authorises the MCA to impose transparency obligations on undertakings enjoying significant market power in relation to interconnection and, or access. This obligation would require operators to make available to the MCA and interested third parties during negotiations specified information, such as accounting information, technical specifications, network characteristics, terms and conditions for supply and use, and prices.

The MCA believes it is proportionate and justified to supplement the access obligation also by maintaining / imposing a transparency obligation on GO and Melita given their joint SMP in the wholesale fixed broadband access market.

The imposition of this remedy guarantees that access seekers and third party providers have access to all the necessary information for the provision of access. Moreover, in particular because of the non-discrimination remedy, the MCA requires GO to maintain, and Melita to make available, upon its request, a reference offer, which shall be sufficiently unbundled to ensure that undertakings are not required to pay for facilities which are not necessary for the services requested. The reference offer shall give a description of the relevant offerings broken down into components according to market needs and shall provide the associated terms and conditions, including prices.

The MCA does however distinguish between the position of GO, as an already established wholesale provider and Melita which has never to date offered access over its network to third parties.

In this respect, the MCA notes that it is able to impose changes to GO's VULA reference offer. The Authority may also specify for GO the precise information to be made available, the level of detail required and the manner of publication.

The MCA will not however request Melita to disclose the reference offer for wholesale bitstream access. Such a request for disclosure would not be made by the MCA unless a *bona fide* request for access has been made by potential purchasers of wholesale bitstream access where negotiations fail and after a dispute is logged with the MCA and is decided by the Authority.

In the case that GO and / or Melita conclude a wholesale access commercial agreement with an access seeker – be it for VULA-based access in the case of GO and bitstream access in the case of Melita - the MCA will consider adopting such agreement as the reference offer.

In addition to the above, GO would also be obliged to keep the MCA regularly updated on its network upgrade in particular or any extensions of the FTTH roll-out. The MCA would enforce an obligation on Melita to supply regular updates on its network upgrade once a Reference Offer is required, without prejudice to other requirements emanating from the regulatory framework.

7.3.4 Price control, cost accounting and accounting separation

The MCA considers that, absent regulation, GO and Melita would be in a position to collectively exercise market power not just by coordinating on refusal to grant access but also by implementing price-related actions - excessive charges, price discrimination and margin squeeze – in order to restrict entry and limit competition. This is because alternative service providers seeking WFBA would have no option other than getting the service from GO and/or Melita. Own network deployment by alternative providers is ruled out, given the high sunk costs and long timeframes associated with such deployment. Ultimately, absent regulation, alternative service providers would find it harder to compete in the retail fixed broadband market if price-related actions implemented by GO and Melita are left unchecked.

The provisions of regulation 14 of the ECNSR bear significant relevance in this respect. In fact, this regulation authorizes the MCA to mandate wholesale price control remedies and also to impose obligations related to cost recovery. More specifically, regulation 14 empowers the MCA to mandate obligations of cost orientation of prices and cost accounting system that would be tailored specifically for different types of interconnection and / or access.

For the reasons outlined in previous subs-sections, the MCA considers that the access obligation, the non-discrimination obligation and the transparency obligation are not sufficiently adequate to restrict competition shortcomings related to anti-competitive behaviour concerning the price of wholesale access.

The MCA considers that, in the context of the joint dominance by GO and Melita, a regulatory obligation in the form of a price control obligation would be necessary to prevent the risk of anti-competitive pricing strategies being implemented by GO and Melita. A price control obligation would ensure that prices are tied to cost information obtained from cost models and / or separated accounts. The MCA proposes that such a price control remedy shall be achieved on the basis of Melita and GO maintaining / updating / developing cost accounting systems and accounting separation.

A cost accounting system is required in order to evaluate wholesale pricing of GO and Melita on the basis of their underlying costs. Also, in all cases, an accounting separation obligation would be imposed to follow up on obligations of non-discrimination.

The MCA shall grant a reasonable time period for the GO and Melita to develop / upgrade / maintain such obligations. In all cases, the MCA proposes that it shall allow operators to primarily negotiate the price and other terms and conditions of wholesale fixed broadband access commercially, in good faith. Should commercial negotiations fail, the MCA shall intervene as necessary to guarantee acceptable terms and conditions.

This obligation shall be without prejudice to the use of other mechanisms, as laid out in paragraphs 48 to 58 of the *Commission Recommendation of 11.9.2013 on consistent non-discrimination obligations and costing methodologies to promote competition and enhance the broadband investment environment*, which mechanisms are already *inter alia* used in relation to the VULA wholesale prices for access provided by GO.

7.4 Conclusion on proposed regulatory intervention

The MCA considers that GO and Melita have an incentive and possibility to coordinate on a focal point in the wholesale fixed broadband access market, by way of refusing to grant access. Given their joint SMP in the relevant market, the MCA identifies the risk that these two operators limit competition and reduce consumer welfare by way of implementing price-related and non-price actions. To this effect, the MCA is proposing the following regulatory obligations, which it considers as necessary to address the potential shortcomings arising in the wholesale fixed broadband access market as a result of the joint SMP enjoyed by GO and Melita in this market:

- Access obligation
- Non-discrimination obligation

- Transparency obligation
- Price control and cost-accounting obligation
- Accounting separation obligation

The MCA believes that these proposed remedies are based on the nature of the competition problems it has identified in the relevant market and are proportionate and justified, in light of the objectives set out in Article 4 of the ECRA.

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

The MCA also reserves the right to review the established raft of remedies as it deems necessary in line with resultant market outcomes.

The existing Decisions published by the MCA, first in 2016 entitled '*Virtual Unbundled Access to Fibre-to-the-Home, Response to Consultation and Decision*', and subsequently in 2018 entitled '*Virtual Unbundled Access to Fibre-To-The-Home: Enhancing the Non-Discrimination Obligation*' shall continue to apply.

8 Consultation framework

The MCA invites comments from interested parties on this consultation document.

For the sake of clarity and ease of understanding, the MCA encourages stakeholders to structure their comments in order and in line with the section and sub-section numbers used throughout this document.

In accordance with Article 4A of the Malta Communications Authority Act [Cap 418 of the Laws of Malta], the Authority welcomes written comments and representations from interested parties and stakeholders during the national consultation period which shall run from the 22nd May 2020 to the 24th July 2020.

The Authority appreciates that respondents may provide confidential information in their feedback to this consultation document. This information is to be included in a separate annex and should be clearly marked as confidential. Respondents are encouraged to avoid confidential markings wherever possible. Respondents are also requested to state the reasons why the information should be treated as confidential. The Authority will take the necessary steps to protect the confidentiality of all such material as soon as it is received at the MCA offices in accordance with the MCA's confidentiality guidelines and procedures.

For the sake of openness and transparency, the MCA will publish a list of respondents to this consultation. All responses should be submitted to the Authority by not later than 12.00hrs on 24th July 2020 and addressed as per below:

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