



**Response to Consultation Document [Review of electronic communications sector]:
Comments on the Review of the Electronic Communications Sector**

Submitted on Behalf of:	The Bermuda Telephone Company Limited (BTC) Telecommunications Bermuda & West Indies Limited (Digicel) Transact Limited (Digicel)
Dated	28 November 2017
To	Jozelle Escolastica – Head of Regulatory Finance



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Regulatory Authority of Bermuda

1st Floor Craig Appin Building

8 Wesley Street

Hamilton, Bermuda

Attn: Jozelle Escolastica – Head of Regulatory Finance

We would like to thank the Regulatory Authority of Bermuda (RA) for giving us the opportunity to provide a response the first round of this very important consultation on Bermuda's Electronic Communications Market ('the Consultation'). Digicel is pleased to note that the RA has chosen to expressly confirm that the views expressed in the Consultation are not final or definitive.

As will be further detailed below, Digicel takes issue with a number of the RA's conclusions in this first round consultation. Digicel is hopeful, however, that the RA will consider views from the market participants before finalizing its conclusions in that regard. The following points made by the RA in the consultation should, however, be highlighted at the outset:

- Digicel is pleased to note that the RA seeks to ensure that the ongoing regulatory framework adapts to developments in the market including new entrants in the broadband space as well as significant investments in mobile and fixed network infrastructure in Bermuda. The RA should also seek to ensure that the new regulatory framework is designed to take into account the impact unregulated over-the-top (OTT) services have had, and continue to have, on both the mobile and fixed services provided by licence holders.
- We also welcome the RA's intention to remove the majority of the existing significant market power (SMP) remedies. It has been Digicel's view for some time that the SMP remedies in their current form are unhelpful to both market participants and consumers. Removal of the

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majority of the SMP remedies would represent a good first step in modernizing Bermuda's regulatory framework. It would also spur investments in services and products which are currently difficult to justify in a climate of burdensome and (at times) overly complex regulation.

- The RA's indication of an intention to rebalance ex-ante and ex-post regulation is encouraged. As will be seen later in this submission, Digicel believes that the reliance on ex-ante regulation to any material degree would be a further detriment to the market and consumers. The RA's own experience over the last cycle of regulation should be evidence enough to confirm this. The RA is encouraged to seriously and carefully consider whether the imposition of additional remedies on certain markets is appropriate in any event.

Clarity around the consultation procedure connected with the business connectivity and off-island connectivity markets is needed. The RA makes it abundantly clear that this is the first-round consultation and is designed to allow interested parties to consider and review the RA's preliminary conclusions in respect of certain markets. At paragraph 16 of the Consultation Document, the RA confirms that it has not yet come to any conclusions in respect of the business connectivity and off-island connectivity markets. In respect of the former, the RA indicates that that further assessment is needed before a refined definition of that market can be settled. In respect of the latter, the RA intends to gather more information before setting out its findings in respect of SMP in this market.

Our reading of the consultation procedure under the RA suggests that the RA will need to provide interested parties with an additional round of consultation on the business connectivity and off-island connectivity markets after the RA has had the opportunity to complete its analysis of those markets. The RA has, however, sought input from interested parties during this round of consultation in respect of those two markets without making this clear. Digicel would welcome clarity around this specific issue during the next consultation round.

Note: Where confidential data has been presented in this report, it is indicated using the scissor symbol '✂'. A redacted version of this report has also been prepared, suitable for publication, with the confidential data removed.

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Digicel's response to the Regulatory Authority's review of the electronic communications sector

Executive summary

On the Regulatory Authority's review of the electronic communications sector

Digicel believes that the 2013 regulatory approach was not successful in achieving many of the goals that the governing legislation of the RA equips it to do. It would be a mistake, however, to place the blame for these failures solely on the remedies for SMP themselves. The RA has a general power under the terms of the Regulatory Authority Act 2011 (RAA)¹ and the Electronic Communications Act 2011 (ECA)² to adjust the manner and style with which it regulates a sector to support its objectives. Digicel's view is that, in addition to the SMP remedies being cast too strictly, the lack of open and transparent policy development concerning the sector has resulted in a SMP remedies being pursued and enforced to no real positive end. Consumers should benefit from faster speeds, higher quality services and ease of commerce. Obligations that require regulatory consideration before change in price, adjustment in marketing strategy and competitive offers have not resulted in the desired outcome. The application of those remedies without nuance or consideration of the overarching impact to the market has contributed to that difficulty.

Subsequently, in its current review of the electronic communications sector, the RA has: identified several markets; undertaken some investigations into those markets; and defined Digicel and OneComm as having SMP. This has led the RA to propose several possible remedies, and raise further questions regarding the current mobile wholesale access regime, submarine cables and other regulatory issues.

Digicel disagrees with the RA in several significant areas and believes that the RA must reconsider its analysis and therefore the conclusions from its market review. Digicel submits that the RA's ultimate proposals, if implemented, will lead to a competitive framework which harms the interests of consumers, and reduces incentives for investment in necessary new infrastructure.

¹ See <http://www.rab.bm/index.php/legislation-menu/1471-regulatory-authority-act-2011/file>

² See <http://www.rab.bm/index.php/legislation-menu/1470-electronic-communications-act-2011/file>



The fixed broadband and mobile markets in Bermuda are already effectively competitive

The two main electronic communications markets in Bermuda – the fixed broadband market and the mobile market – are affected by technological change and competitive dynamic development, which make them effectively competitive. These aspects will persist for the foreseeable future as each technology upgrade, which aims to be the best in Bermuda, will continue. Digicel believes the criteria B1 and B2 in Section 22(2) of the ECA,³ which enable the RA to impose ex-ante remedies, are not satisfied. This undermines the RA's proposed decisions on market power and remedies, making them inappropriate and unjustified.

The domestic fixed broadband market in Bermuda is highly competitive, much more so than in many other countries (including much of Europe):

- there is nationwide coverage by two competing fixed broadband infrastructures
- both fixed broadband infrastructures are providing strong dynamic competition to each other, as the significant rapid investments in next-generation access (NGA) networks based on fiber technology take effect
- further competitive constraints on price and quality of service are provided by actual entry, and potentially wider entry, by fixed-wireless access (FWA) services.

The mobile market in Bermuda is also competitive, with Digicel and OneComm striving to offer the best nationwide network. This is ensured by both market and regulatory means, because:

- license requirements for LTE geographical coverage (99.9% within 18 months) are among the most stringent in the world
- Bermuda is a small densely populated country, with high expectations for nationwide land coverage, indoor signals and coastal water coverage. Both mobile operators in Bermuda are unable to persist with poor quality networks in any respect because consumers can switch to the other supplier.

³ See <http://www.rab.bm/index.php/legislation-menu/1470-electronic-communications-act-2011/file> page 26.

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The competitiveness of the mobile market is also demonstrated by the high churn levels registered by Digicel: around 30% of Digicel's subscribers disconnect each quarter, indicating an annual churn of 36% and an average subscriber lifetime of a short 3 years.

Digicel also observes that the investment commitments required for rollout of NGA/LTE infrastructure is much more significant in small island states than for other countries.

It is important that the analysis undertaken by the RA is reassessed and refined

It is essential that the RA revisit the price benchmarks and measures that underpin their market review, as the current analysis does not support the proposed remedies. After a review of analysis related to the fixed broadband and mobile markets in particular, Digicel submits that:

- after adjusting for Bermuda's exceptionally high purchasing-power-parity (PPP) factor, prices for services in Bermuda are not excessive when compared to the RA's benchmarks
- more generally, although there is little information available on the approach taken, the RA does not appear to be applying PPP adjustments consistently in its analysis
- The baskets of services within the RA's fixed broadband pricing benchmark do not distinguish between packages with limited consumption and packages with unlimited consumption (the latter being the most widespread in Bermuda)
- the baskets of services within the RA's mobile pricing benchmark are too wide (for example, in the mobile market analysis a package with 100 minutes and 1GB of data could be benchmarked against a package with unlimited voice and 5GB of data).

The RA further relies on an undocumented profitability analysis which it believes demonstrates excessive returns. It is not clear whether the RA have considered Digicel's level of profitability at a group level or at a Bermuda-specific level. Digicel observes that:

- if profitability has been assessed at level of Digicel Group, then this is misleading since the majority of Digicel's revenue is earned in developing markets which exhibit high investment risks. Digicel Group's return on capital employed (ROCE) reflects these developing market risks. Relying on the performance of Digicel Group to propose regulation of its Bermudan operations is not reasonable.
- if profitability has been assessed at the level of Bermudan operations, then this is likely to be a narrow perspective with which to assess the competitiveness market. EBITDA and EBIT levels observed in recent past quarters reflect the past technology investment cycles, and do

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not reflect the forward-looking, long-term profitability levels which will arise during and after Digicel has significantly increased its asset book value with its current fiber deployments.

The RA should also consider the differences between on-island 'domestic' broadband access connectivity and off-island international connectivity (its current analysis does not). This is important because both of these components are required to offer a broadband Internet service, but should be considered as separate economic markets. The RA analyzes the submarine cable market separately (in relation to Question 7 in its Consultation Document), but does not isolate domestic broadband competition and investment issues. Many aspects of the market for domestic broadband access are directly related to the upstream submarine cable market, which affects the peak and average speeds on offer. As the mobile market continues to move towards mobile data services, the same submarine cable market serves as an input to mobile broadband, hence aspects of the submarine market will also be reflected in the downstream mobile broadband market.

The MVNO access regime already in place is fit for purpose

Digicel submits that regulations imposed by the RA under a previous administrative determination address the issue of mobile virtual network operator (MVNO) access. Change to this regulation because of this consultation would contravene good licensing practice and lead to regulatory uncertainty for future licensing.

On the correct way to view the competitive and regulatory needs of the Bermudan market

Digicel submits that the correct remedies to be imposed by the RA should be based upon the following:

- The RA's priorities should be focused on improving service quality, in particular setting an environment which is supportive of the significant investments needed to improve access speeds. Bermuda lags behind other developed nations in terms of broadband speed, and instead of introducing regulation to reduce the prices of existing services, the RA should ensure it is encouraging dynamic, infrastructure-based competition which leads to the rapid deployment of faster, higher-quality fiber network services. This needed infrastructure competition relates to both domestic access infrastructure (fixed broadband, mobile voice and broadband services) and the submarine cable links between Bermuda and the digital content hosted elsewhere in the world.

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- Digicel believes that the level of prices in Bermuda should not be the RA's main concern. Bermuda is fundamentally a very high-cost jurisdiction, meaning that it is very unlikely that prices in Bermuda will be as low as in other less-advanced countries in the region.
- Price differentiation in telecoms is important so that consumers who value a higher level of service or greater consumption, and are willing, pay more for the service. These price differentials rarely reflect the marginal costs of supply, but instead reflect the marginal value of faster service or greater consumption. Price differentiation at the higher end of the market supports the business case for investment in NGA infrastructure. However, introducing regulation that undermines price differentials – such as cost-oriented wholesale access regulation – reduces the ability of competing infrastructure operators to make investments in new technologies. In this regard, alternative providers should be seen as niche competitors to improve differentiation and diversity within niche segments of the market, and not as whole-market suppliers which would undermine the total value of the sector and reduce Digicel's and OneComm's investment and quality incentives.
- By comparison, if Bermuda was in the European Union (EU), the level of competition in fixed broadband access infrastructure in Bermuda would be seen as admirably leading-edge. This is because Bermuda already has 100% nationwide infrastructure competition in fixed services from Digicel and OneComm, and significant NGA investment activities to deploy fiber across the whole country. The European Commission (EC) has recognized the importance of a regulatory framework which is supportive of NGA investments, i.e. ideally infrastructure competition is present and driving competing NGA upgrades by multiple (more than one) operators. The EC has proposed the de-regulatory measure of lifting cost orientation in favor of implementing a downstream margin protection, recognizing that margin protection and de-regulation are more supportive of the underlying infrastructure investment decisions. The EC made these recommendations precisely because the continent was falling behind other advanced nations (such as the USA, South Korea, Singapore, Japan or the United Arab Emirates) in broadband service levels, and was lacking comprehensive NGA investment. These recommendations were published by the EC in 2013.⁴

⁴ Recommendation C(2013) 5761 of 11 September 2013, entitled *Commission recommendation on consistent non-discrimination obligations and costing methodologies to promote competition and enhance the broadband*

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- The RA raises both ex-ante and ex-post approaches, and Digicel agrees that both have their place in a functioning, competitive market. However, ex-ante regulations by definition intervene in the functioning of a market. This raises the risk of unintended consequences, and harm to the market and consumers which cannot easily be reversed. Digicel urges caution in the RA's choice and application of remedies. Digicel recommends that the RA adopt regulatory principles designed to foster broadband investment for speed and quality, rather than regulating access and conditions leading to lower prices for only short-term consumer surplus.
- Digicel suggests that the RA consider the guidelines in a recent report published by Plum Consulting entitled *Effective regulation of telecommunications in the island states of the Caribbean*.⁵ This report provides an insight into how one might consider regulation in small islands such as Bermuda, in the context of the challenges specific to such islands such as the minimum efficient scale of operators, regulatory burden and imposition of remedies in the event of SMP. It includes best-practice principles suggested by various regulators including Ofcom.

Digicel's response to the RA's questions

1. Question 1

Do you agree that the 2013 SMP remedies and the Authority's regulation via the same have not led to expected benefits for consumers or optimal outcomes for competition?

The RA's question relating to the 2013 remedies and their impact on the market belies the complexity of a sophisticated and fast paced electronic communications market. The SMP remedies became inadequate not only because of the passage of time, the proliferation of OTT services and other technologies and the various shifts in the market landscape, but also because the RA applied regulation in a manner which reduced the incentive and ability for

investment environment. See <http://ec.europa.eu/digital-agenda/en/news/commission-recommendation-consistent-non-discrimination-obligations-and-costing-methodologies>.

⁵ See <http://plumconsulting.co.uk/effective-telecoms-regulation-island-states-caribbean/>

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operators to provide new and innovative service, pricing and products. The RA must look to more than just new SMP obligations to resolve this issue.

Digicel would encourage the RA to right-size its statutory framework, look to develop clear policy directions and then develop regulations designed to achieve a future for Bermuda that matches Bermuda's ambitions. Digicel is a willing partner in this endeavor but in order to be effective the RA must trust Digicel and other SMP operators enough to allow business commercial risks to be taken with certainty that the rewards of those risks will not be removed prematurely by regulatory intervention.

The RA continues to operate under stop gap license measures, such as the Transitional Licence Conditions put in place in 2013 and the Transitional Provisions under the ECA. Both of these measures were meant to be temporary and designed to allow a smooth transition between the pre-integrated communications operating license (ICOL) and post-ICOL market. No serious attention has been given to removing, updating or right-sizing these provisions by the RA in recent years. It is difficult, therefore, for the RA to expect a modern and appropriate regulatory framework to emerge from such circumstances.

The RA should consider the speed with which its HDS-1 spectrum obligations impacted consumers. Despite its misgivings about some of the specific methods the RA used to achieve the goal of an LTE network roll-out, Digicel agrees with the underlying principles of the HDS-1 effort and believes that can be instructive for the RA on a wider scale.

The development of the HDS-1 regime started with the RA acting on a clear policy direction issued by the Minister responsible for telecommunications at that time. This policy directive addressed the value, use and allocation of spectrum in Bermuda. It was made publicly available and was the subject of reasonable consultation with industry. After the policy was set, the RA set about developing a consultative process and, eventually, regulations and license obligations specifically designed to achieve that outcome. The RA did not use heavy handed and outmoded ex-ante regulation techniques to achieve its goals. The RA gave the license holders certainty around the regulatory cost of the spectrum by enshrining it in legislation (after consultation).

The issues of pricing of services, quality of service, competition and others should be addressed using a policy first approach. The RA is encouraged to consult widely on what policy objectives it believes would benefit Bermuda as a whole and then, from that policy, look to develop a regulatory framework that takes into account the input and works to achieve those objectives.

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The RA's current proposal does not point to any clear policy objective. In Digicel's view, it is not forward-looking enough and appears to be a reactive rather than proactive attempt at regulating SMP operators by continuing to restrict their ability to move nimbly in a marketplace and through a compressed market cycle. Additional ex-ante SMP obligations will result in increased regulatory burden, increased cost and a more protracted product cycle. This, in turn, will result in a lower incentive for large scale investment and leave Bermuda lagging in terms of overall technological development on a global scale. Ultimately, this will make Bermuda less competitive, less innovative and less prepared for a digital future. The key to changing this trajectory lies in a regulator that is willing to be led by clear policy directions and not tied to front-line regulation as a solution.

Section 24(1) of the ECA ("*Imposition of ex ante remedies*") states the following:

"If, as part of the market review process, the Authority concludes that the imposition of one or more ex ante remedies is necessary to prevent or deter anti-competitive effects that are, or are likely to be, caused by the presence of significant market power in a relevant market, the Authority may make an administrative determination imposing one or more of the following obligations on any communications provider found to have significant market power in a relevant market..."

Digicel notes therefore that the correct formulation of this question is not whether the existing remedies have delivered either expected consumer benefits or optimal outcomes for competition, but whether they have deterred anti-competitive effects. Digicel notes also that even functioning markets which do not have anti-competitive effects may not deliver all expected consumer benefits nor optimal outcomes for competition. This can be for various reasons including poorly executed business plans, wider economic considerations or adverse regulatory conditions.

Digicel believes that overall competition in the telecommunications market in Bermuda is delivering consumer welfare-enhancing benefits. This is evidenced by the significant levels of capital investment, service innovation and parallel competing infrastructures.

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2. Question 2

What are your views on the Authority's assessment of the market provided in Section 5?

2.1. General

The RA is putting forwards its findings of reviews of seven markets, using various market indicators, and concluding on the status of the operators within those markets.

These seven markets are obtained from the document *Preliminary Identification of Markets Notice, 17 October 2017*,⁶ which states that Section 22(2) of the ECA specifies that the identified markets must satisfy all the criteria A, B1, B2 and C. The satisfaction of these criteria leads to a candidate market for further analysis in the market-review process.

Digicel believes that the RA's findings on these markets, as detailed in Section 5 and concluded upon in Section 6 of the document *Review of the electronic communications sector, 17 October 2017* (the 'Consultation Document'), must be reconsidered.⁷ In particular, in the case of the fixed broadband and mobile markets:

- Digicel believes that both markets are affected by technological changes and other developments which render them effectively competitive (contrary to required criterion B1), and that these technological changes and developments are persistent and will continue for the period of the review (contrary to required criterion B2).
- The main services analyzed by the RA's benchmarks do not indicate high prices or a lack of competition in Bermuda.

These points demonstrate Digicel's view that the two main electronic communications markets in Bermuda – the fixed broadband market and the mobile market – are effectively competitive, and do not satisfy all the necessary criteria to be subject to further analysis, SMP or stringent ex-ante remedies.

⁶ See <http://www.rab.bm/index.php/consultation-responses-2/regulatory-authority-market-review-consultation-2017>, "2107 10 17 Candidate Markets Notice (s 22 ECA)".

⁷ See <http://www.rab.bm/index.php/consultation-responses-2/regulatory-authority-market-review-consultation-2017>, "2017 10 17 Review of Electronic Communications Sector", pages 18 to 64.

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Moreover, as described, Digicel believe that conclusions are being made by the RA on analysis that must be reassessed and improved. One aspect where Digicel believes the RA could improve its market analysis is by defining narrower markets or sub-markets on which to assess SMP. For example, the RA currently defines a wide market for mobile services, namely “the island wide provision of mobile services (voice, text and data)”. By comparison, the EC has only ever identified three relevant markets for mobile services (all of which were for wholesale services and only the first of which is still considered relevant by the EC today):

- Wholesale voice call termination on individual mobile networks
- Wholesale access and call origination on public mobile telephone networks
- Wholesale international roaming on public mobile networks

The following sub-section provides Digicel’s submission on technical and competitive aspects, and benchmarks, for the fixed broadband and mobile markets.

2.2. Fixed broadband market

Fixed broadband provides Internet and content IP data and streaming to end users (primarily to their Wi-Fi routers, laptops and connected TVs in households, and to some businesses subscribing to the same services). Only a tiny fraction of Internet content worldwide is hosted within Bermuda, because:

- there is no local Internet exchange point in Bermuda
- there are no large data centers in Bermuda, because the land, staffing, and power costs of hosting them in Bermuda are relatively high.

This means that fixed broadband services in Bermuda essentially consist of two main elements: the broadband network on the Island of Bermuda which connects households to the international gateway, plus the international connectivity from the gateway to all the data centers and Internet services hosted in the rest of the world.

The remainder of this sub-section considers the fixed broadband market, ignoring the separate off-island market debate, i.e. the market for domestic fixed broadband services. Digicel considers this market to be effectively competitive in Bermuda, despite the RA’s conclusions to the contrary, and is experiencing critically important competitive factors that are actively driving consumer choice and benefits further. The domestic fixed broadband market in Bermuda is much more competitive than in other countries, and Digicel believes that the RA’s

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conclusions, and more importantly the breadth of remedies will in fact harm the competitive dynamics and cause the market to evolve to one with an emphasis on low prices and also commensurately lower quality of service and limited service innovation.

A low-end domestic fixed broadband market would not support continued, necessary investment in NGA infrastructure, nor will it support improved consumer utility going forwards.

This report makes several key observations to make on the work undertaken by the RA, split first into comments on technical and dynamic effects and second on the shortcomings in the RA's benchmarking approach. These are considered in turn below.

2.2.1. Technical change and dynamic competition

Digicel's view is as follows:

- There is nationwide coverage by two competing fixed broadband infrastructures. It is unlikely that a third fixed-access infrastructure would be sustainable.
- mobile broadband services using Long-Term Evolution (LTE) technologies are now fast enough at the access layer to compete with fixed broadband services.
- Dynamic competition effects are very strong in Bermuda.
- Price differentiation is important for broadband markets.

Each of these points is considered in turn below.

Nationwide coverage by two competing fixed broadband infrastructures

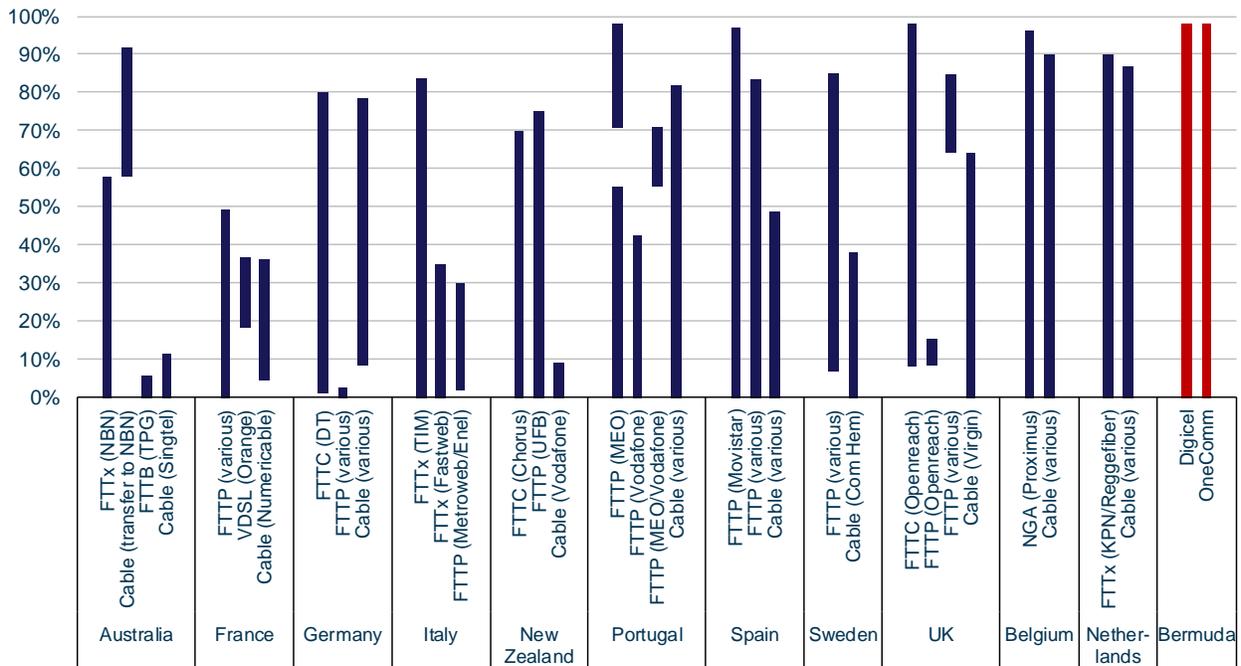
Bermuda is in the beneficial position of having two competing nationwide fixed infrastructures. Very few other countries enjoy this level of infrastructure competition – and those without the benefit of good infrastructure competition have resorted to wholesale access as a means to stimulate downstream-only competition.

British Telecom (BT) has recently commissioned and released an analysis of overlapping NGA infrastructure in several countries. The results of the analysis are shown in Figure 2.1 below, which

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indicates the expected level of coverage of NGA technology by type in 2020.⁸ Where two or more columns are overlapping in parallel, this shows competing networks covering the same areas of the country. Otherwise, where they do not overlap, the networks serve different parts of the country.

Figure 2.1: Expected level of infrastructure competition in 2020 for selected countries, in terms of premises covered
[Source: Analysys Mason analysis, 2017]



As indicated by recent announcements by Digicel and OneComm, Bermuda will have almost full coverage by two parallel NGA infrastructures by the end of 2017.⁹ As can be seen above, even European countries that are leading the way with NGA rollout, like Belgium and the Netherlands, are not this advanced.

⁸ The original figure can be found as Figure 1.2 in the report available from https://www.btplc.com/UKDigitalFuture/GridModules/Industryreports/Analysys_Mason_final_report_for_BT_3_Oct_2016a.pdf. The version shown is simplified and also includes other countries, including Bermuda itself.

⁹ See <http://bernews.com/2017/03/one-fibrewire-internet-to-offer-up-to-200mbps/> and <https://www.telegeography.com/products/commsupdate/articles/2017/08/17/digicel-bermuda-to-deliver-ftth-broadband-by-year-end/>

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Digicel also highlights a comment made by the Body of European Regulators for Electronic Communications (BEREC), who assists the EC and the national regulatory authorities (NRAs) in implementing the regulatory framework for electronic communications across the European Union. In their comprehensive report on the challenges of NGA rollout and infrastructure competition, published in October 2016, BEREC stated the following about the Netherlands:

The Netherlands has the relative luxury that currently practically each household has access to two competing networks and can choose between service providers with high quality services.¹⁰

BEREC itself is therefore highlighting the fact that the infrastructure situation that will be in place in Bermuda within a year should be recognized as leading-edge and providing competitive benefits to consumers which cannot be replicated with wholesale access interventions.

Competition between fixed and mobile broadband services

Alternative retail providers (i.e. the other ICOL holders do not invest in fixed-access network infrastructure, and rent infrastructure access from either Digicel (BTC) or OneComm). Other ICOLs are highly unlikely to invest in a third fixed-access network (as additional fixed costs for one-third or less market share in Bermuda would be inefficient and uneconomic), as evidenced by the emergence of an alternative, wireless provider (Bluewave).

The FWA network in Bermuda is a further infrastructure competitor to DSL, standard hybrid-fiber coax (HFC) broadband' and also fixed NGA technologies. FWA, like mobile, can offer a comparable substitute in terms of speed but probably not in nationwide capacity.

Bluewave prices are competitive for NGA products offered in excess of 25Mbit/s (this compares with OneComm only, as BTC do not currently offer speeds greater than 25Mbit/s). This is shown in Figure 2.2 below. Bluewave's competitively priced entry into the highest end of the market highlights the dynamic competition at work, conditioning the fixed operators to focus investments for quality (as opposed to cost-cutting to reduce the price of slow speed services).

¹⁰ See http://berec.europa.eu/eng/document_register/subject_matter/berec/reports/6488-berec-report-challenges-and-drivers-of-nga-rollout-and-infrastructure-competition, page 101

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Figure 2.2: Package comparisons for 25Mbit/s and over [Source: BTC, Bluewave, OneComm, 2017]

Operator	Package	Price (USD) ¹¹
BTC	25Mbit/s	250
Bluewave	25Mbit/s	129
OneComm FibreWire	Average of 20 and 30Mbit/s	114.95
Bluewave	50Mbit/s	149
OneComm FibreWire	50Mbit/s	169.95
Bluewave	100Mbit/s	199
OneComm FibreWire	100Mbit/s	214.95

As both fixed and mobile/wireless broadband providers are connected to off-island connectivity, they can be considered good supply substitutes for consumers (certainly those who do not want to download large numbers of gigabytes of content per month).

Dynamic competition effects

Dynamic competition occurs when old technologies are replaced with new ones, and competing technologies get outdated and unattractive to consumers. This is most effective when cable networks upgrade from DOCSIS2.0 to DOCSIS3.0 to DOCSIS3.1, so that DSL networks fall behind the market leader. The small size of Bermuda means that it does not take long to deploy a nationwide network, or complete an upgrade of customer premises equipment (CPE), hence dynamic competition acts very quickly in Bermuda. Healthy, dynamic competition can also be undermined rapidly by a change in the investment incentives due to interventional regulation.

Digicel is currently deploying a fiber-to-the-home (FTTH) network, investing USD\$ million¹² or USD\$ per household¹³ on average (and USD\$ per customer assuming the Digicel business as a whole will have approximately 50% market share over the long term). This is a significant investment and is a priority for Digicel, introducing new technologies for its potential and current customers.

¹¹ See <https://bluewave.bm/residential>, https://oncomm.bm/shop/internet/internet_plans/fibrewire-internet, <https://www.digicelgroup.com/bm/en/mobile/plans/residential-internet.html> and <http://www.btc.bm/Residential/Internet>

¹² See Digicel Section 91 request for RA's 2017 Request for Inputs (RFI).

¹³ There are 32 100 'residential valuation units' according to <https://www.gov.bm/bermuda-land-valuation-statistics>

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OneComm is also in the process of upgrading its network with fiber optics, with deployments in 40% of the country as of August 2017,¹⁴ and it is auto-upgrading customers to fiber broadband. BTC's DSL network cannot match a 200Mbit/s service and investment in VDSL by BTC would be pointless since (i) VDSL only offers up to 80Mbit/s and (ii) an FTTH upgrade in Bermuda can be carried out in the same space of time. Digicel's FTTH products will offer up to 200Mbit/s.¹⁵ This demonstrates that dynamic competition works effectively, and generates consumer gains by exceeding, not matching, the competitor's network capabilities. These consumer gains arise in terms of increased speed and utility, although not in lowering prices of a static set of products.

This dynamic market may have swings in market shares of revenue (and to a lesser extent customers), as high-end high-spending users move to the network with the best capabilities (for the same, albeit higher, price). These kinds of swings will average out over time – the key point is that Digicel (BTC) and OneComm are each aiming for a significant portion of the overall market share with each competitive move they attempt to make, and each will achieve gains but then fall back in turn. This is precisely the kind of market competition which will stimulate ongoing efficient NGN investment, and which the RA should recognize and encourage.

Price differentiation

Price differentiation allows investors to be able to monetize their NGA investments, since charging higher prices for better services, or attracting more customers to the better technology, supports the business case for sinking cost into a network upgrade. Wholesale access obligations which prevent infrastructure owners from differentiating their prices (e.g. uniform cost-oriented unbundled access irrespective of speed) will remove the consumer's private-benefit decision to choose a faster service but pay a higher price.

2.2.2. Shortcomings in the RA's presented benchmarks

Digicel has not been given visibility of the RA's benchmarking approach, including which products were included and how averages/adjustments were calculated. Digicel believes that:

- the RA's PPP adjustments appear to be applied incorrectly and should be reexamined

¹⁴ See <https://www.telegeography.com/products/commsupdate/articles/2017/08/23/bermudas-one-extends-fibrewire-internet-to-40-of-homes/>

¹⁵ See <https://www.digicelgroup.com/content/dam/digicel/markets/Bermuda/fibre/Internet-TV-Bundles.pdf>

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- the benchmarking of broadband prices needs to compare like-for-like technologies where possible
- the costs of international connectivity are material in the context of Bermuda, especially compared to other countries
- value-added tax (VAT), sales taxes, import tax, and other country-specific duties should be treated consistently
- comparison of packages with limited versus unlimited consumption is unreasonable, especially in small-island states where all consumed data must arrive over relatively expensive submarine cables
- the RA's use of other data sources appears to have issues and should be improved.

These points are considered in more detail below.

Inconsistent PPP adjustment used by the RA

One aspect of the RA's analysis where Digicel has extensive concerns is in the PPP adjustment:

- The sources for the PPP adjustment or the methodology used to apply it by the RA and derive these factors are not documented in the Consultation Document.
- Digicel has access to authoritative sources such as the Economist Intelligence Unit, Euromonitor and the World Bank's World Development Indicators. However, none of these sources produce recent PPP values for half of the benchmark countries, in particular: British Virgin Islands, Cayman Islands, Guernsey, Isle of Man, Jersey, and Turks and Caicos (Bermuda itself is only available from 2013 from the development indicators compiled by the World Bank).
- The implied PPP adjustments used by the RA do not appear to agree with those published by the above sources in several cases. In particular, the multiplier assumed to convert from USD to USD PPP for Bermuda appears to be slightly less than 1 by comparing the blue bars for Bermuda in the charts in the Consultation Document. However, the 2013 data from the World Bank indicates a factor closer to 0.6. It is highly likely that the RA is significantly overstating Bermuda prices in PPP terms, which is skewing the RA's price benchmarks.
- Moreover, PPP conversions do not appear to be applied consistently across the calculations undertaken by the RA. For example, Figure 2.3 below compares the PPP adjustment made to the Maldives across four charts from the RA's Consultation Document. Between Figures 5.6 and 5.8 in the RA's Consultation Document, the PPP adjustment significantly increases the

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result (shown by the first red box and arrow). However, between Figures 5.13 and 5.14 in the RA's Consultation Document, the PPP adjustment has a slightly downward effect (shown by the second red box and arrow)

This suggests an issue in the RA's calculations: a PPP adjustment should not increase a country's prices in some instances and decrease it in others. Digicel recommends the RA revisits and reissues all of its PPP-adjusted calculations.

- Digicel's conclusion is that the PPP adjustment factors applied in the RA's Consultation Document and therefore any associated conclusions should be treated with skepticism. Digicel believes that correctly adjusted PPP benchmarks do not indicate that either Digicel or BTC's products are expensive, and are in fact reasonably priced compared to its peers.

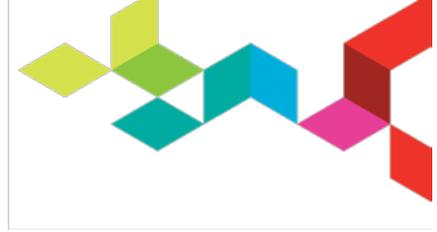


Figure 2.3: Charts from the RA's Consultation Document (charts without PPP adjustment on the left; charts with PPP adjustment on the right) [Source: RA, 2017]

Figure 5.6

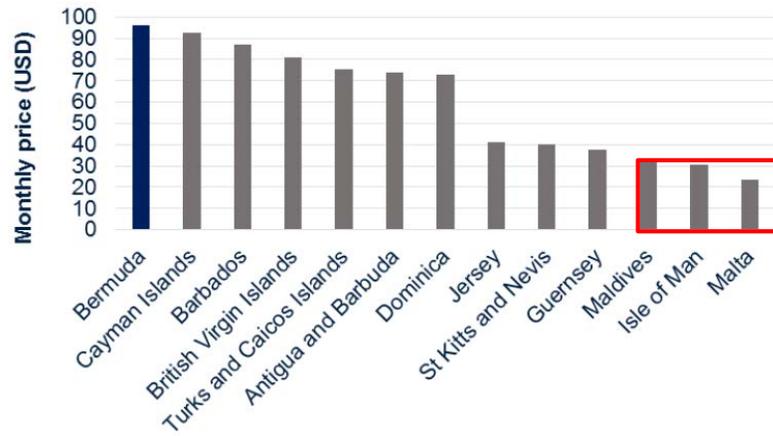


Figure 5.8

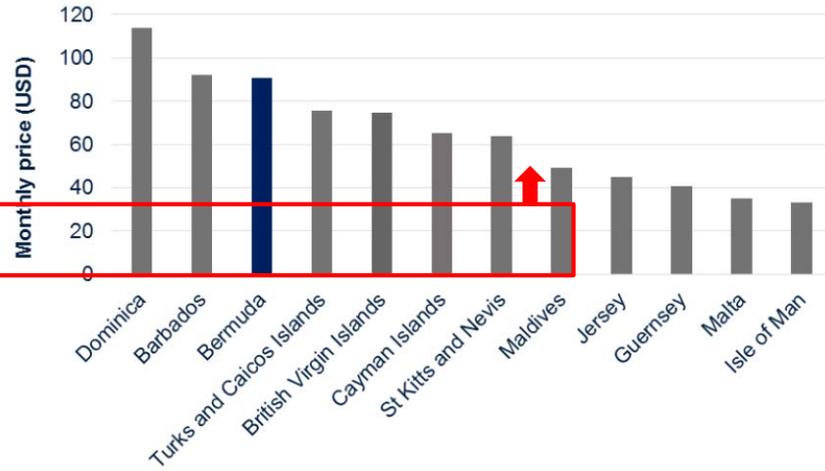


Figure 5.13

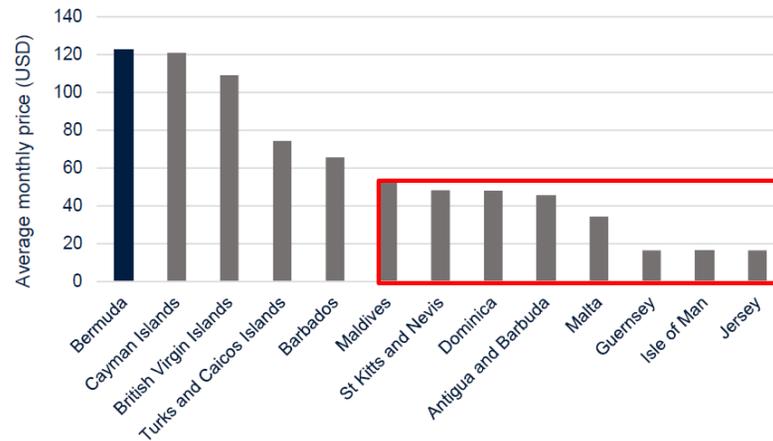
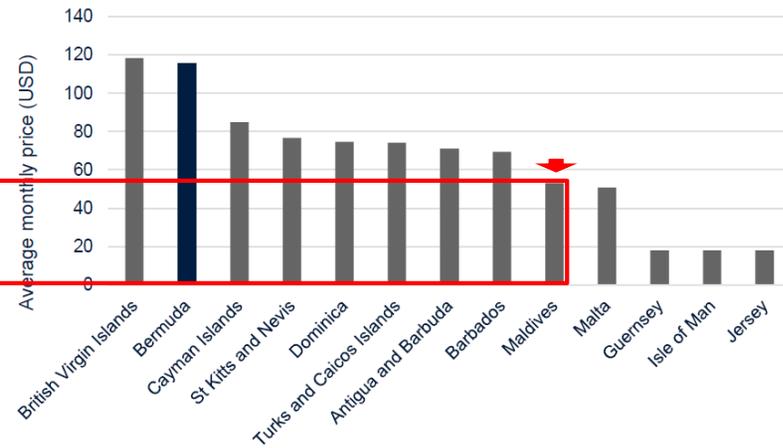
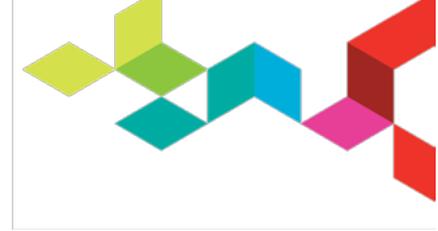


Figure 5.14





Comparability of broadband packages in the technology context

In the RA's benchmarking approach, the underlying technology (and its capability) is a key point. For example, in Malta, Melita uses DOCSIS3.0,¹⁶ whilst GO offers both VDSL and FTTH services.¹⁷ These technologies offer higher capability than the DSL network currently in use by Digicel and are therefore not a representative comparator.

The recent and imminent speed upgrades by both Digicel and OneComm must be emphasized. This is highlighted by the RA itself in paragraph 135 of its Consultation Document: the comparison of prices in Figure 5.10 of the Consultation Document shows that Bermuda is towards the middle of the range when fiber pricing is considered. This is a key finding which the RA must take the utmost account of in its review of the fixed broadband market.

Costs of international connectivity

When considering the costs of connectivity in Bermuda *versus* the islands in the RA's list of benchmark countries, the costs related to international connectivity will be significant (and specific to Bermuda). For example, compared to other countries in the RA's benchmark, Bermuda has the highest total submarine cable length (as shown in Figure 2.4) and the third-highest in per-capita terms (as shown in Figure 2.5)¹⁸.

¹⁶ See <https://www.melitabusiness.com/why-melita/best-in-class-network/>

¹⁷ See <https://www.melitabusiness.com/why-melita/best-in-class-network/> and <https://www.go.com.mt/-/residential-broadband-schedule-of-charge-1> respectively.

¹⁸ See <https://www.submarinecablemap.com>, a website updated from TeleGeography.

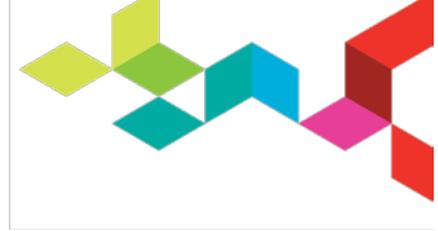


Figure 2.4: Total submarine cable length by country
[Source: TeleGeography, 2017]

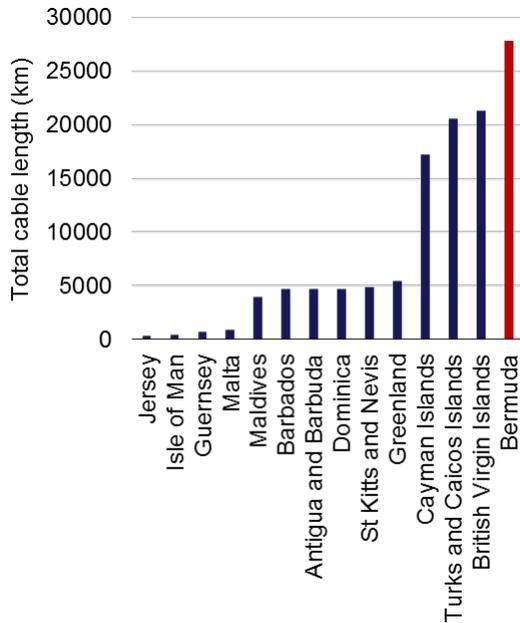
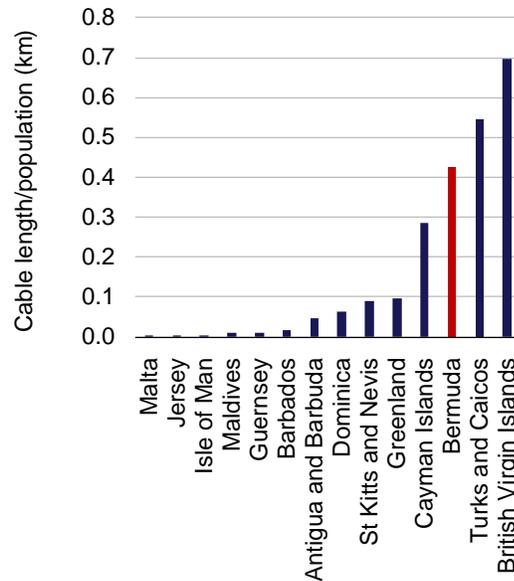


Figure 2.5 Submarine cable length per capita
[Source: TeleGeography, 2017]



It therefore makes sense that the off-shore connectivity costs for broadband services will be significant in Bermuda. Wholesale international connectivity costs are published for Greenland (which is also an isolated island), which are shown in Figure 2.6 below.

2. Global IP

2.1 One Time Charges

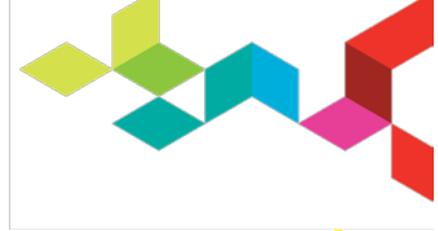
Code	Service	Price	Note
2.1.1	Setup	3.224 kr.	
2.1.2	Service Change	3.224 kr.	
2.1.3	No Fault Found fee	689 kr. per hour	Minimum 2 hours plus cost of any materials and travel fee.
2.1.4	Termination	1.440 kr.	

2.2 Monthly Recurring Charges

Code	Service	Price	Note
2.2.1	Global IP - CDR Price	23.948 kr. per 50 Mbit/s per month	Minimum order 100 Mbit/s. Increments 50Mbit/s. Payable in advance.
2.2.2	Burst Surcharge	15%	Applies to CDR Price

Figure 2.6: TELE
Greenland wholesale
prices for international
connectivity over the
undersea cable
[Source: TELE,¹⁹ 2017]

¹⁹ See https://telepost.gl/sites/default/files/tele-post_annex_g_price_list_01052017.pdf, section 2



The monthly access fees above translate to approximately USD75 000 per Gbit/s per month. This highlights the cost levels that can be experienced for international connectivity (whilst in other countries this value will make a negligible contribution to the monthly retail price, given the cable-kilometers-per-capita measure shown above in Figure 2.5).

Digicel's own approximate cost per ISP subscriber (on average) per month is shown in Figure 2.7 below.

Digicel provided a profile of usage of its international bandwidth to the RA in October 2017, as shown in Figure 2.8 below. The peak usage of Gbit/s is approximately % of the total bandwidth available, with higher usage experienced in the evening and in particular close to midnight.

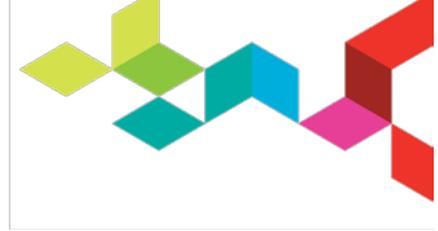
As of October 2017, Digicel had approximately ISP subscribers. Therefore, the subscriber base is provided with around Mbit/s of capacity in the busy hour per subscriber. This will likely increase significantly (at least to over Mbit/s) when NGA broadband products take off, due to the higher access speeds on offer. Therefore, Digicel will need to substantially increase its international bandwidth to adequately serve its customer base.

Digicel also highlights that, unlike OneComm, Digicel does not own a submarine cable. The fact that OneComm owns its own submarine cable is observed by the RA in paragraph 243 of its Consultation Document, and could be one reason why OneComm can currently support some NGA upgrades.

The RA is addressing the off-island connectivity market separately, hence Digicel discusses competition issues for off-island connectivity in relation to Question 7. However, it remains relevant to the fixed broadband market, at least from the perspective of the RA's approach to market analysis and for comparing broadband costs between countries, and for supporting fast NGA services.

Consideration of taxes and duties

VAT can vary considerably between the islands considered by the RA (from 0% in Bermuda to 20% in the Isle of Man). Similarly, countries like Antigua and Barbuda are also subject to after-sales taxes (in their case, ABST). The RA makes no mention of whether the prices it uses consistently include or exclude these taxes.



Customer Premise Equipment (CPEs) in Bermuda are subject to a 22.25% import tariff.²⁰ If routers are included in the packages, then this will impact the resulting monthly prices.

Limited versus unlimited consumption

According to the product descriptions on their respective websites, the fixed broadband packages offered by both Digicel and OneComm effectively offer no limits on data consumption. Therefore, there is no price differentiation by consumption (only by speed).

Operators in several of the other benchmark countries do impose usage limits (or throttling). For example:

- In Jersey, JT Global imposes monthly daytime usage limits ranging from 20GB to 300GB for its fiber and ADSL products,²¹ although night time usage is unlimited.
- Operators in the Maldives impose a ‘fair usage allowance’ (different from a fair usage policy) on most of their packages, working effectively as a usage cap. The allowance scales with the price of the tariff, all the way up to those with unlimited allowances. Once the allowance is exceeded, speeds are reduced significantly (e.g. to 512kbit/s), but no extra charges are applied for the additional use.

Bermudan operators offer unlimited usage in their packages, which therefore carries an increased level of risk in terms of increasing their Internet service-capacity costs, compared to other operators that restrict or throttle usage. Therefore, it is reasonable that prices in Bermuda would be somewhat higher in this context. The RA should pay closer attention to the packages it considers in its analysis, to ensure that only those that offer unlimited usage (or effectively unlimited usage, due to very high usage caps) are included in the benchmarks.

Other shortcomings in the data used

The RA’s population figures do not appear to reflect what is reported in the sources they cite. In Table 5.5 of the RA’s market review, they cite data from Wikipedia²². Based on our own inspection, this webpage is itself sourced from the United Nations (UN) World Population

²⁰ <https://www.gov.bm/sites/default/files/Bermuda-Customs-Tariff-310316.pdf>, page 440. Telecom network equipment deployed by operators like Digicel is exempt.

²¹ See <https://www.jtglobal.com/Jersey/Personal/JT-Fibre/Fibre-Tariffs/Tariff-details/> and <https://www.jtglobal.com/Jersey/Personal/Broadband/Products/Home-broadband-tariffs/>

²² The webpage [https://en.wikipedia.org/wiki/List_of_countries_by_population_\(United_Nations\)](https://en.wikipedia.org/wiki/List_of_countries_by_population_(United_Nations))



Prospects dataset²³. However, while some of the RA’s data appears to agree with the original UN data, not all do. There are significant deviations in particular for Antigua and Barbuda and the Turks and Caicos Islands, as shown in Figure 2.9 below. It is also unclear where the Guernsey/Jersey population values are sourced from, since these datasets only provides their combined population.

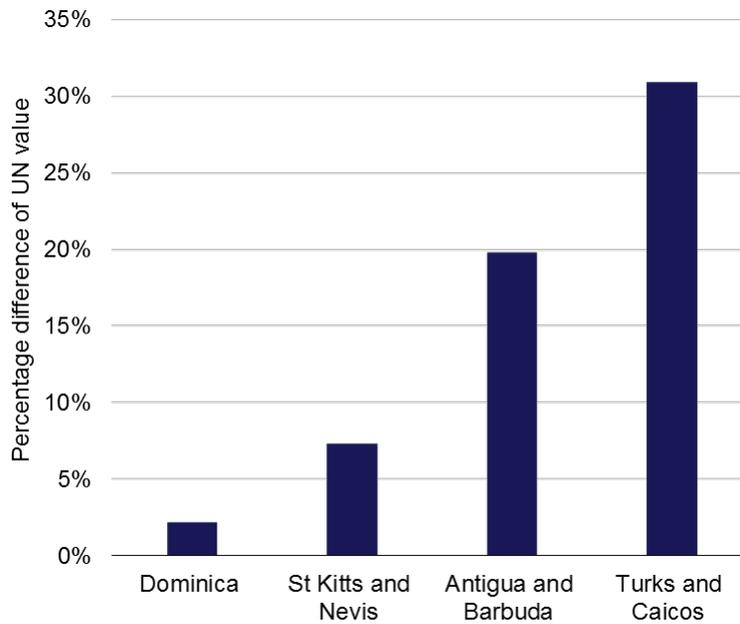


Figure 2.7: Comparison of inconsistent population numbers used by the RA with the underlying UN source data [Source: RA, UN, 2017]

These are a further indication that the RA must revisit its analysis and ensure they have been undertaken with the necessary rigor.

2.3. Mobile market

Digicel has several key observations to make on the work undertaken by the RA in relation to the mobile market, split first into comments on technical and dynamic effects and second on the shortcomings in the RA’s benchmarking approach. These are considered in turn below.

2.3.1. Technical change and dynamic competition

Digicel’s view is as follows:

²³ See [https://esa.un.org/unpd/wpp/DVD/Files/1_Indicators%20\(Standard\)/EXCEL_FILES/1_Population/WPP2017_POP_F01_1_TOTAL_POPULATION_BOTH_SEXES.xlsx](https://esa.un.org/unpd/wpp/DVD/Files/1_Indicators%20(Standard)/EXCEL_FILES/1_Population/WPP2017_POP_F01_1_TOTAL_POPULATION_BOTH_SEXES.xlsx) “MEDIUM VARIANT” worksheet



- There is nationwide coverage by two competing LTE mobile infrastructures, which are bound to extremely stringent coverage obligations.
- It is unlikely that a third network operator would be sustainable in Bermuda.
- Prices of mobile services are evolving dynamically in Bermuda.

These points are considered in turn below.

Stringency of coverage obligations

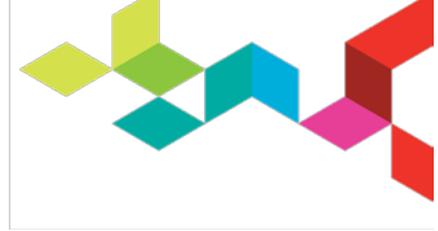
The LTE licenses awarded by the RA in 2016 to Digicel and OneComm included a coverage obligation of 99.9% geographical coverage, to be achieved within 18 months of license award.²⁴

No other island in the list of benchmark countries used by the RA has imposed a coverage obligation as stringent as this for LTE (or, indeed, any) networks. Figure 2.10 below summarizes the coverage obligations identified as imposed by the regulator as part of recent spectrum awards.

Figure 2.8: LTE coverage obligations by benchmark country where available [Source: Regulator websites, 2017]

Country	Obligation	Source
Cayman Islands	Nothing explicit: status reporting to track against operator schedule	http://www.ofreg.ky/ict/upimages/commonfiles/14172596121CTDecision2013-1Assignmentof700MHzSpectrum.pdf
Dominica, St Kitts and Nevis	95% coverage of its own subscriber base	https://www.ectel.int/wp-content/uploads/2017/03/Final-700MHz-Assignment-Process.pdf
Guernsey, Jersey	95% population coverage	https://www.cicra.gg/media/597553/t1253gj-media-release-cicra-gives-sure-three-months-to-meet-missed-4g-commitments.pdf
Isle of Man	95% population coverage	https://www.gov.im/news/2013/oct/15/manx-telecom-and-sure-isle-of-man-to-bring-4g-mobile-phone-service-to-the-island/
Malta	95% of area with outdoor coverage (any technology)	https://www.mca.org.mt/sites/default/files/pageattachments/Licence_GO%20mobile_900-1800MHz_amendment%20Jan16.pdf

²⁴ See <https://www.telegeography.com/products/commsupdate/articles/2016/10/28/bermudas-rab-awards-4g-spectrum-to-cellone-and-digicel/>



By imposing these obligations through the licenses, the RA is already ensuring that Bermuda will have effectively ubiquitous coverage of the country by leading-edge LTE technology in the form of two technologically advanced and therefore directly competing networks.

Sustainability of a third mobile network operator

Approximately half of the benchmark countries selected by the RA, including Bermuda, have two mobile network operators, according to TeleGeography. The remaining countries Antigua and Barbuda, Barbados, British Virgin Islands, Guernsey, Jersey, Malta and St Kitts and Nevis have three operators. However:

- in Antigua and Barbuda, one operator (APUA) is state-owned²⁵
- Ozone in Barbados is a new entrant, having only been in operation since July 2017²⁶
- CCT in the British Virgin Islands is locally owned²⁷
- in both Guernsey and Jersey, the markets remain unbalanced, with both having subscriber market shares of approximately 60:20:20 as of 2016²⁸
- in Malta, two operators are currently undergoing a merger process, which will likely mean a return to a two-operator market²⁹
- the operator UTS in St Kitts and Nevis recently exited the market.³⁰

Based on the above, there is little evidence that a third mobile network operator could be sustained by a small island market like Bermuda. In general, the fixed costs of a mobile network operator (including radio coverage, a core network with international connectivity, engineering staff, business overheads) cannot be easily sustained by a third entrant attempting to launch in a small island market. This is similar to the discussion of the minimum efficient scale in the aforementioned report published by Plum.

This does not necessarily mean that a mobile *virtual* network operator (i.e. an MVNO) could not be sustained. However, Digicel observes that, in Western European countries, a MVNO is seldom able to capture more than 5–10% subscriber market share, which would correspond to 3000–6000 subscribers in Bermuda. It is unclear if such a small subscriber base could be sustainable,

²⁵ See <http://www.apua.ag/about-us/> and

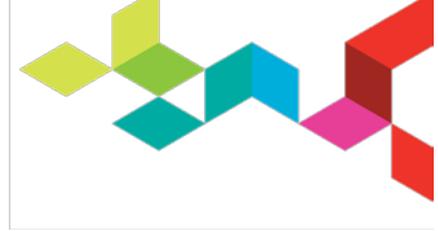
²⁶ See <https://www.telecompaper.com/news/barbados-mno-ozone-wireless-to-launch-in-july--1201112>

²⁷ See <https://www.cctbvi.com/content/about-cct>

²⁸ See <https://www.cicra.gg/media/597622/t1265gj-report-telecoms-statistics-2016.pdf>, Figure 34

²⁹ See <http://www.vodafone.com/content/index/media/vodafone-group-releases/2017/melita-vodafone.html>

³⁰ See <https://www.uts.cw/about-us/press-releases/st-kitts-nevis-no-longer-part-chippieland>



unless it was perhaps part of a wider business model. As described in the response to Question 4, such operations would be best designed to service niche segments of the market (perhaps ‘no frills’ or ‘gold-plated’ in nature).

Dynamic competition

Since February 2016,³¹ Digicel has increased monthly prices by USD6 for each of its postpaid tariffs, except for its most expensive Premier tariff. This increase aligns with the increase in international connectivity costs shown in Figure 2.7 above.

However, Digicel has added valuable extras to each tariff, including handset discounts worth from USD150 to USD400,³² free international voice minutes and zero-rated social media use. This information is summarized in Figure 2.11 below.

Figure 2.9: Comparison of Digicel’s mobile postpaid tariffs [Source: Digicel, 2017]

Tariff component	Core	Standard	Select	Premier
Price as of February 2016 (USD)	99	119	149	199
Increase (in USD)	+6	+6	+6	0
International voice minutes as of February 2016	0	60	60	60
Increase (in minutes)	0	+90	+190	+Unlimited
Added data relative to February 2016	Unlimited WhatsApp message	Unlimited WhatsApp message and voice	Unlimited WhatsApp message, voice and video	Unlimited WhatsApp message, voice and video

Therefore, whilst prices to the end-user have increased slightly, Digicel’s subscribers are getting more for their money, including the ability to use unlimited WhatsApp OTT services. This is due to having to compete with both OneComm on the attractiveness of its packages, and with OTT providers that offer alternative voice and messaging services.

Digicel notes that there are multiple factors affecting consumer purchasing decisions. Price is only one of these and others may include brand preference and loyalty, product differentiation,

³¹ See <https://web.archive.org/web/20160215130508/https://www.digicelgroup.com/bm/en/mobile/plans-and-services/postpaid-plans/postpaid-voice---data-plans.html>

³² See <https://www.digicelgroup.com/bm/en/mobile/plans-and-services/postpaid-plans/postpaid-voice---data-plans.html>



perceived service quality, location of retail outlets etc. In a market with high levels of investment and service innovation pricing movements may not be a reliable guide to the level of competition. In this regard, Digicel believes that the RA's approach to assessment of the level competition is overly narrow and likely to lead to unreliable conclusions.

2.3.2. Shortcomings in the RA's presented benchmarks

Digicel has not been given visibility of the RA's benchmarking approach, including which products were included and how averages/adjustments were calculated. However, Digicel believes:

- the RA's PPP adjustments appear to be applied incorrectly and should be revisited
- the costs of international connectivity are material in the context of Bermuda, especially compared to other countries
- VAT, sales taxes, import tax, and other country-specific duties should be treated consistently
- benchmarking of packages with equivalent consumption is crucial.

The first three points are described in the considerations of the fixed broadband market in Section 2.2.2 and equally apply to the mobile market. The final bullet is discussed in more detail below.

Benchmarking of packages with equivalent consumption

Considering Figure 5.13 in the Consultation Document, it is not reasonable to compare the pricing of packages with 100 minutes to that of packages with more than 1000 minutes. Similarly, comparing bundles with a 1GB allowance and a 5GB allowance is unreasonable. These benchmarks will be highly skewed given the variation in service offerings.

Digicel has identified postpaid packages across those countries that offer a 3GB data allowance, i.e. the midpoint of the bundle. A small number of packages that are data-only are excluded (so all prices shown also include some voice). Digicel's handset discounts (assuming a 24-month contract) are also removed.

All such packages identified are shown below (with no averaging of prices) in Figure 2.12 (and Figure 2.13 in PPP), with Bermuda packages shown in red. This uses PPP adjustments largely based on data available from the World Bank. Perceived shortcomings regarding the RA's own PPP analysis are described in Section 2.2.2.



Figure 2.10: 3GB package prices in USD from the RA's list of countries [Source: Operator websites, 2017]

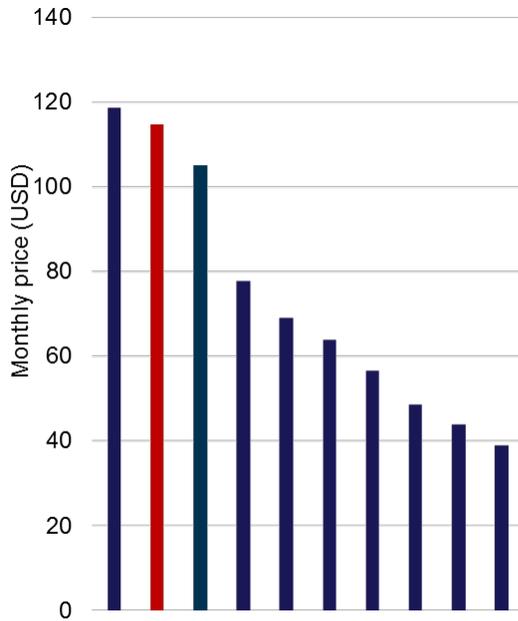
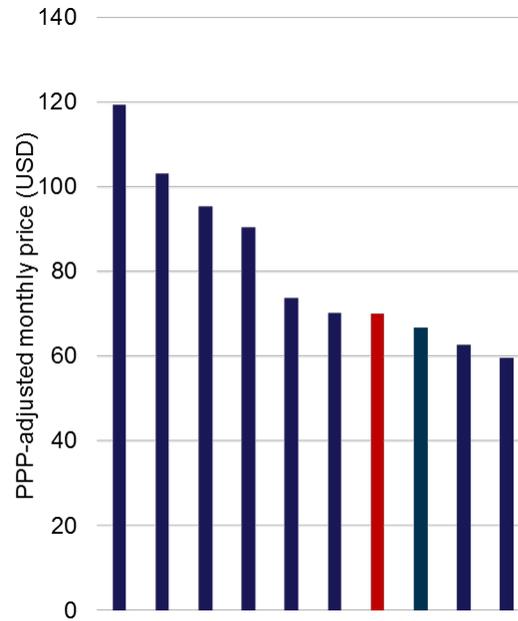


Figure 2.11: 3GB package prices in USD PPP from the RA's list of countries [Source: Operator websites, 2017]



As can be seen above, under this direct comparison, the 3GB package available in Bermuda is not the most expensive, and, in PPP terms, is one of the least expensive.

If 5GB packages are also considered in a similar way, then whilst Bermuda appears to be the most expensive, after applying a PPP adjustment it is much closer to the average.

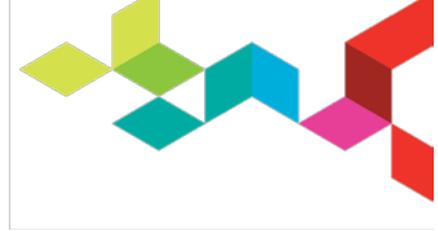


Figure 2.12: 5GB package prices in USD from the RA’s list of countries [Source: Operator websites, 2017]

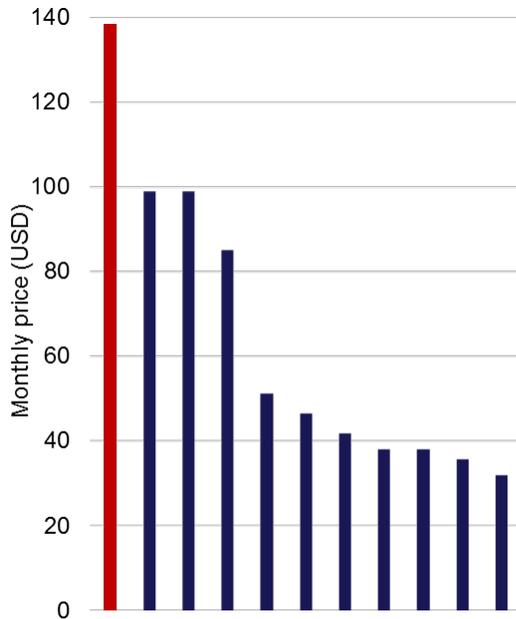
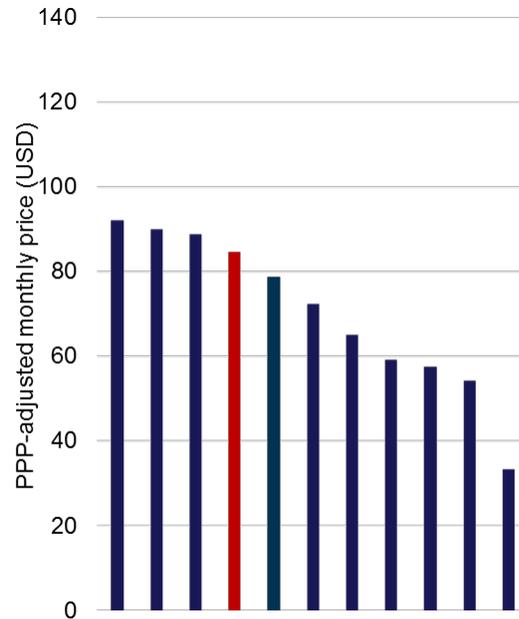


Figure 2.13: 5GB package prices in USD PPP from the RA’s list of countries [Source: Operator websites, 2017]



Moreover, Digicel mobile subscribers receive handset discounts bundled in with their monthly price. This arrangement will offset import duties as well as the cost of the handset. Finally, there is also a Bermuda-specific tariff of USD9.25 per handset per month that is payable to the government and will also be reflected in the retail price.

The RA should consider doing such benchmarking with care, before using such analysis to make any conclusions.

2.4. The RA’s profitability analysis of Digicel Bermuda does not support the RA’s competition conclusions

For several markets in its Consultation Document, the RA mentions profitability analysis. However, the RA does not disclose any information, publicly or confidentially, to support its assertion of high profits. Digicel assumes that this has been based on analysis of accounts for Digicel Bermuda in the possession of the RA and, in particular, that it could be using group financial information to assess the profitability of Digicel.



Observing Digicel Bermuda's EBITDA and EBIT margins at points in the recent past is also a narrow measure of Digicel's long-term profitability. Digicel urges the RA to consider the wider issues surrounding profitability, such as the investment cycle (which has only recently delivered LTE, and is in the process of delivering FTTH), and the cashflow requirements to deploy nationwide coverage in a 1-year to 2-year period.

Digicel does not agree that it is making super-normal profits in Bermuda, particularly once a contribution has been made to its corporate support functions. Digicel believes that profitability levels remaining steady does not indicate that the market is not competitive. Digicel further believes that declining profitability is not a pre-requisite for competitiveness, as suggested by the RA in paragraph 186 of its Consultation Document, since declining profitability is only a measure of a market moving to a lower level of return.

Many of Digicel's markets are unfortunate to suffer from regular hurricane damage, raising the long-term level of capital and operating intensity needed to deploy and operate mobile networks in these countries.³³

Profitability analysis at a group level is not applicable to Digicel Bermuda

Digicel Group's earnings before interest and taxes (EBIT) margin is around 25%, derived from its initial public offering (IPO) prospectus.³⁴ Moreover, Digicel Group's net book value (NBV – property, plant, equipment, tangibles) rose from USD3.43 billion to USD3.58 billion between March 2015 and June 2015, representing the increasing investment in new network equipment (such as fiber and LTE). The ratio of EBIT to NBV (ROCE) was 20.6% in 2015, falling to 18.4% for the quarter ending 30 June 2015.

Whilst it may appear that an EBIT margin of 25% and a ROCE of 18–20% are high by developed-country standards, it is important to recognize that Digicel Group does not derive most of its revenue from developed markets. Developing markets, by virtue of the higher country-risk factors, will have higher cost of capital.

³³ This is described on Digicel's IPO prospectus. See <http://www.nasdaq.com/markets/ipos/filing.ashx?filingid=10938915>, page 34

³⁴ See <http://www.nasdaq.com/markets/ipos/filing.ashx?filingid=10938915>, pages 20 and 21



Digicel explained the effect of increased risk on the weighted average cost of capital (WACC) to the regulator in Jamaica in 2016.³⁵ In 2017, Digicel further demonstrated this impact of increased risk to ECTEL, in relation to the Eastern Caribbean islands in which Digicel also has a mobile presence.³⁶

Page 85 of the IPO prospectus shows that around 50% of Digicel's revenue comes from three large markets: Papua New Guinea, Haiti, and Jamaica. These markets are considerably higher risk than Bermuda as demonstrated in their country risk premium values on the Damodaran website.³⁷

3. Question 3: SMP conclusion

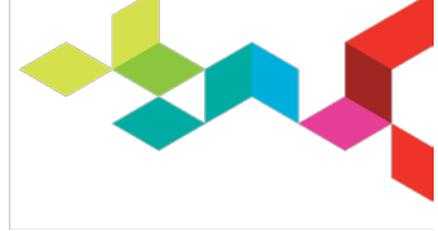
Do you agree with the Authority's initial views on relevant markets and SMP, as set out in Section 6?

The RA has defined the relevant markets in its Preliminary Identification of Markets Notice. As the RA acknowledges itself, these identifications are preliminary and based on available data, and as such Digicel believes there is insufficient grounding to properly define the market boundaries and relevant competitive forces. Digicel urges the RA to continue with the steps it has set out, and requests that the RA conduct and consult on additional analyses and the demand and supply characteristics (both prevailing and anticipated). Digicel also recommends the RA to apply Small but Significant Non-transitory Increase in Prices ('SSNIP') tests to the markets. Digicel believes that this will reveal the extent to which the markets are competitive, and affirm the existence of competitive forces from OTT players. In its Consultation Document, the RA has correctly identified OTT video providers in the subscription television sector and that there may be substitution between OTT and traditional pay TV services, However, the RA has not identified OTT voice and messaging providers (e.g. WhatsApp) who provide the same competitive constraint to mobile and fixed voice and messaging services. Digicel requests that

³⁵ See http://www.our.org.jm/ourweb/sites/default/files/documents/sector_documents/digicel_response_2016-06-10.pdf, Section 3.7

³⁶ See https://www.ectel.int/wp-content/uploads/2017/07/REDACTED-Final-report-for-Digicel_20170717.pdf

³⁷ See <http://www.stern.nyu.edu/~adamodar/pc/datasets/ctryprem.xls> for 2016 data. The country risk premium for Bermuda is 1.2%, whilst the value for Jamaica and Papua New Guinea are 9.2% and 7.8% respectively. Data for Haiti is not available.



the RA conduct the full market definition analysis necessary to underpin any bounded market remedies to identified SMP.

3.1. Fixed Broadband

Based on the explanation set out in Digicel's response to Question 2 (discussing the Section 5 market analysis in the Consultation Document), Digicel disagrees with the RA's SMP decision.

Digicel believes that there is strong competition between OneComm and Digicel (BTC), active new entrants (e.g. Bluewave), and substitution possibilities from LTE mobile services. Digicel does not believe that Digicel (BTC) can leverage a position of SMP to the detriment of consumers and/or alternative entrants.

3.2. Mobile market

Based on the explanation set out in Digicel's response to Question 2 (discussing the Section 5 market analysis in the Consultation Document), Digicel disagrees with the RA's SMP decision.

Digicel believes that there is strong competition between OneComm and Digicel, and there remains the potential for market entry with LTE spectrum and competition from OTT providers. Both mobile network operators also have wholesale access obligations imposed on them. Digicel does not believe that it has SMP in the entire mobile market as defined by the RA in its market review. If it had such power and exerted it, then the competitive response from OneComm would result in many customers leaving Digicel.

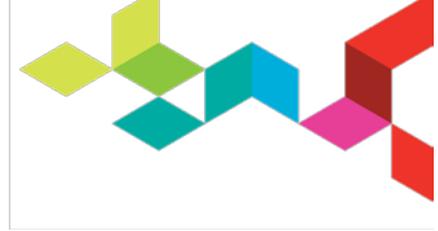
4. Question 4 (remedies in Section 6)

Do you agree with the Authority's proposed remedy options and other regulatory proposals set out in Section 6 and 7?

4.1. Fixed broadband market

The RA proposes four main remedies in the fixed broadband market: wholesale access, retail price limitations, quality-of-service (QoS) obligations, and information submission.

Each of these remedies are considered in turn below, in the context of being applied to an operator who has been found to have SMP in a defined relevant market.



Wholesale access, on fair and reasonable and non-discriminatory terms, and potentially cost-oriented

Digicel recognizes that other ICOLs can currently obtain wholesale access on a retail-minus basis. In this case, retail-minus access regulation preserves both the margin for the retailer (the minus) and the underlying network investment incentives (since the reference retail price is set by the network operator, and this is carefully set for each product speed to encourage take-up in NGNs and satisfy the wider competitive dynamics in the market with two different competing infrastructures).

Cost-oriented access would significantly harm the market, and undermine NGA investment incentives. Cost-oriented access does not typically reflect the retail pricing gradients used to differentiate retail pricing by service quality (since the costs are typically more homogeneously allocated to products using per-line allocations or equal mark-ups for shared costs).

Homogeneous cost-based access undermines the short- and long-term dynamics of the fixed broadband market because it reduces the ability for price differentiation, and the other ICOLs do not need to consider the access network investment decision to enter the market: they only have to access the product on a wholesale basis per customer. This means that the other ICOLs with cost-based access do not face the significant sunk cost risks of the incumbent. Other ICOLs with cost-based wholesale access are likely to target the higher-spending customers, removing the ability for infrastructure owners to set price differentials and to use those differentials to support next-generation investments, with the customers willing to pay higher prices for higher-quality services. Fiber optic and cable network upgrades also need to continue beyond the initial deployment (e.g. with additional DOCSIS capabilities; frequency plan adjustments for better broadband; upgrades to the line speed supported by Gigabit passive optical networks (GPON); higher capacity optical line terminals (OLTs), splitters, modems, etc.).

This is essentially recognized by the EC, which recommends a margin-squeeze protection regulation for incumbents in EU Member States:

- who have been found to have SMP in a defined relevant market
- whose broadband upgrades have been deployed in jurisdictions where there is a competing cable or other broadband network infrastructure.

The introduction of a margin-squeeze protection instead of cost-oriented copper local loop unbundling (LLU) has allowed incumbents (e.g. BT in the UK) to maintain material price



differentials for different service speeds, and to encourage higher-spending users (and those supplied through wholesale access) to make the jump to the next-generation technology (VDSL in the case of the UK). Price differentials and generally higher retail prices have also allowed alternative infrastructure operators such as Virgin to deploy competing infrastructure.

Retail price limits

Digicel does not believe that excessively high retail prices are a real risk in Bermuda, since Digicel (BTC) faces nationwide competition from the (better performing) cable network of OneComm, and that if Digicel (BTC) sets high prices, then customers would move to OneComm, or not take-up Digicel's new FTTH services. Excessively high prices would also lead to effective substitution by new FWA and LTE mobile broadband services.

Digicel does not believe that excessively low (predatory) prices are a real risk in Bermuda. Given that there are two national fixed broadband infrastructure operators, predatory pricing by one broadband operator would have to be carried out to predate on the other fixed operator's customer base. Both operators are in the process of improving the quality of broadband services by investing in next-generation technologies, both with equivalent sunk costs, and setting retail prices below cost does not help the business case for this investment.

The RA's previous experience of retail price controls demonstrates that retail price intervention is fraught with unintended consequences and unexpected effects on retail competition – retail price regulation can lead to a reduction in competitive intensity.

These unintended consequences would be exacerbated by the RA's suggested remedy to 'likely use some cost benchmark in order to determine whether prices are excessively low or excessively high.'³⁸ This is because, for example, the average variable costs (the reference point for predatory prices) are very different between cable (DOCSIS), DSL and fiber networks being deployed at different cycles. This would be compounded if wholesale access was on a cost-oriented basis. If the RA was applying a retail-minus or margin-squeeze wholesale access remedy, then there would not be a risk of anticompetitive margin squeeze if an operator sets a low, competitively attractive retail price.

³⁸ Quoted from the Consultation Document, paragraph 272, bullet 2.



QoS standards

Digicel recognizes that broadband speeds need to improve (which is being supported by the current fiber upgrades, so that Digicel (BTC) remains competitive against OneComm) and that customers should not face unreasonable connection delays, switching barriers or service outages. Digicel looks forward to understanding more about the RA's practical, cost-effective proposals in this area.

Information provision

Digicel does not believe that obligations on detailed information provision are necessary. Digicel's business information is highly confidential, and in a small market like Bermuda, even the publication of generalized information can be enough to undermine the active competitive process (e.g. where and when one operator might be planning a network upgrade). General leakage of confidential knowledge and insight may also occur (e.g. if RA's staff are subsequently employed by an ICOL).

Digicel recognizes that transparent and reliable information for consumers on service standards can support competition and switching. However, additional monitoring and reporting activities conducted in a non-discriminatory way will increase the support costs for all ICOLs (since all ICOLs will have to report on indicators such as peak broadband speeds, average broadband speeds, etc.). Digicel looks forward to understanding more about the RA's proposals in this area.

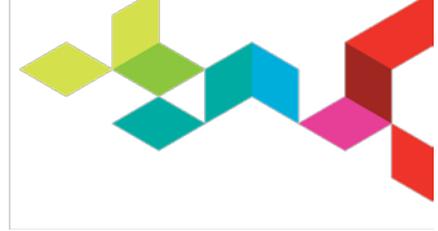
4.2. Mobile market

The RA proposes three main remedies in the mobile market: wholesale access, retail price limits, and information provision. These remedies are considered in turn below.

Wholesale access

Digicel agrees with the RA's conclusion that "*wholesale access is already a license obligation for ICOL holders that hold 4G spectrum and therefore is not minded to further regulate this*". The MVNO access obligation does already support competition at a service level.

Setting regulated MVNO wholesale access prices is complex, especially if done on a cost-oriented basis. This is because network costing normally leads to (more) homogeneous access prices compared to market-differentiated retail prices (e.g. a user who wants ten gigabytes per month is not prepared to pay 5 times the amount that a user pays for two gigabytes per month,



because the marginal value of additional gigabyte of mobile data traffic declines, and it is not straightforward for a cost model to reflect this value-based differential).

Retail price limits

Digicel does not believe that excessively high retail prices are a real risk in Bermuda, since Digicel faces nationwide competition from OneComm, and if Digicel sets high prices, then customers would move to OneComm.

The opinion of the RA on the risk of predatory pricing is not consistent with the RA's views elsewhere (e.g. on benchmarks and profitability).

Information provision

Digicel does not believe that obligations on detailed information provision are necessary. Digicel's business information is highly confidential, and in a small market like Bermuda, even the publication of generalized information can be enough to undermine the active competitive process. General leakage of confidential knowledge and insight may also occur (e.g. if RA's staff are subsequently employed by an ICOL).

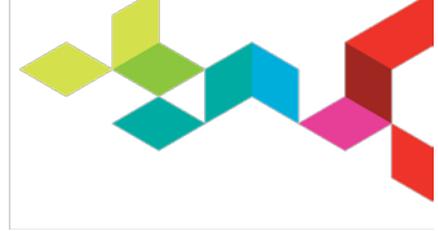
Provision of information on subscribers and revenue does occur in other markets, but it is generally not linked to any SMP finding. Instead, it is general market monitoring and reporting carried out by the regulator. Digicel does not see any need to include market information reporting in relation to any SMP-related issues in Bermuda.

5. Question 4 (proposals in Section 7)

Do you agree with the Authority's proposed remedy options and other regulatory proposals set out in Sections 6 and 7?

Digicel believes that a forward-looking approach to market regulation should be based on the following key priorities.

- Dynamic competition between two nationwide fixed-access infrastructures is the most important competitive activity to foster. Regulations that reduce the incentives for Digicel (BTC) and OneComm to engage in strong, direct, dynamic competition to deploy better, next-generation broadband access technologies compared to each other will be counterproductive to the technical and consumer gains needed to boost Bermuda's



position in the global broadband rankings – a key determinant of making Bermuda an attractive place for consumers to live and for businesses to establish (and remain). Regulations which allow other ICOL holders to utilize next-generation broadband networks through wholesale access on an ‘easier basis than the incumbent’ undermine the ability of investors (Digicel and OneComm) to rely on retail revenue in the business case for fiber deployment. This ‘easier basis’ arises with the RA’s proposals for wholesale access because the access seeker does not bear any of the sunk cost burden of the fiber deployment – the access seeker retains the option to not buy wholesale access, whereas the investor has sunk the capital.

- In the mobile market, nationwide benefits of LTE have been ensured with 99.9% geographical coverage obligations. As mobile users increasingly demand in-building coverage, and because consumers will often experience the quality of their mobile network by travelling easily and regularly around the small island, the mobile network operators face strong pressure to operate a high-quality network, and to not fall behind their competitor’s network.
- A race to reduce retail prices, especially those differentiated at the higher-quality end of the market, might lead to immediate consumer welfare gains (cheaper prices), but will undermine fiber infrastructure investment, leading to poorer services in the short-to medium-term. This is already accepted by the RA in paragraph 321.
- Bundling of fixed and mobile services would support improved competition, because operators would then be competing for a larger combined revenue product, and would be able to pass on the billing and operational savings from bundling into lower consumer prices.
- Other ICOL holders (i.e. other than Digicel and OneComm) are best designed to service niche segments of the market: these niche segments should be ‘no frills’ sub-brand services, or those requiring extra-special gold-plated support (e.g. combined with IT support services). It is disadvantageous, unrealistic and uneconomic to expect other ICOL holders to support the majority of the marketplace, since Bermuda should not be aiming to serve the majority of customers with either no-frills or gold-plated services. The mass-market is best served by large, vertically integrated players, which can spread the fixed costs of network infrastructure over the largest number of ‘mid-range’ customers without downgrading all customer services to a low level of service quality and innovation. In the



UK, which is a good example of a highly competitive broadband market, according to Analysys Mason Research, non-infrastructure wholesale access operators serve 40–45% of retail demand, the cable network (covering 60% of the population) serves approximately 20% of retail demand, and the copper and fiber-based incumbent BT serves approximately 35% of retail demand.

As currently proposed, the RA’s remedies are significantly more intrusive and market-altering than the recommended priorities which Digicel puts forward.

In relation to the RA’s key elements, as set out in paragraph 342 of the Consultation Document:

- Digicel does not agree that regulatory intervention is needed to deliver competitive prices and consumer benefits. Digicel and OneComm already compete strongly on these factors: retail price regulations undermine competitive pricing (particularly the past retail pricing approval mechanisms which have hampered normal competition) and wholesale access reduces the incentives for infrastructure investment.
- Evidence-based decision-making based on a good understanding of costs is admirable, but is difficult to achieve and has significant implications for the support expenses of the industry. Obtaining accurate and timely information on the costs of providing different electronic communications services is not realistically possible: regulators with hundreds of staff in markets with millions of subscribers and billions in revenue struggle to achieve this aim with good accuracy. The cost of complying with the submission of cost-based information will be borne by the ICOLs and the RA, and hence by the limited pool of consumers in Bermuda. Digicel believes that the RA should set realistic expectations: evidence-based decision-making is necessary, but the evidence is not only within detailed cost models.
- Digicel has made several comments where it believes that the proposed and current ex-ante regulations should be lifted. This is because Digicel agrees with the RA that *“competition is the primary driver of effective and efficient markets”*. Digicel believes its evidence shows that the market is demonstrating important competitive dynamics, is not uncompetitive, and not likely to become uncompetitive.
- Digicel agrees that streamlined regulations with recourse to competition law support the investment and operating environment in the electronic communications sector.



6. Question 5

Do you agree that the Authority should regulate against abuse of dominance and market power by SMP operators across a range of market sectors, by the potential use of both ex-ante and ex-post regulation?

Recourse to ex-post rules form a key foundation of competitive markets.

Ex-ante regulations are common in the electronic communications sector, but Digicel highlights that it is critically important to understand the effects, and also unintended consequences, of potential ex-ante regulation. This is because ex-ante regulation acts before a problem has necessarily arisen, and this changes the environment within which the competing firms are working. The past effects of ex-ante regulation cannot be undone, and Digicel recommends the RA adopt a cautious approach, as set out in the rest of Digicel's submission. The RA itself recognizes that ex-post regulations can be relied upon in more competitive parts of the market (as in paragraph 321, bullet 2 of the Consultation Document).

Various sector regulators have both ex-ante and ex-post powers, and a combination of the two is a common approach.

As Digicel has pointed out in its response to Question 1, Section 24 of the ECA is explicit that any ex ante remedies can only be imposed if they are "necessary". Digicel is of the view that in order to assess whether a particular ex ante remedy is necessary it must be ruled out that alternative ex post market controls would not be effective. In particular there must be sufficient doubt as to whether competition law would act as a sufficient deterrent to any potential anti-competitive behavior. This is particularly the case where there are multiple suppliers and many of the potential problems identified by the RA would also potentially give rise to concerns of concerted practice.

Even where this is the case the proposed specific ex ante remedy must be the minimum intervention that will address the identified competition problem.

Digicel looks forward to having an opportunity to comment on the specific ex ante remedies proposed and the reasoning which underpins the assessment that they are "necessary".



7. Question 6

Do you believe that there is a need to make changes to the existing MVNO regime? If so, please specifically state what those changes should be.

As set out above, Digicel does not believe that the MVNO regime needs changes.

8. Question 7

Do you think that the submarine cable relevant market should be susceptible to SMP obligations?

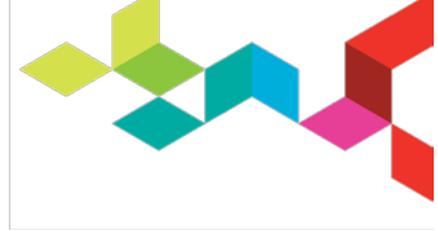
In respect of the proposed market for international connectivity Digicel notes that the RA has not completed its analysis of the two sub-markets it has proposed and has not offered a preliminary view on its assessment of this market.

The RA sets out in Section 5.6.2 of the Consultation Document that there are three suppliers of off-island submarine capacity. Digicel also notes that paragraph 113 of the Consultation Document sets out that an (anonymous) respondent *“to the high cost of local loop access, especially when compared with off-island (submarine) capacity: “competition from off-island carriers has decreased the price for off-island capacity...however, there has been little to no change in the price of local loop capacity.”*

For a commoditized product such as off-island connectivity, the observation by this anonymous respondent and the existence of three providers would appear to indicate that there is sufficient competition to curb any potential market power and that there would be no basis to make a finding of SMP.

Even if SMP did exist Digicel is not clear that in a situation where there are multiple providers *ex post* competition measures would not be sufficient to deal with any potential issues of refusal to supply or price alignment between an undifferentiated product supplied by multiple providers.

In respect of the proposed market for on-island submarine cable interconnectivity and backhaul, Digicel believes that the RA has correctly identified that these services are similar to domestic business connectivity services. However, Digicel disagrees that they are sufficiently distinct to fall into a separate market. While submarine cable interconnectivity and backhaul



may be of a higher capacity than domestic business connectivity services, Digicel believes that there is sufficient scope for supply side substitution to place these services in the same economic market. Specifically, once a supplier of domestic business connectivity services provides services at bandwidths that require fiber access and connectivity then the provision of higher bandwidth services to be used for on-island submarine cable backhaul is a matter of sourcing the correct terminal equipment to connect to the fiber. Digicel does not believe that these services are so distinct as to fall into separate economic markets.

Digicel notes that the RA intends to consider issues of service continuity as part of its market review. In particular, at paragraph 306 of the Consultation Document, the RA canvasses whether *“notwithstanding market power conclusions, it would be appropriate for the Authority to impose obligations on all owners of such infrastructure to ensure the continuity of their supply”*.

Digicel believes that in the circumstances where there are a number of independent infrastructures, it would be neither appropriate nor necessary to impose obligations on all owners of such infrastructure.

9. Question 8

Outside of the SMP ex-ante remedies, what other regulations and administrative determinations applicable to the electronic communications sector should be made, modified or revoked? Please provide a detailed explanation for the same.

Digicel has assumed that the RA is systematically working to address long outstanding issues with the market. The RA has indicated a clear intention to address some of these issues in past Work Plan consultations and final Work Plans. In the circumstances, Digicel looks forward to the RA making good on its clear representations to address these matters in the near future and will provide comments on them as and when they arise.



10. Question 9

Are there any areas and issues that you believe have been omitted from this review that should be addressed by the Authority?

See above.



Review of the Electronic Communications Sector

Consultation – Response

November 28, 2017



Ms. Jozelle Escolastica
Head of Regulatory Finance
Regulatory Authority
1st Floor Craig Appin House
3 Wesley Street
Hamilton HM 11

Dear Ms. Escolastica,

Re: Review of the electronic communications sector – Ensuring the delivery of benefits for Bermuda via regulation

I write on behalf of Deltronics in response to the Regulatory Authority's ("the Authority") Consultation Paper and Request for Comments that was issued on October 17th, 2017. We appreciate the opportunity to provide our comments and would like to thank the Authority for the opportunity.

Please find our preliminary responses below. While we agree in principle with the general direction of the proposal, it is paramount that the public interest take priority and that there are mechanisms in place for enforcing the rules.

In addition to the proposed, we think the Regulatory Authority should consider including access to dark fiber as a requirement of SMP operators.

We look forward to continuing dialogue as we move forward on this very important matter.

Yours Sincerely,

Dion A. Tucker
Deltronics

Deltronics hereby set's out its responses to the following questions:

- Question 1: Do you agree that the 2013 SMP remedies and the Authority's regulation via the same have not led to expected benefits for consumers or optimal outcomes for competition?

RESPONSE

Deltronics believes that the 2013 SMP remedies have not lead to consumer benefit nor reasonable competition, because the rule that were put in place in 2013 were not acted upon by the Authority. The Authority failed to carry out its legislative remit when it comes to its 2013 SMP remit. The lack of enforcing the remedies has led to essentially, no competition (which the ECA is set up to deliver). We are on record as stating that even if there was lawful access, there would still be a problem supplying competitive services on a retail minus 15%. We believe that Bermuda would be best served if network access was forced on SMP providers. As noted by other respondents to the Authority's CFI, that although network access was mandated, it was not enforced by the Authority. To date we are unclear why this is the case.

We would also like to note that given the size of Bermuda, the Authority should not be encouraging replication of networks, as that is an inefficient use of capital, especially for a new entrant.

- Question 2: What are your views on the Authority's assessment of the market provided in section 5?

RESPONSE

Deltronics believes that the assessment on the market in section 5 is a reasonable one, but we think that SMP providers should be mandated to lease dark fiber at cost as well (this should be a methodology which is used in most mature jurisdictions). This would go a long way to allowing the growth of hybrid networks which could provide Bermuda with a more sustainable competitive environment. This would benefit consumers, which is a major construct of the Electronic Communications Act 2011.

This passive network access should not be duplicated with 3, 4, 5, network operators deploying fiber, is again an inefficient use of capital. It is our position that we would not have a problem paying a reasonable fee for access. We draw the Authority to paragraphs 184 through 187, where by the Authority's records both incumbents are earning profits that are in excess of what would be expected in an effectively competitive and well-functioning mobile and fixed markets. There is a clear reason for this in our opinion, and that is clearly lack of any real competition.

- Question 3: Do you agree with the Authority's initial views on relevant markets and SMP, as set out in Section 6?

RESPONSE

The Authority is minded to adopt the following two relevant markets in this section:



“Retail provision of fixed broadband internet connectivity, provided over any technology, and for any speed, on an island wide basis.

Wholesale provision of fixed broadband internet connectivity, provided over any technology, and for any speed, on an island wide basis.”

Deltronics has no issue with these two markets as long as they are unequivocally binding and enforced when SMP providers ignore their potential obligations. We also agree that both One Communications and Digicel/BTC have SMP.

- Question 4: Do you agree with the Authority’s proposed remedy options and other regulatory proposals set out in Section 6 and?

RESPONSE

Deltronics presents the following position on proposed remedy options:

- **Obligations to provide wholesale access:** Such an obligation would ensure that operators could access the SMP operator’s network for the purpose of providing broadband services, thereby promoting competition at a service (as opposed to infrastructure) level. Such an obligation would include conditions around providing wholesale services on a fair, reasonable and non-discriminatory basis. This obligation would also consider the appropriate pricing of wholesale services, and whether it is appropriate to impose cost-orientation obligations.

Deltronics agrees fully with this, as long as it is delivered and most importantly enforced. Without enforcement, the rules will be mute.

- **Obligations to not set excessively high or excessively low retail prices:** Such an obligation would ensure that SMP operators could not engage in anti-competitive or anti-consumer behavior, either by setting prices which are excessively high, or by setting prices which are anti-competitively low (predation or margin squeeze). Such an obligation would likely use some cost benchmark in order to determine whether prices are excessively low or excessively high.

Deltronics see the setting of excessively high retail prices as counterproductive to any SMP provider, given effective competition exists. We see the low retail prices as the largest impediment to competition (especially new entrants, and smaller providers). Predation and margin squeeze rules should be accompanied by serious penalties.

- **Obligations to meet certain quality of service standards:** Such service standards would impose an obligation to meet certain minimum standards of service quality, including measures such as lead times for installation and repair, as well as lead times for migration, either between services or between internet providers.

Deltronics agrees with this position. Clear service level minimum standards will go a long way to deter what has been seen in Bermuda for some time now, where ISP and Access providers pass blame and the customer is left confused and without service in many instances. With these minimum standards in place, it should be much more robust (if again the rules are applied and enforced).

- **Obligations to provide regular and prescribed information to demonstrate compliance with SMP obligations:** Such an obligation would set out specific information that would need to be supplied by SMP operators in order to ensure compliance with SMP conditions. The nature and form of this condition could include specific requirements that involve the provisions of regular financial and costing information, as well as market information on subscribers and revenues. This condition could also be used to monitor quality of service compliance, through reporting of key performance indicators (KPIs).

Deltronics agrees with this fully, as lack of this since 2013, has allowed there to be extreme difficulty obtaining network access in the past (see LinkBermuda's response to CFI). We are also aware of other smaller licensees experiencing similar problems.

- Question 5: Do you agree that the Authority should regulate against abuse of dominance and market power by SMP operators across a range of market sectors, by the potential use of both ex ante and ex post regulation?

RESPONSE

Deltronics believes that the Authority should be able to exercise both ex-ante and ex-post mechanisms on SMP operators in the **public interest**.

- Question 6: Do you believe that there is a need to make changes to the existing MVNO regime? If so, please specifically state what those changes should be.

RESPONSE

Deltronics does not have any hard position on MVNO, however we stand by our principles of replication networks of that size in Bermuda. Instead, MVNO should be an option to any non-SMP operator with clearly defined rules of engagement. This approach is also supported by the complexities of gaining access to towers, roof-tops, and other physical infrastructure required to build another mobile network.

- Question 7: Do you think that the submarine cable relevant market should be susceptible to SMP obligations?

RESPONSE



Deltronics believes that SMP should be placed on submarine cables. These cables are the lifeline of Bermuda. Although we are not clear on any approach that the Authority might take on this market, we await further clarity.

- Question 8: Outside of the SMP ex ante remedies, what other regulations and administrative determinations applicable to the electronic communications sector should be made, modified or revoked? Please provide a detailed explanation for the same.

RESPONSE

No comment at this time.

- Question 9: Are there are any areas and issues that you believe have been omitted from this review that should be addressed by the Authority?

RESPONSE

No comment at this time.

Consumer Affairs

November 28th, 2017

Jozelle Escolastica
Head of Regulatory Finance
Regulatory Authority
1st Floor Craig Appin House
3 Wesley Street, Hamilton, HM11
Bermuda

via Email: jescolastica@rab.bm

Dear Ms. Escolastica,

**Matter: Response to Consultation Document
[Review of the electronic communications sector]:
Comments on the Review of the Electronic Communications Sector**

Members of the Consumer Affairs Board have reviewed the above named consultation briefing and provide feedback below. We aren't directly responding to the consultation questions as they limit the scope of response and narrow the opportunity to assist with your overall objective of the request for consultation: offer solutions to identified market problems.

Significant Market Players

SMP (Significant Market Players) is woven through the document and most of the Regulatory Authority's work since the introduction of the Authority and its 2013 market review has dealt with how to manage two carriers (as one unit or in its individual parts). The reality of this 2017 Market Review is a reflection of two matters:

1. Every Regulatory Authority (RA) Board and Executive decision
2. The direct response by carriers and consumers on the RA's management of the electronic sector

The RA is by far the most powerful stakeholder in the Electronic Communications Market. Their decisions have a direct impact on how the market evolves and functions, conversely the stakeholder with the least power experience the greatest in fact is the consumer. Therefore, it is important that all who review and respond to the consultation document understand the weighting of the RA influence over outcome.

Feedback on the Relevant Markets

Today consumers have:

- Broadband Access - Two landline internet providers (One, Digicel)
- Wireless Broadband Access – One provider (BlueWave)
- Broadband ISP – Six data providers (One, Digicel, TBI, Link, LiveNet, BlueWave)
- Mobile - two LTE service providers (One, Digicel)
- TV - Three subscription TV providers (One, WOW, Digicel)
- Voice - Four Home Phone providers (Digicel, TBI, Link, LiveNet)

These choices seem substantial considering they are all servicing an addressable market of 64,000 consumers. However, with all that choice, there are only two Access Providers for all consumers: One and Digicel.

Choice in the market is not really choice because the dependency is on One and Digicel to offer product and service at a level they elected. Internet, Home Phone and even TV is depends on the two access provider. So the Quality of Service (QOS), Prices and Features of those access lines will dictate what the dependent carriers

such as Link, TBI and LiveNet can provide at what cost to the consumer.

Access Line Prices (at 11.28.2017)

Slow Speed

Broadband Copper (One)	Basic is \$30 a month	carry only 2 Mbps of data into the home
Broadband Copper (Digicel)	Basic is \$39 a month	carry only 4 Mbps of data into the home
Broadband Fibre (One)	Basic is \$48 a month	carry only 5 Mbps of data into the home

Top Speed

Broadband Copper (One)	Top is \$140 a month	carry up to 25 Mbps of data into the home
Broadband Copper (Digicel)	Basic is \$139 a month	carry up to 25 Mbps of data into the home
Broadband Fibre (One)	Basic is \$160 a month	carry in excess of 200 Mbps of data

Video

TV Copper (One)	Basic is \$30 a month	includes: line, box, 18sd, Music
TV Fiber (Digicel)	Basic is \$90 a month	includes: line, box, 55sd/32hd, Music

Voice

Voice Copper (Digicel)	Basic is \$26 a month	includes: line, 50 calls
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Observation

The decision of the RA to allow Carriers to charge separately for Broadband, TV and Voice, despite it being:

- a) The same line accessing the consumer's home and it physically never changes, being connected to the home for over 5 years
- b) The same line can provide up to 200 Mbps with TV, Phone calls and over 119 channels, simultaneously.

Broadband Recommendation

The RA should consider benchmarking Bermuda on 'time to market' for the introduction of Fiber and 200 Mbps into Bermuda. For example: Jamaica introduced 100 Mbps in 2011, which places Bermuda 6 years behind; Cayman had 300 Mbps available in 2015, which places Bermuda two years behind them. The time horizon for services and technology has to be conducive to encouraging carriers to advance their markets to the benefit of Bermuda, allow for a competitive advantage and most importantly offer carriers a reason to continue to invest capital in their connectivity infrastructure.

The RA's decision to keep BTC separate from Digicel in their acquisition resulted in a reallocation of financial resources. This reallocation will result in delays for consumers receiving their first connection to fiber, through Digicel.

The RA decision to allow One to classify their service as 'Fiber-Wire', resulted in deceiving consumers into believe they are getting Fiber to their home, when they are not. There is no fiber reaching the home, the company upgraded its back-end lines and kept the old copper lines to homes in place. The line problems at homes may still exist because the line is copper.

The RA applauds BlueWave for entering the market to be a competitor. BlueWave is welcomed, but has not been proven to be direct competitor to One or Digicel for carriage of simultaneous 100 Mbps. If BlueWave can carry high data loads for 25% of the residential market at peak times, then One and Digicel would have formidable competitor because they would both be left to fight over 30% of the market. For example: One 30% / Digicel 30% / BlueWave 30% / 10% no internet subscription or use at work.

Recommendations

Since there are only two landline access providers, it is proposed:

The RA REGULATE BROADBAND ACCESS

QOS - For the access line:

- Setting standard for repair and normal replacement due to damage
- Install turnaround times and fines for missed appointment

Cancellation – Reducing the 30-day Carrier Cancellation Notice, if the service was not deliver customer. This does not absolve the consumer of fees and equipment returns, and would only permissible when immediately switching to another ICOL.

Line Repair - Loss of Access service will be metered per day, not flat fee.

ISP Carriage - Any ISP be allowed carriage over available Access Lines, provided they met RA criteria for connection.

The RA INTRODUCE BROABAND ACCESS PRICING:

Flat rate tiered pricing for the Access Lines:

- a) Slow – 2 – 20 Mbps - \$20
- b) Medium – 20 Mbps to 100 Mbps - \$70
- c) Fast – 100 Mbps to 500 Mbps - \$120

This would help to reduce the price of service and allow all ISP to compete for customers at a level they deem effective. SMP would have the obligation to provide regulated quality lines to other carriers and consumers at a predictable price.

The RA MONITOR BROADBAND ACCESS:

- The RA from time to time visit retail stores, call customer care centers and order services to gauge the market and service levels.

The RA DEREGUALATE BROADBAND ISP:

Consider allowing ISP to compete for customers, by offering varying IP type packages of ISP service, which may include: Video, Voice, Storage, Hosting, Security, etc. The Access line would become critical and a universal service.

Mobile Recommendation

This market should be monitor very closely as deterioration in the core service — voice calls — will financially impact carriers and also the income of the RA. The market change may force carriers to become more aggressive since they will be seeking ways to stabilize revenues and fund required upgrades to 5G in a few years.

It should be noted: Bermuda only installed LTE 2017 as part of the America's Cup rollout. It was publicly stated by an ACBDA official Digicel and One failed to meet capacity requirements for the World Series that was hosted in Bermuda October 2015. Sometime later a clause was put into the America's Cup telecommunications obligation that LTE be made available a set level of quality. Additionally, LTE launched in the US December 2010, which put Bermuda a whole 7 years behind. Cayman launched LTE December 2013, which puts Bermuda 4 years behind.

'Time to market' for the technologies and services are very important because Bermuda is affected directly by the same international forces as all other islands – adoption of mobile IP voice and video services — demanded at the capacity level.

Important: Bermuda carriers may not have the same time to recoup revenues because they are so late to market with technology.

Fixed Line Voice Recommendation

The access line price for this service should be officially removed from the market. The Broadband Access (proposed) line fee for slow Broadband of \$20 should apply.

Subscription TV Recommendation

The OTT (Over The Top – streaming, demand, etc. service is looked at as a competitive force in the market; both One (\$7 million announced) and Digicel (part of \$50 million) are just starting to make heavy investment in this platform (new equipment, customer care, services packages, install teams).

There is clear international evidence subscription TV represents financial losses to incumbent providers. Incumbent providers will need to recover those costs from somewhere else. In Bermuda, this is particularly important because Logic (an internet company) brought CableVision (incumbent TV company). Whereas One is structured to have TV and Internet customers to operate stably, significant erosion in TV will reduce its ability to function as it does now. And OTT services are not national (outside Bermuda), so those funds don't get invested back into the infrastructure they are using — the same for all countries that don't produce OTT services.

It should be noted: WOW's stability has been considered with the introduction Digicel Fiber TV. The RA advised the Government in the March 2015 order that a \$800,000 payment to WOW for the migration of spectrum was beneficial. However, at 2017 WOW had only 12% of the TV market and stated SMP had not been generally effective.

Business Connectivity Recommendation

The RA should introduce a new sector — **small business connectivity**. The purpose would be to help facilitate the adoption of transparent and competitive business market for the growth of emerging digital services and shift legacy services.

The RA INTRODUCE SMALL BUSINESS BROABAND SECTOR

- Pricing – All market prices be listed on company website.
- QoS – Be introduced for small businesses connectivity — be they single or multi-user businesses — along with any associated services offered with such connectivity

Currently, the market is created where the small business operator does not know what is fair or reasonable and cannot easily compare similar service offerings, for example: speed vs price.

Procedure to get information

- Small Businesses are required to email or call carriers.
- The carrier then will “create“ a package for the small business, which may be one or less than 4 users.
- The consumer does not get to evaluate like services to demand better value

For example:

Business Internet

- Bermuda – SoHo Broadband from BTC is Access and Telephone line. You have to seek an ISP price, and are committed to a \$2,100 annual contract for the minimum 6 Mbps internet/voice line.
- Cayman – 100 Mbps including fiber, 100 down and 10 Up is \$610 a month
- Guernsey – 60 Mbps including copper and static IP, 60 down and 10 up is \$95 a month

The ease of collecting information by the consumer is demonstrated by Cayman and Guernsey. It should also be noted the local small business can see how they compare for standard of services.

28 November 2017



Ms. Jozelle Escolastica
Head of Regulatory Finance
Regulatory Authority
1st Floor Craig Appin House
3 Wesley Street, Hamilton HM11
Bermuda

Dear Ms. Escolastica,

Re: Response to the Initial Consultation Document entitled “Review of the electronic communications sector – Ensuring the delivery of benefits for Bermuda via regulation” dated 17 October 2017 (the “Consultation Document”)

On behalf of One Communications Ltd. and its affiliates (collectively, “OneComm” or the “Company”), we thank the Regulatory Authority (the “RA”) for the opportunity to consult on the state of the electronic communications markets in Bermuda. OneComm provides its perspective first by way of general comments; second, through more targeted responses to specific sections and paragraphs; and finally, closing comments.

A. General Comments

1) Disconnect between the RA’s Conclusions on the Past and Proposals for the Future

In many sections of the Consultation Document, the RA concludes that the 2013 SMP remedies are ineffective and are negatively affecting the market:

- “delivered limited services-based competition” (page 6)
- “limited the introduction of new retail pricing schemes... including bundling” (page 6)
- “have not significantly strengthened the market nor prevented or deterred anti-competitive effects” (page 6)
- need to “be modified in order to meet the new market realities” (page 67)
- are “not a viable option for achieving the Authority’s objectives.... There are a number of shortcomings with the existing regime” (page 68)
- 2013 remedies are “limiting innovative and new pricing... and are no longer relevant remedies” (page 68)

In reference to specific ex ante 2013 remedies, the RA states that the:

- wholesale access regime “has had limited success in delivering significant competition and choice” (page 68)
- tariff notification process “has proven to be ineffective” (page 68)
- price control remedies are “not explicitly designed to encourage and reward investment, and nor can they ensure that consumers are paying affordable prices relative to the costs of provision.” (page 68)

At pages 68 and 69, the RA provides a summary of the feedback received from ICOL holders regarding the current regulatory regime. Although each ICOL holder referenced different concerns and issues with the existing regulatory regime, there was unanimity of dissatisfaction with the current framework. Deltronics, as paraphrased by the RA, stated it most clearly when it indicated that the “existing remedies are neither reasonable nor appropriate, and in any event not effective.” (page 69)

Given this clear unifying theme in the feedback, and the RA’s own critique of the 2013 SMP remedies, it makes logical sense that a change in regulatory approach should be seriously considered. These assessments of the past resulted in the RA proposing to “remove some or all of the 2013 SMP remedies” (page 6) in favour of implementing a “combination of streamlined ex ante remedies and effective use of ex post competition powers” (page 70) to achieve its objectives in the future. A significant regulatory reset is unanimously supported across the industry, and even by the RA itself.

And yet, notwithstanding that guiding determination, when the details of the RA’s proposals for future regulations are examined closely, we discover that the proposed plan is to replace ineffective regulation with broader, and likely more aggressive regulation; very similar in kind and character to the 2013 SMP remedies.

In that regard, the RA is considering:

- continuation of the wholesale access regime, “but with more stringent regulation” (page 6, reiterated with additional detail at page 58)
- implementation of broadband remedies such as: “wholesale access and cost orientation; obligations not to set excessively high or low retail prices..., quality of service obligations and requirements to provide information in order to ensure compliance” (page 12, reiterated with additional detail at page 58)
- implementation of remedies in the mobile market such as: “retail price controls; requirements to provide information in order to ensure compliance with SMP obligations; and wholesale access obligations” (page 12, reiterated with additional detail at pages 59 and 60)

In terms of broadening its application of ex ante remedies, we note the RA’s considered options for:

- the regulation of business connectivity could be based on “ex ante, ex post or (likely) some combination of the two” (page 62)
- off-island connectivity could entail an obligation to offer “cost-oriented pricing for international capacity.” (page 63)
- on-island submarine cable interconnectivity and backhaul “could, for example, be in relation to quality of service... as well as prices” (page 64)

In essence, the Consultation Document states a number of findings that support less intervention and a far lighter touch approach to regulation. The proposed preliminary framework for future regulation, however, does not reflect an intention to be less interventionist, nor lighter touch, nor “streamlined” in the least.

2) Consultation Document Creates Regulatory Confusion and Commercial Uncertainty

The RA states the following as a fundamental principle underpinning the RA’s proposed objectives (page 66):

“Market intervention by the Authority, whether ex ante or ex post, should be based on a transparent and predictable process.”

Contrary to its declaration of this fundamental principle, at page 11 of the Consultation Document, the RA introduced significant commercial uncertainty into the markets when it stated:

“The Authority is, therefore, proposing to remove the majority of the existing SMP remedies. While the Authority conducts the Review, the Authority expects ICOL holders to comply with a minimum set of existing obligations, such as maintaining existing access arrangements and continuing to inform the Authority of pricing and business plans regarding next generation investments.” (emphasis added)

As the RA is aware, OneComm has asked for clarity regarding this set of statements in the Consultation Document. The Supreme Court of Bermuda has expressed its strong view that the RA is “legally required to identify within a reasonable time and with due specificity precisely which obligations it intends to enforce during the interregnum period.”¹ And yet, no guidance on this point has been provided to the industry. The RA’s Consultation Document confuses the precise state of the 2013 remedies, as ICOL holders have little guidance in predicting the minimum set of obligations that must be maintained while the RA conducts the market review. The unfortunate result of this uncertainty is that normal commercial activity like promotions, bundling and price competition are severely inhibited, to the ultimate detriment of the consumers.

¹ *One Communications Ltd et al-v- The Regulatory Authority* [2017] SC (Bda) 231 Commercial at 28.

3) Evidence of Regulatory Bias and Preconceived Market Conclusions

The key purposes of this further market review are to revisit and objectively determine the state of the electronic communications markets in Bermuda. The resulting market determinations are to be used in an assessment of existing remedies, and whether they need to be maintained, modified, withdrawn or replaced. It is paramount that the review and determinations as to remedies (if any) be carried out in an objective manner, free of historical or personal bias.

Page 10 of the Consultation Document, states that the data provided in responses to the RFI (dated 18 July 2017) and CFI (dated 19 July 2017) formed the basis upon which the RA determined its initial views and key findings. We note that the response deadlines were 8 August 2017 and 2 August 2017, respectively, though we have been advised that extensions were granted to some but not all ICOL holders. Accordingly, submissions that formed the base of data for this review of the market were received by the RA no earlier than 2 August 2017, with some ICOL holders submitting responses weeks later.

On 6 July 2017, the RA issued a press release with an unsubstantiated finding that OneComm had proposed a tariff that amounted to “predatory” pricing.² For purposes of this response, it is noteworthy that predatory pricing is generally defined as an act carried out by a dominant firm (or holder of significant market power). To make its accusation of predatory behaviour, the RA had to have already concluded that OneComm was dominant and/or held significant market power (“SMP”) without the benefit of a valid market review. The press release was issued 12 days before the RA issued documents seeking data with which to analyze the state of the market.

This preconceived market conclusion was later confirmed in correspondence with OneComm on 14 July 2017, only days before the RFI and CFI were issued:

“The Authority is clear in its view that One maintains a position of dominance in the electronic communications sector, including within the area of broadband network and service provision and pay TV service provision.”

Moreover, on 15 August 2017, almost coincidentally with receiving the RFI and CFI information, the RA issued a press release entitled “Electricity Sector Regulation – Commencement of Licensing Regime”. In the closing paragraph of that press release, Matthew Copeland, Chief

² For the record, OneComm continues to reject the RA’s unsubstantiated accusation. Notably, the RA’s explanation of the press release provided in the correspondence of 14 July 2017 made no further mention of predatory pricing. Essentially, the term was used to sensationalize the press release, but no substantive determination of predatory behaviour had actually been made.

Executive of the RA, confirmed the RA's intention to take regulatory action in respect of telecommunications:

“The Authority is shortly due to make significant announcements with regards to telecommunications and how it intends to resolve instances of market failure in the same sector.”

It is difficult to understand how the RA can be objective and unbiased in its study of the market if, within days of receiving the information that was to be analyzed to determine the state of the market, the RA had already determined the existence of, and formulated specific plans regarding how to resolve, multiple “instances of market failure” in telecommunications.³

This evidence of bias and preconceived market conclusions is consistent with the issue raised above regarding the RA's proposed regulatory framework for the future. Essentially, in advance of issuing the Consultation Document, the RA was already of the view that certain entities hold market power, and before fully assessing the information submitted for the review process, the RA had already determined that market failure exists in the telecommunications sector and needs to be remedied. This context of bias explains why the RA is proposing to intervene in the markets more broadly and more aggressively than ever before.

4) Need to Balance All “Principles and Objectives of the Market Review Process” as per section 21 of the ECA

21. In determining whether to impose, modify or withdraw significant market power obligations with respect to a particular provider or providers based on its review of the relevant market, and in deciding which types of obligations to apply, the Authority shall seek to—

- (a) develop or maintain effective and sustainable competition for the benefit of consumers with regard to price, innovation and choice;
 - (b) promote investment in the electronic communications sector;
 - (c) establish *ex ante* remedies that are effective but proportionate, taking into account the costs of compliance and the ultimate benefits to consumers;
 - (d) establish *ex ante* remedies that apply on a technology-neutral and service-neutral basis whenever feasible; and
 - (e) rely on market forces and withdraw, reduce or limit *ex ante* remedies in circumstances where the Authority concludes that markets are effectively competitive or likely to become so within a reasonable period of time, taking into account actual and expected market circumstances.
- (emphasis added)

In the Consultation Document, the RA notes this provision at pages 15 and 16. In practice, we note the RA's application of the section has been selective rather than a balance of all of these principles and objectives. The statutory list does not require emphasis of one over another; it requires that all in the list be considered and weighed.

³ Additional confirmation of this bias and lack of objectivity is set out in the confidential Annex to this response.

In respect of the promotion of investment in the sector as per (b), it is important to note that every regulatory intervention has an effect on investment decisions. Recent actions regarding fees and deductions are a clear example where “promotion of investment” has not been clearly considered. In turning back to the proposals of the Consultation Document, we note that a decision to regulate more broadly and aggressively will discourage rather than promote investment – particularly in segments where historically little or no regulatory intervention has been made (i.e. mobile, business connectivity, off-island connectivity and on-island submarine cable interconnectivity and backhaul).

With regard to proportionality as per (c), the RA does not accurately consider the costs of compliance and the ultimate benefits to consumers. The 2013 remedies are a case in point. By the admissions of the RA set out in the Consultation Document, the 2013 remedies (originally put in place for the benefit of consumers) have not resulted in the expected benefits to consumers. And, the costs of complying with the 2013 remedies have been borne by all ICOL holders throughout the more than 4 year period. Every dollar or work hour spent on regulatory compliance is not invested in facilities or business operations. That trade-off needs to be properly considered before implementing a broader and more aggressive set of remedies, especially if the benefit to consumers is uncertain.

Technology neutrality as per (d) is an increasingly difficult concept in telecommunications, but it remains a necessary objective to ensure proper market analysis. To that end, we note the RA’s efforts to consider the concept of technology neutrality. In discussing broadband as a market, the RA stated that:

“...the Authority is currently minded to approach market definition in a way that is neutral to the technology used to deliver the service.” (page 57)”

This technology neutral approach needs to be more broadly and consistently applied than to simply broadband. Just as broadband internet can be provided using multiple technologies, the RA should also recognize that voice, subscription television, and business connectivity are similarly provided over diverse networks. Market definition in all cases needs to consider these services across the available technologies and platforms. Voice is not a service that is only provided over fixed line networks, and subscription television (which in its current form includes Netflix, Amazon Video, Hulu and others) is currently provided across the networks of WoW (fixed wireless), BlueWave (Wifi), Digicel (fibre), BTC (copper) and OneComm FibreWire networks. Defining a market as “fixed” voice is not technology neutral, nor is assessing subscription TV market share using only subscriber numbers over traditional cable television networks.

Section 21(e) is a requirement to “rely on market forces and withdraw, reduce or limit ex ante remedies in circumstances where the Authority concludes that markets are effectively competitive or likely to become so within a reasonable period of time”. The clear default

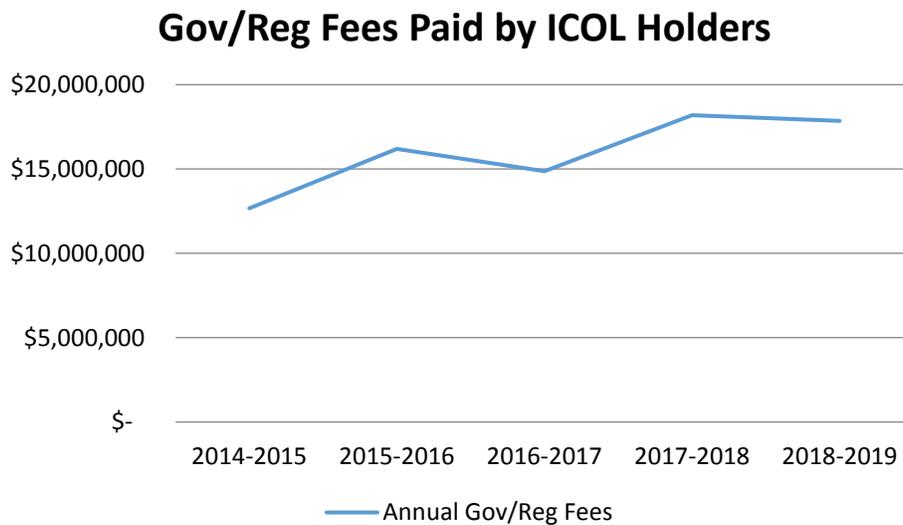
stance is to rely on market forces, not regulate in the first instance. It is also clear that the threshold reference is “effective” competition, rather than “perfect” competition, or some other vision of ideal competition that appears to be the goal of the RA’s efforts. Even less than effective competition is statutorily acceptable if the competition level will become effective within a reasonable period.

At page 25 of the Consultation Document, the RA notes that the concept of “minimum efficient scale” explains why “in small island nations such as Bermuda” there is an economic limit to “the number of facilities-based providers that can efficiently co-exist.” With that in mind, the RA needs to look past its repeated concerns regarding the number of competitors in any market, and instead focus on the statutory threshold of “effective” competition.

5) Government and Regulatory Fees and the Costs of Compliance

As per sections 21(b) and (c) of the ECA set out above, promotion of investment in the sector, and the costs of compliance are important considerations in the market review process. To the extent that government and regulatory fees are paid, and resources are used in the effort to comply with regulation, those same funds and resources cannot be invested or used to improve, expand, or innovate. While we recognize that some funds are needed for pursuit of other government policies, and that the statutes require industry oversight, we want to highlight the tradeoffs being made as industry funds and resources are diverted to those purposes.

Based on the RA’s Approved Work Plans and Budgets for the years 2014 to 2017, and the proposed Work Plan for 2018-2019, total government and regulatory fees paid by the electronic communications sector have been increasing.



Over that time frame, approximately \$80 million in total will have been paid by ICOL holders and their customers to fund the annual budgets of the RA, and to pay government authorization, handset and spectrum fees. When considered in relative terms, this amount is comparable to the publicized combined cost of both fibre-based wireline networks in Bermuda.

This fees burden does not even begin to factor in ICOL holders' collective costs of complying with the 2013 remedies – the constant paperwork required to communicate with the RA, the allocation of staff time for financial and operating reports, and the effort to properly participate in the consultations.

Regulatory fees and taxes on industry revenue drain funds from the sector that could have been used to invest in networks, or alternatively, been kept by the consumer in the form of paying less tax or as a price reduction. The trade-offs and longer term effects of industry taxation and compliance burden need to be considered.

The RA informs that the trend of industry revenues is downward and yet, remains intent on maintaining its nominal budgeted amount. In its Proposed Work Plan for the 2017-2018 Fiscal Year, the RA stated at page 12:

4.2.1 Telecommunications

i. *The Authority anticipates a decrease in the annual relevant (taxable) turnover (for the sector) for the financial year 2017-18 resulting in a proposed increased Regulatory Authority fee. The Authority noted a continued downward trend in the actual relevant (taxable) turnover during the financial years 2014-15 and 2015-16 of approximately 4% and 9% respectively and anticipates that this trend will continue during 2017-18.*

The Authority estimates that the ICOL Holders' annual relevant (taxable) turnover during financial year 2017-18 will be approximately \$177.4 million which is approximately 7% less than the amount that was projected for 2016-17 and approximately 5% less than the actual annual relevant (taxable) turnover for 2015-16.

As previously mentioned, the Authority's Telecommunications expenditure budget has increased by \$174,500 (5%) from the prior budget. In order to fully fund the Authority's proposed expenditure budget \$3,550,000, the Regulatory Authority fee would have to be increased from 1.75% to 2.00% of relevant (taxable) turnover. This would generate revenues of approximately \$3,550,000 for the Authority based on the anticipated annual relevant (taxable) turnover and result in a net surplus of approximately \$nil.

ii. The Authority will therefore recommend that the Minister of Economic Development makes a regulation providing for the Regulatory Authority Fee to be paid by ICOL Holders during financial year 2017-18 to increase from 1.75% to 2.00% of relevant (taxable) turnover.

(emphasis added)

The RA's recommendation to increase its fees percentage year was rejected by the Minister, and was instead maintained at 1.75%. We do not know if this resulted in a deficit as requests for that financial information have been refused. In the current year, rather than asking for the percentage to be increased, the RA is pursuing a different path that does not require Ministerial approval. It has chosen instead to revisit its approach regarding historical deductions. Preliminarily, the RA has determined that almost all of the previously allowed deductions will no longer be allowed, with the net result being a broadening of the tax base upon which the regulatory and government fees will apply. This is an effective increase in the tax rate and should be recognized as such, with its attendant negative consequences for future investment and the prejudicial effect it will have for ICOL holders' ability to compete with unregulated entities in adjacent market segments.⁴

With industry revenue shrinking at a significant rate, and RA budgets and government fees increasing because of the new taxation approach, it is abundantly clear that the trend is unsustainable. The industry requires repeated and constant rounds of reinvestment, and will not be able to keep pace with technological change. Bermuda's telecommunications infrastructure will suffer as a result.

The RA notes the "financial difficulties" faced by some ICOL holders at page 65 of the Consultation Document, and goes on to write, "if they were to deteriorate further, could diminish diversity and choice in the electronic communications market in Bermuda." The RA's observation should be equally applied at a macroeconomic level. There needs to be a proper reconsideration of the approach on taxation, recognition of the increasing costs of compliance, and an economically enlightened sense of the net effect of the proposed broader and more aggressive remedies.

B. Specific Comments by Section of the Consultation Document

1) 5.1.2 and 5.1.3 Broadband Market Structure and Market Entry

Since the CFI and RFI data-gathering of the RA began in July 2017, the market has changed significantly, and is continuing to evolve. OneComm has upgraded all of its customers to FibreWire plans. As per 21(e) of the ECA, the RA is obligated to take into "account actual and expected market circumstances." Accordingly, the international comparisons using the previous standard internet plans are outdated and inaccurate.

⁴ For example, the RA has preliminarily determined that ICOL holders will now be charged 4.25% tax on handset revenues, while unregulated entities like electronics stores will not be taxed for the same sales. This differential taxation approach results in ICOL holders facing a competitive disadvantage for all products and services where non-ICOL holders compete.

In addition, Digicel/BTC confirms its island-wide fibre-to-the-home (“FTTH”) build is complete.⁵ In fact, under the guise of a market trial, it has already launched FTTH services to many Bermudian households. It has been providing households across the island with 2 months’ free service for the most expensive tier of Digicel Play TV service bundled with FTTH access and matching ISP speeds up to 200 Mbps. Consumers are being given this offer with no install fees, no hardware costs, and no service fees.⁶ Given this service availability, the international comparisons used by the RA are inaccurate.

The RA notes that Bluewave entered the broadband market in May 2017. The RA touts Bluewave as an “example of efficient market entry, which could provide benefits to consumers” in large part because of its use of wireless technology to avoid the capital costs of wired solutions for the “last mile.” And yet, the RA seems to doubt Bluewave’s ability to reach nationwide coverage because “in small island nations such as Bermuda... the minimum efficient scale required to fund the necessary network investment limits the number of facilities-based providers that can efficiently co-exist.” It is perhaps this doubt that explains why Bluewave’s offerings have not been properly considered in the RA’s analysis of broadband services.

Bluewave’s published service offering includes plans with speeds up to 100 Mbps for \$199 per month:

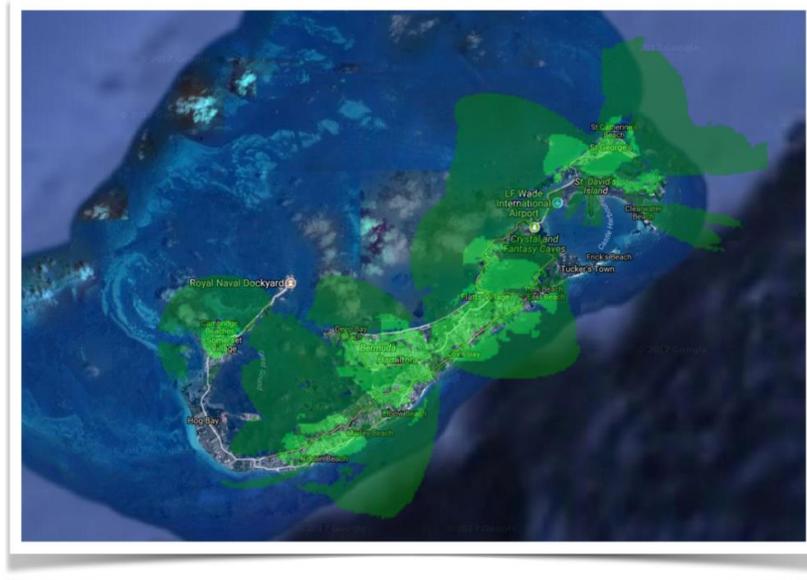


Source: bluewave.bm on 20 November 2017

The new entrant’s coverage has expanded to cover many of the most populous areas of Bermuda. We suggest that the RA’s point about minimum efficient scale applies differentially to firms with significantly different cost structures. In other words, wireline broadband services have a different minimum efficient scale than wireless broadband services. See below a coverage map for Bluewave:

⁵ As reported in the Royal Gazette on 27 November 2017, page 11.

⁶ We note the RA’s preferential treatment of this offer, as there appears to be no tariff, no effort to regulate this “trial” and no wholesale offering, contrary to the 2013 remedies the RA purports to uphold as law.



Source: bluewave.bm on 20 November 2017

Without properly considering Bluewave's market offering, the international comparisons used by the RA are inaccurate. Also, whatever doubt the RA may have about Bluewave's ability to expand coverage, Bluewave is currently an effective competitor, or, has the ability to become an effective competitor in a reasonable period of time. Accordingly, its offerings must be factored into the RA's market assessment as to whether effective competition exists or is likely to develop in a reasonable period of time.

With regard to specific complaints from other ICOL holders detailed in paragraphs 87 through 92, we respond in the confidential Annex to this response. In terms of general response to the issues raised by them, we suggest that demands from access seekers for a greater wholesale discount should be met with caution. Increasing the wholesale discount will not only discourage network investment on OneComm's part (and presumably on Digicel/BTC's part as well); it will also devalue the investments made by Bluewave in its wireless network.

A corollary point arises in respect of Bluewave's market entry relative to would-be beneficiaries of wholesale access: If Bluewave can enter the market with a wireless broadband network, why are X, Deltronics, FKBNet and Link not doing the same? We submit that, unlike other ICOL holders, Bluewave is clearly willing to invest the necessary resources and funds to launch their network and build a business. Firms that are unwilling to take commensurate risk should not be rewarded through regulatory intervention. To do so, will penalize Bluewave's investment and severely discourage market entry in the future.

2) 5.1.4 Broadband Market Investment

Paragraphs 99 through 106 on page 29 are outdated. All of OneComm's broadband customers have been automatically upgraded to FibreWire plans.

The wording of paragraph 103 is incorrect. It is not a probability. OneComm broadband customers are experiencing increased broadband speeds. And, the upgrade was done in a manner to ensure that no customer would pay more per month. In fact, when the increased speeds are properly considered (meaning, quality adjusted), prices paid by OneComm customers are significantly lower on a price per megabit basis.

Paragraph 106 raises significant concerns regarding the RA's competition perspective. The wording illustrates an overwillingness to intervene in markets where effective competition exists or appears to be developing. OneComm's new fibre-based network is already delivering benefits to consumers, and will continue to do so in the long run, as we compete in the marketplace. A competing FTTH network has been deployed and a new wireless entrant is expanding in the market. There is no obvious need for regulatory intervention, and the statute requires a default stance of relying on market forces, where practicable.

3) Table 5.5 – Problematic Inference re Population Density

Population density is a useful factor to consider amongst others but if taken in isolation, it can be misleading. For example, the RA highlights that Bermuda has high population density relative to most of the benchmarked countries, and should therefore have lower costs to serve. This ignores the RA's previous reference to minimum efficient scale. Providers in countries with very small populations will always have difficulty reaching minimum efficient scale, as the costs to serve are large and fixed or step-oriented. These costs include capital investments in the core network, as well as long haul capacity (terrestrial and/or subsea), and upstream costs for handoff of internet traffic to IP providers in larger markets like the United States. Only a relatively small proportion of cost is variable.

To illustrate the point, imagine an island country with a population of 2,000 people and only 1 square kilometer of landmass. Its population density of 2,000 people per square kilometer would be significantly higher than in Bermuda. With only 2000 people (all else equal), the cost of providing internet would be higher notwithstanding its higher population density. Taking the point further, it would be doubly inefficient if regulation were used to require wholesale in this small imaginary country with relatively high population density because neither the facilities-based provider, nor any wholesale access seeker, would be able to reach minimum efficient scale.

4) Figure 5.6 – Data and Methodology Problems

There are a number of problems with the data and methodology used for the benchmarking analysis of the RA:

- The RA statement on page 32 that “copper broadband is currently predominant... in Bermuda” is contrary to its own findings later in the Consultation Document.
- The RA statement that “fiber broadband has not yet been widely rolled out” was inaccurate at the time of issuance, and will be increasingly inaccurate within a reasonable period of time.
- The exclusion of wireless broadband from the analysis is not substantively supportable. If Bluewave is offering service in the market, it should be included in the RA’s assessment of the market.
- The pricing data was gathered manually from website information in July and August 2017. In contrast, the decision to use the 4-10 Mbps tariff range is based on usage data from 2016.⁷ This particular incongruence is a serious methodological problem and severely limits the validity of the analysis.
- As all customers are now on FibreWire plans, OneComm’s active tariffs between 4-10 Mbps, are FibreWire Lite (5 Mbps) for \$65 per month, and FibreWire 10 for \$85 per month, both well below the “almost \$100 on average” referenced at page 33 as the Bermuda average.

5) Figure 5.7 and 5.8 – Data Problems

The RA places a great deal of emphasis on its analysis of the “past” (paragraphs 109-130), comparatively little on the “present” (130-139), and even less on the “future” (140-142). This makes little sense when change is rapid, and the facts of the past market have been rendered stale by improving and converging technologies, and multiple transformative transactions. The cumulative effect of these factors can only be seen in the present. That is where the focus of market review should be, if it is to have a forward-looking perspective on what to do in the future, if anything.

Contrary to the RA’s assertion in paragraph 121, Figure 5.7 is only insightful for comparing prices of standard (copper) fixed broadband in the past. We also note that the focus on copper tariffs is, by definition, not technology neutral. The figure attempts “to show the full cross-section of all tariffs,” but in Bermuda’s case those tariffs represent less than half of the current market. Essentially, the analysis takes no notice of pricing from Bluewave’s wireless internet plans, nor does it consider OneComm’s FibreWire plans (or our previous “standard” internet

⁷ This appears to be drawn from stale market data supplied in a previous attempt by the RA to review the market. The data-gathering exercise for that aborted review commenced in January 2016. The relevant information to use would be the actual internet speeds used by the vast majority of Bermudians as of October 2017.

plans), almost all of which were available prior to August 2017 which is the timestamp on the analysis. This is a particularly odd approach when earlier in the Consultation Document, the RA had already noted the availability of FibreWire plans at paragraph 102 on page 29.

Even the RA notes a problem with the analysis at paragraph 124 on page 34 when it attempts to discount the Barbados results: “the simple average that the Authority has applied may not reflect the reality of what people actually buy... and, instead, are simply a display of the tariffs on offer.” In our view, this concern applies more broadly to the whole analysis rather than simply the tariffs of Barbados.

If the FibreWire Lite and FibreWire 10 prices are averaged and calculated on a monthly price per Mbps, OneComm would be ranked 4th in Figure 5.7; and once PPP adjustments were made, OneComm would score towards the middle of the pricing benchmark in Figure 5.8. With only 1 service in the 4-10 Mbps range, Bluewave’s 10 Mbps service at \$89 would fare even better in the RA’s rankings. When all of the current Bermuda data is considered there is a far different outcome than the RA’s conclusion that “Bermuda still remains one of the most expensive countries for broadband.”⁸

The verb tense used in the RA’s analysis of the “past” continues to be in the present, as if the metrics are ongoing. The statement above is a good example of a pronouncement on the current market state that is based on faulty analysis of the past. Footnote 17 on page 36 also illustrates the point, where the RA notes that: “...if consumers can only afford \$100 per month on broadband, they would only be able to secure a broadband connection in Bermuda of 6 Mbps.” And yet, as early as late May 2017, as per tariffs filed with the RA, FibreWire Lite at 5 Mbps was available for \$65.⁹ Also, on or around that date, Bluewave had launched with a 10 Mbps service for \$89. OneComm is now selling FibreWire 10 for \$85.¹⁰

6) Figure 5.9 and Widespread FibreWire Rollout in Bermuda

Contrary to the 6 Mbps referenced in Figure 5.9, OneComm’s customers are currently on plans with a collective average download speed of more than 25 Mbps. This was true on or around

⁸ Paragraphs 136 and 137 of the Consultation Document are confused about the co-existence of OneComm’s FibreWire 30 plan for \$125 per month, and the “standard” 25 Mbps internet plan for \$240 per month. This is an artefact of the regulatory process that required we advertise our old plan rates even as we were migrating all customers to the FibreWire plans. Now that the island-wide migration is complete, “standard” plans are no longer marketed; only FibreWire plans are being sold going forward, and the RA’s view of the present market should factor in the current market state.

⁹ For completeness, we note the RA’s omission of FibreWire Lite at 5 Mbps for \$65 per month in Tables 5.4 and 5.11, and that the availability of that plan has not been factored into the RA’s overall analysis.

¹⁰ This confusion regarding verb tense and the RA’s questionable reliance on January 2016 data suggests that this portion of the Consultation Document is an inconsistently edited section copied over from a report that was drafted in Q1 2016. As a result, it provides an oddly inaccurate picture of today’s market and should not be relied on for purposes of determining how to regulate going forward.

the date of issuance of the Consultation Document. That is clearly higher than any of the countries listed, and dramatically higher than the average. This contradicts the RA's view at paragraph 130 (notably stated in the present tense) that: "In fact, over 70% of Bermuda broadband customers are on a tariff offering headline speeds of 10 Mbps or less."

Contrary to the RA's uncertainty in paragraph 134, FibreWire services were available to 40 per cent of Bermuda as of August 2017, and by late October 2017 OneComm had automatically upgraded all of its internet customers to FibreWire plans. Moreover, Digicel has completed its FTTH deployment to the vast majority of Bermuda, and there is mounting evidence of them having done a stealth launch under the guise of a trial. These are not future outcomes, they are present outcomes and need to be considered as such. Similarly, the existence of Bluewave, and its current coverage provide the market with another choice for fibre-like internet speeds.

The RA's somewhat lagged data is not a measurement of the current state of the market and yields a problematic market analysis. The obvious concern arises that this picture of the market is being relied upon by the RA to determine the need for regulations in the future.

7) Why Bundles are Not Offered

At page 38, the RA notes the absence of service bundling in Bermuda. The usual statement is made by the RA that consumers "would benefit from bundling of services on the basis that this would deliver easier purchases, better customer service and lower bills/prices." For OneComm's part, we wholeheartedly agree regarding the consumer benefits bundling could provide. We note, however, that the 2013 remedies, and the RA's overlapping bundling restrictions implemented through various transaction and license conditions, effectively prevent and discourage bundling in Bermuda. By way of example, we refer to section 4.3.2 of the order creating the 2013 remedies where the RA put in place overly complex rules regarding the provisioning of retail and wholesale bundles, including very specific requirements for standalone offerings and special cost accounting studies to disprove Price Squeeze and/or predation.¹¹

8) The Future is Now

When referencing the "future" of broadband, the RA takes note that investment in fibre being made by OneComm and Digicel "creates the potential for the delivery of significant benefits to consumers in the form of faster services at lower prices." (emphasis added) While there may be some debate as to the exact timing of the launch of fibre-based services in Bermuda, there is no doubt that the vast majority of Bermudians had fibre-based broadband available to them as of the issuance date of the Consultation Document.

¹¹ Ironically, OneComm's experience in trying to develop cost accounting studies has been that they are so costly to undertake that they cannot be commercially justified in the market circumstances of any particular offering.

Moreover, notwithstanding Bluewave’s exclusion from the prior analysis, they are a part of the RA’s perceived future state of broadband – the inaccurate inference being that Bluewave’s business is a future event. As noted by the RA, Bluewave began market operations as early as May 2017, and with its current coverage map (above), is now competing for business in a large portion of the island. When you read the testimonials on its Facebook page, it is clear that Bluewave is not simply “potential” or future competition for broadband customers, even though that is how the RA seems to perceive them as of 17 October 2017.

9) 5.1.7 Conclusion on Broadband

Given the above, it is odd that the conclusion of this section does not even mention the fact that there has been recent market entry based on wireless technology. The traditional notion of high barriers to entry (including high fixed costs and difficult logistics for physical construction) is breaking down. Notably, it is new and/or maturing wireless technology that is enabling Bluewave’s entry, rather than the wholesale regulatory regime. The RA needs to consider the impact of continuing and/or increasing incentives for wholesale access seekers, as such efforts will inevitably affect the viability of a new market entrant like Bluewave. There is a clear tension between allowing facilities-based competitors sufficient opportunity to enter and prosper, and fostering wholesale competitors who are dependent on perpetual regulatory largesse.

10) 5.2 Mobile

A key issue in the Bermuda market that is not considered in any real detail in the Consultation Document is the concept of overall market size and the trend. Where mobile was once the growth segment in the overall market, it has now plateaued, and the dynamics of the market are shifting as a result. We agree with the RA’s reference regarding the trend of substituting away from fixed to mobile telephony, but we now see clear signs of market saturation underscored by the lack of growth in Bermuda’s population and economy.

We note the libelous accusations of collusion being made by an ICOL holder referred to as “X” who has been allowed to hide behind anonymity.¹² The RA should not accept X’s unstudied view that prices have not dropped dramatically. A rigorous economic approach to market assessment would also consider adjustments for inflation and increases in quality. If that were done, the RA would find that the services provided in today’s market are significantly less expensive now than they were in 2013.

¹² ICOL holder X is quite willing to make bold accusations without providing any real basis for them. The justification for allowing them anonymity in this process should be disclosed, as this is supposed to be a public consultation. All other ICOL holders were unafraid to provide their views on the Consultation Document. Most importantly, knowing the identity of X would help provide context to their comments, and allow others to properly assess their credibility.

OneComm Smartphone Postpaid Plans	
2013	2017
Basic plans provided 100 local anytime minutes, and 200 on-net local minutes with \$0.25 per additional minute	Almost all plans currently offered include unlimited local talk
Basic plans allowed 100 incoming local and \$0.15 per outgoing local text with unlimited available for a \$7.00 extra fee	Almost all plans currently offered include unlimited local text
Data was purchased in 100MB increments (e.g. 200 MB cost \$25 per month)	Almost all plans ¹³ include more than 2GB of data with unused data rolling over to the next month
Government License Fee \$7.00 per month	Government License Fee \$9.50 per month

11) 5.2.3 Market Entry in Mobile

The RA's declares that "there has been no significant market sector entry since the last market review." We note, however, paragraph 162 where the RA references the disqualification of an applicant for 4G spectrum, and the conclusion in paragraph 163 where it is declared that "not many firms have strong intentions to enter the mobile market".

Applying for spectrum is attempted market entry. Even if it is ultimately unsuccessful, it still clearly demonstrates that some firms believe it is possible to enter the market as a facilities-based provider. Whatever the barriers to entry may be, the applicant believed they were surmountable. Most importantly, it should be noted that the legal and regulatory barriers to entry were the requirements of the RA's spectrum allocation process. In this case, the would-be new entrant was unable to satisfy the regulatory rules and requirements. This was not a case where the applicant faced insurmountable "natural" barriers to entry.

We respond to the comments of other ICOL holders set out in paragraphs 168 to 172 in the Confidential Annex to this response.

From the same ICOL holders who are unwilling to risk any capital to properly enter the broadband market (and are demanding regulatory relief), there are demands for a more generous MVNO solution that would eliminate their need for capital and make them viable without undertaking any business risk whatsoever. To give in to such demands, would end the

¹³ The only exception is the smartphone plan that OneComm currently sells for \$90 per month which includes 400 local minutes, 400 local texts and 1GB of data. Notably, even this lowest plan in the current offering still provides significantly more minutes, texts and data as compared to the same spend in 2013.

possibility of new facilities-based entry in the future. Like broadband, we expect that new entrants could and would emerge based on new wireless standards currently being developed and tested in larger markets. That will only happen if the RA does not discourage such entry through the creation of a “no risk” MVNO option. Why would any player invest in facilities-based entry if regulation provides them a generous MVNO solution?

12) 5.2.4 Market Investment in Mobile

At paragraph 175, the RA rightly notes that network upgrades “come at material capital and operating costs to ICOL holders, and, as such, would need to take such costs in account in any market interventions.”

To compete in the mobile market, network operators are required to continually enhance existing networks (e.g. adding carrier aggregation) as technology improves, and sometimes are required to build a new network when new technologies are adopted (e.g. LTE overlay). This continual enhancement, and sometimes total replacement, requires significant profitability to finance longer term spectrum and network costs.

Current market players have recently completed a significant round of reinvestment to bring national LTE coverage to Bermuda. Current profitability will help fund the next round of upgrade (VoLTE, carrier aggregation, etc.) and the next generation rebuild (e.g. 5G). If the return on investment for the current network is redirected to MVNO operators, the RA needs to consider who will fund the next round.

13) Figure 5.13 and Section 5.2.5 Data Problems

Paragraph 177 states that the analysis focuses on “pre-pay (contracts)” because the “included allowances can be assessed, as opposed to post-pay, where the incremental unit costs (of calls, texts, data) are less clear.” In essence, the RA has focused on pre-pay because it is analytically convenient, rather than analytically correct.

Many of the comparison countries have a very different mix of prepaid vs postpaid subscribers. The clear majority of Bermuda’s mobile subscribers choose postpaid plans over prepaid, and therefore, competition for subscribers in Bermuda focuses on the postpaid market. A comparison based on prepaid is not a helpful comparison with the Bermuda market, because it compares only a minority of subscribers in Bermuda, as if they define the market. The RA’s analysis ignores the value of many of the service features provided to most Bermudian subscribers. For example, rollover data has been provided to OneComm subscribers since 2016. This feature provides for the conservation of data allowances across billing periods, giving customers more flexibility in their usage, and making overage charges less likely.

Another prime example is the market norm of handset subsidies in Bermuda. When the RA looks at pricing across nations, it needs to consider what is included in that pricing, especially if a significant benefit is provided in one country and not all the others. In Bermuda, there is a market preference in favour of handset financing over outright purchase of the handset. Shipping and customs costs in Bermuda significantly raise the overall cost¹⁴ of acquiring handsets. The latest high end phones are now priced well over \$1000 at retail. Rather than paying for the handset upfront, the consumer prefers that the mobile carrier essentially finance that purchase. The RA's international comparison does not address this issue. When the RA references the low fees of other countries, it needs to address whether device subsidies or financing costs are dealt with differently in the comparison countries.

OneComm's current mobile postpaid plans are set out below:

Smartphone Plans

<p>2GB Data</p> <p>Rollover Data Included Unlimited Talk and Text \$100 Additional Device Discount Pay per use Long Distance and International SMS Voice Mail, Call Display, Call Waiting, Call Forwarding and Three Way Calling Additional Data: \$0.05/MB</p> <p>\$ 105.00 per Month</p> <p>Gov't license fee \$9.50</p> <p>Buy now</p>	<p>4GB Data</p> <p>Rollover Data Included Unlimited Talk and Text \$200 Additional Device Discount 60 Long Distance minutes to USA & Canada 250 International SMS Voice Mail, Call Display, Call Waiting, Call Forwarding and Three Way Calling Additional Data: \$0.04/MB</p> <p>\$ 125.00 per Month</p> <p>Gov't license fee \$9.50</p> <p>Buy now</p>	<p>6GB Data</p> <p>Rollover Data Included Unlimited Talk and Text \$350 Additional Device Discount 150 Long Distance minutes to USA & Canada 500 International SMS Voice Mail, Call Display, Call Waiting, Call Forwarding and Three Way Calling Additional Data: \$0.04/MB</p> <p>\$ 155.00 per Month</p> <p>Gov't license fee \$9.50</p> <p>Buy now</p>	<p>15GB Data</p> <p>Rollover Data Included Unlimited Talk and Text \$550 Additional Device Discount Unlimited Long Distance minutes to USA & Canada Unlimited International SMS Voice Mail, Call Display, Call Waiting, Call Forwarding and Three Way Calling Additional Data: \$0.03/MB</p> <p>\$ 199.00 per Month</p> <p>Gov't license fee \$9.50</p> <p>Buy now</p>
<p>40GB Data</p> <p>Rollover Data Included Unlimited Talk and Text \$550 Additional Device Discount Unlimited Long Distance minutes to USA & Canada Unlimited International SMS Voice Mail, Call Display, Call Waiting, Call Forwarding and Three Way Calling Additional Data: \$0.03/MB</p> <p>\$ 244.00 per Month</p>	<p>60GB Data</p> <p>Rollover Data Included Unlimited Talk and Text \$550 Additional Device Discount Unlimited Long Distance minutes to USA & Canada Unlimited International SMS Voice Mail, Call Display, Call Waiting, Call Forwarding and Three Way Calling Additional Data: \$0.03/MB</p> <p>\$ 269.00 per Month</p>	<p>1GB Data</p> <p>400 Local Minutes & 400 Local SMS Pay per use Long Distance and International SMS Voice Mail, Call Display, Call Waiting, Call Forwarding and Three Way Calling Average: \$0.25 per minute, \$0.15 per SMS, \$0.05 per MB</p> <p>\$ 90.00 per Month</p>	

Source: OneComm.bm as of 25 November 2017

In almost all of the OneComm postpaid plans, a significant device discount is provided and should be considered in any comparison of value.

¹⁴ The RA's plan to broaden its tax base to include handset revenues will further elevate the ultimate cost to the consumer.

The RA states that Bermuda is the most expensive country in Figure 5.13, with mobile tariffs costing \$122 per month when comparing average monthly price for mobile tariffs containing at least 100 minutes, 100 texts and between 1GB and 5GB of data allowance. When we compare OneComm’s pricing above, we find \$90, \$105 and \$125 for the 1GB, 2GB and 4GB plans, respectively, with the average being just over \$106 per month. It should also be noted that OneComm’s \$90 plan far exceeds the RA’s minimums of 100 call minutes and 100 text messages, with the larger OneComm plans providing unlimited talk and text, included long distance minutes and allocations of international texts. Once PPP adjustments are made, Bermuda’s relative ranking would be even better.

14) Figures 5.15 and 5.16 – Methodology Problems

Given the greater proportion of postpaid subscribers in Bermuda, RA should consider how Bermuda’s pricing might fare if the postpaid pricing is considered. For the average monthly price per GB of mobile data allowance across tariffs with 2-5 GB (this being the more common range of usage), the RA ranks Bermuda the most expensive country in their data set, even after PPP adjustment, with an average price per GB of \$41. We are unclear of the exact calculation used by the RA to make this assessment. When we consider the plans referenced above, OneComm’s \$105 2 GB and \$125 4 GB plans are relevant. On a straight average per GB, we calculate a little over \$38 per GB. Once that number is adjusted for PPP, Bermuda’s relative pricing would be even better.

15) 5.2.6 Profitability

In paragraphs 184 to 186, the RA declares OneComm is making “significant profits, with a substantial margin on earnings before interest and taxes” and that these levels of profitability are in excess of what would be expected in an effectively competitive and well-functioning mobile market.” We note that no international comparisons are provided to substantiate this conclusion.

To fill the gaps of the RA’s analysis, we note the following from page 20 of Verizon’s Annual Report for the period ending 31 December 2016 in respect of its wireless operations:

Segment Operating Income and EBITDA

Years Ended December 31,				(dollars in millions)			
	2016	2015	2014	2016 vs. 2015		Increase/(Decrease) 2015 vs. 2014	
Segment Operating Income	\$ 29,853	\$ 29,973	\$ 26,760	\$ (120)	(0.4)%	\$ 3,213	12.0%
Add Depreciation and amortization expense	9,183	8,980	8,459	203	2.3	521	6.2
Segment EBITDA	\$ 39,036	\$ 38,953	\$ 35,219	\$ 83	0.2	\$ 3,734	10.6
Segment operating income margin	33.5%	32.7%	30.5%				
Segment EBITDA margin	43.8%	42.5%	40.2%				

Consistent with the above, we note the following from page 22 of AT&T’s Annual Report for the period ending 31 December 2016:

Operating income increased \$840, or 4.2%, in 2016 and \$1,903, or 10.6%, in 2015. The operating income margin of AT&T Mobility increased to 28.3% in 2016, compared to 26.9% in 2015 and 24.2% in 2014. AT&T Mobility's EBITDA margin increased to 39.7% in 2016, compared to 37.9% in 2015 and 34.7% in 2014. AT&T Mobility's EBITDA service

margin increased to 48.7% in 2016, compared to 46.7% in 2015 and 42.0% in 2014. (EBITDA service margin is operating income before depreciation and amortization, divided by total service revenues.)

Consistent with their North American counterparts, Vodafone for the six months ending 30 September 2017 reports:

	FY 15/16 €m	H1 16/17 €m	H2 16/17 €m	FY 16/17 €m	H1 17/18 €m
Group revenue	49,810	24,051	23,580	47,631	23,075
Group adjusted EBITDA	14,155	7,090	7,059	14,149	7,385
EBITDA margin	28.4%	29.5%	29.9%	29.7%	32.0%

Source: <http://www.vodafone.com/content/index/investors.html>

Based on the examples above, it is clear that effective competitors in well-functioning mobile markets are realizing EBITDA margins that range from 28% - 44%. The RA's conclusion of excess profitability needs to be reconsidered based on verifiable market evidence.

16) 5.4 Subscription Television and Platform Irrelevance

OneComm agrees that the market has changed so significantly such that OTT services are now clearly part of the same market as traditional subscription TV services. When a consumer considers their choices for audio-visual entertainment, the ubiquity of broadband technology enables a wide selection of services beyond what was previously provided over traditional cable/satellite/wireless platforms. Most households today have subscriptions to Netflix, Amazon Prime, Hulu and/or they use android-based boxes to access content that is made available from a myriad of sources on the internet, some of which respect copyright and many of which that do not. Even the term "subscription TV" needs to be reconsidered in a world where all manner of content is increasingly flowing over broadband, without the need for subscription or the payment of fees of any kind (e.g. Youtube and other sources).

The shift to OTT (inclusive of free and paid services) is a continuing global phenomenon that is increasingly highlighting a shift in market dominance to global technology firms. Those same firms are now extending their reach by becoming original content creators and owners. There is no market power in simply distributing content. In fact, distribution platform owners (e.g. traditional cable tv network operators) face increasing content costs and have no ability to raise prices, as their customers have shown an increasing willingness to cut the cord entirely.

Netflix epitomizes the global trend.

About Netflix

Netflix has been leading the way for digital content since 1997

Netflix is the world's leading internet entertainment service with over 109 million members in over 190 countries enjoying more than 125 million hours of TV shows and movies per day, including original series, documentaries and feature films. Members can watch as much as they want, anytime, anywhere, on nearly any internet-connected screen. Members can play, pause and resume watching, all without commercials or commitments.

Source: <https://media.netflix.com/en/about-netflix>

The market power of Netflix can be seen in its ability to improve profitability by raising prices on a sustained basis. In 2007, it launched its streaming business and charged monthly subscription fees of \$7.99. On or around 2011 that price was increased to \$8.99 for new subscribers. In 2016, that price was increased to \$9.99. For the end of 2017, Netflix has announced its plan to increase its monthly price to \$10.99.

The RA states that its assessment of this segment is still ongoing, and that they continue to consider how best to define the relevant market. OneComm believes that the market for audio-visual entertainment is undeniably global, and that Bermuda is a price-taker in the grand scheme of it. There is no market power possible in this segment from the confines of Bermuda's market.

As for the RA's statement regarding OneComm "making material profit at the group level¹⁵ from subscription television service", we note that some profitability is necessary to offer the services. Moreover, looking at the group level is inconsistent with the segment-by-segment analysis attempted by the RA, and should not be used to justify continuing overregulation of OneComm's TV business. With the launch of Digicel's Play TV service, there is clearly sufficient competition to discipline any anti-consumer behaviour, and we suggest that the best outcome for consumers would be for the RA to allow competition to unfold.

17) 5.5 Business Connectivity

Considering KeyTech Limited's sale of BTC in 2014, OneComm in its current incarnation should be considered a long-time competitor in business services (excluding access), but a relative newcomer in the access portion of business connectivity. OneComm's metro access network is a new entrant to that segment. We do not understand how any ICOL holder can suggest that

¹⁵ When making determinations regarding profit levels, the RA needs to benchmark their statements. Although we believe that group level profitability does not support regulatory intervention in any individually defined market, we note for the record, that Verizon reported 20.7% total return to shareholders for the year ending 31 December 2016.

OneComm holds market power in this segment, given the existence of 3 different access networks.

We note that the RA continues to conduct its profitability assessment in this sector, and that its related market assessment is “ongoing”. Accordingly, we reserve our comments until such time as the RA articulates a detailed preliminary view for this segment.

18) 5.6 Off-Island Connectivity

The RA continues to assess the “subsea connectivity sector and whether any interventions are warranted in order ensure service continuity and positive outcomes (in terms of prices and quality.” We note the existence of 3 providers in this segment and that significant investments were made to develop their respective assets. Beyond the large direct costs, all subsea systems are complex and risky endeavours that came with no guarantees. Any regulatory intervention in this segment will disrupt the basis upon which those investments were undertaken, and will create concerns that will dampen similar investment and risk-taking in the future.

Given the incompleteness of the RA’s work in this area, we reserve further comment until such time as the RA articulates a detailed preliminary view for this segment.

19) 5.7 On-island Submarine Cable Interconnectivity and Backhaul

The attempt to define this segment as a relevant market is contrived and artificial. The facilities referenced are simply interconnection facilities and are already subject to discussion above as business connectivity. The high bandwidth nature of the service does not distinguish this as a separate product market.

To obtain meaningful comment in respect of these services, the RA needs to be clear about the facilities and providers causing concern. As it stands in the Consultation Document, there is little to no real analysis provided. In paragraph 253, it appears that the RA’s analysis will be in the future, as it “will investigate the nature of competition for these services including the presence of SMP operators.”

Accordingly, given the incompleteness of the RA’s work in this area, we reserve further comment until such time as the RA articulates a detailed preliminary view for this segment.

20) Section 6 Relevant Markets, Likely SMP Operators & Remedy Options

For this section, we refer the RA to our opening general comment that there is a disconnect between the RA’s conclusions on the past and its proposals for the future. There are significant inconsistencies between the wording of the Consultation Document and the Preliminary Identification of Markets Notice (the “Candidate Markets Notice”) even though these

documents were issued on the same day; that being 17 October 2017. The Consultation Document purports to seek industry views on product and geographic markets. The impression given was that the analysis was still early stage and capable of incorporating constructive input regarding product and geographic market definition:

- Subscription television – paragraph 219 – the RA’s “market assessment will need to consider how best to define the market”
- Business connectivity – paragraph 237 – “As part of the Authority’s ongoing market assessment it will be considering what may be the most relevant and proportionate market definition”
- Off-island connectivity – paragraph 242 – “As part of the Authority’s ongoing review, it will be considering the nature of competition... and whether there are any competition concerns warranting regulatory intervention.”
- On-island submarine cable interconnectivity and backhaul – paragraph 256 – “As part of its ongoing assessment of off-island connectivity, the Authority will consider whether intervention in interconnection or backhaul... are required going forward.”

Contrary to these references, the Candidate Markets Notice issued on the same date clearly states the RA’s preliminary views:

Box 1: Markets susceptible to ex ante regulation

1. the Island-wide provision of fixed broadband internet connectivity, provided over any technology, and for any speed
2. the Island-wide provision of mobile services (voice, text and data)
3. the Island-wide provision of voice call origination and termination from a fixed location
4. the Island-wide provision of subscription television services
5. the Island-wide provision of business connectivity services
6. the provision of off-island connectivity (i.e. international data transmission)
7. the provision of on-island submarine cable interconnection and backhaul

The RA describes these conclusions as a “starting point” for a detailed market definition study. We are also told that the “identification of a market in this Notice does not represent a finding that SMP necessarily exists in that market, but simply that it is a candidate market and requires further analysis through the market review process.”

The analytical disconnect lies in the idea that the RA could have a “preliminary” view even though its market analysis in most cases is still ongoing and incomplete. This problem is highlighted by the coincidental timing of the documents, and the uniformity of the initial views. No matter the segment, the same 3 “preliminary” views are expressed for each:

- There are high barriers to entry.
- Costs of rolling out a network are likely to remain high and technology change will not materially reduce them, and the market is not trending to effective competition.

- Ex post competition rules alone will not be sufficient to promote or preserve effective competition.

The Candidate Markets Notice makes it very clear that the RA’s analytical bias favours implementing ex ante remedies in all identified market segments. The determination in the third bullet requires a finding that SMP operators exist in the candidate market. The intellectual disconnect is particularly stark where the RA is not even sure if there are 3 or 4 providers active in the segment, as in off-island connectivity. And yet, the RA already has a preliminary view that ex ante remedies are needed to address SMP concerns. Identification of the relevant market participants, and the services they provide, is an absolutely necessary component for market definition, let alone a preliminary finding that the market is “susceptible to ex ante regulation.”

C. Closing Comments

1) Failure of Ex Ante Remedies and Time for a Regulatory Reset

As set out above, there is unanimity in the sector (including the RA) that the ex ante remedies have failed to result in the outcomes intended by the RA in 2013. There is no definitive evidence that explains their ineffectiveness, and yet the RA appears intent on using the same ex ante remedies more broadly and more aggressively than before. When juxtaposed with declining industry revenue, broader and increasing taxation, and the continuing need to invest capital, it is difficult to justify the “initial” views of the RA.

Serious consideration needs to be given to the possibility that a complete reset of regulatory policy and approach is needed. OneComm’s experience is that the 2013 remedies have denied consumers the benefit of new service offerings, price reductions, bundling and other promotions.

Rather than doing more of what has not worked over the last 4 years, we ask that the RA turn back to the regulatory principles set out in section 16 of the Regulatory Authority Act 2011 (the “RAA”). In that list, the following principles are relevant:

- (b) rely on market forces, where practicable;
- (c) rely on self-regulation, where practicable;
- (d) act in a reasonable, proportionate and consistent manner;
- (e) act only in cases in which action is needed;
- (f) operate transparently, to the full extent practicable;
- (g) engage in reasoned decision-making, based on the administrative record

This list of principles is completely consistent with the RA's belief that a greater reliance on ex post remedies is appropriate. The same list is inconsistent with a continuing and greater reliance on ex ante remedies, given the market experience over more than 4 years, and the reality of current global technology trends.

2) Regulation Begets Regulation and the RA's Disbelief in the Efficacy of Ex Post

The Candidate Markets Notice states:

12. In general, *ex post* rules alone are, in the Authority's preliminary view, unlikely to be sufficient where a form of wholesale access (including interconnection) is required in order to promote effective competition in downstream markets.

13. Moreover, by the very nature of being *ex post*, the rules are enforced after an event. Therefore, where the extent of market power in a market is such that it was likely that consumers will be harmed in the absence of *ex ante* regulation or that there will be irreversible damage to competition, *ex post* intervention will likely not be sufficient to promote or preserve competition. While *ex-ante* regulation may be required in certain instances, the Authority is minded to consider how a combination of *ex-ante* and *ex-post* regulation can best achieve its objectives and duties.

The logical outcome of the assumptions and reasoning in these paragraphs is that the RA will never be able to rely on ex post remedies. Notwithstanding more than 4 years of experience with ineffective ex ante remedies, the RA remains convinced that wholesale remedies are required to promote effective competition. That assumption is problematic with the end result being that regulation begets regulation. The initial assumption that wholesale is "required" means that the RA will never rely on ex post rules alone.

And yet, there is no valid basis for the view that ex post is "unlikely to be sufficient". In fact, the RA has little to no experience with ex post regulation. In the Bermuda market, there has been so much ex ante regulation implemented that it is increasingly difficult to determine which outcomes result from market forces and which outcomes result from heavy-handed regulation. That analytical difficulty is apparent in the Consultation Document and the RA's preliminary views.

Ex post competition law is considered by many to be a more efficient and effective approach to regulating economic activity. We encourage the RA to review the research and consider the possibility that ex post regulation may be better able to deliver positive market outcomes in Bermuda in part because it is premised on letting market activity unfold before intervention distorts the economics.

Ex ante, on the other hand, assumes a reasonable level of accuracy in predicting market outcomes. Regulation is used to avoid negative outcomes before they unfold. While this may have appeal as a preventative approach, regulatory intervention often has unintended consequences that may frustrate the original policy intention. An example in the current market can be found in the bundling rules. More than 4 years after implementation, there are

no true bundles of services available in the market to the detriment of the consumer. The effort to restrict or control bundling of services effectively prevented or discouraged bundling.

3) Technology Will Drive Competition in the Market

When we consider the positive changes that have occurred in the industry, it is clear they are all driven by improvements in technology, rather than being benefits derived from regulation. Improvements in the form of LTE, fibre-based broadband, capacity upgrades in subsea cables, device advancements and the applications they enable, have provided significant productivity and entertainment benefit to the consumers of Bermuda. These technologies will continue to mature and reduce in cost as global adoption continues to unfold and economies of scale result.

Technology can level a competitive playing field by empowering new entry and mitigating traditional notions of market dominance. Bluewave's market entry was enabled by improvements and cost reductions in wireless broadband technology. Digicel's deployment of FTTH is facilitating their entry into the subscription TV segment. Technological change has also, over the last decade, dismantled traditional notions of market power in voice and TV services.

With that in mind, we urge the RA to turn back to the RAA principles referenced above. The RA can rely on market forces in this technologically-driven sector. A reliance on ex post remedies would also facilitate the RA acting only in cases in which action is needed. Consumers can be more than adequately protected with the enforcement powers available in the current statutory scheme.



**Confidential
Annex**



1. Additional Evidence of Bias and Preconceived Market Conclusions

2. Response to Complaints from Other ICOL Holders Regarding Wholesale Broadband Access

3. Response to Demands from Other ICOL Holders Regarding MVNO



November 28, 2017
Attn: Jozelle Escolasatica
Head of Regulatory Finance
Regulatory Authority
1st Floor, Craig Appin house
8 Wesley Street,
Hamilton HM 11
Bermuda

Dear Ms. Escolasatica:

Re: Response to Consultation Document [Review of electronic communications sector]

1. LinkBermuda Ltd. ("Link") hereby files our submission in relation to the above-referenced Consultation Document issued by the Regulatory Authority ("the Authority") on 17 October 2017. Link appreciates the opportunity to file comments in this Consultation, noting we had filed a submission on August 2, 2017 setting out responses to the Authority's Call for Inputs regarding Electronic Communications Markets, setting out, in part, our observations on the state of competition in Bermuda.

2. Link notes that the Authority's legislative mandate is to ensure regulation of the sector promotes competition, interests of residents and consumers of Bermuda, development of the Bermudian economy and employment and Bermudian ownership and innovation. Link recognizes that Bermuda is a small country with a small population base, and as such, ensuring a sustainable dynamic competitive environment characterized by multiple facilities-based communication service providers may be challenging. Yet, notwithstanding these realities there are a number of existing service providers operating in Bermuda who are capable of contributing to the goals and objectives of providing Bermudians with high quality, competitive services, which is a positive sign, as long as the competitive environment can continue to support these providers' efforts to provide quality services in a cost-effective manner.

3. Link agrees with the Authority's preliminary view that since 2013 there has been increased consolidation of firms, such that there are now primarily two larger firms who hold a significant degree of market power over the vast majority of communications services and facilities in Bermuda. In this regard, Link supports the Authority's initiatives to review the existing regulatory regime to determine the most appropriate approach to regulation. We agree that where there is evidence of failure by certain of those firms to comply with the wholesale pricing regime or engaging in other anti-competitive behaviour, such as margin squeezing, or where there is a significant risk of such behaviour, it is appropriate to consider introducing *ex ante* regulation in an attempt to curtail such behaviour. Link agrees that regulatory intervention should only occur where

necessary and to the minimum extent required in furtherance of the regulatory objectives. We recognize that the ultimate benefit to Bermudians comes from a truly competitive market characterized by operators who have flexibility to operate their business on a sustained basis, improve efficiencies and compete for customers by improving quality of service and offering various product and service innovations at competitive prices. A move toward *ex ante* regulation is appropriate in cases where it is necessary to ensure that competitors relying on access to wholesale services and facilities are able to compete effectively.

4. For the purpose of this submission, Link will not address all issues raised in the Consultation. Link's failure to comment on any specific issues should not be interpreted that those issues are not important or relevant to Link where to do so would be contrary to our interests. Rather, we have chosen to focus on specific issues about which additional comment from Link is warranted and may clarify our views with respect to certain services. We address these issues below.

Off-island connectivity

5. In the Consultation the Authority stated it would be considering the nature of competition in the off-island connectivity service market, and whether there are any competitive concerns warranting regulatory intervention¹.

6. We note that in most of the other service categories being reviewed in this Consultation, there are primarily one or typically two dominant firms that operate in those markets and that control most of the revenues in those markets; this is not the case in relation to off-island connectivity. In fact, Link submits that the off-island connectivity market is very competitive considering there are, to our knowledge, at least 4 competitors offering such services, including Link, Globenet, One Communications and TBI. In fact, the Authority also recognized that in this market there are "at least three suppliers" of submarine connectivity. Link submits that the existence of at least three or four submarine off Island connectivity suppliers indicates that the market is fairly competitive, from the perspective of the number of options available to customers located on Bermuda. Moreover, retail ISP internet pricing has been coming down, indicative also of a competitive market for internet connectivity.

7. It is also notable that while there are a number of providers competing to sell these services, the customer base for such services is very small, whether for on-island customers or for international customers. Given increased competition by off-island competitors for these services, the customer base may even become smaller, noting Link, for instance, has lost some retail international customers to off-island providers. The geographic market for submarine connectivity is not restricted to Bermuda-based service providers. While Bermuda based customers will rely on connectivity from Bermuda based providers (and we recognize the importance of ensuring such services are sustainable and provide reasonable terms of access for Bermudian based customers), it is important to recognize that as a submarine connectivity provider, Link also relies on international customers to sustain this business. We depend on the sale of these services to international customers and, as such, our ability to offer competitive pricing, respond to increasing capital, maintenance and operational costs (including subsea fibre

¹ Consultation section 5.6, para 242.

breaks should they occur) also depends on revenue from off-island customers. In order to win, and keep, business from these international customers, we must be able to compete effectively against international submarine cable providers who may operate in countries outside Bermuda.

8. Given that this market is characterized by multiple providers and a very small customer base to whom we can sell these services (both on and off island), Link submits that there is no need to impose regulation over these services; in fact, doing so may be detrimental to the sustainability of those services.

9. As the Authority appropriately noted in the Consultation, the cost of building submarine connectivity is significant, and in order to sustain such business we must be able to sell our services to as many customers as we can. The very nature of this business means that Link must ensure that not only is our fibre network robust and of high quality, but that the pricing of our services is competitive in the domestic and in the international market. In this regard, Link submits that we are already compelled by market conditions to offer services and pricing for submarine connectivity that are as attractive as we can, whilst also attempting to recover some reasonable return on investment in order to sustain our business in the long term. In this regard, Link submits that there is no basis for imposition of regulation over submarine connectivity rates and charges. In fact, we note the Authority's comments at section 5.6.4 of the Consultation that the Authority will be assessing the subsea connectivity sector and whether any (regulatory) interventions are warranted to ensure service continuity and positive outcomes in terms of pricing and quality of service. Link submits that, while we do not believe the market warrants imposition of regulation, it may be appropriate to consider in a future review whether there may be ways to help defray the costs for Bermuda-based submarine cable providers so they can continue to invest in and maintain their networks, compete with international off-island companies to bring business to Bermuda and to offer competitive on-island rates.

Proposed market definition for on-island backhaul and submarine cable connectivity

10. The Authority proposes that in relation to the *on-island* submarine cable connectivity and backhaul for the transfer of data traffic *within* Bermuda, between domestic service providers and the point of interconnection to the submarine connection (at the on-island landing station), the relevant market definition is:

The island-wide provision of in-island submarine cable interconnectivity and backhaul.

11. Link has considered the above definition in light of our knowledge of the various submarine cable providers offering services on Bermuda and the options a customer may have to obtain competitive interconnectivity and backhaul to a submarine cable point of interconnection (POI). Based upon our review, while there are about 4 submarine cable service providers, we know that there are approximately 3 competitors competing for backhaul and interconnection services. Given the nature and costs of fibre connectivity across the island, if on a given route there are at least two service providers competing for that service, then a customer would have a competitive option for that route (on the expectation that the two service providers would compete for the business). Where there is only one provider, that route would not provide a customer with a competitive option, leaving them to obtain the backhaul from only the single provider. In such case, Link suggests that perhaps the relevant market definition for this service should not be geographically defined as an island-wide market. Rather, the more appropriate market may be

route specific to a given submarine cable POI. In the case of Link, for instance, we already compete with 2 other backhaul providers to bring connectivity services to our submarine cable POI. As such, it would be inappropriate to define the relevant market as island-wide if the affect were to regulate the services across the entire island due to only one or two routes not having a second or third competitor. As such, Link proposes that a more reasonable, and fair, market definition would be to define the relevant market as the individual route that brings connectivity to the submarine cable POI. That way, only those routes deemed non-competitive would be subject to the Authority's potential regulation

12. In paragraph 313 of the Consultation the Authority invites comments on whether or not it would be appropriate to impose obligations on providers of interconnection and backhaul services, for the purpose of achieving connectivity to international links. It has suggested as examples, remedy options such as quality of service (lead times to repair, and service continuity requirements), as well as price regulation. As noted above, Link submits that if on a given route there is more than one competitor from whom a customer can obtain service, the two or more providers will compete to win the customer's business and as such there will be no need to impose regulation on either price or service quality.

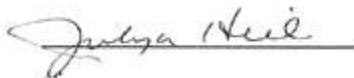
Consultation Questions

Question 7 – do you think that the submarine cable relevant market should be susceptible to SMP obligations?

13. Link submits that, as we described earlier, there are at least 3 providers of submarine cable connectivity on Bermuda; and noting that there are significant costs of building and maintaining submarine cable facilities, with increasing competitive alternatives from operators outside Bermuda, the existing operators already have incentives to try to win as many customers as they can. In this regard, the circumstances would indicate that there is no SMP held in this market; as to whether the pricing of in-Bermuda connectivity has been determined to be prohibitive for Bermuda-based companies to obtain connectivity from Bermuda, Link submits that to our knowledge the pricing regime is competitive in light of the various providers seeking to serve these customers. This is also supported by evidence of internet access pricing going down in recent years.

14. Link appreciates the opportunity to participate in this process. Should the Authority require further information from us we would be pleased to provide it.

Respectfully,

A handwritten signature in cursive script, appearing to read "Julya Hill", is written over a horizontal line.

Julya Hill
Chief Executive Officer
LinkBermuda