

TELECOMMUNICATIONS REGULATORY COMMISSION
VIRGIN ISLANDS

BROADBAND MARKET ANALYSIS CONSULTATION

29 January 2015

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The address for responses to this document or enquires regarding this document is:

Broadband Market Analysis Consultation
Telecommunications Regulatory Commission
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Fax: (284) 494 6786; E-mail: consultations@trc.vg
The deadline for responses is **5 March 2015**



Instructions for submitting a response

The Telecommunications Regulatory Commission of the Virgin Islands (“TRC”) invites comments on this consultation document from all interested parties.

Comments should be submitted by **5 March 2015** in line with the guidelines for conducting consultations set out in the Telecommunications Code (Part 1) (Public consultations and Public Hearings) Guidelines, 2010¹. The TRC reserves the right not to consider any responses submitted after this date.

Preferably responses to this document should be sent by email to consultations@trc.vg (indicating the subject): “Consultation on the Broadband Market Analysis”. Alternatively, the responses may be sent to the address (or the number) below:

Consultation on the Broadband Market Analysis –Telecommunications Regulatory Commission P.O. Box 4401 or 27 Fish Lock Road, 3rd Floor Road Town, Tortola, British Virgin Islands VG 1110 Fax: (284) 494 6786.

Responses should include:

In the case of responses from corporate bodies (legal persons):

- the name of the company/institution/association/other organisation;
- the name of a principal contact person; and
- full contact details (physical address, postal address, telephone number, fax number and email address).

In the case of responses from individual (natural) persons, name and contact details (including email).

In the interest of transparency, the TRC will normally make all submissions received available to public, subject to confidentiality of the information received. The TRC will evaluate requests for confidentiality according to relevant legal principles.

Respondents are required to clearly mark any information included in their submission which they consider to be confidential, and provide reasons why that information should be treated as such. Where information claimed to be confidential is included in a submission, respondents are required to provide both a confidential and a non-confidential version of their submission. The TRC will determine whether information claimed to be confidential is to be treated as such and, if so, will not publish that information. In respect of information that is determined to be non-confidential, the TRC

¹ [http://www.trc.vg/attachments/030_G00349_SI%20No%20100%20of%202010%20-%20Telecommunications%20Code%20\(Part%201\)%20\(Public%20Consultations%20and%20Public%20Hearings\)%20Guidelines,%202010.pdf](http://www.trc.vg/attachments/030_G00349_SI%20No%20100%20of%202010%20-%20Telecommunications%20Code%20(Part%201)%20(Public%20Consultations%20and%20Public%20Hearings)%20Guidelines,%202010.pdf)
[20Telecommunications%20Code%20\(Part%201\)%20\(Public%20Consultations%20and%20Public%20Hearings\)%20Guidelines,%202010.pdf](http://www.trc.vg/attachments/030_G00349_SI%20No%20100%20of%202010%20-%20Telecommunications%20Code%20(Part%201)%20(Public%20Consultations%20and%20Public%20Hearings)%20Guidelines,%202010.pdf)
[20Telecommunications%20Code%20\(Part%201\)%20\(Public%20Consultations%20and%20Public%20Hearings\)%20Guidelines,%202010.pdf](http://www.trc.vg/attachments/030_G00349_SI%20No%20100%20of%202010%20-%20Telecommunications%20Code%20(Part%201)%20(Public%20Consultations%20and%20Public%20Hearings)%20Guidelines,%202010.pdf)

may publish or refrain from publishing such information at its sole discretion. Once the TRC has received and considered responses to this consultative process, it will issue a final statement on the consultation which will be published on the TRC website (including a report on the consultation), and if appropriate a Determination on Dominance and amendments to the licences of public suppliers, depending upon the outcome of the consultation.

Executive Summary

At the beginning of 2015, the level of broadband provision in the British Virgin Islands (the “BVI”) is below the Caribbean and global average in terms of speed and proportion of the population with a fixed broadband connection. As the Telecommunications Regulatory Commission’s (the “TRC”) report “Telecommunications Markets in the British Virgin Islands 2009 – 2012”² concluded, “a key concern for the BVI is the stagnation in fixed line broadband services from 2009-2012 and the low bandwidth speed available.” The TRC has been monitoring the broadband market over this period and has found prices and speeds offered have remained constant unlike the worldwide trend in falling per megabit (“MB”) broadband prices and rising broadband speeds. In addition, the TRC has received many complaints and is aware of widespread consumer dissatisfaction concerning poor and variable quality of service in the delivery of fixed broadband service. Whilst the TRC is aware of the difficulties in offering an island-wide broadband service given the topographical challenge of the BVI, the TRC is of the view that broadband is such an important part of today’s community’s needs that a light touch regulatory approach of monitoring the market now needs to turn to assess the extent of dominance in the market and to apply regulatory remedies as allowed under the Telecommunications Act 2006 (the “Act”).

In this market analysis we follow a formal approach to market analysis as set out in the Market Review Final Statement³, whereby we define the relevant markets for analysis. The broadband market broadly comprises fixed and mobile provision and this analysis sets out separate markets for each, noting the limits to substitutability between fixed and mobile broadband. We focus our analysis on the fixed broadband market based on the view that the mobile broadband market is still a developing market, with evolving technologies such as long term evolution (“LTE”) still to come online in the BVI and therefore any regulatory intervention should focus on the fixed broadband sector in line with other countries such as the UK.

This document is structured into three sections:

- 1. Market Definition**
- 2. Assessment of competition and evidence of dominance**
- 3. Assessment of appropriate regulatory obligations and remedies**

In section one we distinguish between the retail market for fixed broadband provision reaching to business and residential customers and the wholesale market for fixed broadband access whereby the fixed broadband network could be opened up to other public suppliers. In section two, we find LIME BVI to be dominant in both markets:

Key findings:

- **LIME BVI is dominant in the market for fixed retail broadband**
- **LIME BVI is dominant in the market for fixed wholesale broadband access.**

² http://www.trc.vg/images/Telecommunications_Markets_in_the_BVI_2009-2012.pdf

³ http://www.trc.vg/images/attachments/014_TRC_Market%20Review_Final.pdf

Once dominance has been identified and if it is confirmed through this market analysis consultation, the TRC is then able to implement regulatory obligations on the designated dominant public supplier.

In section three, we broach the subject of possible regulatory remedies and seek feedback on the possible options. The TRC is currently minded to pursue the option to set in place quality of service obligations whereby the designated dominant public supplier is required to provide guaranteed minimum connection speeds based on the package purchased and penalties for outages or delays in service delivery but awaits feedback before detailing this proposal further.

Throughout this document we ask questions which we invite all interested parties to respond to. The questions are listed in annex 1. Responses should be submitted to consultations@trc.vg by 5 March 2015.

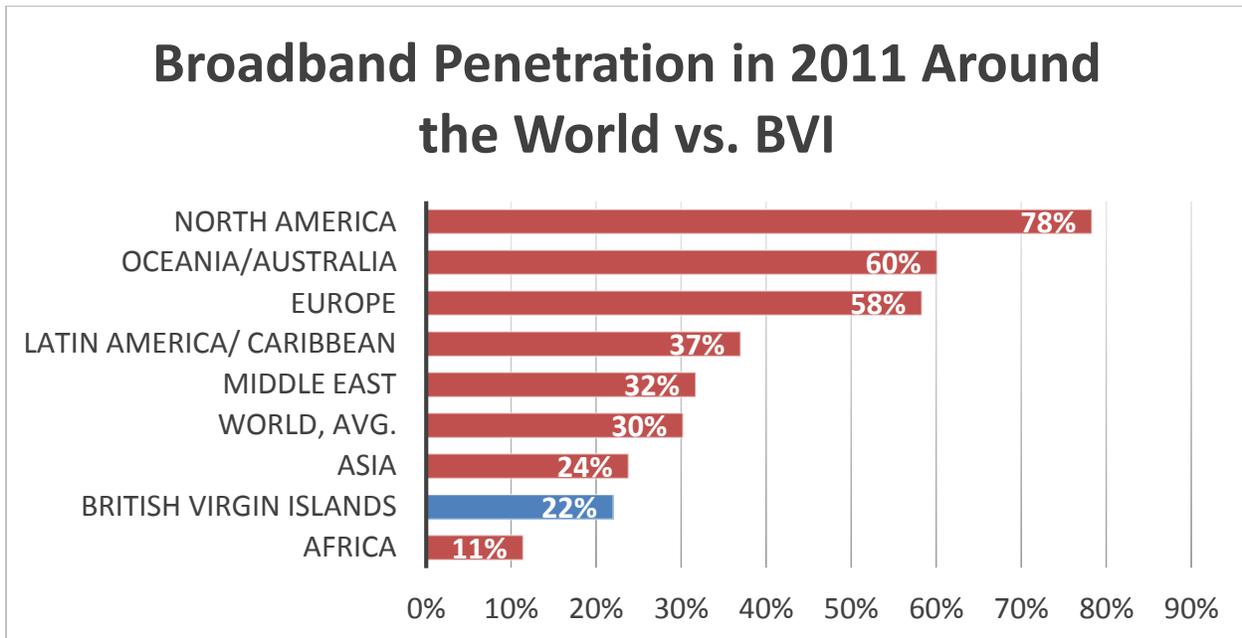
In tandem with this formal public consultation, we are also publishing an online consumer survey looking for consumer feedback on broadband use in the BVI. This survey is available on our website, www.trc.vg. The deadline for completing the survey is also 5 March 2015.

Following responses to the consultation and consumer survey, we will produce a second stage consultation document detailing the proposed regulatory remedies.

Introduction

The Market Review Programme set out Fixed Broadband Access as one of the priority market areas for analysis. Broadband enables consumers to access the internet via fixed or mobile technology. Broadband has become a basic necessity and has evolved into a fundamental human right. Broadband is now a key driver of economic growth and competitiveness and exerts a greater stimulus to economic growth than other infrastructure sectors. The ITU⁴ reports that a 10% increase in broadband penetration increases GDP growth by 0.25-1.38%. The study also shows that the contribution of broadband to economic growth is greater at higher levels of penetration. The graph below shows that the BVI ranks low in terms of the number of people connected to broadband as a percentage of the total population. At the end of 2012, broadband penetration stood at 21% with an estimated 55% of households having a broadband connection.⁵

Figure 1: Broadband Penetration Around the World in 2011

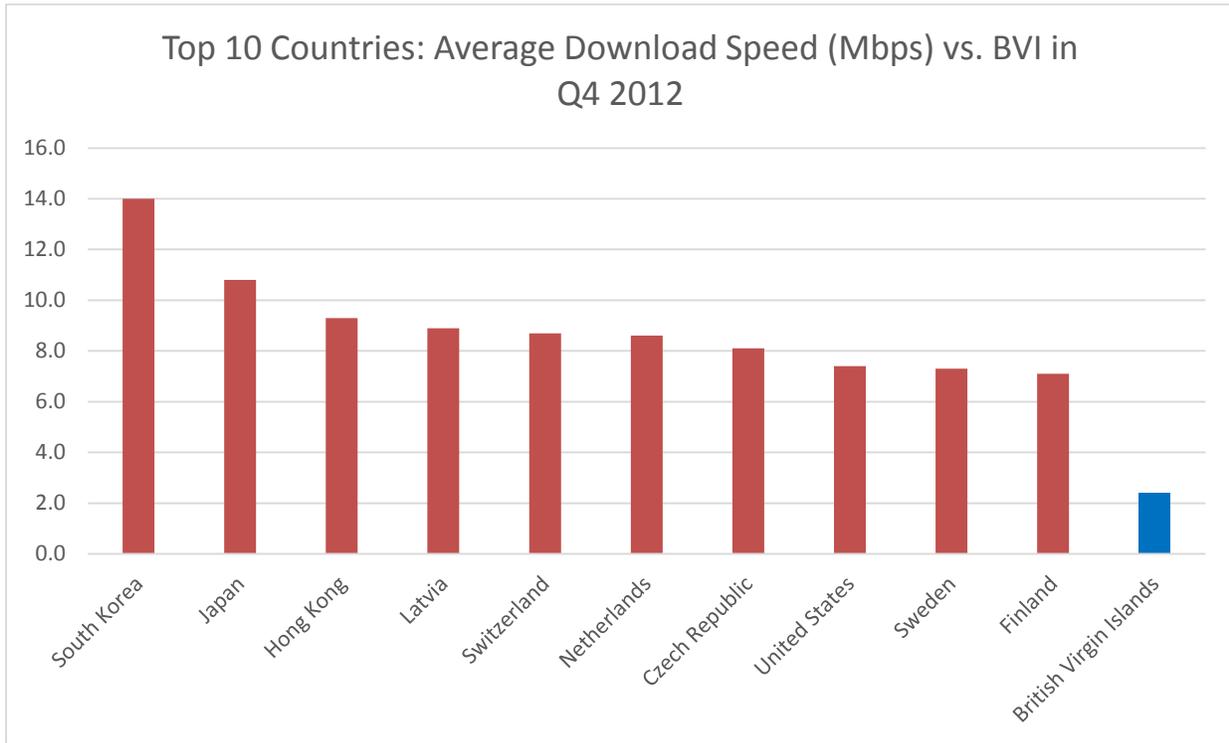


The BVI also ranks as one of the lowest countries in the world in terms of broadband speed as shown in figure 2 below.

⁴ ITU Impact of Broadband on the Economy April 2012 http://www.itu.int/ITU-D/treg/broadband/ITU-BB-Reports_Impact-of-Broadband-on-the-Economy.pdf

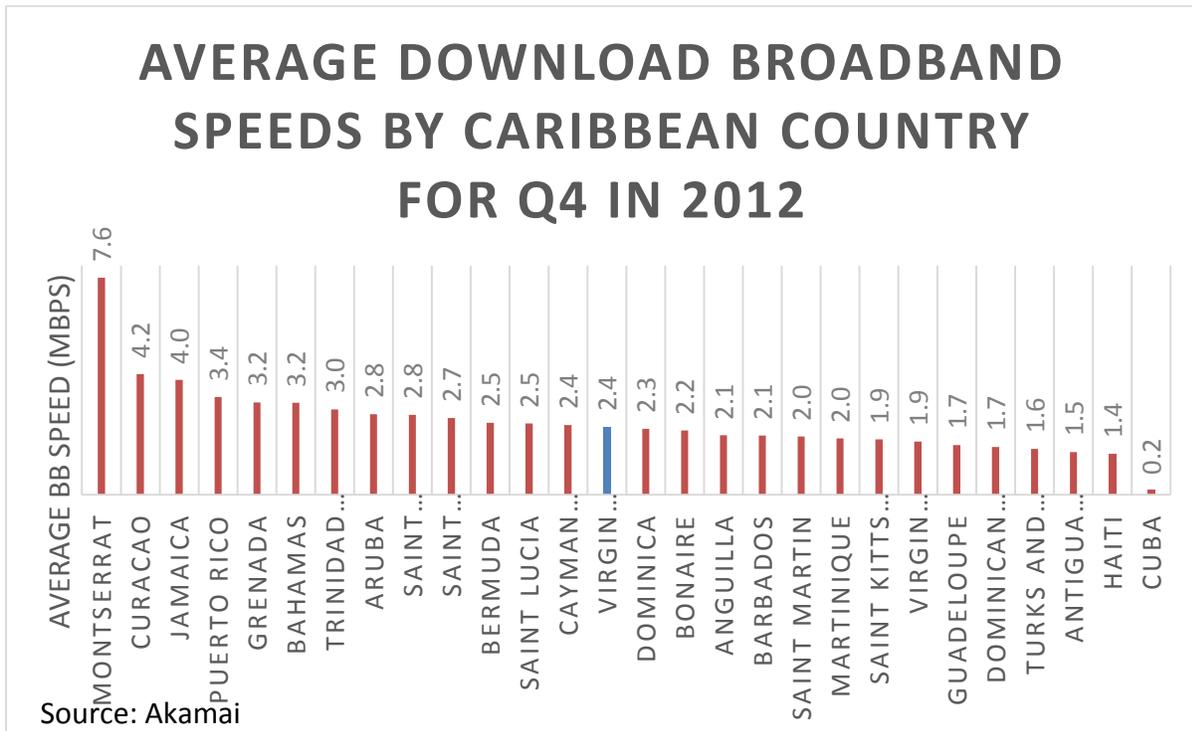
⁵ http://www.trc.vg/images/Telecommunications_Markets_in_the_BVI_2009-2012.pdf

Figure 2: BVI compared to the Top 10 Countries: Average Download Speed 2012



The BVI also ranks low in the Caribbean as shown in figure 3 below.

Figure 3: Average Download Speeds by Caribbean Country Q4 2012



The statistics suggest that the BVI is behind the rest of the world in broadband provision and therefore the TRC asks the question is this due to a problem of market power and can this be solved through regulatory action? Is fixed or mobile broadband the way to go for the BVI? Or are the needs of the BVI best served through a combination of both?

To do this, we carry out a market analysis of the broadband market which assesses the competitiveness and substitutability of fixed and mobile broadband products in the BVI. The market analysis is structured into three parts:

1. Market definition
2. Assessment of Competition and evidence of relevant market power
3. Regulatory obligations and remedies.

The TRC seeks feedback from licensed public suppliers and the public on the questions raised in this document. Following the close of this consultation, the TRC will consider all the responses and will produce a second stage consultation document which will outline the proposed regulatory options if appropriate.

1. Market Definition

The broadband market consists of different levels of sale known as the retail level – to residential and business consumers in the BVI and the wholesale level to other licensed public suppliers to offer internet service to their customers. The technology used to deliver the broadband service can be fixed or mobile and the substitutability of these different technologies will affect the market definition.

A **retail fixed** broadband connection can include:

- A DSL connection to the premises (home or office)
- A fibre connection to the premises
- A cable connection to the premises

A **retail mobile** broadband connection can include:

- A phone mobile data connection (can be used to create a wifi hotspot by tethering)
- A non-phone mobile broadband connection eg a dongle or mifi device (can be used to create a wifi network)

A broadband connection is described by the ITU as fixed if it uses a wired connection and provides high speed access to the public internet (using a TCP/IP connection) at downstream speeds equal to or greater than 256 kbit/s. A broadband connection is described by the ITU as mobile if it provides wireless access to data communications at downstream speeds greater than or equal to 256 kbit/s. A broadband connection can also be set up as a fixed wireless connection using Wimax technology. This product offers a fixed service using a mobile technology. Wimax offers internet access in the same way that a non-phone mobile broadband connection offers internet access. Therefore we treat wimax as a product within mobile broadband.

The retail broadband products on offer in the VI at the date of publication include (see annex 2 for full listing):

- LIME BVI fixed broadband product
- CCT mobile broadband product available on handsets and dongles
- Digicel BVI mobile broadband product available on handsets and dongles
- LIME BVI mobile broadband product available on handsets and dongles

Whilst some consumers may have an existing Wimax connection, this product is no longer on sale from CCT and therefore we exclude it from our analysis.

Consumers in the BVI may subscribe to both fixed and mobile connections. For example, a consumer may have a mobile phone and accesses the internet via the mobile phone and also has a fixed broadband connection at home. A product is only truly substitutable if the consumer will give up one product to switch to the other.

Other regulators in Europe have looked at the question of whether fixed and mobile broadband are true substitutes as explained in the box below.

A market for broadband services or separate fixed and mobile markets?

Analysis undertaken by national regulatory authorities in the European Union who follow a set framework for reviewing communications markets, like the BVI⁶, has found the retail fixed broadband market to be separate from the retail mobile broadband market. Market analysis undertaken in Ireland, Poland, Slovenia and the UK has found sufficient differences in the way that fixed broadband and mobile broadband are supplied and demanded to warrant separate market definition. Only the Austrian Regulatory Authority for Broadcasting and Telecommunications (the “RTR”) has found that mobile broadband products are substitutes for fixed broadband products for residential consumers in Austria and therefore should not be subject to regulation. RTR defined a wholesale market for the provision of broadband access for non-residential customers only as strong infrastructure based competition especially from mobile broadband created a trend towards effective competition in the retail residential market for broadband services in Austria. Some of these European regulators (in Portugal, France, Ireland and Denmark) have concluded that fixed wireless access products, such as WIMAX are not included in the wholesale access market due to various issues such as, inter alia, charges, capacity and/or broadband coverage, level of service and functions available, as well as new investment costs to build new fixed wireless access products.

Therefore we ask the questions:

- 1) Is mobile broadband a substitute to fixed broadband for residential customers in the BVI?**
- 2) Is mobile broadband a substitute to fixed broadband for non-residential (business) customers in the BVI?**

To be able to answer this question fully, we need to understand what a true substitute is.

The SSNIP Test

Demand side substitutability

The relevant test for demand side substitutability is whether a relative price increase for fixed broadband services is profitable or would customers switch to another service, eg mobile broadband. The strict economic test to apply is the small but significant non-transitory increase in price (“SSNIP”) test which assesses if the incumbent can profitably maintain a 5-10% increase in price. The test assesses if as a result of the price increase, enough customers switch to an alternative product such as mobile broadband phone connection or non-phone connection (mifi or dongle) so that the incumbent’s price change would not be profitable. The table below shows the current price of fixed broadband and 5% and 10% increases in price compared to current mobile broadband pricing. The table shows a typical fixed broadband package

⁶ The BVI follows a Market Review Framework as set out at http://www.trc.vg/attachments/TRC_Market%20Review_Final.pdf

offered by LIME priced at \$84 per month for 2Mbps. This package is then compared to Digicel’s 7GB Mobile data plan for \$86, CCT’s 8GB Mifi plan for \$89 and LIME’s 7GB dongle plan for \$86.

Table 1

Fixed BB	5%	10%	Mobile BB	Non-phone Mobile BB	Non-phone Mobile BB
LIME	Increase	Increase	Digicel	CCT	LIME
Mega Plus \$84 2 Mbps Unlimited data usage	\$88	\$92	7GB 4G Mobile Data Plan \$86	8GB Mifi \$89	7GB Dongle \$86

A 5-10% increase in price would increase LIME’s fixed broadband price to \$88-92 per month. Given the price of the proposed alternatives (mobile broadband – phone and mobile broadband – non-phone) as detailed in the table, and the key fact that the proposed alternatives do not offer a fixed, unlimited connection, the TRC does not see that enough customers would switch to the proposed alternatives as a result of the price increase so as to make the price increase unprofitable for LIME. Therefore, the proposed alternatives are not pure substitutes to fixed broadband. A residential customer who wanted to switch may be discouraged by the data limits imposed in the mobile broadband products. Equally a business customer may not be willing to fully give up a fixed broadband connection and to replace with a mobile broadband connection if a fixed broadband connection is required for security and reliability.

Therefore this price test helps us to demonstrate what a substitute is and how by assessing the possible alternatives to a product we can determine whether there are any real substitutes and therefore define the market for the product and any real substitutes.

In the view of the TRC, whilst it is possible that some consumers may switch to an alternative mobile broadband product, it is highly likely that LIME BVI would be able to profitably maintain a price increase above the competitive level. Indeed it is highly possible that LIME BVI is currently pricing at the profit maximizing level rather than the competitive level. This is because there is no other broadband product available on the market which offers the same level of speed, resilience in the event of natural disasters, and unlimited use. The consumer perception of wired broadband is that it can offer a faster and more reliable connection to the internet, whether that is the level of service that is offered or not. Whilst the TRC notes (based on complaints received) that there is consumer dissatisfaction with the fixed broadband service provided by LIME, this market analysis focuses on how substitutable fixed broadband and mobile broadband are despite quality of service issues.

Fixed broadband offers a connection speed of up to 8 MB/s currently in the BVI⁷. Fixed broadband connected via fibre to the premises can offer up to 100 MB/s. Mobile broadband using HSPA + technology currently offer connection speeds of up to 6 MB/s in the BVI. Mobile broadband technology using LTE can offer speeds up to 40 MB/s. At the date of publication, no operators currently offer LTE in the BVI as no operators have yet opted to deploy LTE within their current spectrum allocations.

There is a significant switching cost once a broadband contract has been set up with LIME BVI including the loss of the original connection fee and notice period that must be given to terminate a contract. These factors will make consumers less likely to switch to an alternative product like a dongle on mobile broadband. If the dongle does not serve the customer’s needs then the customer would have to pay reconnection fees to go back to fixed broadband. Whilst dongles can provide comparable or superior speeds to fixed broadband, they are subject to use limits below that of fixed broadband. Note in figure 4 that that whilst mobile broadband is subject to limits of use, once the limit is reached a customer can either obtain an out of bundle rate and pay per MB or can buy another data package. There are no publicized limits of use for fixed broadband.

Figure 4: Limits of Use

Fixed BB	Wimax	Mobile BB			Non-phone Mobile BB		
LIME	CCT	LIME	Digicel	CCT	LIME	Digicel	CCT
Unlimited data usage	Unlimited data usage	20 MB – 7 GB	30 MB – 7GB	10 MB – 30 GB	1 GB – 7 GB	100 MB – 75 GB	10 MB – 30 GB

Fixed broadband is typically used for large data applications such as streaming and downloading movies, working from home, using VoIP applications like Skype, web browsing, email and online payments. Based on these needs and usage behaviour, consumers demand unlimited data with minimal interruption to service due to weather conditions. Mobile broadband users (who may also be fixed broadband users) typically use mobile broadband for medium sized data applications such as emails, streaming music and videos, social media, applications, web browsing and online payments. Based on these needs and usage behaviour, consumers demand connectivity on the go, reliable and fast connection speeds and connectivity as they move about the VI.

In the view of the TRC, Wimax as a form of mobile broadband, when it was on offer, was only a partial substitute for fixed broadband as the speed available is still not as high as fixed (4Mbps compared to up to 8Mbps on fixed) and the level of service may not be as reliable as fixed. At the current time, existing Wimax service is also not available island wide on the same basis as fixed broadband and therefore cannot be a pure demand substitute.

⁷ Current fibre upgrades to LIME’s network will increase the speed and we await verification from LIME on the maximum speeds achievable.

One key difference between fixed broadband and mobile broadband is that only mobile broadband provides some access to internet in the territorial waters of the BVI. This service partially meets the demand of sailing consumers although mobile broadband is not available throughout the territorial waters.

- 3) Do you agree that Fixed Broadband and Mobile Broadband are not pure demand substitutes? If not, please explain why.**

Supply side substitution

The relevant question is whether other network providers would enter the market in a speedy manner in response to the relative price increase. Fixed line broadband (as explained further in the wholesale section) requires significant sunk investments and the infrastructure is not easily replicable. Therefore there is little supply side substitution. However, the cable network owned by BVI Cable TV would be capable of offering internet access to the homes it passes and could therefore be configured to offer a competitive service to LIME BVI. At the time of publication, this service is not available and is therefore not considered a demand side substitute but could potentially be a supply side substitute.

Mobile broadband also requires significant investment in HSPA+ or LTE network equipment and compatible handsets and is also not deemed to be a supply side substitute. Similarly Wimax is not deemed to be a supply side substitute due to the costs in setting up the network and the need to obtain the relevant frequencies.

Mobile broadband is currently seen to be a developing market with the future prospect of LTE (“Long term evolution”) for the BVI and therefore the TRC is minded not to analyse this market at the current time. The TRC will monitor the extent to which mobile broadband exerts competitive pressure on fixed broadband services through its ongoing data collection but given that MBB services are not fully substitutable for FBB services, defines a separate market for fixed broadband.

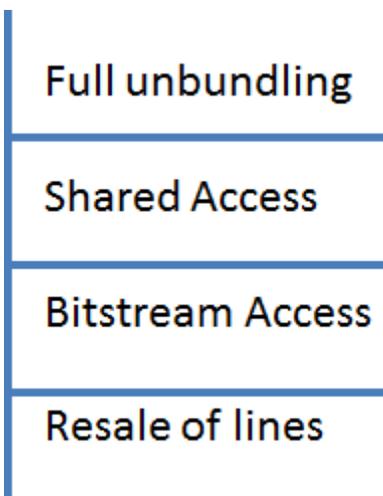
- 4) Do you agree that there are no supply side substitutes to the fixed broadband network?**
5) The TRC therefore defines the market for retail fixed broadband as the relevant market. Do you agree with this definition? If not please explain why and propose an alternative market definition.

What is the related wholesale market?

In order to supply a fixed broadband product, the provider, LIME BVI, needs a fixed network to create a fixed broadband connection to the customer's premises. This fixed network is the essential input into supplying the fixed broadband retail product and because this network could, in theory, be used by other operators as a wholesale network, LIME BVI could offer wholesale broadband access to other operators.

Wholesale broadband access can be offered at many different levels to the incumbent's competitors offering different levels of network control to the competitor and requiring different levels of investment by the competitor. This is known as the ladder of investment theory whereby the more network control is granted to the competitor the greater the investment that needs to be undertaken by the competitor.

The European Commission Recommendation on Relevant Markets sets out Market 4 Wholesale Physical Network Infrastructure Access and Market 5 Wholesale Broadband Access as the relevant markets to consider in supplying inputs to the provision of a retail broadband product. Market 4 represents a physical market whereby physical access is granted to an alternative operator and that operator must undertake investment to install its own equipment to operate a broadband connection to the customer. Allowing access to another operator to do this is called local loop unbundling ("LLU"). This market is referred to by Ofcom as the Wholesale Local Access Market. Market 5 represents a non-physical market whereby the incumbent grants access to an alternative operator to its wholesale network but retains control of that network as the alternative operator does not invest in its own equipment but simply takes over the line (under the ownership and maintenance of the incumbent) and sells it to the end customers. This is known as bitstream access and is commonly referred to as Wholesale Broadband Access. Local loop unbundling rests at the top of the investment ladder and bitstream access at the bottom, requiring the least investment from an alternative operator. Resale of lines falls below bitstream access as the alternative operator simply resells the product.



The Ladder of Investment – Wholesale Broadband Access Options (Physical and non-physical)

1. Full Unbundling = Local Loop Access. The local loop is the fixed copper wire connection which runs from the customer's premises to the local exchange. Local loop unbundling allows these connections to be connected to the network of another communications provider and used by it to provide voice and data (broadband) services. Therefore access to LIME BVI's network would be opened up in such a way that another public supplier would control the link between the core network at the Main Distribution Frame (the "MDF") and the customer. This option requires significant investment by the competitor in equipment to run the line.

2. Sub-loop unbundling/shared access. In one shared access model the DSLAM (Digital subscriber line access multiplexer) is controlled by the new entrant. The DSLAM is located in the exchange. It connects multiple DSL interfaces to a high-speed digital communications channel using multiplexing techniques. Less investment is required than with full unbundling.

3. Bitstream Access

DSLAM is controlled by the incumbent and there is no possibility for the new entrant to technically alter the xDSL link (towards the customer). High speed bit stream access (provision of DSL services by the incumbent operator) refers to the situation where the incumbent installs a high speed access link to the customer premises (eg by installing its preferred ADSL equipment and configuration in its local access network) and then makes this access link available to third parties, to enable them to provide high speed services to customers.

4. Resale of lines

Resale offers are not a substitute for bitstream access because they do not allow new entrants to differentiate their services from those of the incumbent

What is bitstream access?

Bitstream access can be offered by using the incumbent's network connected to the customer and allowing access to an alternative operator to enable them to provide broadband access to customers. The wholesale product is the provision of transmission capacity (between the end-user' connection and the point of interconnection available to the alternative operator) in such a way as to allow new entrants to offer their own, value-added services to their customers. In order to be able to differentiate their services (including such services as VoIP) from those of the incumbent, new entrants must have access to a point where they can control certain technical characteristics of the service to the end-user and/or make full use of their own network (or alternative network offerings) thus being in a position of altering the quality (eg the data rate or other features) supplied to the customer.

The main elements defining bitstream access are the following:

- High speed access link to the customer premises (end user part) provided by the incumbent;
- Transmission capacity for broadband data in both directions enabling new entrants to offer their own, value-added services to end users;
- New entrants have the possibility to differentiate their services by altering (directly or indirectly) technical characteristics and/or the use of their own network;
- Bitstream access is a wholesale product consisting of the DSL part (access link) and “backhaul” services of the (data) backbone network (ATM, IP backbone).

At present, there is no wholesale broadband access product in the BVI, whether physical or non-physical offered to any alternative operator. Therefore there is no obvious distinction between a wholesale physical broadband access market in the BVI and a wholesale non-physical broadband access product. In the same vein, in the event that one operator were to be found dominant in the provision of any such product, the regulatory solution – whether full local loop unbundling or bitstream access is not obvious. One solution may be bitstream access coupled with the new entrant installing equipment to extend the reach of the incumbent’s network to unserved areas. Therefore the TRC sees that it is appropriate to define a wider market for Wholesale Broadband Access which includes both physical and non-physical access.

In a larger market such as the UK, local loop unbundling may suit some operators whilst bitstream access may suit other operators and therefore the two products are not deemed to be substitutes and are classified into separate markets. In the case of a smaller market such as the BVI, bitstream and local loop may be partial substitutes. In a small island territory, such as the BVI, a fixed access network constitutes a bottleneck because it is particularly difficult and costly to replicate. Therefore further entry by an end to end network operator may be unlikely. Further entry may focus on the profitable areas in Road Town or unserved areas. Any other public supplier wishing to provide fixed broadband services to end-users must build, establish or gain access to a transmission channel to the end-customers premises.

6) Do you agree that the relevant market is the Market for Fixed Wholesale Broadband Access? If not please explain why and suggest an alternative.

The Ladder of Investment

Wholesale access regulation can be introduced at different levels of the network with the aim of promoting competition for broadband services and at the same time enhancing incentives to invest over time as new entrants gain market share. Facilitating competition in broadband services commonly requires alternative operators being able to gain access to the existing networks of end-to-end providers.

According to the Ladder of Investment theory, to be able to effectively compete, entrants need to reach a minimum efficient scale, which is unattainable absent regulatory intervention to enable access to the incumbent’s infrastructure. It is then only by iteratively competing at ever higher levels of the value chain that broadband providers are able to invest in their own access infrastructure. Different points of access (and different points of handover of traffic) exist and different points of access entail different degrees of differentiating the product to the end user for the new entrant and thus the degree of adding value to the final service.

Geographic dimension

The geographic scope of the licences of all public suppliers of telecommunications services in the Virgin Islands is the Territory of the Virgin Islands. A licensed public supplier may supply fixed broadband services throughout the territory. Accordingly, the TRC considers the geographic dimension of the markets to be national.

Conclusion to Section 1

This market analysis therefore defines the relevant markets as:

The retail market for fixed broadband services

The wholesale market for fixed wholesale broadband access

7) **Do you agree with our wholesale market definition?**

2. Assessment of competition and evidence of dominance

In this section we assess the degree of competition and look for signs of dominance in the following markets:

The retail market for fixed broadband services

The wholesale market for fixed wholesale broadband access

Market power

Section 26 (3) of the Telecommunications Act (the “Act”) sets out that the TRC may determine that a public supplier is dominant with respect to a telecommunications network or a telecommunications service where, individually or jointly with others it enjoys a position of economic strength affording it the power to behave to an appreciable extent independently of competitors.

Section 26 (3) of the Act requires that the TRC shall hold a consultation before determining a public supplier dominant, and is carrying out this duty with this document.

Assessment of Market power

In an assessment of market power, the Act directs the TRC to take into account the following factors:

- a) The relevant market;
- b) Technology and market trends;
- c) The market share of the public supplier;
- d) The power of the public supplier to introduce and sustain a material price increase independently of competitors;
- e) The degree of differentiation among networks and services in the market; and
- f) Any other matters that the TRC deems relevant.

We therefore assess the relevant markets defined above for signs of market power.

The retail market for fixed broadband services

- a) **The relevant market** has been defined as the retail market for fixed broadband services.
- b) **Technology and market trends.** LIME BVI’s fixed network consists of fibre and copper wire. LIME BVI has fibre in parts of Road Town and connects the majority of the residential population to its core network via a copper access network. The global trend is towards next generation fixed broadband networks whereby fibre is used to offer connectivity as close to the customer premises as economically feasible. LIME BVI has been undertaking investment in laying fibre in the Virgin Islands to reach closer but not directly to residential premises.
- c) **The market share of the public supplier** is 100% attributable to LIME BVI. LIME BVI is the only provider of fixed line broadband services at the time of writing and therefore has 100% market share.

- d) **The power of the public supplier to introduce and sustain a material price increase independently of competitors.** As the only provider of fixed broadband service, LIME BVI is able to introduce and sustain price increases.
- e) **The degree of differentiation among networks and services in the market.** LIME BVI has the only fixed network in the BVI and is the only provider of fixed broadband services. Mobile broadband is not deemed to be a true substitute to fixed broadband.
- f) Any other matters that the TRC deems relevant.
 - a. Barriers to entry. Whilst all public suppliers have unitary licenses which allow the offering of service by any technology, a fixed line network or access to a fixed line network is required to enter the market for fixed retail broadband. Building a fixed line network or configuring an existing fixed line network to offer retail broadband network can take significant investment, time and resources which may be limited in a small geographic territory such as the VI. Similarly, as identified above there is no active market for fixed wholesale broadband access enabling other public suppliers to access LIME's network to offer retail service. The TRC therefore believes that at the time of publication barriers to entry persist.

According to the factors listed above, it is reasonable to determine that LIME BVI is dominant in the retail market for fixed broadband services.

The wholesale market for fixed wholesale broadband access

- a) **The relevant market** has been defined as the market for fixed wholesale broadband access. The analysis in section 1 concluded that it was not necessary to divide the market between wholesale physical network access and wholesale non-physical network access in a market where there are no wholesale products currently available. It is hoped that this broad market definition will allow public suppliers the flexibility to demand and supply the type of wholesale product that is most needed.
- b) **Technology and market trends.** Different wholesale access approaches work in different markets. In some markets full unbundling of the local loop has enabled competition to develop in the face of incumbent market power, whereas in other markets bitstream access can offer the degree of access required to enable competition to develop. The technology available allows operators to access an incumbent network at different levels so that a whole range of access choices should be available to operators wishing to offer a competing service. The trend in next generation network provision is geared towards both investment in high speed networks and encouraging competition through regulated access.
- c) **The market share of the public supplier.** In this market, if LIME BVI were to offer a fixed wholesale broadband product it would have 100% market share.
- d) **The power of the public supplier to introduce and sustain a material price increase independently of competitors.** In this market, if LIME BVI were to offer a fixed wholesale broadband product there are no substitutes so it would be able to profitably increase prices above the competitive level.

- e) **The degree of differentiation among networks and services in the market.** LIME BVI operates the only fixed network on the island which offers a fixed broadband service.
- f) Any other matters that the TRC deems relevant.
 - a. Barriers to entry. In order to offer wholesale broadband access, a public supplier needs to have a fixed network which is configured for broadband delivery. As above, this requires significant investment, time and resources which may be limited in a territory the size of the VI. Therefore the TRC believes that the barriers to entering this market are high.

According to the factors listed above, it is reasonable to determine that LIME BVI is dominant in the market for wholesale broadband access⁸.

The TRC therefore proposes to determine that LIME BVI is dominant in the following markets:

LIME BVI is dominant in the retail market for fixed broadband service.

LIME BVI is dominant in the market for wholesale broadband access.

The associated draft determination of dominance is published alongside this consultation document and the public is also invited to provide feedback on this document. This is currently a draft document and if the TRC decides to publish it in final form following this consultation, then it will lay the basis for regulating fixed retail and wholesale broadband service as according to section 26 of the Act.

- 8) **Do you agree that LIME BVI is dominant in the retail market for fixed broadband service? If you disagree please explain why. Are there any other factors that the TRC should consider in its assessment of market power?**
- 9) **Do you agree that LIME BVI is dominant in the market for fixed wholesale broadband access? If you disagree please explain why. Are there any other factors that the TRC should consider in its assessment of market power?**

⁸ Note throughout that wholesale broadband access refers to wholesale broadband access on the **fixed** network.

3. Assessment of appropriate regulatory obligations and remedies

Under Section 26 (4) of the Act, “where the Commission determines that a public supplier is dominant in any market, the Commission shall include in the licence of the public supplier, by amending the licence, such additional terms and conditions to the licence for the purposes of regulating tariffs, protecting the interest of users and other licensees including the provision of adequate facilities and interconnection and access services, and of ensuring fair competition among licensees as it considers appropriate”. Therefore, if the TRC issues a determination designating a public supplier as dominant in the relevant broadband markets then it is empowered to amend the licence of each public supplier setting out the appropriate regulatory remedies. Also, section 29 (2) (a) of the Act enables the TRC through the Telecommunications Code to establish price regulation regimes to promote efficiency and sustainable competition and maximise consumer benefits for setting, reviewing and approving prices where a licensee has a dominant position in the relevant market.

Therefore the TRC intends to consult on the appropriate range of regulatory obligations and remedies for the markets where it considers LIME BVI to be dominant:

The retail market for fixed broadband provision

The market for fixed wholesale broadband access

The retail market for fixed broadband provision

The competitive problem in the retail market for fixed broadband provision is that LIME BVI is currently the only retail provider of fixed broadband services and therefore if a business or residential customer wants a fixed broadband connection with a certain associated level of speed and reliability then their only option is to go to LIME BVI. If that service does not live up to the advertised level of speed and reliability then that customer cannot go to another provider and switch service because that option is simply not available. If a customer wants an alternative then they would need to switch to mobile broadband but as discussed in section 1, the TRC does not currently see mobile broadband as a true substitute to fixed broadband because the configuration of a mobile broadband network means that service availability and speed may vary and the customer may want a fixed broadband connection which does not entail a fixed download limit. Therefore, without a viable alternative the customer is stuck with the fixed broadband connection and can only complain to the provider about the quality of service. In addition, the fixed line network does not extend to all residential areas of the Virgin Islands and in these areas there is no fixed broadband service offered by LIME BVI and no fixed alternatives available.

10) The TRC would like to ask all business and residential customers and licensed public suppliers if the fact that there is only one fixed broadband provider is a problem? What are the consequences of having only one provider of fixed broadband services in the BVI?

11) If it is a problem, then what are the areas of greatest concern? Please explain and order by priority with reference only to FIXED broadband service.

- a) Connection speed
- b) Limits of use

- c) Reliability
- d) Price
- e) Availability of service within the territory of the Virgin Islands

12) If the TRC decides to regulate the provision of retail fixed broadband services, should the emphasis be on price or quality?

13) Would it be appropriate to consider quality of service obligations, such as guaranteed connection speeds, with penalties for failing to meet contractual obligations to the customer?

14) Is no regulation of the fixed retail broadband market an option?

The TRC will await the response on this section before considering which if any regulatory remedies may be appropriate to deal with the lack of competition on the retail fixed broadband market. The TRC is currently minded to pursue the option to put into place specific quality of service obligations such as guaranteed minimum connection speeds based on the package purchased and penalties for outages or delays in service delivery but awaits feedback before detailing this proposal further.

The wholesale market for broadband access

The TRC seeks feedback in this section as to whether it is necessary to introduce regulation to create a market for fixed wholesale broadband access and what level of broadband access would be required. The range of options were outlined in section 1.

1. Local loop unbundling
2. Shared access
3. Bitstream access
4. Resale of line

The TRC invites responses on what kind of wholesale access should be offered and on what terms. The next stage of the broadband consultation will outline the preferred options and the proposed regulated terms of access. The TRC will set out the proposed obligations for any dominant suppliers in terms of obligations to provide access, transparency, non-discrimination and accounting separation.

15) Is there operator demand for regulated fixed wholesale broadband access?

16) What types of fixed wholesale broadband access should be offered?

17) How should fixed wholesale broadband access be mandated and on what basis – what terms and conditions?

18) Is the concept of a Next Generation Network offering download speeds of up to 100Mbps relevant to the BVI?

Conclusion

In this consultation document, the TRC has defined the relevant markets for fixed retail broadband and for wholesale broadband access. The TRC proposes to declare LIME BVI as dominant in the market for fixed retail broadband and as dominant in the market for wholesale broadband access as set out in the accompanying draft determination of dominance. The TRC seeks feedback from licensed public suppliers

and the public on these market definitions and proposed determinations of dominance. The TRC welcomes responses which set out any specific problems with the current model of fixed broadband provision and proposes any regulatory solution at the retail or wholesale level. The TRC believes that whilst international examples can provide useful insights for the BVI, the ultimate solution must be tailored to the BVI environment to help facilitate competition to promote a choice of fixed line broadband providers for BVI consumers so that in the event a consumer is not satisfied with the level of service received from a provider they are able to switch to an alternative.

Please respond to this consultation by 5 March 2015

Annex 1 Questions: Responses due by 5 March 2015

- 1) Is mobile broadband a substitute to fixed broadband for residential customers in the BVI?**
- 2) Is mobile broadband a substitute to fixed broadband for non-residential (business) customers in the BVI?**
- 3) Do you agree that Fixed Broadband and Mobile Broadband are not pure demand substitutes? If not, please explain why.**
- 4) Do you agree that there are no supply side substitutes to the fixed broadband network?**
- 5) The TRC therefore defines the market for retail fixed broadband as the relevant market. Do you agree with this definition? If not please explain why and propose an alternative market definition.**
- 6) Do you agree that the relevant market is the Market for Fixed Wholesale Broadband Access? If not please explain why and suggest an alternative.**
- 7) Do you agree with our wholesale market definition?**
- 8) Do you agree that LIME BVI is dominant in the retail market for fixed broadband service? If you disagree please explain why. Are there any other factors that the TRC should consider in its assessment of market power?**
- 9) Do you agree that LIME BVI is dominant in the market for fixed wholesale broadband access? If you disagree please explain why. Are there any other factors that the TRC should consider in its assessment of market power?**
- 10) The TRC would like to ask all business and residential customers and licensed public suppliers if the fact that there is only one fixed broadband provider is a problem? What are the consequences of having only one provider of fixed broadband services in the BVI?**
- 11) If it is a problem, then what are the areas of greatest concern? Please explain and order by priority with reference only to FIXED broadband service.**
 - a) Connection speed
 - b) Limits of use
 - c) Reliability
 - d) Price
 - e) Availability of service within the territory of the Virgin Islands
- 12) If the TRC decides to regulate the provision of retail fixed broadband services, should the emphasis be on price or quality?**
- 13) Would it be appropriate to consider quality of service obligations, such as guaranteed connection speeds, with penalties for failing to meet contractual obligations to the customer?**
- 14) Is no regulation of the fixed retail broadband market an option?**
- 15) Is there operator demand for regulated fixed wholesale broadband access?**
- 16) What types of fixed wholesale broadband access should be offered?**
- 17) How should fixed wholesale broadband access be mandated and on what basis – what terms and conditions?**
- 18) Is the concept of a Next Generation Network offering download speeds of up to 100Mbps relevant to the BVI?**

Annex 2

(Prices shown are daily/weekly/monthly prices excluding connection and device set up costs)

Fixed Broadband

	Fixed Broadband (ADSL) Broadband Plans				
	LIME				
Residential subscribers	Plan	Price/month	Max Download (Mbps)	Usage	Contract Length
	Mega	\$64	1	3 MB	no contract
	Mega	\$54	1		1 year
	Mega Optimum	-	8		no contract
	Premier	\$148	3		1 year
	Premier Plus	\$178	4	5 MB	1 year
	Premier Max	\$249	6		1 year
	Mega Plus	\$84	2	3 MB	no contract
	Mega Plus	\$74	2		1 year
	Premier	\$134.10	3		2 years
	Premier Plus	\$161.10	4	5 MB	2 years

Fixed Broadband (ADSL) Broadband Plans					
LIME					
	Premier Max	\$225.10	6		2 years
	Mega Max	\$106	3	3 MB	no contract
	Mega Max	\$96	3		1 year
	Premier	\$120.20	3		3 years
	Premier Plus	\$144	4	5 MB	3 years
	Premier Max	\$201.20	6	-	3 years
	Mega Extreme	\$148.00	8	3 MB	-
Business subscribers	Premier	\$148	3	3 MB	-
	Premier Plus	\$178	4	5 MB	-
	Premier Max	\$249	6	6 MB	-

Fixed Wireless Broadband (Wimax)

Fixed Wireless (WiMAX) Broadband Plans						
CCT						
Plan	Tier	Price/month	Max Download (Mbps)	Usage	Contract Length	Out of bundle rates
CCT Max	Basic	\$69	-	-	-	-
	Advanced	\$89	-	-	-	-
	Premium	\$109	-	-	-	-

- Prices in the above table are monthly prices for various plans which exclude connection costs.
- WiMAX is no longer available to new customers

Mobile Broadband

Digicel:

Digicel: Postpaid				
Plan	Price/month	Usage	Contract Length	Out of bundle rates
Digicel Unlimited 1*	\$115	7 MB (BOLT ON)	1-2 Years	\$0.15 MB
BVI 65 Plus Plan*	\$65	500 MB (BOLT ON)	1-2 Years	\$0.15 MB
1GB 4G BB Data Plan	\$30	1 GB	1-2 YEARS	US\$0.15 MB
3GB 4G BB Data Plan	\$44	3 GB	1-2 YEARS	US\$0.15 MB

Digicel: Postpaid				
4G BlackBerry BIS Special	\$15	7 GB (BOLT ON)	1-2 YEARS	US\$0.15 MB
5GB 4G BB Data Plan	\$65	5 GB	1-2 YEARS	US\$0.15 MB
7GB 4G BB Data Plan	\$79	7 GB	1-2 YEARS	US\$0.15 MB
BVI 65 Plus Blackberry Data Plan	\$15	200 MB	1-2 YEARS	US\$0.15 MB
Service 1248- BVI Blackberry Lite 4MB	\$15	UNLIMITED (2G)	1-2 YEARS	US\$0.15 MB
Service 1249- BVI Blackberry Unlimited	\$15	UNLIMITED (2G)	1-2 YEARS	US\$0.15 MB
Service 1304- BVI BIS Unlimited (NEW)	\$15	UNLIMITED (2G)	1-2 YEARS	US\$0.15 MB
Service 5476- BVI Blackberry BES	\$25	UNLIMITED (2G)	1-2 YEARS	US\$0.15 MB
1GB 4G Mobile Data Plan	\$19	1 GB	1-2 YEARS	US\$0.15 MB
3GB 4G Mobile Data Plan	\$45	3 GB	1-2 YEARS	US\$0.15 MB
3GB 4G Mobile Data Plan Special	\$19	3 GB	1-2 YEARS	US\$0.15 MB
4G Mobile Data Plan Special	\$15	7 GB (BOLT ON)	1-2 YEARS	US\$0.15 MB
5GB 4G Mobile Data Plan	\$68	5 GB	1-2 YEARS	US\$0.15 MB
7GB 4G Mobile Data Plan	\$86	7 GB	1-2 YEARS	US\$0.15 MB
BVI 65 plus Mobile Data Plan	\$15	200 MB	1-2 YEARS	US\$0.15 MB
Service 1323- BVI Unlimited Data Plan	\$15	UNLIMITED (2G)	1-2 YEARS	US\$0.15 MB

Digicel: Prepaid				
Plan	Price/ month	Usage	Contract Length	Out of bundle rates
1Day30MBDatabundleplan	\$2	30 MB	1 Day	US\$0.15 MB
30day1024MBDatabundleplan	\$27	1024 MB	30 Days	US\$0.15 MB
30Day2048MBDatabundleplan	\$37	2048 MB	30 Days	US\$0.15 MB

Digicel: Prepaid				
30Day3072MBDatabundleplan	\$50	3072 MB	30 Days	US\$0.15 MB
7Day250MBDatabundleplan	\$10	250 MB	7 Days	US\$0.15 MB
7Day500MBDatabundleplan	\$17	500 MB	7 Days	US\$0.15 MB
30Day500MBDatabundleplan	\$15	500 MB	30 Days	US\$0.15 MB
14Day100MB_BB_Socialplan	\$5	100 MB	14 Days	US\$0.15 MB
1Day40MBBlackberryPlan	\$2	40 MB	1 Day	US\$0.15 MB
30Day1024MBBlackberryPlan	\$39	1024 MB	30 Days	US\$0.15 MB
7Day400MBBlackBerryplan	\$10	400 MB	7 Days	US\$0.15 MB

- Plans with an asterisk(*) include both voice and data

LIME:

LIME: Postpaid				
Plan	Price/ month	Usage	Contract Length	Out of bundle rates
My Plan Base*	\$25	250 MB	-	\$0.11/MB
Bolt on: 500 MB	\$12	500 MB	-	-
Bolt on: 1 GB	\$19	1 GB	-	-
Bolt on: 2 GB	\$35	2 GB	-	-
Talk Text & Data 50*	\$15	50 MB	-	-

LIME: Postpaid				
Talk Text & Data 200*	\$34	50 MB	-	-
Talk Text & Data 350*	\$52	100 MB	-	-
Talk Text & Data 500*	\$70	250 MB	-	-
Talk Text & Data 1000*	\$140	500 MB	-	-
Blackberry Internet Service (BIS)	\$39		-	-
Blackberry Social	\$9		-	-
4G - Mobile Data only	\$8	250 MB	-	0.06
4G - Mobile Data only	\$20	1 GB	-	0.06
4G - Mobile Data only	\$45	3 GB	-	0.06
4G - Mobile Data only	\$68	5 GB	-	0.06
4G - Mobile Data only	\$86	7 GB	-	0.06
4G - Mobile Data only	0.10 per MB	Pay as you go	-	-

LIME: Prepaid				
Plan	Price/ month	Usage	Contract Length	Out of bundle rates

LIME: Prepaid				
Talk Text & Data 200*	\$50	50 MB	-	-
Talk Text & Data 700*	\$161	250 MB	-	-
Blackberry Internet Service (BIS)	\$10/week or \$40/month	4G	-	-
Blackberry Social	\$3/week	4G	-	-
1 GB of 4G Data	\$22	1 GB or 30 days	-	0.11
1 Day	\$1	20 MB	-	-
30 Days	\$5	100 MB	-	-
30 Days	\$10	250 MB	-	-
30 Days	\$15	500 MB	-	-
30 Days	\$22	1 GB	-	-
30 Days	\$35	2 GB	-	-
30 Days	\$0.11/MB	N/A	-	-

- Plans with an asterisk(*) include both voice and data

CCT:

CCT: Postpaid				
Plan	Price/ month	Usage	Contract Length	Out of bundle rates
Freedom 1*	\$119	7 GB	12-24 months	-
Bolt on: 10 MB	\$1	10 MB	1 Day	-
Bolt on: 300 MB	\$8	300 MB	7 Days	-
Bolt on: 500 MB	\$13	500 MB	30 Days	-
Bolt on: 1 GB	\$20	1 GB	30 Days	-
Bolt on: 3 GB	\$45	3 GB	30 Days	-
Bolt on: 5 GB	\$65	5 GB	30 Days	-
Bolt on: 8 GB	\$89	8 GB	30 Days	-
Bolt on: 10 GB	\$99	10 GB	30 Days	-
Bolt on: 15 GB	\$139	15 GB	30 Days	-
Bolt on: 30 GB	\$179	30 GB	30 Days	-

CCT: Prepaid				
Plan	Price/ month	Usage	Contract Length	Out of bundle rates
Zero 1*	\$119	1 GB	30 Days	US\$0.15 MB
Bolt on: 50 MB	\$2	50 MB	2 Days	US\$0.15 MB
Bolt on: 500 MB	\$10	500 MB	7 Days	US\$0.15 MB
Bolt on: 1 GB	\$15	1 GB	14 Days	US\$0.15 MB
Bolt on: 2 GB	\$20	2 GB	30 Days	US\$0.15 MB

- Plans with an asterisk(*) include both voice and data
- 10 MB, 300 MB, 500 MB, 1 GB, 3 GB, 5 GB, 8 GB, 10 GB, 15 GB and 30 GB data bolt-on plans for postpaid customers only are applied to only the Freedom 2 plan for \$99, the Freedom 3 plan for \$69 and the Freedom 4 plan for \$39.
- 50 MB, 500 MB, 1 GB and 2 GB data bolt-on plans for prepaid customers only are applied to only Zero 2 plan for \$99, Zero 3 plan for \$69 and Zero 4 plan for \$39.

Non-phone Mobile Broadband

Digicel:

Digicel: Postpaid				
Plan	Price/ month	Usage	Contract Length	Out of bundle rates
10GB 4G Dongle Data Plan	\$99	10 GB	1-2 Years	\$0.15 MB
20GB 4G Dongle Data Plan	\$159	20 GB	1-2 Years	\$0.15 MB
3GB 4G Dongle Data Plan	\$44	3 GB	1-2 Years	\$0.15 MB
40GB 4G Dongle Data Plan	\$199	40 GB	1-2 Years	\$0.15 MB
40GB Dongle Data Plan Special	\$159	40 GB	1-2 Years	\$0.15 MB
5GB 4G Dongle Data Plan	\$65	5 GB	1-2 Years	\$0.15 MB
75GB Dongle Data Plan Special	\$179	75 GB	1-2 Years	\$0.15 MB
75GB 4G Dongle Data Plan	\$249	75 GB	1-2 Years	\$0.15 MB
75GB 4G Mobile Data Plan	\$70	75 GB	1-2 Years	\$0.15 MB
7GB 4G Dongle Data Plan	\$79	7 GB	1-2 Years	\$0.15 MB
BVI 40GB Router plan	\$40	40 GB	1-2 Years	\$0.15 MB
50GB Dongle Data Plan Special	\$35	50 GB	1-2 Years	\$0.15 MB

Digicel: Prepaid				
Plan	Price/ month	Usage	Contract Length	Out of bundle rates
30Day500MBInternetBundle	\$19	500 MB	30 Days	\$0.15 MB
7Day100MBInternetBundle	\$5	100 MB	7 Days	\$0.15 MB
30Day1GBInternetBundle	\$25	1 GB	30 Days	\$0.15 MB
30Day3GBInternetBundle	\$55	3 GB	30 Days	\$0.15 MB
30Day5GBInternetBundle	\$79	5 GB	30 Days	\$0.15 MB
30Day7GBInternetBundle	\$99	7 GB	30 Days	\$0.15 MB
30Day20GBInternetBundle	\$199	20 GB	30 Days	\$0.15 MB

LIME:

LIME: Postpaid & Prepaid				
Plan	Price/ month	Usage	Contract Length	Out of bundle rates
Dongles	\$20	1 GB	-	-
	\$45	3 GB	-	-
	\$68	5 GB	-	-
	\$86	7 GB	-	-
MiFi	\$20	1 GB	-	-
	\$45	3 GB	-	-

LIME: Postpaid & Prepaid				
	\$68	5 GB	-	-
	\$86	7 GB	-	-

CCT:

CCT: Postpaid				
Plan	Price/ month	Usage	Contract Length	Out of bundle rates
MiFi	\$1	10 MB	1 Day	-
	\$8	300 MB	7 Days	-
	\$13	500 MB	30 Days	-
	\$20	1 GB	30 Days	-
	\$45	3 GB	30 Days	-
	\$65	5 GB	30 Days	-
	\$89	8 GB	30 Days	-
	\$99	10 GB	30 Days	-
	\$139	15 GB	30 Days	-
	\$179	30 GB	30 Days	-

CCT: Prepaid				
Plan	Price/ month	Usage	Contract Length	Out of bundle rates

CCT: Prepaid				
MiFi	\$2	50 MB	2 Days	US\$0.15 MB
	\$10	500 MB	7 Days	US\$0.15 MB
	\$15	1 GB	14 Days	US\$0.15 MB
	\$20	2 GB	30 Days	US\$0.15 MB