

Good Day,

I have been a residential subscriber to Cablevision and BTC internet services for a very long time – 15+ years!! Whilst these are separate companies I have found the services to be satisfactory from both entities, certainly not without their challenges with system outages etc. With the recent advertising upgrades from both companies towards Fiber feeds (BTC / Digicel) and a newer Cablevision box (ONE) I decided to avail myself of these services.

The Digicel upgrade to 25 mg Fiber had its challenges upon initial installation but finally we got there and in general I have good internet speed throughout the house via wifi.

The ONE upgrade re my TV entertainment (Cablevision) took many service calls and visits before it finally got sorted. However, my biggest complaint was that the present upgrade does NOT allow us to record TV shows because we don't use ONE internet fiber. This bundling of services that forces the consumer to use one specific service provider to the detriment of the other smacks of monopolistic behavior in my opinion. I might add that I could record on my older ONE Cablevision box prior to this upgrade, even though I used BTC as my internet provider. Now I'm being told that to record shows on the new device I must switch to ONE Fiber service. I am very happy with my Digicel Fiber service and have no intention of switching. What I might well do is switch to the BTC / Digicel TV service – haven't made up my mind on this point yet. But overall, I consider this "forced" packaging / bundling of services anti-competitive. Consumers ought to have a choice as to which services to use without the company and its technology forcing the consumer to use only one provider. This issue seems very similar to the "old" requirements that consumers were forced to change their mobile telephone numbers should they decide to switch vendors. I understand this issue got resolved so that consumers can keep their numbers, which in essence becomes their unique ID....

Thank you for your consideration to the above.

Kind regards,

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29 April 2019

Markez Laws
Regulatory Finance
Regulatory Authority
1st Floor Craig Appin House
3 Wesley Street, Hamilton HM11
Bermuda

Dear Sirs,

**Re. Response to Consultation Document [Market Review of the Electronic Communications Sector]:
Comments on the Market Review of the Electronic Communications Sector.**

The Bermuda Broadcasting Company Limited (the “BBC”) read with interest the Consultation Document and submits this response as an interested party.

The BBC is an interested party due to the fact that (a) the BBC understands that in the near future the broadcasting sector is expected to be added as a regulated industry sector under the Regulatory Authority Act 2011 (as part of the electronic communications sector or otherwise) and the BBC is Bermuda’s oldest and largest licensed broadcaster and (b) the BBC has commercial retransmission arrangements with various ICOL holders under which the BBC provides the ICOL holders with BBC licensed or originally-produced TV content (specifically ZFB-TV and ZBM-TV) and, as such, has a view on ICOL holders’ profitability and business practices in relation to their subscription television services.

Section 7 of the Consultation Document provides that respondents may provide comments and views on any section and content in the Consultation Document, including any of the questions set out in Section 7 of the Consultation Document. We set out below the references to the relevant sections and questions in the Consultation Document and provide our comments and views following each such section/question.

1. 3.2.3 Profitability Analysis

As noted in the Consultation Document, one of the key objectives of the Authority’s market review is to ensure providers of electronic communications services obtain fair and reasonable returns on investment.

The BBC’s view is that ICOL holders and other PayTV operators generate well in excess of what could be considered reasonable profitability or return on investment from their subscription TV service operations to the detriment of the entire sector.

PayTV operators not paying market price for their content

The BBC concurs with the Authority’s position in paragraph 85 of the Consultation Document that it cannot be said that “there is no evidence that OneComm and Digicel Group are making significant returns”. The BBC believes that Logic Communications Ltd. (trading as One Communications) has been making, for many years, significant – if not extraordinary – profits and profitability from its subscription cable TV service. The BBC has a





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retransmission arrangement with OneComm under which OneComm transmits each of ZFB-TV and ZBM-TV on OneComm's cable TV system. Under the arrangement, OneComm is required to pay the BBC a monthly fee of \$2.50/subscriber, plus \$0.70/subscriber for each subscriber receiving the channels in a high definition tier (in each case, with certain deductions for licensing fees and bad debts). OneComm has never paid the BBC any fee for the provision of the BBC's high definition channels and refuses to do so. Furthermore, over the last 14 years, OneComm has only agreed to one rate increase in the monthly BBC subscriber fee, being a meagre increase in November 2014 of \$0.25/subscriber/channel.

The BBC's retransmission rates are far below what could reasonably be considered fair market rates and are insufficient to cover our broadcasting costs.¹ The BBC retransmits two network TV channels 24/7 in Bermuda, however, for such 24-hour coverage, OneComm pays the BBC only \$1.25 per month, per channel, for each OneComm TV subscriber on the OneComm TV system. By comparison, *The Royal Gazette*, whose newsroom only produces one newspaper per day, charges \$1.50 each day for its newspaper. The PayTV business model in Bermuda is broken and terrestrial broadcasters, like the BBC, are suffering as a result. Cable TV systems like OneComm should be required to carry, and pay a reasonable fee for, locally produced TV content. It should be noted that unlike Bermuda, many other countries have laws protecting and promoting both the local broadcasting sector and local programming. These rules are essential because international markets favour countries with large, well-developed broadcasting and production sectors, whose programmes can easily displace local programmes in countries with smaller, less developed sectors. In these countries, local programming is seen as essential to promote diversity and to protect the identity, unity and sovereignty of a country. In Canada, for example, its Broadcasting Act provides that broadcasters contribute to the maintenance and enhancement of national identity and cultural sovereignty. As such governments typically provide tax incentives and subsidies to local TV producers and put in place local content rules for TV and radio networks. The Authority should ensure that Bermuda has similar rules, which apply to content carried on TV subscription services provided by ICOL holders, in order to support local TV programming. Unfortunately, unlike in the US, PayTV operators in Bermuda do not pay a reasonable or fair price for their audio-visual content and are not subject to local content rules. The BBC believes that these companies use low-cost pirated content to populate their TV channels and have little-to-no incentive to pay market prices for properly licensed, locally produced content as they look to reap the financial benefit of selling cheap pirated substitute products at high margins.

In the US, retransmission revenue for broadcasters has increased at drastic rates, from \$1.2 billion in 2010 to approximately \$8.6 billion in 2017 (an increase of over 616%).² The main reason is due to the rapid increase in content costs charged by networks (e.g. ABC, CBS, NBC, FOX, CW, etc.) to terrestrial network affiliate broadcasting stations (like the BBC). In order to help offset escalating costs, terrestrial broadcasters in most jurisdictions (not including Bermuda) have increased their retransmission fees and income. While the BBC has experienced similar cost increases as US broadcasters, the BBC has not seen any meaningful increase in retransmission revenue due to low retransmission fees paid by retransmission carriers, such as OneComm and WoW. Retransmission revenues at the BBC actually declined by 9.6% from 2013 to 2017. To make matters worse, the BBC's costs under our US affiliation agreements have doubled over the last 6 years and continue to rise. The BBC is also faced with

¹ BBC broadcasting costs include costs required (a) to produce the BBC evening TV news and other local TV shows and programs, (b) to acquire fully licensed ABC and CBS content from our US affiliates, and (c) to acquire the rights to broadcast international sporting and other special events such as coverage of FIFA World Cup, America's Cup, Olympic Games, and International Triathlon Union events.

² SNL Kagan projects that retransmission fee revenue in the US will increase to \$11.6 billion by 2020. Moreover, in February 2018, the American Cable Association reported that retransmission fees to be paid to corporate broadcasters are expected to rise by over 88% within the next two years.





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high local operating and fixed costs for producing local news, weather, sports and other TV content. The BBC's rising costs simply have not been off-set by sufficient increases in retransmission revenue as PayTV operators in Bermuda transmitting our content on their systems are unwilling to pay market rates for our channels as they prefer to use no-cost or low-cost pirated content. Until Bermuda regulators crack-down on the use and sale of pirated audio-visual program content in Bermuda, PayTV operators will continue to use cheap pirated content to the detriment of everyone in Bermuda, including the BBC (who is not being fairly compensated by PayTV operators for BBC's fully licensed, local content), cable TV customers (who are paying the effect of unreasonably high margins on their cable TV services) and the people of Bermuda as a whole (as profits earned by large, foreign-owned PayTV operators are being extracted from the Bermuda economy and sent overseas).

To illustrate the value of BBC content to OneComm's subscription TV service, the BBC has prepared a commentary on a recent OneComm promotional flyer, attached hereto as Schedule A, which OneComm has sent to all homes in Bermuda to market its cable TV services. As you will see, out of the 9 network TV shows advertised by OneComm in the flyer, 6 of the TV shows are provided by the BBC. In other words, according to OneComm's own marketing materials, 67% of OneComm's most valued TV network content is being provided by the BBC. OneComm charges its customers \$87.50/month for its TV package but refuses to pay the BBC any amount greater than \$2.50/subscriber/month for our two TV channels.

It is imperative that the subscriber fee paid by PayTV operators such as OneComm and WoW increases in Bermuda to help broadcasters cover increases to their content and production costs. Unfortunately, no meaningful increase in the BBC subscriber fee has occurred over the last ten years and as a result the BBC has incurred losses from operations, while at the same time PayTV operators like OneComm earn oversized profits that are extracted from the Bermuda economy and sent overseas. If PayTV operators do not pay a fair subscriber rate to broadcasters like the BBC, our local TV offering will soon be substantially downsized and the BBC will be forced to make further cutbacks, including, additional layoffs.

ICOL holders offering subscription TV services should be prevented from providing customers with antennas

ICOL holders offering a subscription TV service should be prohibited from providing/selling terrestrial antennas as part of their "TV bundle" as the Digicel Group currently does and as OneComm has threatened, to avoid having to pay terrestrial TV broadcasters a fair market price for the retransmission of the broadcasters' content. OneComm has indicated to the BBC that if the BBC increases its retransmission subscriber rates, OneComm will stop transmitting ZBM-TV and ZFB-TV and will, like the Digicel Group, provide terrestrial antennas to its customers to circumvent retransmission and having to pay any fees whatsoever to the BBC. This is just another unfair tactic that PayTV operators use to not pay a fair price for the local content that they acquire and resell on their TV systems in order to maintain their unreasonably high profit margins.

The BBC believes ICOL holders selling audio-visual content should be required to carry local content from terrestrial broadcasters (such as ZBM-TV and ZFB-TV) on their systems and should be required to pay a fair market price for such content.

OneComm is pirating BBC content by showing such content on its other channels

The BBC has acquired the exclusive rights in Bermuda to certain content (e.g. CBS and ABC content (which includes NFL and NBA games), as well as FIFA World Cup, Olympic Games, America's Cup etc.) that certain ICOL holders are illegally using and selling to their customers.





For example:

- (a) OneComm was selling CBS NFL games on OneComm’s “NFL Sunday Ticket & RedZone” consisting of 16 Channels on OneComm’s cable TV system that showed all NFL games over the 2018 regular season. The cost of this service was \$350 (full-season) or \$175 (half season). OneComm never sought the consent of, or paid, the BBC to use such CBS NFL content. In addition, OneComm does not have any rights to show network affiliate NFL games or CBS games shown on the Canadian channel TSN, as shown below:



- (b) During the 2019 Super Bowl, OneComm pirated BBC’s CBS Super Bowl TV coverage and transmitted the same CBS Super Bowl coverage illegally across multiple competing cable TV channels, minus our local advertising. This particular form of piracy significantly harms our advertising revenues. After the broadcast of the game, the BBC wrote to OneComm requesting an explanation as to OneComm’s purported legal basis of using unauthorised BBC Super-Bowl content. OneComm simply responded that it rejected any claims regarding illegal behavior and confirmed it stood by its broadcast policies and the terms of its various content agreements. The simple fact is that no agreement could grant OneComm the right to use the BBC’s CBS Super Bowl TV coverage, as the BBC has never granted such rights to any person.
- (c) During the 35th America’s Cup (“AC”), OneComm blacked-out all AC coverage on ZBM-TV and ZFB-TV to certain customers and instead offered OneComm’s own AC coverage to OneComm’s customers on a separate channel for a cost of \$1,000 per cable box. The BBC was the official host broadcaster of the AC and OneComm had no right to block coverage or to sell or show any AC content on other channels without the BBC’s consent. Many OneComm customers (including hotels and restaurants) complained to the BBC about the lack of AC coverage, but, these issues were solely attributable to OneComm’s business practices of blocking coverage on the BBC’s channels and then reselling our content that OneComm had no right to use or sell on separate channels within its cable TV system. OneComm’s conduct reflected poorly on Bermuda as visiting media were disappointed that the AC was not widely shown in restaurants and other hospitality establishments. Unfortunately, if an establishment did not pay OneComm \$1,000 per cable box, it was unable to show any AC content to its own patrons.



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- (d) OneComm also aired AC races on NBC, excluding all of our local advertising content. OneComm did not have the rights to use any NBC network content. OneComm's actions negatively affected the BBC tremendously as we had spent significant resources installing systems and transmitters and purchasing new technology for the AC event. The BBC won the Government's technology innovation of the year award for our broadcast of the Americas Cup, however, piracy by OneComm during the AC and at other times clearly demonstrates their reckless business practises and shows their lack of sensitivity to small businesses in Bermuda. It should also be noted that OneComm's heavy use of pirated content and channels continues to hurt the BBC's advertising revenues. OneComm places pirated network channels all around the BBC's own channels, which devalues our content. The BBC's local channels and local advertising are literally drowning in a sea of pirated channels on OneComm's cable TV system.
- (e) OneComm also disregarded the BBC's exclusive rights to the FIFA World Cup last summer and other FIFA tournaments in the fall of 2018. FIFA representatives warned OneComm of its various infractions, however, the warnings were apparently ignored as OneComm repeatedly aired pirated FIFA World Cup games on various channels within its cable TV system.
- (f) The BBC was the exclusive rights holder in Bermuda of the 2016 Olympic Games. Despite being well notified in advance, OneComm aired Games coverage across multiple channels in its cable TV system without our consent.

These are all examples of where PayTV operators are using content for which they have no legal right to use or resell and for which they pay little-to-nothing for, all without our consent in order to maintain extraordinary profitability to the detriment of Bermudian broadcasters and customers. This type of piracy marginalizes our local channels. It hurts our advertising revenues and it devalues the retransmission consent revenues that we could earn from ICOL holders.

The BBC wishes to highlight the fact that foreign owned cable TV companies who are operating locally, often make representations to Bermuda government officials and regulators that they have the rights to use and sell US TV network content within Bermuda. Although, they may have certain ancillary agreements for limited content rights, the BBC believes that they do not have the rights to the vast majority of US network television and network affiliate content (such as, for example, Fox, NBC, CW, and PBS) that they sell and air within Bermuda. The BBC understands that the Authority has received letters from Fox and NBC that supports the BBC's position.

OneComm is using BBC content on platforms outside OneComm's cable TV system without BBC consent

In January 2019, OneComm announced that its cable TV subscribers could access OneComm's content across set-top boxes, smartphones, tablets and laptops. This content includes the BBC's channels which were licenced to OneComm under our retransmission arrangement to enable OneComm to retransmit ZBM-TV and ZFB-TV on OneComm's cable TV system only (i.e., not across IPTV or OTT service delivery infrastructures or on the go mobile devices). The use of BBC content, outside of the two designated channels shown on OneComm cable TV system, is not allowed and OneComm would need to pay the BBC a fee to show/sell such BBC content. This is yet another example of where OneComm refuses to pay fair market prices for the content that it uses in the services that it sells in Bermuda.

PayTV operators are populating their subscription TV systems with pirated content





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Most of the network channels of PayTV operators contain predominantly low-cost, pirated content that has been obtained from third parties located outside of Bermuda. The network owners of this content (such as FOX and NBC) have not authorized the use of their content in Bermuda. This piracy significantly marginalizes the value of BBC content, as PayTV operators obtain pirated content at pennies a channel and then sell their channels to unwitting Bermuda customers at exorbitant mark-ups. The BBC is, in effect, subsidizing the businesses of PayTV operators. If PayTV operators were prohibited from using and selling pirated content in Bermuda, they would be forced to purchase fully-licensed content, such as the BBC's content, at fair market rates. Once again, this form of piracy materially affects our advertising revenues as we have to compete against thousands of hours of pirated content daily on channels that PayTV operators do not have the legal rights to show. If PayTV operators paid the BBC a fair price for BBC content, their profitability may reduce somewhat, but, the BBC would not have been forced to lay off staff members earlier this year.

Violation of Leased Channel Policy

OneComm is leasing its cable channels to entities that advertise in violation of the Cable TV Leased Channel Policy, as extended (the "**Policy**"). The Policy provides that cable TV service providers (e.g. OneComm) are not permitted, and shall not permit, the insertion of advertising on leased channels. OneComm's breach of the Policy has financially benefited OneComm but it has hurt the BBC as broadcasters rely on the Policy to attract advertising dollars to help cover the high costs of operating a broadcasting facility.

Minister needs to regulate content of ICOL holders

We implore the Minister to promptly make regulations to curtail ICOL holders' use of pirated content. The BBC's various regulators have informed us many times in the past that there is no means by which any authority in Bermuda can regulate the content shown on ICOL holders' subscription TV services. However, the Electronic Communications Act (the "**ECA**") provides that (a) the ECA applies to content transmitted or received by means of electronic communications pursuant to section 4(1)(d) of the ECA and (b) the Minister has the express power to establish policies and make regulations for the sector regarding content provided by means of electronic communications pursuant to section 6(e) of the ECA.

Regulations should be immediately made to protect terrestrial broadcasters' and others' content rights and to impose hefty penalties on ICOL holders for non-compliance, including selling pirated content. Certain ICOL holders regularly show content for which the BBC has exclusive rights in Bermuda and they dismiss our cease and desist demands as they believe there is no effective supervisory body and, as such, the BBC would have no meaningful recourse outside of expensive and time-consuming court proceedings to curb such actions. If audio-visual content rights were respected and pirated content was banned through effective regulation and enforcement, Bermuda PayTV operators would be forced to pay market prices for the content that it sells in Bermuda and would thereby generate lower, but more reasonable, levels of profitability.

We also appeal to the Minister and the regulator to promptly make regulations to curtail ICOL holders' advertising and sale of pornography on their subscription TV service. The Authority needs to pay closer attention to the fact that OneComm is providing multiple hard-core pornographic channels over its cable TV platform. They are selling and distributing hundreds of hours of adult TV content each day throughout Bermuda. Attached as Schedule B, is a list of OneComm's adult TV content shown on its cable TV system during 27 February 2019. Attached as Schedule C, are various screen shots from OneComm's cable TV system which further highlights the inappropriate



content shown on OneComm's cable TV system. The very explicit text descriptions of the adult shows are available for all to view on OneComm's cable boxes. A young child can view this uncensored text simply by scrolling through the cable channel guide. These adult shows are promoting incest, prostitution, racism, violence against women, young teenage sex, etc. The BBC would expect that licensed cable TV operators would be forced to stop advertising and selling such offensive material and that if they did not so cease that their regulator would take appropriate measures, including ultimately revoking their licenses, as would be expected in a sophisticated jurisdiction like Bermuda. As the Authority will be aware, regulators in many jurisdictions (including the UK) require ISPs to block ISP addresses that show illicit pornography and hefty fines are levied on ISP carriers that contravene this requirement. The Authority must take similar action and crack down to uphold community values and standards.

Furthermore, content piracy by ICOL holders puts Bermuda's reputation as a blue-chip financial jurisdiction at risk. How is Bermuda going to build a fourth pillar of its economy on Fintech and InsurTech if ICOL holders are engaged in content piracy?

2. *Question 1.c: To what extent do consumers see paid OTT services (such as Netflix, Hulu and Amazon Prime Video) as effective substitutes to more traditional retail PayTV services, such as those offered by OneComm, WoW and Digicel Group?*

The BBC believes that in defining the PayTV market that OTT services are a part of the same market as traditional retail PayTV services.

If the more traditional retail PayTV services, such as those offered by OneComm, WoW and Digicel Group, did not carry local Bermuda programming and content, including ZFB-TV and ZBM-TV, the BBC would argue that there would be little to differentiate OTT services and traditional retail PayTV services as each would be offering only foreign produced content.

There are certain OTT services operating in Bermuda (e.g., Ex-Pat TV, Triangle IPTV Solutions, Bermuda IPTV Experts and Bermuda IPTV etc.) which are not effective substitutes as we understand that they only sell pirated, unlicensed or otherwise illegal content through their OTT services. These services typically offer thousands of IPTV channels for only a nominal monthly fee. Not only are these services advertising, selling and showing CBS and ABC channels and CBS and ABC syndicated content for which the BBC has exclusive rights within Bermuda and for which they have not obtained our consent, but we understand that they also regularly sell content of BBC World, BBC World News, Fox, NBC, the NFL, the NBA, and FIFA, etc., without the content providers' consent. We believe they are operating illegally and pirating content from other networks around the world without securing the necessary consents. These IPTV operators in Bermuda are charging local credit cards and their businesses need to be shut down. The BBC is aware that the Authority has informed Ex-PAT TV that Ex-PAT TV is required to abide by and adhere to all intellectual property laws and obligations both within Bermuda and those that affect Bermuda internationally, however, Ex-PAT TV continues to show BBC content without our consent.

In August 2018, the BBC wrote to the Authority complaining that ICOL holder FKB Net Ltd. (conducting business as Fort Knox Bermuda) was advertising a new IPTV product that offered over 500 TV channels for only \$35/month (see: (<http://www.livenet.bm/index.html>), however, the service pirates BBC content. Fort Knox made no attempt to contact the BBC in order to legally acquire any BBC content. Fort Knox is stealing our TV signals from various overseas locations and reselling our stolen property to unwitting customers in Bermuda. The BBC believes that Fort Knox is also pirating and selling a large number of movie channels and movies on demand. Furthermore, Fort



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Knox is selling many other TV channels (such as BBC1, BBC2, BBC3, BBC4, etc.) which are not permitted to be sold outside of their home jurisdictions. It is our belief that most if not all of Fort Knox's LiveNet IPTV offering is being pirated and sold illegally in Bermuda. This practice should not be allowed in a jurisdiction like Bermuda, especially from an ICOL holder.

The BBC believes that most IPTV/OTT entities are not registered in Bermuda and are operating within Bermuda illegally. IPTV/OTT services sold into Bermuda should be regulated by the Authority.

It should be emphasized that over the last number of years other jurisdictions, including the UK, have aggressively prosecuted persons who engage in content piracy and/or are involved in the supply of illicit streaming devices and services that provide illegal access to popular TV content. In the UK, it was estimated that in 2017, approximately 25% of British people watch or download illegally pirated material, up from 70% in 2013. This is significant as the EU Court of Justice has recently ruled that streaming by end users on illicit streaming devices constitutes an infringement of copyright. This means that anyone viewing illegal streams is breaking the law. Last month, a UK court handed jail sentences totalling 17 years to three individuals who were convicted of operating a pirate streaming organization which provided access to Premier League matches to over 1,000 pubs and residents in England and Wales. The court found that the football content was illegally obtained by the defendants and then supplied by the defendants to their customers. It meant people were able to view fee-paying TV without the permission of, and without making any appropriate payment to, broadcasters and content owners. This case demonstrates that such organizations are criminal enterprises whose only function is to make money from defrauding content owners and legitimate broadcasters. In many of these cases, the consumer was directly negatively affected by the conduct of these illegal operators as subscriptions were cancelled and customers who had pre-paid significant sums were left out-of-pocket. As part of these convictions, the English courts have ordered, under a High Court Blocking Order, UK internet service providers (including Sky, BT, Virgin Media, TalkTalk, plusnet and EE) to block streams broadcasting illegal TV content. In the UK, maximum sentences for criminal penalties for online copyright infringement have recently increased from two years to 10 years. To support and protect broadcasters and content owners, the BBC implores the Authority to take similar actions against such illegal services operating in Bermuda (including those which are identified in the preceding paragraphs) by imposing substantial penal consequences on anyone found conducting content piracy business.

3. *Question 2.b: To what extent do paid OTT services (such as Netflix, Hulu and Amazon Prime Video) and traditional PayTV providers (such as WoW and Digicel Group) impose a competitive constraint on OneComm?*

The BBC's position is that paid OTT services (such as Netflix, Hulu and Amazon Prime Video) and traditional PayTV providers (such as WoW and Digicel Group) impose a modest degree of competitive constraint on OneComm. However, the main competitive advantage for OneComm in the Bermuda market is the ineffectual regulatory environment that currently exists in Bermuda that allows ICOL holders like OneComm to use low-cost pirated content to populate their TV channels to keep costs inordinately low in order to generate and maintain extraordinary high profit margins. The mainstream OTT services in the US, like Netflix and Amazon Prime Video, have to spend sizable amounts of money to purchase and/or produce the lawful content that they sell and transmit through their subscription TV services as they do not have a similar competitive advantage as US laws and the Federal Communications Commission ensure that copyright laws are respected and enforced in the US.

4. *Question 3: Do you agree with the Authority's proposals for remedies (as set out in section 6)?*





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In relation to subscription television, the BBC believes that this sector requires increased regulation, supervision, enforcement and remedies. This mainly is due to the need to regulate TV content shown on PayTV systems to ensure that providers of PayTV do not advertise, use or sell content on their systems that they have no right to so advertise, use or sell. The BBC's position is that PayTV operators' use of no-cost or low-cost, pirated TV content enables these operators to generate unjustifiably high profit margins from their subscription television services. Due to their ability to use low-cost pirated content, such operators are unwilling to pay a fair or market price for licensed content (including licensed local content produced in Bermuda, such as the BBC's ZFB-TV and ZBM-TV), as this would cut into their oversized margins that they have become accustomed to expect.

PayTV operators should be required to file with the Authority, on a monthly or quarterly basis: (a) a certification showing evidence that the PayTV operator has obtained all legal rights required to advertise, sell and/or show the content on their PayTV systems; and (b) financial information that shows the margins that each PayTV operator is generating for the stated period for each tier in their subscription television service. This information will undoubtedly show that subscription television operators are making staggering returns from their subscription television services.

Yours truly,

/s/

The Bermuda Broadcasting Company Limited



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Schedule A

OneComm Promotional Flyer

ONE Communications' Promotional Flyer
 (recently sent to all Bermuda homes)

Of the 9 network TV shows advertised, 6 are provided by BBC

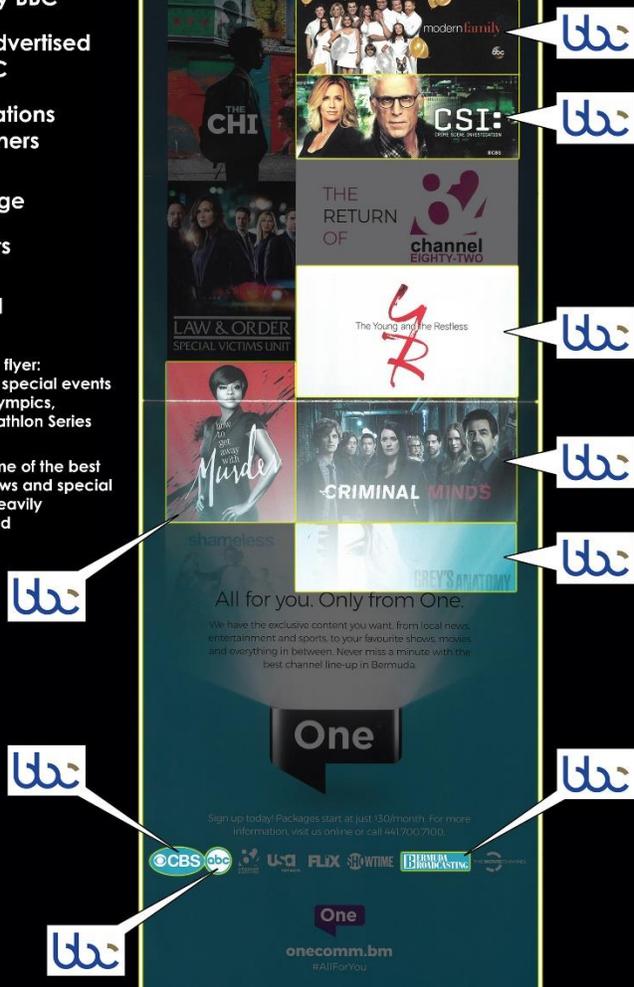
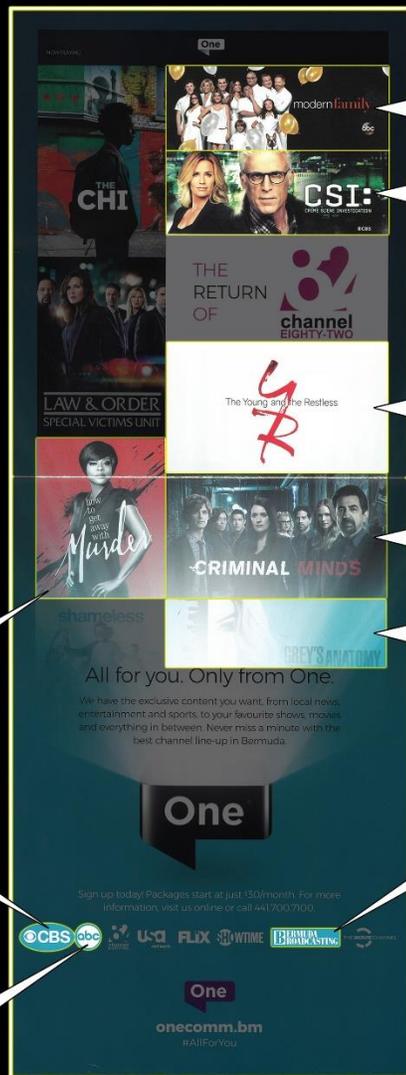
67% of the shows advertised are from BBC

ONE Communications charges customers **\$87.50** for this package

BBC only gets **\$1.25** per channel

Not included in ONE's flyer: BBC's nightly local news, BBC's special events e.g. FIFA World Cup, Olympics, America's Cup, ITU World Triathlon Series

Conclusion: BBC provides some of the best network TV shows plus local news and special programming but is heavily under-compensated





Schedule B

OneComm - Adult TV content over 24 hour period (27/2/19)

TV Show Title	TV Show Description
Ghetto Girls	These Nubian hotties will do anything to get off.
Moms	It's every guys fantasy to catch naughty moms masturbating; these babes continue to plunge their fingers between their legs even after being caught.
Teen	Young babes need a huge, stiff one between their legs!
Hood violence: chicks vs thugs.	It's female vs. male to see who will rule the streets in their violent hood brawl.
Breaking in my horny stepson	Breaking in my horny stepson
Horny sluts hard at work	Horny sluts hard at work
Smokin hot moms next door	This MILF can barely keep her panties on and fingers away; she spreads her legs and loves the feeling of a throbbing orgasm.
Sorority Sisters Banged	Out-of-control college babes need it long and hard
Lesbian	Sexy and horny babes lick their way to pleasure.
Teen	Experiences harlots teach new tricks!
Young sluts give it up for the camera!	Young sluts give it up for the camera!
Watch me tap that teen coochie	Watch me tap that teen coochie
Starlet	Horny porn stars bare all for the camera.
MILK Me	Horny mothers provide service with a smile.
She	Kinky babes will do whatever you want!
Desperate MILFs go lesbian	Older babes explore the female body
Kinky sex club girls	Tasty chicks gather for raunchy fun.
Forbidden Sex: Girls only	Luscious lesbians worship female flesh.
Innocent Ho's	Hotbabes like to behave badly.
Horny cheaters get down & dirty	Beautiful harlots make hot fantasies come true.
Casting couch kittens	Young sluts want to break into porn.
Blondes vs. Brunettes: All girl sex	Sapphic seductresses have a sex contest.
Let me lick your massive stick	These babes want you to unzip and unleash it!
Damn!	Young and horny gals entertain older men.
Teen	Teen Sluts like it hung & hard
Filthy moms	These nasty ladies know how to please a man!
Lick the wrapper	Black babes want you to drop your drawers.
Hump my bumps	Wild and crazy girls demands hard rods.
A woman's touch: Girl on girls sex	Lusty lesbians enjoy soft skin and hot lips.
All American sex crazed girls	The horniest tramps give it up for the camera.
Slam your rod in my juicy hole	Horny harlots want you to invade the pink!
My wife	Wild babes open wide for your throbbing meat!
Bent over babes	Horny girls want you to fill every hole.
Cheating moms: never go home	These wife sex freaks stay out all night looking for their next partner to freak with.
Hot Wives	Mature, super tight and hot housewives slide enormous rods between their legs until they screen for more and burst in pleasure.
Naughty Divorcees: Wet & Nasty	Their husbands are gone, because these freaky ex-wives can never be fully satisfied with one partner.
Hot MILFs: Ready to Orgasm	The kids are off to school and the MILFs are all alone and so horny: these sexy mamas are ready to orgasm and they know just how to pleasure themselves.
Stag Pretty in Pink Uncensored	These bachelor parties are not only insane orgies of bad decisions, they also rock some of the pinkest, prettiest strippers; pink, soft and trusting... these girls are the ultimate party favors.
I love to spread my legs	These babes do all the naughty things a wife refuses to do; once they kick their legs in the air, they are soaking wet and ready for action.
Bisexual	60 minutes
21 Hot & Horny 2	They may look sweet and innocent, but that's just on the surface - when these horny hotties get in the bedroom, they transform into total nymphos who will ride shaft until they scream out in orgasmic pleasure.

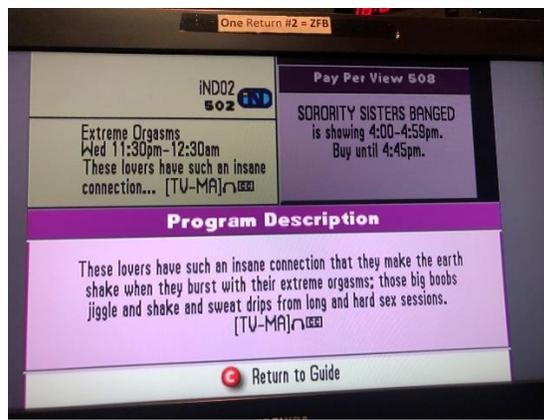
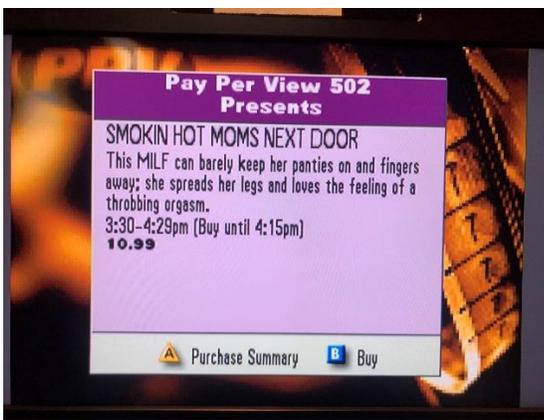
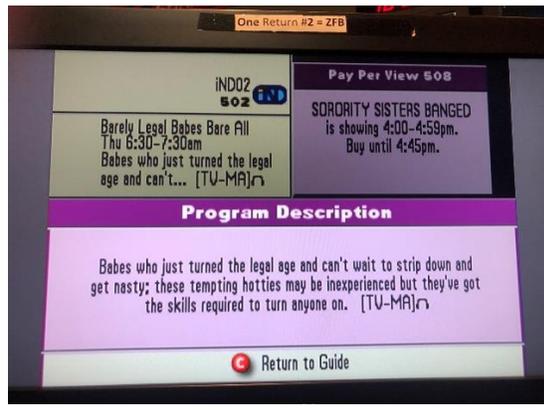
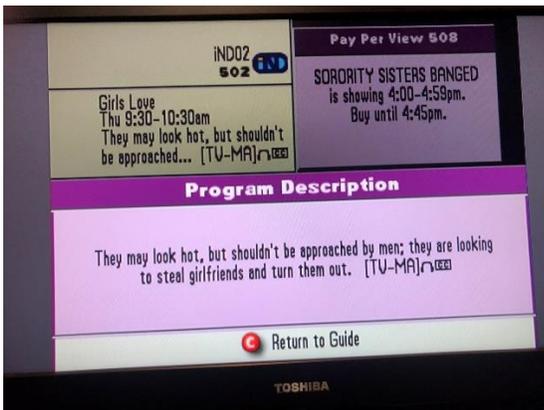
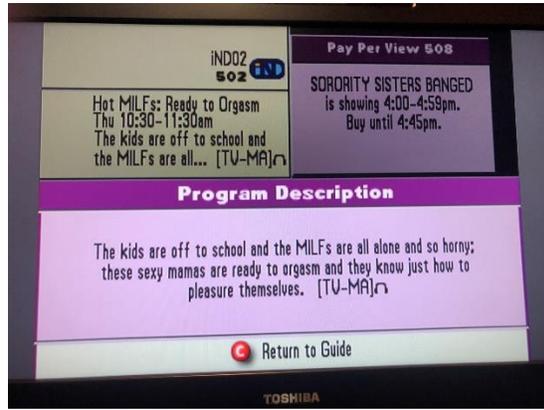
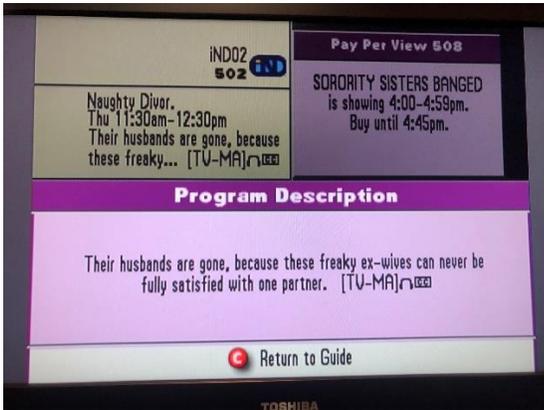


100 percent uncensored lesbians	Horny, kinky lesbians love to rip off their panties and smother their hot bodies in each other's faces; naughty lesbians enjoy all the sticky and sweet they can taste.
Amateur booty: Nice & tight	So fresh and right off the bus, these amateurs are ready to bare all for the first time on camera; their bodies are nice and tight and they can't wait to show them off.
Sexy girls on girls	Gorgeous hotties who can't get enough of each other are caught on camera; these babes are spread wide and tasting to extreme orgasm over and over again.
Extreme Orgasms	These lovers have such an insane connection that they make the earth shake when they burst with their extreme orgasms; those big boobs giggle and shake and sweat drips from long and hard sex sessions.
Hot Moms get down and dirty	These MILFS are so tight they screen in ecstasy; they really know how to dig deep and explode hard.
Sleazy amateurs need it bad	Fresh-faced and eager to please, these amateurs are in heat and ready to explode; these hot ladies need it bad and can't wait to show off their sexy assets.
Barely legal babes bare all	Babes who just turned the legal ages and can't wait to strip down and get nasty; these tempting hotties maybe inexperienced by they've got the skills required to turn anyone on.
Naughty Divorcees: Wet & Nasty	These housewives are ready to rock until they get the cream they crave.
Nympho hotties 3	These sexy nympho hotties have taken it to a whole new level that it takes double doing to get off.
Girls love girls	They may look hot, but shouldn't be approached by men; they are looking to steal girlfriends and turn them out
Young college lesbos 3	perfect perky boobs, sizzling tight bodies, round bottoms and dripping-wet privates are just some of the things in this never-before-seen event; it's simply unbelievable
Horny amateurs spread wide	These sexy ladies spread their gooey treats wide open; in this fun house, she spreads wide and shares what's inside.
Brawling bimbos: crazy cat fights	Those who call them a bimbo will get dropped; cat fights have never been so crazy.



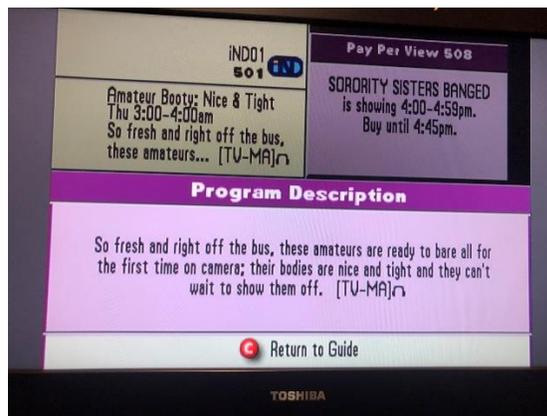
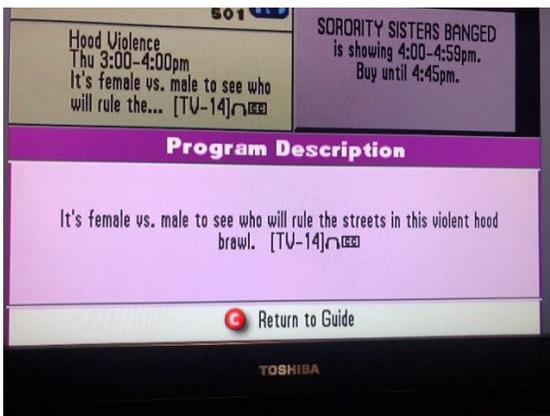
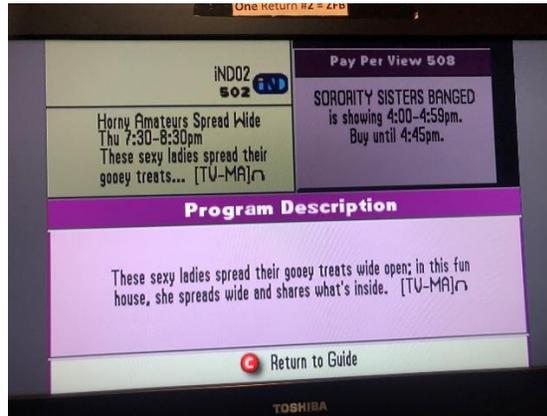
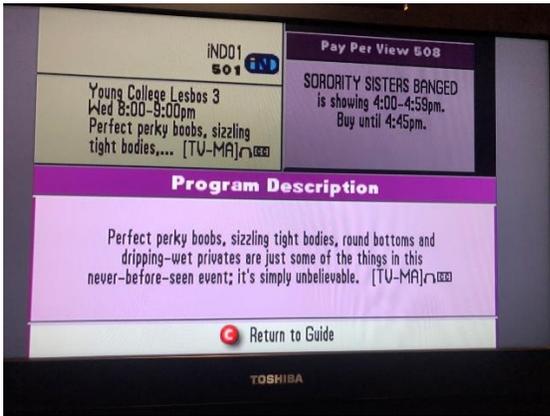
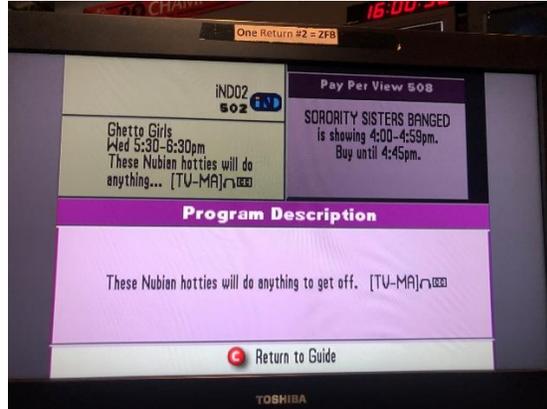
Schedule C

Screen shots from OneComm's cable TV system





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29 March 2019

Submitted Via the RAB portal

Response to the market Review of the electronic communications sector.

Dear Sirs,

The Chamber wishes to thank the RAB for the deadline extension. With a diversity of interests the Chamber acknowledges that we won't be able to take an individual position on the specifics of the document.

Never the less, The Chamber held a meeting of members that fall within the scope of the RAB and asked for their individual thoughts on the consultation document and suggestions. There were representatives from the large and small companies. They had differing opinions but they were unanimous on a few points.

The regulation as it currently stands is overly complicated and difficult for businesses to understand. Surely this impacts the RAB's ability to be effective and to implement.

The Chamber believes that competition and access to competition in the market is the best determinant of fair prices and business success. To that end the telecoms /mobile / TV provider space has shrunk over the years resulting in fewer competitors and no visible reduction in cost for the end consumer. On the cost side, speeds may have increased but costs have not reduced. This is not the same as evidenced in other jurisdictions. Competition has shrunk, companies have merged/ consolidated with little benefit to the consumer outside of bundled packages.

There appear to be holders of ICOL licenses who have allocations but are not using them. These companies are possibly unable to use them or are not planning to use them. This begs the question of how long can you hold a license without activating it. Is it indefinite? That said, given that no more licenses are being issued, how does the RAB propose to encourage competition in this space? Significant Market Power or SMP appears to be a major concern to the RAB but there are no clear statements on how to prevent this from happening. Should the current holder of licenses be allowed to effectively stymie the process by taking up space and never activating the permit? Furthermore there doesn't appear to be a clear process for new entrants in the market to apply for a license, meaning that there is effectively a barrier to competition. On this point the members present were unanimous.

The other determinant of success in any market is customer service standards. This appears to be missing from the provision of service requirements and the remedies for non compliance. Several customers appear to be unhappy. Local sites like Maj's List are full of complaints of bad, patchy service with no consequence for the service provider. Is consumer protection a goal of the RAB?

One of the continuous complaints from business users and householders alike, involve the cost of roaming on mobile devices. Is there any attempt by the RAB to regulate the charges levied on and wracked up by unsuspecting business or residential customers? The roaming packages seem to cover only Canada, UK, US and a few others countries. At the same time it isn't uncommon to hear visitors speak of roaming packages that allow them to

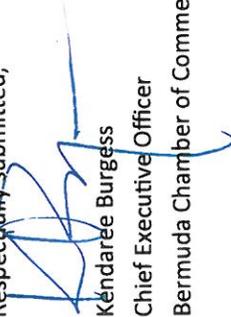


travel the world on low fixed rates, some very similar to their local costs. Bills in Bermuda are reputed to go into the thousands for some customers.

What is the objective of the RAB; is there a vision for where you see Bermuda and the offerings, is this public? If clearly and simply articulated, businesses could incorporate the vision into future planning and make decisions based on that vision. For example – will we have 5G by 2021, by 2022? These answers impact decisions on the creation of smart cities and the way potential new businesses to the island view Bermuda in making decisions on where to domicile.

The RAB plays a critical role in the future success of this island and the Chamber encourages dialogue with industry to insure outcomes that are workable and effective and that benefit both the industry and the consumer.

Respectfully submitted,



Kéandree Burgess
Chief Executive Officer
Bermuda Chamber of Commerce

Part A - Key Findings and CA Observations

Response to Consultation Document [Market Review of the Electronic Communications Sector]: Comments on the Market Review of the Electronic Communications Sector”

Attachment:

1. **Part A - Key Findings and CA observations**
2. Part B - RA Questions Response

Matter; 2019 Market Review Consultation - Regulatory Authority of Bermuda

Part A - Key Findings and CA Observations

A Brief

The RA has reviewed the market activity over the past 4 years. They looked at 6 market sectors:

1. Broadband
2. Mobile
3. TV (Pay-TV)
4. Fixed Voice
5. Business Connectivity
6. Off-island Connectivity

CA Key Findings

Broadband

- Digicel and OneComm own the broadband market, neither Link nor BlueWave have successfully accessed the market.
- After one year, BlueWave only managed to acquire 1% of the market and their technology does not challenge Fiber technology when a high volume of customers use their network.
- The RA calls Superfast Broadband 30 Mbps and above but has no definition to define actual Broadband by speed. (Internationally Superfast is presented as above 30 Mbps for standard community service, supported by Ultrafast being above 300 Mbps, and a Universal Service Obligation of 10 Mbps to all homes. (UK Parliament - Commons Library Briefing, page 9, footnotes)

Part A - Key Findings and CA Observations

Response to Consultation Document [Market Review of the Electronic Communications Sector]: Comments on the Market Review of the Electronic Communications Sector”

- Broadband - There have been virtually no competitive price changes in 4 years by either company (internationally, prices dropped as faster speeds came to the market; this gave the customer the option of better choice.)
- ISP-only goes away. They have to become full-service Internet (ISP and Access)
- The entry of BlueWave only saw Digicel and OneComm revenues increase (see figure 5.4, paragraph 324)
- RA wants to do away with pre-submission of prices and switch to Cost Oriented model (show expenses for offering services to the market in regular reporting)
- The RA sees Digicel and OneComm as joint Significant Market Powers

Mobile

- Digicel and OneComm own the mobile market.
- There is no noted action to broaden the competitive market, for example, announce the offering of cellular license to any competitor that wants to enter the Bermuda market.
- Bermuda's mobile prices are significantly higher than in other markets.
- There is no significant mention of What's App or other services that cause deterioration of mobile voice and text.

TV (Pay-TV)

- The TV sector has deteriorated significantly - 25% of all customer have left cable companies (between One/CableVision, WOW and Digicel TV) since 2014 (see figure 4.9, paragraph 209)
Remaining customers indicate that if the cable company increased the monthly price by 10% (approx. \$3 - \$7.55, depending on package) they would cancel service and move to Internet services like Netflix.
- Near 70% of Bermuda subscribe to Netflix. 51% have Netflix and a cable subscription.
- Older subscribers are interested in keeping service, but may be subjected to higher prices in the future, since they are the primary demographic interested in keeping Pay-TV.
- The Bermuda TV market changed because of the internet — locals have direct access to international content through Netflix, Amazon TV, Hulu.

Part A - Key Findings and CA Observations

Response to Consultation Document [Market Review of the Electronic Communications Sector]: Comments on the Market Review of the Electronic Communications Sector”

Fixed Voice (Home Phone / Business Phone)

- Since Digicel took over the service, revenues for this sector have grown.
- Mobile phone service does not appear to be killing Fixed Voice service (It does not say if this voice is home or business).

Business Connectivity

- The RA wants to allow residential fibre lines to be a substitute for low-speed business leased lines
- The RA cannot determine what is a reasonable definition for low-speed lines (keep in mind there is no definition of Broadband in Bermuda, determining a fair speed for business is challenging)

Consumer Affairs Concerns

- RA's role in the market — The work of the RA is vital however Consumer Affairs is concerned with the turnover of staff especially in upper management, the lack of active public reporting (annual reports) during the 2013 - 2017 the lack of oversight and commitment to fair outcomes for the end users.
- RA role — The RA procedure is for the telecommunication industry to submit prices to the RA for approval before offering them to the consumer. Consumer Affairs is concerned that the RA may not be exercising sufficient supervision on the service providers and should give significant consideration of the impact of price increases and service modifications on consumers before granting increases.
- RA oversight — Consumer Affairs is concerned that the service providers, are not sufficiently responsive with information requests to allow for proper oversight of their operations. The service providers should be required to provide market data on a timely basis to allow for proper market evaluation,
- Measuring Broadband — The RA has no numeric definition of Broadband, this makes it near impossible to compare baseline quality for all users, define a value for money for an average customer, compare progress over time or compare Bermuda to other regions in

Part A - Key Findings and CA Observations

Response to Consultation Document [Market Review of the Electronic Communications Sector]: Comments on the Market Review of the Electronic Communications Sector”

benchmarking. For example if the dollar was not explained as equaling 100 cents, you would not know the value of a dollar; it would be a vague expression, and you could not express inflation. A Broadband speed definition, therefore, gives you a community baseline of measurement for a unit of service. Technology terminology must be adequately defined. The definition of “Broadband,” for example must be precise and sufficiently thorough to allow for fair comparison of services within the Bermuda market and for comparison to other markets. Consumer Affairs is concerned that this is not the current status.

- Broadband being technology neutral — The RA wants to be technology-neutral when managing the sector. The carriers invest in technology that works for their business model. However, the RA’s decision to stay neutral means they cannot indicate to the market when they will expect technology deployments to occur or at what levels. For example, the RA cannot say, we envision Fiber to the Home for all by 2020 and at a speed of 50 Mbps minimum. The carriers decide if or when any service should be delivered to the market. The RA takes the position to review progress after four years. In the 2019 Budget report \$539,000 has been allocated for school bandwidth, page 33, last paragraph. If the market had a national plan for fiber rollout with the right speeds, the reduction of congestion could be managed without the excessive cost. Consumer Affairs would like to see a proactive influence on the market from RA. Setting standards to be met, for example, fibre connections to all Bermuda homes at a set speed by a set date would advance the delivery of greater service within a defined timeframe and provide greater service to Bermudians.

- Broadband consumer pricing— The networks are highly underutilized. The RA says (p. 315) most customers were “likely” above 10 Mbps, and are on Superfast speeds. The RA provides no current detail on average user speed, but international sources such as Bandwidth Place (<https://www.bandwidthplace.com/location/bermuda/>) and M-Lab/Cable.Co.UK (<https://www.ispreview.co.uk/index.php/2018/07/uk-slips-to-35th-in-global-country-ranking-by-average-broadband-speed.html>) indicates the average Bermuda user is only using approximately 10 - 20 Mbps of speed. This indicates while the fibre line going into the home has a full capacity of the 1,000 Mbps fibre lines, only

Part A - Key Findings and CA Observations

Response to Consultation Document [Market Review of the Electronic Communications Sector]: Comments on the Market Review of the Electronic Communications Sector”

2% of the line is actually in use. This matters because speed suppression artificially drives up market prices — customers pay extremely more for significantly less because carriers will not offer faster average speeds to homes and businesses. For example, the average speed to homes in 2019 should be: 50 Mbps being a basic average speed at \$75, 100 Mbps being a medium average speed at \$150 and 200 Mbps being above average speed at \$200. Instead, carriers set the market to 10 Mbps being basic at \$85, 30 Mbps being average at \$125 and 50 Mbps being above average at \$170. Consumer Affairs is concerned that available bandwidth speeds are underutilized due to the pricing for higher delivery speeds. The average Bermuda residence has contracted speeds substantially below potential fibre-delivery speeds because the pricing structure for broadband effectively discourages use of higher broadband speeds.

- Mobile services — currently One and Digicel do two things: a) bundle voice and text with the data bill; b) offer data only at prohibitively high prices. Two things happen a) the customers don't monitor the decline of actual mobile calls and text over their network; b) the customer takes a service(s) they don't generally use or need. Consumer Affairs is concerned that bundling of services by the providers; voice, text, and data being combined under a single subscription charge, obscures the relatively high prices charged for data usage in the Bermuda market. In other markets, data usage charges are decreasing on a per GB basis, a market move not experienced in Bermuda.
- TV market disappearing — The evidence shows Bermudians are aggressively cutting the cable cord. This means if Digicel, OneComm or WOW's business depends on this revenue, but customers are choosing to spend their dollars overseas, the RA has to acknowledge this and advise of possible solutions should TV revenues fall to unsustainable levels.

RA Address Consumer Specific Issues

- Having the “right to exit” a contract — terms change, you can exit; and notification must be sent to you advising of change and the right to cancel, regardless if it is a bundle of services.

Comment: Submitted in the review of Consumer Protection Principles Consultation.

Part A - Key Findings and CA Observations

Response to Consultation Document [Market Review of the Electronic Communications Sector]: Comments on the Market Review of the Electronic Communications Sector”

- A 14-day cooling off period — after service is installed and active, the customer can exit a contract within 14 days by paying for what is used and any expense to activate the service.

Comment: Submitted in the review of Consumer Protection Principles Consultation.

- Cancel Broadband service because of faulty speed — if speed is delivered below a proposed 20% threshold (say 100 Mbps is the package ordered, but the speed only arrives at 75 Mbps). The RA is asking is the 20% threshold fair.

Comment: Consumer Affairs does not believe this is fair the loss should reflect a price reduction to the customer until the service restoration to the advertised level. For example, if the 20 Mbps is \$100 and 25% of the speed is lost and reported to the carrier, the customer should receive a 25% reduction on their bill if they choose to stay. The carrier would have an immediate incentive to fix the problem.

- Allowing customer to cancel a contract at any time by paying an early termination fee (ETF)

Comment: The Early Termination Fee should only be 25% of the contract to ensure the company recovers expenses and not perpetuates excessive profits. In principal this is not objectionable but the terms of the termination fee should be fair to the consumer. An early termination fee should be no more than 25% of the outstanding contract,

- Stipulating maximum contract lengths — 24 Months maximum.

Comment: Submitted in the review of Consumer Protection Principles Consultation.

- Stopping automatic contract rollovers —

Comment: Submitted in the review of Consumer Protection Principles Consultation.

- Enabling simple and timely switching of services —

Comment: Submitted in the review of Consumer Protection Principles Consultation.

Allowing customers to choose the (broadband) product that is right for them —

Part A - Key Findings and CA Observations

Response to Consultation Document [Market Review of the Electronic Communications Sector]: Comments on the Market Review of the Electronic Communications Sector”

Comment: The RA proposes to let business customers choose residential broadband instead of low speed leased lines. Currently, Link, OneComm, Digicel are permitted to sell leased lines (up and down Internet speed is the same) to small business. Whereas a home pays \$105 for 5 Mbps up / 20 Mbps down, a business would pay approx. \$255 for 6 Mbps up and 8 Mbps down. The RA should give market guidance based on international benchmarks.

- Charge customers a new administrative RA fee for cancelling service —

Comment: Consumer Affairs does not agree totally with this proposal as the departure from a provider may be due to poor service. Thus applying a fee for a customer leaving due to the provider’s actions could theoretically result in collection action against the consumer.

Part B - RA Questions Response

Response to Consultation Document [Market Review of the Electronic Communications Sector]: Comments on the Market Review of the Electronic Communications Sector”

Attachment:

1. Part A - Key Findings and CA observations
2. **Part B - RA Questions Response**

Matter: 2019 Market Review Consultation - Regulatory Authority of Bermuda

Part B - Response to Questions

7 CONSULTATION QUESTIONS

669. Respondents are asked to provide comments and views on any section and content in this Consultation Document.

Question 1: Do you agree with the Authority’s proposals for relevant markets (as set out in section 4)?

No.

The market definition should include relevant technologies and timelines for delivery. Otherwise, carriers can make decisions that negatively impact the quality of service, national needs for reinvestment and competitiveness of the Bermuda electronic communications market.

Broadband example:

The RA market definition in paragraph 142 does not establish projected industry milestones to encourage improved service. Where milestones are established, the providers are encouraged to act to provide service, as was done with the deadlines to establish LTE networks for America’s Cup in 2017.

Additionally, when regional partners are making capital investments in market technologies, local carriers in conjunction with the RA should determine if or when national upgrades should take place. Carriers upgrade based on internal timelines at a rate of return that makes them the most profit from their networks. These benefits have a direct impact on how the carriers and consumers behave in the market.

Part B - RA Questions Response

Response to Consultation Document [Market Review of the Electronic Communications Sector]: Comments on the Market Review of the Electronic Communications Sector”

The market definitions should have a specific purpose and outcomes:

- Encourages strategic investment in Bermuda
- Deliver quality services comparable to the region's best
- Stimulates competition for the benefit of the consumer
- Enhances growth in key economic sectors

Question 1.a: Do you agree with the Authority's proposal not to define a wholesale fixed voice termination market?

No the RA should have oversight and input.

Question 1.b: Do you agree that it is not appropriate to define any wholesale subscription television markets? If not, what should such market definitions look like, and, on that basis, would OneComm (or any other provider) likely hold SMP?

Yes However, market deterioration in the Pay-TV market has to be addressed by the RA — specifically, job losses, cross-subsidy, carrier stability and future investment. The RA should be releasing timely updates on market changes and solutions that have a significant economic impact.

Question 1.c: To what extent do consumers see paid OTT services (such as Netflix, Hulu and Amazon Prime Video) as effective substitutes to more traditional retail Pay-tv services, such as those offered by OneComm, WoW and Digicel Group?

The RA should consider that the OTT services significantly impact the Pay-tv service providers and should consider whether the Pay-tv providers could obtain local rights to OTT services, providing a parallel income stream for the Pay-tv service provider. Analogous to this is securing the Island rights to the streaming of the World Cup or Olympics.

The RA should anticipate change by allowing for biennial-market reviews, supported by international data briefings, for troubled sectors. The impact of the decline of revenues for Pay-

Part B - RA Questions Response

Response to Consultation Document [Market Review of the Electronic Communications Sector]: Comments on the Market Review of the Electronic Communications Sector”

tv services should be monitored to prevent job loss and potential overall impact of significant revenue declines in the Pay-tv sector on the viability of the current providers due to the interdependent nature of the provider’s various markets.

Question 1.d: Do you agree with the Authority’s proposal to define “low-speed” business connectivity as below 20Mbps because of the competitive constraint of retail broadband services at speeds below this level? To what extent will high-speed broadband services act as a comparable/substitutable to leased lines? In other words, is a 200Mbps/20Mbps retail broadband service substitutable for a 20Mbps/20Mbps leased line service?

No. This question presumes low speed in 2019 is 20 Mbps because of the local market alternatives (residential fibre) that can act as a substitute. The RA should consider international standards of business competitiveness and make a determination based on best-in-class when making this decision.

March 2019

Top Speed (published on websites/markets under 120k people)

Business Class Fiber

- Jersey - 100 Mbps up / 1,000 Mbps down (1,500 GB cap) \$330
- Virgin Islands - 30 Mbps up / 75 Mbps down - \$N/A
- Guernsey - 20 Mbps up / 100 Mbps down - \$100
- Bermuda - 15 Mbps up / 100 Mbps down - \$550
- Cayman - 10 Mbps up / 100 Mbps down - \$600

Residential Fiber

- Jersey - 100 Mbps up / 1,000 Mbps down (500 GB cap) - \$125
- Bermuda - 20 Mbps up / 200 Mbps down - \$240
- Guernsey - 20 Mbps up / 100 Mbps down - \$75
- Virgin Islands - 10 Mbps up / 100 Mbps - \$150
- Cayman - 5 Mbps up / 300 Mbps down - \$305

Part B - RA Questions Response

Response to Consultation Document [Market Review of the Electronic Communications Sector]: Comments on the Market Review of the Electronic Communications Sector”

Considering International Business and Tourism are the key drivers, the RA should ensure carriers supply service quality that keeps the island competitive. To be clear, carriers have a focus on the success of their company while the RA has a focus on the success of Bermuda and the interests of Bermudians. The interests can be in conflict.

Market Dominance

Question 2: Do you agree with the Authority’s proposals for market power assessment (as set out in section 5)?

The market in 2013 — BTC, CableVision, Digicel and CellOne dominated the market.

The market in 2019 — One and Digicel dominate the market.

Since 2013 the market has consolidated into two dominant providers; Digicel and OneComm, resulting in reduced competition and options for business and consumer customers.

Contributing Factors to OneComm and Digicel Group’s Market Dominance

- Closing the Electronic Communications market in 2013 and not setting a date for a market review of any problem sector.
- Giving the dominant carriers 0% duty rate for the importation of network equipment; instead of startups
- Approving One’s FiberWire prices, as is — not adjusting access prices to reflect efficiencies of upgrades or regional norms.
- Introducing a Pricing Portal but not mandating its use and not marketing the portal as a consumer tool to ensure transparency and to stimulate competition.

Broadband Dominance

- Paragraphs 314 - 316 strengthens SMPs position that the carriers are offering market value, but paragraph 320 shows how market domination is allowed to continue unabated. In paragraph 323 it shows the financial extremes that have been allowed.

Part B - RA Questions Response

Response to Consultation Document [Market Review of the Electronic Communications Sector]: Comments on the Market Review of the Electronic Communications Sector”

Question 2.a: To what extent does Bluewave impose an effective competitive constraint on OneComm and Digicel Group in the retail and wholesale broadband markets? How does its presence and market impact affect the proposed joint SMP finding?

This question demonstrates the importance of technologies in market definitions. Bluewave, the company, can compete with OneComm and Digicel Group — its current technology, WISP, cannot. Therefore, Bluewave is not a threat to the customer base of OneComm or Digicel Group.

Question 2.b: To what extent do paid OTT services (such as Netflix, Hulu and Amazon Prime Video) and traditional Pay-tv providers (such as WoW and Digicel Group) impose a competitive constraint on OneComm?

Streaming of TV, Movie, Music and Games diminish the value of OneComm, WoW, Digicel, Bluewave, and Livenet’s TV offerings. If the RA included international trends and benchmarking into this market analysis, it should consider the experience of traditional cable companies in North America, who have responded to market changes by offering OTT services. For example, AT&T offers UVerse Pay-tv but acquired Warner Media to transition AT&T to streaming TV. In 2019 Bermuda carriers don’t own or lease the rights to content libraries through streaming, but could do so to remain competitive.

Question 2.c: Do you agree with the Authority’s approach to determination of joint SMP (as opposed to single-provider SMP) in mobile and broadband markets?

No. Regardless of the label — single or joint SMP — there is no competition in the market. The lack of competition is like having a monopoly with no government regulations on the quality of service, price regulation and scheduled reinvestment.

The Use of Mobile Dominance

- Verizon, AT&T and T-Mobile upgraded from standard 4G LTE to 4G LTE+ to satisfy the growing demand data across their respective mobile networks.

Part B - RA Questions Response

Response to Consultation Document [Market Review of the Electronic Communications Sector]: Comments on the Market Review of the Electronic Communications Sector”

- The timely network upgrade allows more data to pass over the network, increase data caps to an average size of 22 GB, and provide managed video services inside the data stream.
- The demand in the market is satisfied while acting as a consumer benefit.

In Bermuda mobile service is opaque. It is not clear if:

a) The data cap is used against consumers to generate cash (setting small caps at high prices, then forcing consumers to spend more by being pushed to upgrade or pay continuous overages during the calendar year), or;

b) Slower network upgrades are leveraged against consumers (consumers buy current devices that demand more of the network and are subject to higher fees because of reduced network capacity).

In Bermuda, the move from 2GB to 4GB is \$20 and only yields 2 GB. However, in Dominica, for example, the move from 5 GB to 10 GB is \$28 and yields 5 extra GBs, and 6 GBs more than Bermuda’s plan. Further, to make Dominica and Bermuda’s GB data plan comparable in the 30-day cycle, the Bermuda consumer would have to upgrade to a 10 GB plan for \$175 or pay (\$125 for 4GB + 6G x \$20 per GB) \$120 in overage fees = \$245 for the month of service.

In this comparison, it appears the Bermuda carrier may be using data caps against consumers to drive revenue growth. Because of the lack of competition, Bermuda consumers are forced to either upgrade their service or pay for overages.

Market Remedies

Question 3: Do you agree with the Authority’s proposals for remedies (as set out in section 6)?

No.

Part B - RA Questions Response

Response to Consultation Document [Market Review of the Electronic Communications Sector]: Comments on the Market Review of the Electronic Communications Sector”

The RA’s remedies while strategic, don’t address the market. Whereas the BMA and BTA have to state market problems, the current oversight does not address significant matters affecting business and consumer options.

For example, the RA does not report on:

- The Electronic Communications sector contribution to the economy
- What impact slow network investment causes
- What impact high prices have on consumption and spending
- What role does Business Connectivity have on attracting international startups to Bermuda

Clear and authoritative regulations keep the market in check, but there have to be market goals for Bermuda. The remedies proposed to fix current carrier problems, but give no future market direction. The RA has demonstrated it can give clear direction to the market and apply appropriate remedies if carriers fail. In America’s Cup model, the RA did not have to intervene; it stated expectations and the carriers delivered.

Question 3.a: Do you agree with the Authority’s proposal to require the SMP operators in the wholesale broadband market to provide wholesale access as set forth in paragraph 530?

Paragraph 503 outlines a programme where ISPs assume full-service internet (Access + ISP) instead of the consumer having to buy ISP and Access lines separately. This only works if the carrier Access prices are forced downwards. Currently, the RA directs OneComm, as an example, sell 20 Mbps access to consumers for \$65 and 15% less to wholesalers \$55.25

Question 3.b: Do you agree with the Authority’s proposals for the publication of the various suggested KPIs by SMP operators in each of the following markets:

- Wholesale broadband;
- Retail broadband;
- Wholesale mobile;
- Retail mobile; and
- Business connectivity

Part B - RA Questions Response

Response to Consultation Document [Market Review of the Electronic Communications Sector]: Comments on the Market Review of the Electronic Communications Sector”

Yes.

Question 3.c: Do you agree with the Authority’s proposed lists of information (for each of the wholesale broadband, retail mobile, fixed voice, subscription television and business connectivity markets) that SMP operators will be required to provide to the Authority on a regular basis? Is there any other key information that has not been listed but which should form part of the ongoing information provision?

Consumer Affairs would like to see the RA gather data on consumers sent to credit association/debt because of data overages or billing disputes with carriers.

Question 3.d: In relation to retail broadband, what may be considered “significant” when assessing whether the actual/realized broadband speed is “significantly” different from the advised/headline speed? For example, is 20% an appropriate definition of significant? How should the Authority impose such a condition? For example, how should unforeseeable network issues such as flooding or malfunction, as well as peak-hour network congestion, be taken into account?

The RA should address the difference between the headline and actual speeds proportionately. To be clear 100% of the bandwidth available any time of the day that the consumer is paying for.

Question 3.e: The Authority is considering removing the obligation for SMP operators to publish a reference interconnection offer (“RIO”), in complement to the wholesale access obligations (i.e. for broadband, mobile and business connectivity)? Should the Authority remove the RIO obligation? Why or why not?

Question 3.f: Do you agree with the Authority’s proposal to remove the current requirements for prior notification of retail prices and with the Authority’s approach to Cost Orientation for retail mobile and broadband markets?

Part B - RA Questions Response

Response to Consultation Document [Market Review of the Electronic Communications Sector]: Comments on the Market Review of the Electronic Communications Sector”

They are both reporting mechanisms. If the RA says the SMPs are acting jointly, the carriers only have to comply. SMP carriers have no market threats that will make them focus on delivering high-quality service or improve market prices to cause drastic switching.

This question was answered in full with the previous consultation document.



March 7, 2019

Filed electronically

Markez Laws
Regulatory Finance
Regulatory Authority,
1st Floor, Craig Appin House,
8 Wesley Street,
Hamilton, Bermuda

Re: LinkBermuda - Response to Consultation Document [Market Review of the Electronic Communications Sector]: Comments on the Market Review of the Electronic Communications Sector; Matter 2019021501

1. LinkBermuda ("Link") hereby provides comments on the Regulatory Authority's ("Authority") Consultation Document dated February 15, 2019 ("Consultation"). As a relatively small operator, Link's comments herein are focused on only a specific number of issues, mainly where we felt clarification may be helpful. We note that some of questions asked relate to areas of business which Link is not involved in and in some cases we do not feel we have sufficient expertise to provide detailed comment or analysis. We can say we appreciate the efforts the Authority has made in this review. The proposals in the Consultation relevant to the services on which Link competes appear to be a positive step forward to ensuring that the Authority has the appropriate information within its possession to assess concerns that may arise in the market, whether in relation to retail or wholesale competition.

2. Link's failure to comment on any specific issues should not be interpreted in a manner which would be contrary to our interests. Should the Authority have any questions or wish to discuss our views further we would be pleased to arrange to do so.

3. We agree with the Authority's findings regarding those entities found to have significant market power (SMP) in the broadband and business connectivity markets. We also agree with the finding of no SMP in the off-island connectivity market. We appreciate that an assessment of the appropriate regulatory regime governing services, pricing and establishing remedies is a challenging undertaking in addressing concerns regarding SMP operators and encouraging competition. We note the Consultation includes a number of questions that parties can respond to. Instead, we chosen to focus our comments on the following issues:

- Removing the requirement to maintain an ISP/Access distinction in retail markets;
- Cost-orientation remedy and investment impacts on wholesale access;
- Wholesale remedies – FRAND and EOO
- Terms to enable consumers to switch providers

Removing the requirement to maintain an ISP/Access distinction in retail markets

4. The Authority determined that there is no longer a requirement for SMP operators to “offer separate ISP and Access tariffs at the retail level”¹. Link has interpreted this determination to mean that SMP providers can choose to continue offering both services separately in retail markets, but they may also choose to stop separating the services and offer only bundled ISP and access – such that their retail customer can only buy the complete internet service from them. It is also our understanding that wholesale access service will continue to be provided by SMP operators, with the only change being that in retail markets the SMP operator may now have the discretion to stop separating the two services when they sell them. Given that such a change would also impact retail sales by competitors like Link, we interpreted the reference to the migration plan at paragraph 534 below, to ensuring that SMP operators share their migration plans (for retail markets) with wholesale customers who currently buy the access service from them. This would allow companies like Link who currently sell the services separately in retail markets to modify our offers in the market if we will also have to bundle the ISP/Access service for our retail customers.

Notwithstanding the above, SMP operators would be required to provide a clear migration process for ISP-only operators, and on that basis will be required to maintain stand-alone Access services *until the operators have demonstrated that access seekers have successfully been transferred to wholesale services*. [Emphasis added]

5. While our understanding is that wholesale access service will continue to be offered, and we note that paragraphs 522 and 533 makes this clear, we were unclear on the intention of paragraph 534, above. Specifically, the reference to “stand-alone” access only being available until access seekers have been transferred “to wholesale services”. We seek clarification regarding this clause and regarding the intent of the migration process described in paragraph 534. Paragraph 535 refers to the requirement for OneComm and Digicel to meet any reasonable requests for wholesale “broadband access”, and we seek clarification that this refers to the access component and not a bundled wholesale ISP/Access service. If our interpretation is not correct, and if the Authority has made a preliminary determination that wholesale SMP operators are no longer required to provide standalone access services on a wholesale basis, then Link opposes such a determination and requests that the Authority reconsider this aspect of the determination. Such a finding would effectively deny smaller competitors from competing in retail markets, as there would be no business justification to purchase a bundled ISP and Access service from SMP operators and resell it when we already provide part of the service.

Cost-orientation remedy and investment impacts on wholesale access

6. Link appreciates that the Authority has proposed a mechanism for it to better understand the costs incurred by SMP operators. We note that the Authority’s decision to ensure retail prices are Cost Oriented is intended to strike a balance between the importance of investment and high quality and affordable services². The requirement for cost orientation will also provide value to the Authority in assessing whether the wholesale rates are offered consistent with the FRAND requirements. Having found that certain operators continue to possess SMP, the proposed Cost-Orientation remedy will provide the Authority with more insight in order to address concerns of inappropriate pricing behaviour in the markets by such operators.

¹ Paragraph 532.

² As noted in paragraphs 80 – 82.

7. The Consultation did raise some concerns about whether or how the Authority's recognition of the need for SMP operators to receive a return on investment, or impacts on incentives to invest may impact wholesale access. While Link understands that service pricing must recover costs of service, including investments, we would have concerns if the costing model and policies on which it is based enable SMP operators to overstate the investment impact in such a manner that it may preclude granting wholesale access entirely for a period of time or it may result in excessive rates. Our concerns arise based on some of the following references in the Consultation:

The Authority considers that the cost benchmark for the application of this Cost Orientation remedy should be based on the "fully allocated costs" ("FAC") standard. However, the Authority considers that a strict application of the FAC standard (i.e. pure FAC) is not appropriate in this case. *This is because such an approach, applied rigidly in each year, would not account for uncertainties and fluctuations in costs (especially in the initial years following an investment), and there is a concern that it would not properly incentivize the taking of investment risk.* [Paragraph 38; also referred to in paragraph 480; emphasis added]

8. In relation to paragraph 38 and the other similar provisions, we would like to understand how flexibility would be afforded to SMP operators under the FAC standard. While Link appreciates that flexibility may be appropriate in consideration of fluctuations in costs, we submit it will be important to ensure that appropriate checks and balances are in place to prevent operators from overstating the investment cost or impact where to do so may deny access to important wholesale inputs. The Authority notes that it will take a flexible approach to pricing to ensure that investment incentives are not undermined. While we understand the reasons for these considerations, we also wish to note concerns if such allowances are provided without a careful consideration of the merits of the investment costs.

9. Link also seeks clarity in how the transition from wholesale pricing based on a 15% discount from retail to the new costing approach will occur. Understanding the date when such new pricing comes into effect, the process for SMPs negotiating the new wholesale rates with their customers, the timeline to transition to such rates, and the information that must be provided by SMPs during such rate discussions would be helpful. We also submit that given the rates are not to exceed the retail rate less the costs for the service, there should be a process enabling the customer to address changes in circumstances that may warrant rate changes.

Wholesale remedies – FRAND and EOO

9. Link supports the proposals on FRAND and EOO which are intended to result in fair and reasonable pricing and service terms that are no different to those that SMP operators provide to their own business divisions. We are hopeful that the modifications to the costing approach will provide improved outcomes on wholesale rate negotiations, with wholesale pricing offered more in line with actual costs, thereby improving opportunities for competition in the markets. While this will be a new experience for us, and we remain cautious about how the SMPs may be able to take advantage of this mechanism to increase costs, at this juncture, given that the Authority will have more data in its possession, including the ability to audit it, we are hopeful that it will provide value in assessing disputes or other issues around pricing.

10. We support the proposal that under EOO, that the service provided must be identical on all key service dimensions, including speed, reliability and the time taken to install new

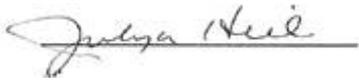
lines and fix faults. The SMP operator must thereby not offer a reduced service to access seekers relative to the service that the operator provides to itself.

Terms to enable consumers to switch providers

11. Link supports the Authority's proposals that SMPs have some limitation in relation to the length of contract and to prohibit automatic renewal of contracts for an additional minimum period. These provisions will ensure that consumers are not inappropriately tied to longer term contracts where they may have otherwise exercised choice to switch service providers in the market. Enabling consumers to switch providers with ease is not only consumer friendly, but it will encourage more competitive response in the market, perhaps via innovation or new offers.

We appreciate having the opportunity to provide these comments.

Respectfully,

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

Julya Hill
Chief Executive Officer
LinkBermuda

cc: mlaws@rab.bm

From: Michael Wicks <mwicks@logic.bm>
Sent: Friday, January 11, 2019 8:53 PM
To: Laura Husband
Subject: Re: EXTERNAL] RE: Complaint - Unreasonable Service Requirement for Internet Access

I appreciate your personal efforts, Laura, but this is not the response I had hoped for. Your “network protection” counter is not consistent with your different policy regarding ADSL devices that connect to your network. Nor does it address my data privacy and equipment ownership rights concerns. Possibly, BTC’s VDSL design has exposed it to unnecessary vulnerabilities but I find this stance by BTC an unreasonable business practice, and service requirement, imposed upon your customers.

It is my understanding that I am not alone in this belief. As a lifelong BTC customer, I am very disappointed regarding this obstinate stance which seems not only out of step with the industry but also a violation of my rights as one of BTC’s customers.

I really had hoped for a different approach.

Regards ... Mike

Michael Wicks

On Jan 11, 2019, at 5:22 PM, Laura Husband <Laura.Husband@digicelgroup.com> wrote:

Good Day Mike,

As promised, I have had a few meetings in order to get a better understanding of our policy and to see if we would be able to provide you with the admin password requested. It has been made clear to me that Digicel/BTC has a policy in which we do not provide the admin passwords. For the protection and security of our network we do not give the password information into our IP network setting reconfiguration.

What we are willing to do for you is arrange for a technician to come out to your home in order to assist in providing you with a secure username and password that would aid in many of the functions you are in need of.

I know this is not the news you were hoping for, but the company has a clear policy on this that we must abide by it. Please let me know if you would like a visit from our technician and I will arrange it.

Kind Regards,

<image001.jpg>

Laura Husband

Head of Customer Care

Digicel Bermuda Ltd.
16 Church Street , Bermuda
(1441)500-0728 | digicelgroup.com

From: mwicks@logic.bm <mwicks@logic.bm>
Sent: Thursday, 10 January 2019 10:09 PM
To: Laura Husband <Laura.Husband@digicelgroup.com>
Subject: RE: [EXTERNAL] RE: Complaint - Unreasonable Service Requirement for Internet Access

G'day Laura – by COB tomorrow, even if you don't have a complete resolution/review, could you provide me with a reasonably detailed progress update advising what has been done, what is next to do plus an estimate as to when you will be able to fully respond?

Thanks again ... Mike

From: Laura Husband <Laura.Husband@digicelgroup.com>
Sent: Tuesday, January 08, 2019 1:35 PM
To: mwicks@logic.bm
Subject: RE: [EXTERNAL] RE: Complaint - Unreasonable Service Requirement for Internet Access

Good Day Mike,

Thank you for your follow up. I am in discussions with my technical team senior management to get a better understanding on this as well as our policies. Your email was very detailed which I truly appreciate. I shall be in contact soon.

Kind Regards,

<image001.jpg>

Laura Husband

Head of Customer Care

Digicel Bermuda Ltd.
16 Church Street , Bermuda
(1441)500-0728 | digicelgroup.com

From: mwicks@logic.bm <mwicks@logic.bm>
Sent: Tuesday, 8 January 2019 1:09 PM
To: Laura Husband <Laura.Husband@digicelgroup.com>
Subject: [EXTERNAL] RE: Complaint - Unreasonable Service Requirement for Internet Access

Hi Laura – can you confirm that the person handling this has received it as I haven't had an acknowledgement, let alone a response.

Many thanks ... Mike

From: mwicks@logic.bm <mwicks@logic.bm>

Sent: Thursday, January 03, 2019 9:15 PM

To: Laura.Husband@digicelgroup.com

Subject: Complaint - Unreasonable Service Requirement for Internet Access

Hi Laura – further to my call today, I would appreciate it if you could forward this to BTC’s disputes team regarding BTC’s current practice of blocking a customer’s full access to consumer owned equipment, specifically the SmartRG VDSL modems needed to connect to BTC’s VDSL internet access service.

BTC COMPLAINT

In November 2013, I became one of BTC’s early adopters of VDSL. At the time of service setup, I was given the choice of purchasing or renting the VDSL modem/router. As I had done over the years with BTC’s ADSL service, I chose to purchase. During the installation, I asked the tech to hand over the admin password and he denied me stating that BTC’s policy prohibited sharing of that information. I have spent a lifetime in IT and, throughout this time, I have been a loyal BTC customer for both voice and data services. Up to that time, I had owned numerous modem/routers which I had set up on the BTC and Logic access/internet networks. I had never been denied access to a device that I owned. In fact, BTC had previously provided the configuration information to ADSL subscribers who owned their own equipment. This new policy prevented me from being able to fully configure my own equipment based on my specific home networking needs. As this router also holds the logon username/password for my ISP (Logic aka OneComm), I further complained that it was a violation of my data privacy to have to provide this to a BTC engineer because I was blocked from doing this myself.

I lodged a formal complaint with Bernell Gibson. In a follow up phone call, he was apologetic but unwilling to release this information to me. On my insistence, Bernell escalated this within BTC but BTC stood firm. Bermuda’s Regulatory Authority was still in its early days and lodging a dispute with them would likely have gained little traction with all of the RA’s more pressing priorities. Because I really wanted the faster speeds VDSL permitted, I kept the equipment but, because of my IT background, I found out what the admin username and password was for the SmartRG modem and reclaimed access to my own router. This allowed me to make changes that were necessary to support my home network architecture. Periodically, I have had to logon to that router for various reasons. I had such a need last weekend but couldn’t.

I was performing a network upgrade and needed access to the modem but the admin password had been changed. It had been several years since BTC took their initial, restrictive stance on this so I had hoped that BTC would have eased this offensive practice and a simple call to the help desk would see them provide this password. I was told that they would not. All they were prepared to do is have me bring it into the service desk and their engineer would make any changes I needed. I have since had conflicting reports that BTC “may” provide a basic user account but definitely not an account with full admin privileges! Quite frankly, anything less than full admin rights is unacceptable for the following reasons:

- a) I own and do not rent the device ... it is entirely inappropriate that BTC block me from making changes – whenever I want/need to – to equipment that I own.
- b) Modems/routers have numerous configuration options that allow a tech savvy owner to configure them to meet the specific needs of their network topology. BTC’s policy prevents

owners from using their equipment's full set of features without having a BTC engineer make them ... in BTC's offices and during BTC's normal business hours.

- c) Requiring owners to bring their equipment into town, during normal business hours, to let a BTC engineer make required changes is time consuming, interruptive and an unnecessary burden for owners, or their agents, that have technical skills.
- d) These devices also provide a number of security features. By BTC blocking owners out of their own device, an owner cannot ensure that their device is secured and properly configured to protect against ever evolving cyber threats. Because BTC doesn't own the device, they could claim no liability if there was a security breach. But the owner has no way to access their device to do this for themselves. This situation is clearly untenable.
- e) In 2013, BTC and Logic were the same company. It was still inappropriate to provide a BTC engineer with an owner's Logic credentials but both were Keytech companies. Today, with OneComm and BTC being totally separate, and competitors to each other, it is absolutely wrong that BTC possess, let alone request, this private information in order to program the modem.
- f) BTC never withheld admin privileges for, or otherwise blocked access to, the ADSL devices they would sell ... or to third party ADSL modem/routers a consumer could source for themselves. Today, that has not changed ... there must be hundreds of customer owned ADSL modem/routers in Bermuda that BTC does not lock down.
- g) It would be no more acceptable for OneComm, Bluewave ... or Digicel ... to setup up a consumer's own home Wi-Fi router, to work with their ISP service, and then block owner admin access.
- h) Insisting that subscribers of BTC's VDSL service rent or purchase only BTC's device option is unreasonable and monopolistic ... and out of step with the industry here and overseas. The fact is that the SmartRG has very mediocre Wi-Fi capabilities forcing owners to have to buy a second Wi-Fi router that provides better residence coverage. Owners should have the choice and buy a device that better meets their home networking needs as long as it is VDSL compatible.

In summary, I believe that this current BTC practice is not a reasonable service requirement for consumers and needs to be revised. At the moment, I am giving BTC the opportunity to address this grievance in two ways:

- 1) Immediately provide the credentials for ALL three SmartRG user accounts – the user account and both admin accounts (admin and support)
- 2) Agree to provide VDSL subscribers the same flexibility that they provide ADSL subscribers – to purchase alternate, VDSL compatible modem/routers – and provide subscribers with the configuration parameters to set these up on the BTC VDSL network ... just as they do on their ADSL network.

Hopefully, BTC will honor the first request without delay. I believe a 7-day turnaround on this is reasonable. However, I would ask that BTC's disputes team acknowledges receipt of this complaint today.

Regards ...
Michael Wicks

Thanks in advance, Laura, for connecting me with the correct BTC resource for this.

Best regards ... Mike

Notice of Confidentiality:

The information contained in this communication is intended solely for the use of the individual or entity to whom it is addressed and others authorized to receive it. It may contain confidential or legally privileged information. If you are not the intended recipient you are hereby notified that any disclosure, copying, distribution or taking any action in reliance on the contents of this information is strictly prohibited and may be unlawful. If you have received this communication in error, please notify us immediately by responding to this email and then delete it from your system.



29 April 2019



Mr. Markez Laws
Regulatory Finance
Regulatory Authority
1st Floor Craig Appin House
Hamilton HM 11
Bermuda

Dear Mr. Laws,

Re: Response to “Market review of the electronic communications sector” Consultation Document dated 15 February 2019

This letter is written on behalf of One Communications Ltd. and its affiliates (collectively, “OneComm” or the “Company”) in response to the document issued by the Regulatory Authority (the “RA”) entitled “Market review of the electronic communications sector” Consultation Document dated 15 February 2019 (the “2019 MR”).

This submission will begin with general comments as context for the broader discussion of the issues. We go on to provide specific comments in respect of the RA’s analyses and conclusions regarding broadband and mobile services, as well as the proposed remedies of the 2019 MR.

We attach as Annex 1 to our submission the expert evidence of Mr. Jeffrey A. Eisenach, Managing Director at NERA Economic Consulting (“NERA”). He is the Co-Chair of NERA’s Communications, Media and Internet Practice. He teaches a course in Regulated Industries at George Mason University Law School, and has previously taught at Harvard University’s Kennedy School of Government and other U.S. institutions. He has served in senior policy positions at the U.S. Federal Trade Commission and other government bodies. He has written extensively on communications regulation and related issues, and has provided expert evidence before the Federal Communications Commission in the U.S. and comparable regulators in Australia, Canada, the Caribbean, the European Union and South America. At our request, Mr. Eisenach provides his independent expert opinion on the issues raised in the 2019 MR, particularly in respect of the RA’s market analyses and proposed remedies for broadband and mobile services (the “NERA Report”).

We note the 2019 MR is a lengthy document that sets out complex concepts and detailed proposed remedies. We have limited our comments to areas where we hope to provide a constructive contribution to the discussion. Agreement should not be inferred for matters that

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we do not specifically note for objection or other comment. Silence on specific points in the 2019 MR should not be considered tacit agreement with the RA's position.

General Comments

In general, the 2019 MR is a document that seeks to replace the 2013 SMP remedies with new remedies based on the RA's continuing distrust of competition in the market. Although the RA makes positive strides in some areas, particularly in the recognition and removal of 'ineffective' 2013 SMP remedies, the RA appears overly intent on inferring tacit coordination and joint SMP from unexplained market outcomes. These findings are then used to justify a new combination of ex ante and ex post remedies that taken together amount to the form of cost accounting and pricing/rate oversight usually implemented in monopoly markets like electricity.

The beginning premise of the 2019 MR is the RA's conclusion first publicized in October 2017¹ that the 2013 SMP remedies were not effective in achieving their original objectives. Few words in the 2019 MR are devoted to explaining that premise, nor is there any analysis regarding the market implications of the ineffective 2013 SMP remedies. The 2019 MR analyzes some aspects of the market since 2013, but it fails to consider that regulation, particularly the 2013 SMP remedies, played a very large part in shaping the market now being studied. Although now declared ineffective or no longer "appropriate", the 2013 SMP remedies were intended to, and did in fact, control and restrict the behaviour of market participants.

Much of the 2019 MR is spent finding possible or likely "tacit coordination" which in turn is used to justify finding joint SMP shared by OneComm and Digicel. The RA's conclusions are inferred as there is no evidence of explicit collusion. We are told that stability and alignment in pricing and service offerings suggest that the companies are acting in concert (tacitly) to the detriment of competition and consumers. The RA's analysis fails to consider how constrained the SMP providers were in terms of pricing and marketing because of the 2013 SMP remedies.

In essence, the market outcomes causing the RA concern are explained in large part by what has "proved not to be effective" regulation.² Tacit coordination assumes the service provider is relatively free to choose a course of action regarding its prices and plans based on indirect signals in the market, and then acts to keep prices above competitive levels or otherwise maximize profits. Where the freedom to market is not available, marketing behaviour cannot be coordinated, tacitly or otherwise. It is a fundamental error to examine the pricing and product marketing behaviour of OneComm (or any other firm) in isolation of the regulation directly applicable to that behaviour. The 2013 SMP remedies were not simply ineffective; they heavily influenced market outcomes. We agree they did not accomplish the objectives

¹ Regulatory Authority, "Review of the electronic communications sector" Consultation Document dated 17 October 2017 (the "2017 MR"). OneComm's response to the 2017 MR is attached as Annex 2.

² Ibid. Paragraph 43.

originally intended, but the analysis should not stop there. The 2013 SMP remedies had market implications that must be considered by the RA in the 2019 MR.

The NERA Report confirms our position that the 2019 MR fails to prove the RA’s theory of joint SMP. As illustrated below, the available evidence is either misinterpreted or ignored in favour of inferences used to confirm a need for regulatory action. Further, the NERA Report explains that the RA’s proposed imposition of cost-oriented retail price regulation, even on a backwards-looking basis as proposed in the 2019 MR, is “counter to the basic economics of the markets at issue”. The NERA Report also explains that proposed remedies at both the wholesale and retail levels are “unnecessary and, by international standards, unusual” and are “more likely to discourage than encourage competition.”³

If implemented as proposed, the RA’s 2019 remedies are likely to echo the outcomes of the 2013 SMP remedies. They will not achieve the RA’s stated objectives. They will inhibit competitive behaviour while significantly raising the cost of compliance. We ask the RA to reconsider its approach and recognize the market implications of the ineffective 2013 remedies. Competition was far more robust once the 2013 SMP remedies were no longer enforceable. From 2017 onward, consumers have begun to receive the benefits that competition brings. The RA needs to trust that competition in electronic communications will continue to play out to the benefit of consumers, provided regulations do not get in the way.

Our suggestion is that the RA needs to further study the market before implementing new remedies. The RA’s analysis to date has been predominantly limited to the period where the market was distorted by regulation. There is no way to distinguish market outcomes from regulatory outcomes. The RA needs to review the market as it unfolds in the absence of price controls, marketing restrictions, and the moratorium on the issuance of ICOLs. We firmly believe that competition will continue to flourish, and consumers will benefit. If it does not, the RA has ex post powers that can readily be used to remedy any anti-competitive behaviour that arises.

Broadband Specific Comments

A. Nationwide Broadband Platform Competition is the Most Important Market Outcome Since the 2013 Market Review

Since the 2013 Market Review, foreign direct investment has resulted in the building of 2 competing nationwide next generation access networks.⁴ To our knowledge, no other nation of

³ The NERA Report, paragraph 5.

⁴ The European Union (“EU”) defines FTTP/FTTH and DOCSIS 3.0 as next generation access technologies (“NGA”) that enable the delivery of superfast broadband speeds. The EU defines “superfast broadband” as services that exceed 24Mbps.



approximately 60,000 people has this same outcome. In fact, many countries in the world are still trying to reach nationwide coverage with a single NGA network. This is important to market review, as NGA networks come at a significant cost and they facilitate the offering of services beyond just internet access (e.g. television services, home phone, etc.). As a result, OneComm and Digicel have been able to launch competing services in their respective core segments – i.e. Digicel has launched television services and OneComm has launched home phone services.

“Superfast” broadband coverage is better in Bermuda than much of the world

Both NGA networks currently offer residential service as fast as 200 Mbps⁵ and are capable of delivering multiples of that speed. Virtually all households in Bermuda have a choice of at least one or both services. Many households also have a third wireless option available from Bluewave, whose service offering has a top speed of 100 Mbps. We are also aware of a fourth entity proposing to enter the market and launch superfast wireless broadband based on 5G standards. In contrast, during the 2013 Market Review, broadband offerings were far less robust. Some but not all customers could obtain copper-based DSL and/or coax-based DOCSIS internet service with a top speed of 25 Mbps.⁶ In 2013, a slower speed (under 10 Mbps) wireless option was also available across a limited footprint.

Many other countries do not currently have multiple nationwide NGA competitors offering superfast broadband. As an example, BT in the United Kingdom reports that 61% of its broadband customer base is now on fibre, and that superfast broadband speeds are available to 95% of the UK.⁷

In the U.S., the FCC reports that approximately 290 million or almost 90% of Americans have access to 100 Mbps broadband.⁸ Harvard Law School professor, Susan Crawford, criticizes the state of FTTH deployment in the United States:

“That the US is trailing other countries is obvious to anyone who has traveled to other nations that are pushing ahead on fiber-optic networks, such as South Korea, Japan, and Sweden, Crawford said. And it could soon be trailing others. China has plans to connect 80% of homes in the country to fiber, she said. As part of its Belt and Road Initiative, China also plans to connect its country with dozens of others with high-speed fiber-optic data freeways.

⁵ Effective 1 May 2019, OneComm’s top residential speed will be 300 Mbps.

⁶ <http://bernews.com/2012/10/bermuda-cablevision-introduces-15mb-25mb/>

⁷ BT Group plc, Annual Report 2018 pages 76 and 110. For clarity, only a very small percentage of UK households have fibre-to-the-home (“FTTH”), almost all of the 61% referenced in the BT quote have fibre-to-the-curb connections.

⁸ Federal Communications Commission Press Release dated 19 February 2019 available at <https://docs.fcc.gov/public/attachments/DOC-356271A1.pdf>.

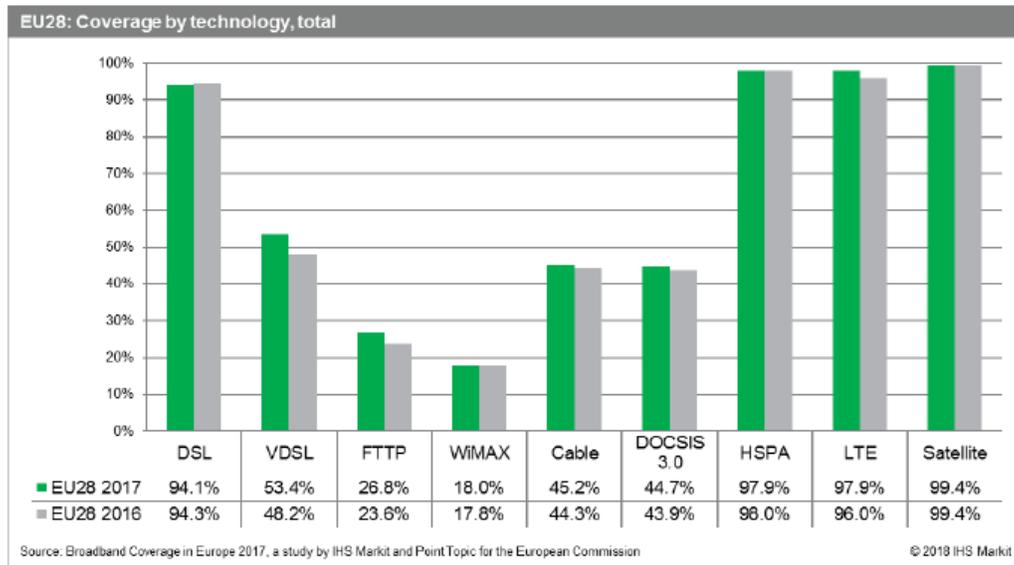


By contrast, only about 13% of Americans have access to fiber at their homes – and even fewer have actually signed up for service...”⁹

In Canada, over 10% of homes and small businesses currently do not have access to high speed internet.¹⁰

With respect to EU member states, we refer to a report prepared by the European Commission, that examines 31 countries across Europe – the EU28, plus Norway, Iceland and Switzerland, and analyses the availability of nine broadband access technologies (DSL, VDSL, cable modem, DOCSIS 3.0, FTTP, WiMAX, HSPA, LTE and satellite) across each market.¹¹

Member states in the EU currently have specific broadband coverage objectives: 'Universal Broadband Coverage with speeds of at least 30 Mbps by 2020' and 'Broadband Coverage of 50% of households with speeds of at least 100 Mbps by 2020'. Bermuda had already met and exceeded these objectives by the end of 2017.



Of particular note is that Bermuda has national coverage from competing FTTH/FTTP and DOCSIS networks while the EU has less than 50% coverage for each technology. Bermuda’s

⁹ Business Insider article by Troy Wolverton dated 10 March 2019, reported content from a book by Harvard Law School professor, Susan Crawford, article found at <https://www.businessinsider.com/harvard-susan-crawford-fiber-optics-broadband-internet-inequality-china-2019-3>. It should be noted that Professor Crawford is referencing FTTP deployments in the U.S. not superfast broadband coverage.

¹⁰ “Closing the Broadband Gap”, Canadian Radio-television and Telecommunications Commission, at <https://crtc.gc.ca/eng/internet/internet.htm> where it announces that a new Broadband Fund will be established to bring fixed broadband services of 50 Mbps to 90% of Canadian homes and small businesses by 2021.

¹¹ “Study on Broadband Coverage in Europe 2017”, European Commission, 22 June 2018, found at <https://ec.europa.eu/digital-single-market/en/news/study-broadband-coverage-europe-2017>

market compares very favourably in this respect, and we believe this is a key point of success in the Bermuda market¹² that needs to be considered when assessing the overall state of the market, and whether remedies are necessary.

B. RA is Overly Willing to Find Joint Market Power and Tacit Coordination in Broadband

As stated in the opening comments, the RA's theory is that stability and alignment of pricing and service offerings are evidence of tacit coordination which supports a finding of joint market power. This conclusion lacks evidentiary support. Moreover, it highlights an analytical bias that explains the invasiveness of the remedies proposed.

The RA's 2013 SMP remedies explain historical trends in broadband pricing and speeds

The RA has concluded that broadband pricing and speed offers during its review period were focal points for tacit coordination because of their stability and similarity. What appears forgotten is that the original slate of tariffs were filed with and accepted by the RA in 2013 at its inception, and they were originally derived and regulated under the price control mechanisms of the previous regulator, the Telecommunications Commission.

Once the initial market review was completed and the RA's 2013 SMP remedies were implemented, price and service changes were subject to a series of overlapping restrictions and controls. Price floors were set by the rules regarding margin squeeze and predatory pricing. Price caps were implemented at the then current pricing levels. A variety of other requirements were set, including in particular prenotification obligations that required pre-approval of any price set for new services,¹³ as well as pre-approvals for any price changes for existing services. Prices for any bundle including an SMP service were similarly controlled by the RA starting in 2013. The price regulation regime was so demanding that SMP providers rarely attempted to change their price or their service offering.¹⁴ The price and service offer stability exhibited in Figure 5.1 of the 2019 MR is a result of the RA's regulatory price controls not tacit coordination.

¹² LTE coverage in Bermuda is also better than the EU. By the end of 2017, OneComm had fully built its 4G LTE network across more than 99% of Bermuda with a quality of service that provides an average minimum download speed of 15 Mbps nationwide. Digicel met the same standard on a slightly later timeline. Bermuda is now served by 2 competing LTE networks nationwide. The EU chart above shows that as of the end of the survey period in 2017, only 97.8% of households in the EU had the benefit of LTE coverage.

¹³ New/different broadband speed offerings were treated as "new" services under the 2013 SMP remedies.

¹⁴ OneComm currently owns the company that once operated as Bermuda Cablevision Limited. KeyTech Limited, the predecessor of OneComm, was at one time the owner of The Bermuda Telephone Company Limited. As a result, we have knowledge of the regulatory difficulties experienced by both SMP providers of internet access in the relevant period when they tried to offer promotional pricing, or make a price/service change.

As further support, we note the RA’s own statement in the “Review of the electronic communications sector” Consultation Document dated 17 October 2017 (the “2017 MR”) where it stated: “The 2013 remedies limited the introduction of new retail pricing schemes for services, including bundling of the same with other services e.g. mobile and subscription television, etc.” (page 6)

RA’s confirmation bias regarding broadband – Only citing similarities and ignoring all instances where prices and offerings are different

The RA cites current pricing practices for fibre-based services as evidence that “...the new network investments by OneComm and Digicel Group have not altered the (historically prevalent) practice of the two companies setting very similar (if not identical) prices for each retail broadband tariff.” Later in the 2019 MR, the RA concludes that “the continued alignment in pricing on the new, faster networks is clear evidence of tacit coordination.” (paragraph 331)

We disagree. This conclusion is an example of confirmation bias where the RA is highlighting only the data that can be used to support its theory of tacit coordination. The 2019 MR analysis selectively relies on comparisons of a few data points – the prices and download speeds for 3 plans. There are more plans currently on offer, and differences in advertised prices and speeds that are not even acknowledged by the RA. There are also differing service bundles offered that are not considered in the RA’s analysis.

Additionally, while the 2019 MR notes the inclusion of BTC in the Digicel Group, BTC’s broadband pricing has not been included in the RA’s analysis. It appears BTC was excluded because its services are copper-based rather than fibre-based but that exclusion is methodologically incorrect. BTC’s services are within the relevant market definition as defined by the RA and must be considered.

As copied on 15 March 2019, the current broadband offerings of Digicel and BTC are:

The screenshot displays two parts of a website. On the left, under 'fibre internet plans', three plans are listed:

- fibre 50**: Downloads 50 Mbps, Uploads 15 Mbps, Price \$170
- fibre 100**: Downloads 100 Mbps, Uploads 20 Mbps, Price \$215
- fibre 200**: Downloads 200 Mbps, Uploads 25 Mbps, Price \$240

On the right, under 'Complete Home Internet. Two great services. One low price.', there is promotional text and a comparison table for 'Access + Internet' services:

	Speed	25MB	15MB	10MB	8MB	6MB	4MB
Was		\$289	\$179	\$139	\$119	\$99	\$79
Now		\$250	\$160	\$125	\$105	\$90	\$70
Saving Per Year		\$468	\$228	\$168	\$168	\$108	\$108
		Sign Up					



As copied on 15 March 2019, OneComm’s posted FibreWire Internet plans and pricing were:

Plan Name	Download Speed	Upload Speed	Price per Month
FibreWire 10	10Mbps Down	5Mbps Up	\$84.95
FibreWire 20	20Mbps Down	5Mbps Up	\$104.95
FibreWire 30	30Mbps Down	5Mbps Up	\$124.95
FibreWire 50	50Mbps Down	10Mbps Up	\$169.95
FibreWire 100	100Mbps Down	15Mbps Up	\$214.95
FibreWire 200	200Mbps Down	20Mbps Up	\$239.95

When reviewing the full breadth of OneComm’s broadband offerings relative to the whole Digicel Group, there are meaningful differences in pricing and plans offered. To highlight a few, OneComm offers FibreWire 10 for \$84.95 a month while Digicel Group offers 10 Mbps Internet service for \$125 a month (a 47% difference); OneComm offers FibreWire 30 for \$124.95 a month, while the Digicel Group does not offer 30 Mbps service, the closest substitute being 25 Mbps service from BTC for \$250 a month; and on the higher speed plans where prices are similar we note there are significant differences in upload speeds (e.g. 33% different upload speed for 50 Mbps plans).¹⁵

There are additional differences in the design and pricing of service bundles between the 2 companies that have not been considered. This omission is a serious error as service bundles are becoming the focal point for competition between the 2 service providers.

As copied on 15 March 2019, Digicel’s current posted service bundles are:

¹⁵ Effective 1 May 2019, OneComm is changing its broadband lineup at retail and wholesale. The new broadband plans will provide 25, 45, 65, 100, 200 and 300 Mbps service speeds. Existing OneComm customers will be upgraded into one of the new plans depending on their current speed. Once completed, this speed boost will result in all OneComm residential customers having ‘superfast’ broadband. It will also be a significant divergence in service offering relative to Digicel, BTC and Bluewave.



Bundle Name	Price	Speed	Channels	HD Channels
Variety Bundle	\$185.00	25 Mbps	123	61
Premier Bundle	\$285.00	100 Mbps	136	73
Premier Bundle and Sports & News+	\$385.00	200 Mbps	150	83

As copied on 15 March 2019, OneComm’s current posted FibreWire bundles are:

	BASIC	BETTER	BEST	ULTIMATE
PRICE	\$190	\$245	\$300	\$355
FIBREWIRE INTERNET	25 Mbps ↓ 5 Mbps ↑	65 Mbps ↓ 10 Mbps ↑	125 Mbps ↓ 15 Mbps ↑	225 Mbps ↓ 20 Mbps ↑
ONEHOME WIFI (3 EERO UNITS)	Included	Included	Included	Included
TV PACKAGE	MORE 101 Channels 71 in HD	MOST 143 Channels 102 in HD	MOST 143 Channels 102 in HD	ULTIMATE 158 Channels 117 in HD
PREMIUM PACKAGES	—	FLOW SPORTS	FLOW SPORTS HBO WTIME	FLOW SPORTS HBO WTIME
CLOUD DVR HOURS	200	200	200	500
ONEBOX MEDIA PLAYERS*	4K	4K	4K	4K 4K
	ORDER NOW	ORDER NOW	ORDER NOW	ORDER NOW

Depending on the bundle compared, there are material differences in price, speed and service features. These bundles are all relatively recent and we fully expect further adjustments as service providers continue to compete for customers.

Broadband prices have been falling in real and quality-adjusted terms

At paragraph 306, the RA notes “that neither OneComm nor Digicel Group have changed their headline prices over the past few years... for each of the ten tariffs presented (five for each operator), there has been no price change whatsoever.” This statement is only true in nominal

terms until 2017 because of the restrictive price regulation enforced in that period, as explained above. When examined correctly over the full period of this review, the true economic story is that broadband pricing has been falling significantly, especially following the deployment of NGA networks in 2017.

From an economic perspective, the RA mistakenly relies on nominal prices with no recognition of inflation. Over the 2013-2017 timeframe, if we accept the RA's focus on that limited period, we find that pricing was falling in economic terms because of inflation over that period. In that period, inflation eroded the price of broadband by approximately 7%.¹⁶ In other words, adjusted for inflation, consumers were paying approximately 7% less in real terms by the end of 2017 even though nominal pricing remained the same.¹⁷

The RA's focus on "headline" pricing is also problematic. OneComm's highest priced broadband offering in the 2013-2016 period was \$240 per month for 25 Mbps service. Once FibreWire plans were introduced in 2017, the same \$240 per month purchased 200 Mbps service – same headline price, but very different service quality. The headline price per Mbps per month fell from \$9.60 in 2013, to \$1.20 in 2017, and will fall to \$0.80 in 2019.¹⁸ To properly consider broadband pricing, the RA must recognize and adjust for changes in quality rather than relying only on nominal or "headline" prices. To make accurate comparisons year over year, quality-adjusted real pricing needs to be used.

The 2017 MR and the Supreme Court of Bermuda's judicial review decision in November 2017 were destabilizing factors that have allowed ICOL holders to compete more freely in terms of pricing, speeds and bundles

In the 2017 MR, the RA stated its key findings at paragraph 14, which included the following:

- 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.

In November 2017, the Supreme Court issued a judicial review decision that stated:

... this Court hereby expresses the strong provisional view that the RA is not only legally bound by the promise to "only enforce a minimum set of existing obligations", but as a consequence of

¹⁶ Government of Bermuda, Department of Statistics, Consumer Price Index data, see <https://www.gov.bm/bermuda-business-statistics>.

¹⁷ See Annex 3 for an Illustration of the Pricing Effects of Government/Regulatory Fees and Taxes in mobile. Although the handset fee would not apply in broadband, the other pricing effects equally apply.

¹⁸ Effective 1 May 2019, FibreWire 25 will be available at retail for \$90 per month.

*that promise, is also legally required to identify within a reasonable time and with due specificity precisely which obligations it intends to enforce during the interregnum period.*¹⁹

Thereafter, many of the 2013 SMP remedies were no longer enforceable. The Court’s decision opened the door for service providers to compete more freely on pricing and features, and it allowed new offers to be launched more easily. In the period that followed, both competitors launched newer, faster speed broadband, and multi-service bundles. New services, promotions and other marketing adjustments were also introduced more rapidly as providers were no longer inhibited by the 2013 SMP remedies. The destabilizing effect of the Court’s decision is still playing out and, in our view, there is growing evidence of pro-consumer outcomes.

Transparency of pricing is a regulated outcome

At paragraph 292 of the 2019 MR, the RA examines the ability of participants to monitor potential deviations in the common policy. As evidence it highlights that “prices and speeds of services are publicly available in Bermuda and published on sectoral participants’ websites.” This is the extent of the evidence for criterion 2 of the RA’s tacit coordination finding. The inference is that participants can monitor and signal each other easily through the publication of pricing, and that any deviation would lead to swift retaliation.

It is ironic that transparency of pricing is used by the RA as evidence in support of tacit coordination, as this is not a market where participants have a choice to publish or not. Every ICOL holder is subject to the following requirements:

14 CONSUMER PROTECTION

14.1 The Licensee shall, in offering to provide, or providing, Electronic Communications Services, publish clear, transparent and up-to-date information regarding its rates, terms and conditions. Publication shall be effected by:

- (a) placing such information on any relevant website operated by the Licensee or, if no such website exists, placing a copy of such information in every major office of the Licensee such that it is readily available for inspection free of charge by members of the general public during normal office hours; and
- (b) sending a copy of such information or any appropriate parts of it to any Subscriber who requests such information.

Moreover, we note that transparency in pricing has been a key focal point for the RA’s efforts since the 2013 Market Review. In fact, the RA held a consultation that dealt with this issue and concluded that the development of an RA-funded price comparison website was needed.²⁰

¹⁹ One Communications Ltd. v Regulatory Authority, Supreme Court of Bermuda (Commercial Court) 2017: No. 231.

²⁰ See the “Electronic Communications Price Comparison Website Final Decision and Order Consultation Summary, Final Decision and Order” dated 17 February 2015 at <https://rab.bm/documents/pricing-portal-decision-and-order-2-17-15/?wpdmdl=1757&refresh=5c8e5fab56d051552834475>.

6.3 Conclusions and Determinations Concerning the Electronic Communications Price Comparison Website

61. For the reasons stated in Sections 6.1 and 6.2, above, the RA has determined that the establishment and implementation of an Electronic Communications Price Comparison Website is in the public interest and would greatly benefit consumers of Electronic Communications Services.

Ultimately, the pricecheck.bm website was launched and touted as a public service tool for price comparisons, as the RA felt the individual websites of the service providers were insufficient for this purpose. A copy of it was publicized in the Royal Gazette and is provided below:²¹



In summary, ICOL holders were required to publish rates pursuant to licence conditions (set by the RA). In 2015, the RA went even further by establishing a website for the express reason of ICOL holders publishing prices for public comparison; and yet, none of this is mentioned in the 2019 MR.

We recognize the RA is not now critical of price transparency. The point being made is that the 2019 MR takes no notice that the RA's evidence for criterion 2 of its tacit coordination finding is in fact a regulated outcome intended for consumer protection reasons.

Timing of network upgrades was driven by competitive risk and influenced by the RA

²¹ "Internet Price Comparison Website Launched", The Royal Gazette, Scott Neil, 14 October 2015. See <http://www.royalgazette.com/article/20151014/BUSINESS/151019834>. The website appears to have been shut down in 2018. On 29 March 2019, the RA published "Decommissioning of Electronic Communications Price Comparison Website" where it is sought public comment on whether to shut down the website.

In paragraph 317 of the 2019 MR, the RA takes note of the “remarkable alignment in the timing of the observed investments by OneComm and Digicel” and declares it “...particularly concerning, especially in combination with the continued alignment in their service offerings and pricing.”

Again, what has been ignored is the role the RA has played in the timing of those network upgrades. In the case of OneComm, plans to implement “Fibre Deep”²² date back as far as 2014 when Bermuda Cablevision Limited was considering infrastructure improvements needed to support nationwide superfast broadband and next generation TV services. In January 2015, Digicel sought approval from the RA to combine its businesses with The Bermuda Telephone Company (“BTC”). The RA granted its approval after a 4 month process. That approval was predicated on a number of conditions including a large scale investment in fibre optic infrastructure within a certain timeframe.²³

With this information leaking into the public domain, Keytech Limited (as it was in 2015, now OneComm) considered it a strategic imperative to implement and expedite large scale fibre investments in its DOCSIS network beyond just the original Fibre Deep project. The scale of those costs led to the combination transaction with Atlantic Tele-Network, Inc. (“ATN”) that provided the cash injection needed to fund the fibre infrastructure build out. Similar to the Digicel-BTC decision, representations by OneComm regarding infrastructure investment and timing became part of the conditions for approval of the transaction. The transaction was announced 13 October 2015 and finally approved by the RA on 27 April 2016 over 6 months later.

Although the RA was not solely responsible for the deployment timelines that unfolded, it certainly played a part in the extended timing that played out. Contrary to the “remarkable alignment” noted in the 2019 MR, OneComm launched FibreWire service 1 June 2017²⁴ and Digicel’s fibre service launched over 6 months later. These facts are consistent with healthy competitive dynamics rather than the tacit coordination the RA is trying so hard to infer.

The RA discounts other destabilizing factors

The RA concludes there is “no strong evidence to suggest that... Bluewave is acting or has the potential to act as a material destabilizing force in the retail broadband market of Bermuda.” (paragraph 329) Assuming the RA’s data is correct, Bluewave’s market share was less than 1% at the end of 2017. It goes on to cite technical limitations of Bluewave’s wireless service that limit quality of service in high-density areas. With that noted, Bluewave’s effect (and potential effect) on the market is determined to be immaterial.

²² The original project name for the fibre optic network upgrades that support the services now marketed as “FibreWire”.

²³ The precise amounts and timeline for the investments are not publicly available information.

²⁴ It should also be noted that OneComm began the process of seeking tariff approvals for FibreWire in December 2016. The full process for obtaining regulatory approval to launch took 6 months.



Our view is that the RA’s conclusion is premature and analytically convenient. The bias to confirming “tacit coordination” means the RA is inclined to dismiss Bluewave’s potential effect in the market, and look past data points that suggest otherwise. For example, on 9 November 2018, TeleBermuda International Limited (“TBI”) made a formal request to the RA for assignment of high-demand spectrum between 3600 MHz and 3700 MHz.²⁵ Also on 9 November 2018, TBI sought similar assignment of 2506 MHz and 2526 MHz high-demand spectrum.²⁶ Notably, both bands of spectrum are capable of being used for 5G wireless deployments. On 7 December 2017, the RA and the Minister approved a transaction that brought the business of TBI into the same corporate group as Bluewave.²⁷ We can only assume that prior to the approval, the businesses to be combined were reviewed along with their respective future plans as part of the RA’s concentration review process.

On 11 December 2017, Decisions Limited, a Bermudian information technology and communications consulting group was also merged into the Bluewave-TBI corporate group.²⁸ Based on information available to the RA before the issuance of the 2019 MR, it appears that Bluewave, East End, TBI and Decisions have come together to compete in the electronic communications sector and related technology businesses. This was very recently confirmed when East End completed the sale of a non-technology business in its portfolio. A representative of the group of companies confirmed: “We are selling because we are focusing on technology. That’s who we are now, and what we want to focus on going forward.”²⁹ Bluewave, in combination with its affiliated companies, has the potential to act as a destabilizing factor in the market, and needs to be considered in the RA’s SMP analysis.

New entry has been prevented by the statutory moratorium on the issuance of ICOLs, not by tacit coordination

The statement in paragraph 330 that “the Authority is not aware of any other credible prospect of further infrastructure entry” requires additional explanation. The RA is aware of a company named Horizon Communications that is planning to launch a 5G network in Bermuda and other jurisdictions.³⁰ The RA issued a press release dated 3 January 2018 clarifying that the Company

²⁵ Regulatory Authority Public Notice: Request for the Assignment of High Demand Spectrum, dated 18 January 2019 at <https://rab.bm/documents/public-notice-high-demand-spectrum-tbi-request/?wpdmdl=13571&refresh=5c911355c9c351553011541> .

²⁶ Regulatory Authority Public Notice: Request for the Assignment of High Demand Spectrum, dated 15 February 2019 at <https://rab.bm/documents/2019-02-15-high-demand-spectrum-press-release-tbi-request/?wpdmdl=13599&refresh=5c911355c89f51553011541> .

²⁷ Final Decision and Order, RA website at <https://rab.bm/documents/tbi-change-of-control-order-decision-ministerial-consent/?wpdmdl=1865&refresh=5c911355cb9ae1553011541>.

²⁸ “East End Group & Decisions to Join Forces” Bernews, 11 December 2017 at <http://bernews.com/2017/12/east-end-group-decisions-ltd-to-join-forces/> .

²⁹ “Polaris diversifies with East End Asphalt deal”, The Royal Gazette, Duncan Hall, 15 March 2019.

³⁰ See <https://horizoncomm.co/> .



does not hold an ICOL, nor does it have a spectrum licence to support a wireless network.³¹ We are advised that Horizon, despite its willingness to pursue the application process, has been unable to obtain an ICOL from the RA because of the long-standing statutory moratorium on the issuance of ICOLs.

The RA's disregard for Horizon's potential entry in the market is analytically incorrect. The fact that companies are attempting to enter the market is a very relevant point in market analysis. It is clear evidence that would-be entrants do not perceive any insurmountable barriers to entry. The fact that they have not yet entered has little to do with the RA's tacit coordination theory.

The RA knows that industry regulation is preventing Horizon from obtaining the ICOL and spectrum they need to enter, and yet that point is not mentioned in the 2019 MR. In a different consultation, the RA has stated:

*In fact, the removal of the Moratorium would subsequently enable the market entry of new sectoral participants and further promote technological innovation in the electronic communications market in Bermuda. Removal of the Moratorium would also have the underlying effect of improving competitiveness within the electronic communications sector.*³²

Lack of entry in this case is neither a symptom nor a result of tacit coordination. It is simply and clearly a regulated outcome. Despite the RA's clear awareness of these issues, the 2019 MR fails to consider the regulatory barriers to infrastructure entry; choosing instead to conclude tacit coordination and joint SMP from the unexplained lack of destabilizing factors.

Now that the moratorium on ICOLs has been lifted and the process for granting ICOLs is being developed by the RA,³³ potentially destabilizing entry by 5G-focused companies like Horizon is entirely possible within a reasonable period of time. As the RA is required to consider prospective market outcomes and likely effects on competition, the analysis under Criterion 3 must now account for the RA's own view that the removal of this legislated barrier clears the way for market entry.

Ineffective punishment mechanisms

Discussion of criterion 4 for the RA's finding of tacit coordination in broadband is very theoretical in its attempt to find potential "effective punishment mechanisms". The RA

³¹ See <https://rab.bm/documents/2017-01-03-ra-press-release-horizon-communications/?wpdmdl=1508&refresh=5c9158331359e1553029171>.

³² "Final Report of the Electronic Communications Sectoral Review", Matter 20180417, dated 30 November 2018, paragraph 138.

³³ See the discussion below in the Mobile Specific Comments regarding the RA's "Consultation: Grant of New Integrated Communications Operating Licences and Other Types of Communications Operating Licences", Matter: 20190405, dated 5 April 2019.

indicates that pricing, quality and marketing efforts are all potentially effective punishment mechanisms that could be used to punish deviations from the tacit agreement. The logic of the discussion seems to be that the mere threat of price wars, improvements in quality, and/or aggressive promotion is enough to keep SMP providers from competing more aggressively. The RA relies on a simple reference to high pricing to infer that such threats existed or were credible. No other analysis is provided.

In keeping with the comments above, the lack of price changes and marketing promotions in the 2013-2017 period was a direct result of the restrictive regulation enforced in that period. Given the regulatory controls in place, it is difficult to fathom how those factors could then be used to punish deviations. As for quality, both SMP providers improved the quality of broadband offerings in 2017. That outcome was pro-consumer and it is difficult to understand how it could be characterized as a punishment mechanism for deviation from an alleged tacit agreement.

More practically, the RA should analyze the actual market behaviour of Digicel and OneComm, rather than relying on hypothetical references. In 2017, using its newly built fibre network, Digicel launched standalone and bundled TV services over its broadband network. This was a very clear deviation from the competitive norms of the Bermuda market. By the *Airtours* theory of the RA, OneComm must have had “credible, timely and effective disciplinary mechanisms in place” to deal with “any behavior that is not in line with the common policy.”(paragraph 266(iv) of the 2019 MR) In response, OneComm invested in the development of a better TV service, FibreWireTV, and launched that service in 2018. We believe this was an entirely appropriate pro-consumer competitive response that the RA should welcome.

The competitive interplay in TV is inconsistent with the RA’s tacit coordination theory. Digicel’s entry into subscription TV is referenced as a driver of OneComm’s TV losses (paragraph 397 of the 2019 MR). This destabilization of the segment is a key data point in finding that no SMP exists in TV services. There is, however, no connection drawn to other segments in this increasingly converged and bundled market. The RA needs to reconsider its findings of tacit coordination and joint SMP in broadband and mobile in the broader context. Clearly Digicel had no concern that OneComm might punish it in the marketplace for breaking the “common policy”, and OneComm had no ability to punish Digicel for entering one of its core business segments. When one firm is able to aggressively enter a core segment of the other firm’s business, either the “punishment mechanisms” are ineffective, or there was simply no tacit coordination and joint SMP in the first place.

Joint SMP finding in retail broadband does not remove the need to analyze the wholesale market dynamic

The extrapolation of retail joint SMP to wholesale joint SMP in broadband is a cavalier conclusion based solely on superficial observation of the wholesale market. The RA’s conclusion



appears based on unverified claims from access seekers who are unwilling to build a business based on the RA-approved terms for wholesale access. As explained in our comments to the 2017 MR, some, but not all, access seekers have been unwilling to commit and invest the limited technical and financial resources needed to offer a retail service based on the wholesale model.

The RA takes no notice of certain access seekers that have been building a business based on the wholesale model. This fact raises the question of why others claim they cannot. Moreover, if a sectoral provider with an ICOL is unhappy with the regulated terms of wholesale access, it is free to choose to enter like Bluewave, or as planned by Horizon. The unwillingness of such access seekers to invest either in the wholesale model, or in new wireless access technologies, is a matter that should be investigated by the RA before making conclusions regarding the state of the wholesale market. If others can do either option, what prevents them from doing the same?

On a related note, we have seen repeated efforts by access seekers to use the wholesale model as a means of financing their working capital.³⁴ This highlights a continuing issue with the wholesale model and the behaviour of access seekers. Rather than simply according blame to access providers, it is incumbent on the RA to investigate and understand the issues as part of the 2019 MR. The RA's statutory obligation to review the market is not fulfilled if the RA simply presumes the lack of a thriving wholesale market is proof of tacit coordination and joint SMP.

Mobile Specific Comments

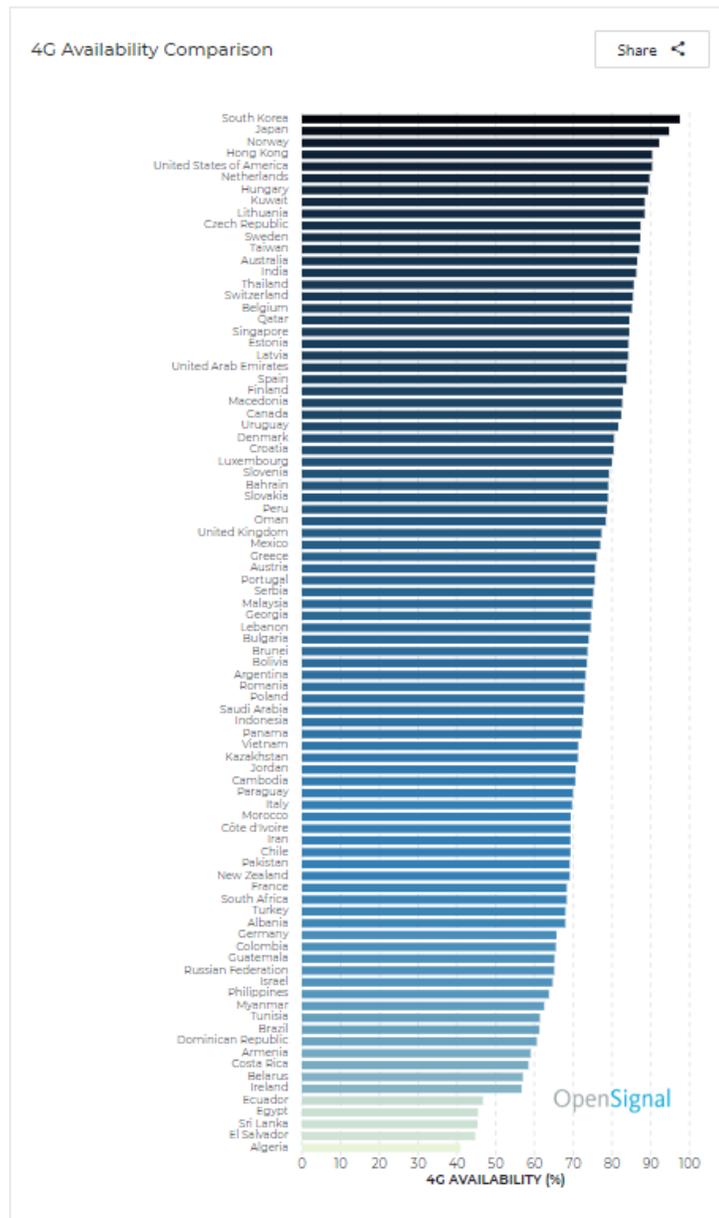
Many of the comments above regarding broadband, apply equally to the RA's analysis of the mobile segment. Accordingly, our comments below will be limited to areas where additional commentary is necessary or where additional market data is helpful and ought to be considered by the RA before proposing remedies.

A. Bermuda is a global leader in 4G availability

As the RA is aware, OneComm and Digicel have both built 4G LTE networks nationwide. The RA has independently tested both LTE networks and found them to operate at greater than 99% coverage with a minimum average download speed of 15Mbps. This is a remarkable outcome particularly when you consider that most other countries continue their efforts to reach 90% availability.

³⁴ The access seeker arranges FibreWire access for its retail customers and sells its ISP service to complete the broadband service. The access seeker bills the consumer for broadband and is paid the monthly retail price on a 30 day cycle, as per the normal commercial terms. To finance its ongoing operations, the access seeker then significantly delays payment to the access provider for 60 to 180 days (and sometimes longer). This has been a recurring outcome with access seekers.





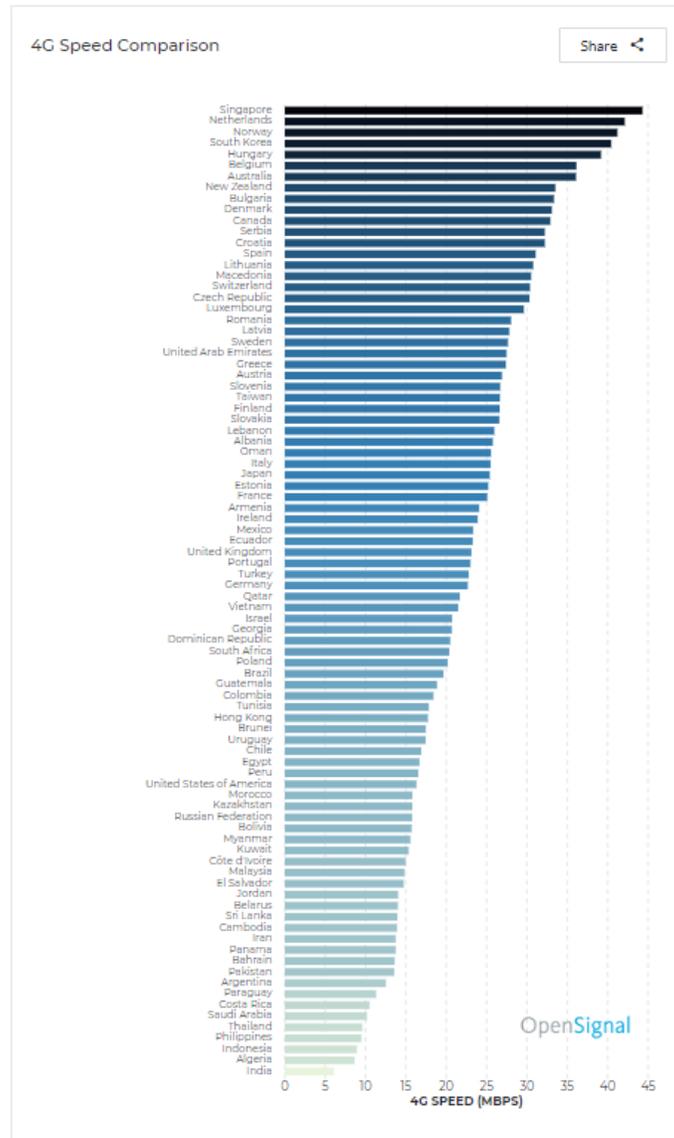
The OpenSignal chart above shows that 4G network availability is well below 90% for the vast majority of countries measured.³⁵

³⁵ Both the availability (above) and speed (below) charts are from OpenSignal’s State of LTE Report dated February 2018, as found at <https://www.opensignal.com/reports/2018/02/state-of-lte#> on 7 April 2019. We note there is a difference between the RA’s coverage measurement and OpenSignal’s availability metric. The RA’s test methodology encompassed both geographic coverage and network availability measures by conducting high-density drive tests over the length of 99% of all of the two-lane roads in Bermuda and the length of any other roads that (1) could be accessed safely and/or (2) were not private. Accordingly, the RA’s coverage metric is also a measurement of availability comparable to the OpenSignal metric.



B. Bermuda is a global leader in LTE network performance

It is also important to note that OneComm's LTE network performance compares very favourably with those of leading nations like Singapore, the Netherlands, Norway and South Korea.



As per November 2017 drive tests conducted by the RA's independent consultants, Score Technologies Inc., OneComm's nationwide LTE network provided an average user download data rate of more than 42 Mbps.



C. Regulation played a part in the timing and standard of deployment for LTE networks in Bermuda

Regulation in mobile has been very different than the regulation of broadband in Bermuda. Despite finding SMP in mobile in 2013, the RA chose not to implement the myriad of price control remedies that it applied to broadband. The RA has, however, chosen to implement a number of spectrum licence conditions that have heavily influenced market behaviour.

Although the initial consultation on the criteria and procedures for allocating HDS-1 spectrum began in August 2015, it was May 2016 when the HDS-1 Final Decision was issued. That decision set out a number of phased LTE buildout obligations and performance standards for deployment on a timeline that set the stage for world class mobile services during the America's Cup in 2017, and expedited national coverage thereafter. The lasting result was that OneComm and Digicel heavily invested to build competing networks to a very high standard as evidenced by their performance in the global comparisons above. While this has generally been a good outcome for mobile customers in Bermuda, the RA should note that it has also significantly contributed to overall network cost. While cost does not directly determine retail pricing, such costs are a contributing factor particularly in a country the size of Bermuda with approximately 63,000 people.

D. RA is Overly Willing to Find Joint Market Power and Tacit Coordination in Mobile

Mobile services in particular are subject to repeated waves of technological change. Technology standards like GSM, CDMA, HSPA, LTE and multiple variants of each, have driven the need for constant network rebuilds and upgrades. Carriers around the world have built out their networks to try and stay current in the mobile space. Although the segment has seen the highest revenue growth rates in past decades, market saturation is setting in, and revenue growth is less evident.

No matter what market, to accomplish constant technological refresh, some degree of profitability is necessary to encourage investment. Profitability is needed to attract further investment and eventually fund the upgrading or rebuilding of a network to the next standard. With 5G deployments beginning in other markets, OneComm is preparing for the next iteration of mobile standard even though the upgrade to LTE was only completed in 2017.

RA's "initial financial analysis" becomes the RA's conclusion of "excess" profits despite evidence to the contrary

In the 2017 MR, the RA stated what it characterized as "initial" findings. They were presumably subject to possible amendment if comments received in the consultation process necessitated change.

5.2.6 Profitability

184. Based on the Authority's initial financial analysis, it appears that Bermuda Digital Communications Ltd. ("BDC") (part of OneComm) is making significant profits, with a substantial margin on earnings before interest and taxes ("EBIT").

185. Digicel Group's mobile operations appear to be making a significant EBIT margin at the group level. The Authority is continuing its assessment in this area.

186. These levels of profitability are in excess of what would be expected in an effectively competitive and well-functioning mobile market.

187. In addition, the levels of profitability do not appear to be falling over time.

As part of our response to the 2017 MR, we provided profitability information taken from the securities filings of Verizon, AT&T and Vodaphone. For the 2019 MR, we provide similar data:

Verizon's wireless operations report:³⁶

Years Ended December 31,	2017	2016	2015	(dollars in millions)			
				(Decrease)/Increase			
				2017 vs. 2016	2016 vs. 2015		
Segment Operating Income	\$ 29,207	\$ 29,853	\$ 29,973	\$(646)	(2.2)%	\$ (120)	(0.4)%
Add Depreciation and amortization expense	9,395	9,183	8,980	212	2.3	203	2.3
Segment EBITDA	\$ 38,602	\$ 39,036	\$ 38,953	\$(434)	(1.1)	\$ 83	0.2
Segment operating income margin	33.4%	33.5%	32.7%				
Segment EBITDA margin	44.1%	43.8%	42.5%				

Similarly, AT&T reported:³⁷

Operating Income decreased \$576, or 2.8%, in 2017 and increased \$840, or 4.2%, in 2016. The operating income margin of AT&T Mobility was 28.1% in 2017, 28.3% in 2016 and 26.9% in 2015. AT&T Mobility's EBITDA margin was 39.4% in 2017, 39.7% in 2016 and 37.9% in 2015. AT&T Mobility's EBITDA service margin was 48.5% in 2017, 48.7% in 2016 and 46.7% in 2015. (EBITDA service margin is operating income before depreciation and amortization, divided by total service revenues.)

On a group basis, Vodaphone reported:³⁸

Adjusted income statement						
	H1 16/17 €m	H2 16/17 €m	FY 16/17 €m	H1 17/18 €m	H2 17/18 €m	FY 17/18 €m
Group revenue	24,051	23,580	47,631	23,075	23,496	46,571
Group adjusted EBITDA	7,090	7,059	14,149	7,385	7,352	14,737
EBITDA margin	29.5%	29.9%	29.7%	32.0%	31.3%	31.6%

³⁶ Verizon 2017 Annual Report, page 21.

³⁷ AT&T 2017 Annual Report, page 26

³⁸ Vodaphone 2018 Annual Report found in the financial statements available at https://www.vodafone.com/content/annualreport/annual_report18/index.html#downloads.



OneComm does not publish EBITDA margin by service. We note, however, that a calculation done using reported consolidated group numbers would show that OneComm’s profitability (as measured by EBITDA margin) is consistent with the range of examples shown above, with OneComm being closer to the bottom of that range. The RA, despite having this comparative information in hand, still declares that “levels of profit being generated by OneComm and Digicel Group in respect of mobile services were ‘in excess of what would be expected in an effectively competitive and well-functioning mobile market.’” We do not agree and the evidence provided supports our view. The RA has simply taken its “initial” findings in October 2017 and without consideration of the data, declared those findings as a conclusion in February 2019.

We also note that OneComm has incurred capital expenditures of over \$90 million since 2016. That money was spent building its networks and related businesses in Cayman and Bermuda. Some level of profitability is necessary to continue making those investments. Accusations of “excess” profitability from a regulator need to be very carefully grounded in evidence, as the regulatory implications of those claims could severely chill investment going forward.

Mobile pricing has changed over time and is not the same between providers

OneComm provided comments supporting the notion that the RA’s “international benchmarking analysis” for mobile pricing had significant data and methodology errors that invalidated the initial conclusions of the RA in the 2017 MR.³⁹ There is no consideration that Bermuda favours postpaid rather than prepaid services,⁴⁰ unlike many of the countries measured. Similarly, the RA takes no notice of device subsidy programs that are popular in Bermuda but not in the countries it sampled, and as a result misses the impact on pricing and churn rates. Despite our 2017 comments, and similar comments provided by others, the RA maintains its 2017 conclusions in the 2019 MR as if no contrary evidence exists.

In paragraph 347 of the 2019 MR, the RA comes to firm conclusions that the number of mobile plans offered “is limited” and “has not varied significantly in recent years”; that the offerings are “relatively standard and do not allow for significant customer personalization” and the “fact that tariffs are standardized” makes tacit coordination easy. The RA offers little evidence for these conclusions other than the problematic analysis from the 2017 MR. An additional 18 months have passed since the issuance of the 2017 MR, and the conclusions remain incorrect.

A simple comparison of OneComm’s pricing in 2016 relative to current pricing illustrates the degree of historical change. In April 2016, OneComm offered the following postpaid smartphone plans:

³⁹ See pages 18 and 19 of the OneComm response to the 2017 MR attached as Annex 2.

⁴⁰ As mentioned in our comments to the 2017 MR at page 18, the RA’s analysis focuses on “pre-pay (contracts)” even though the vast majority of customers in Bermuda choose postpaid plans.



Smartphone Plans

More Data. More Savings.

Price	\$90 /month	\$105 /month	\$125 /month	\$155 /month	\$199 /month
Data	1GB	2GB	4GB	6GB	10GB
	–	✓ INCLUDED	✓ INCLUDED	✓ INCLUDED	✓ INCLUDED
Talk & Text	400 MINUTES 400 SMS*	✓ UNLIMITED	✓ UNLIMITED	✓ UNLIMITED	✓ UNLIMITED
Long Distance U.S.A. & Canada	Pay Per Use^	Pay Per Use^	✓ 60 MINUTES	✓ 150 MINUTES	✓ UNLIMITED
International SMS	Pay Per Use^	Pay Per Use^	✓ 250 Included	✓ 500 Included	✓ UNLIMITED
Device Discounts**	–	ADDITIONAL \$100 OFF the 2yr price	ADDITIONAL \$200 OFF the 2yr price	ADDITIONAL \$350 OFF the 2yr price	ADDITIONAL \$550 OFF the 2yr price
Data Add On	–	–	–	–	✓ 5GB – \$45 / 10GB – \$70

Government License Fee of \$9.50 per line is automatically added to your account each month.

Current OneComm mobile postpaid pricing as of 28 April 2019 is below:⁴¹

ALL LTE SMARTPHONE PLANS INCLUDE

- The **BIGGEST** data plans with the best value in Bermuda.
- Unlimited Global Text and calls to the US and Canada
- Unlimited Local Talk and Text
- Voice Mail, Call Display, Call Waiting, Call Forwarding and Three Way Calling

L Plans

Up to \$650 off any device on NextOne
*NextOne Balance waived > 22 months
1GB Data* Rewards
Additional Data Usage: \$20/GB = < \$0.02/MB

2GB
LTE Data

\$ 105
per Month

3GB
LTE Data

\$ 115
per Month

4GB
LTE Data

\$ 125
per Month

T Plans

Up to \$900 off any device on NextOne
*NextOne Balance waived > 20 months
2GB Data* Rewards
Additional Data Usage: \$15/GB = < \$0.02/MB

6GB
LTE Data

\$ 145
per Month

8GB
LTE Data

\$ 160
per Month

10GB
LTE Data

\$ 175
per Month

E Plans

Up to \$1,200 off any device on NextOne
*NextOne Balance waived > 18 months
5GB Data* Rewards
Additional Data Usage: \$10/GB = < \$0.01/MB

15GB
LTE Data

\$ 200
per Month

25GB
LTE Data

\$ 225
per Month

40GB
LTE Data

\$ 250
per Month

CALL NOW >

Gov't license fee \$12.00

⁴¹ As found at <https://onecomm.bm/shop/mobile/plans> .



As in the broadband analysis, the RA has focused on a select few data points to conclude things are aligned or the same, or otherwise support a theory of tacit coordination and joint SMP. We note the following differences between 2016 and 2019:

	OneComm's mobile postpaid plans	
	2016	2019
# of plans	5	9
Price Range	\$90 to \$199 per month	\$105 to \$250 per month
Data Allowance	1GB to 10GB	2GB to 40GB
Data Features	Rollover Data	Data Rewards
LD to Canada/US included	Only 10GB plan unlimited	All plans unlimited
International SMS included	Only 10GB plan unlimited	All plans unlimited
Device program	Discounts for 2 year contract commitment	NextOne declining balance that is payable anytime
Government License Fee	\$9.50 per month	\$12.00 per month

Contrary to the RA's view, there are significant differences in the offerings relative to 2016, with customers now having an even broader range of choices to personalize their service.

Similarly, a simple comparison of current OneComm and Digicel pricing illustrates the non-standard aspects of offerings as between providers. Current Digicel mobile postpaid pricing as of 7 April 2019 is below:⁴²

Purchase your Postpaid Plan Below!

	PREMIER +	MAX	EXTRA	MORE
Price	\$199	\$155	\$125	\$105
Data	16 GB Data	8 GB Data	4 GB Data	2 GB Data
Phone Discount	\$600	\$400	\$250	\$150
Local Mins & SMS	Unlimited	Unlimited	Unlimited	Unlimited
International Mins	Unlimited Canada, USA & UK	Unlimited Canada, USA (250 min to UK)	Unlimited Canada, USA (150 min to UK)	Unlimited Canada & USA
International SMS	Unlimited	Unlimited	Unlimited	Unlimited
3 months Unlimited Data	Yes	Yes	Yes	Yes
Rollover Data	Yes	Yes	Yes	Yes
Unlimited WhatsApp	Messaging & Voice	Messaging & Voice	Messaging & Voice	Messaging
iPhone Bonus	Unlimited iMessage & Facetime & 1GB Apple Music	Unlimited iMessage & Facetime & 1GB Apple Music	Unlimited iMessage & Facetime & 1GB Apple Music	Unlimited iMessage & 1GB Apple Music
	buy now	buy now	buy now	buy now

Digicel has clearly chosen a different path in terms of its postpaid plans. As before, the RA in its analysis highlights only a select few prices (2GB, 4GB and 8 GB plans) that are the same or close

⁴² As found at <https://www.digicelgroup.com/bm/en/mobile/plans-and-services/postpaid-plans/postpaid-voice-data-plans.html> on 7 April 2019.



to the same. By design, the RA's comparison approach in Figure 5.5 of the 2019 MR simply ignores more than half of the plans offered by OneComm (3GB, 6GB, 10GB, 25GB and 40GB plans). The RA takes no notice of many other differences. For example, Digicel offers far fewer plans (4 instead of 9); significantly different handset subsidies; a much narrower range of data allowances (2GB to 16GB instead of OneComm's 2GB to 40GB); includes the UK in their most costly plan; only offers 16GB as its largest plan relative to OneComm's 25 and 40 GB plans; and so on. How these competing offerings can be characterized as "tariffs that are standardized" is difficult to understand.

Lack of entry and destabilizing factors in mobile result from regulatory restrictions

As in the broadband market, the RA's conclusions regarding lack of entry requires more discussion. In HDS-1, a potential mobile entrant was "not successful in acquiring spectrum." (paragraph 353 of the 2019 MR). In the Final Decision on the Award of HDS-1 Spectrum,⁴³ the RA noted that the potential entrant had failed to meet the minimum requirements established for Baseline Review and eventually disqualified them from the process. The disqualified applicant later challenged the decision claiming that the RA's analysis was "unduly harsh" and that the RA's restrictive application process was "unreasonably discriminatory".⁴⁴ We make no comment as to the accuracy of the claims. Our intention is simply to highlight the would-be new entrant's view that the RA's process and analysis were the barriers to their market entry.

We also note that Horizon, the would-be 5G broadband entrant discussed above, plans to offer mobile services over its 5G network as Phase 4 of its business plan.⁴⁵ Like its broadband aspirations, Horizon's entry into mobile is prevented because of the lack of an ICOL and related spectrum licence. We make no comment about the viability of Horizon's plans to enter the mobile market. Our intention is simply to highlight that Horizon believes it can enter the market, but has been prevented from doing so by a statutory restriction, that being the moratorium on the issuance of ICOLs. Section 75 of the Electronic Communications 2011 (the "ECA") required that the moratorium be reviewed and possibly lifted no later than 4 years after commencement of the ECA in 2013.

In that regard, on 29 January 2019, the RA reports that it submitted a Final Report of the Electronic Communications Moratorium Review to the Minister where it concluded:

⁴³ Regulatory Authority, 26 October 2016, available at <https://rab.bm/documents/hds-1-final-decision-final-for-publication/?wpdmdl=1683&refresh=5c93ec42688c71553198146> .

⁴⁴ Exhibit NF-5 to the Affidavit of Nicholas Faries sworn 28 October 2016, page 3.

⁴⁵ Horizon Communications, White Paper, page 25 available at <https://horizoncomm.co/feast-content/uploads/Horizon-Whitepaper.pdf> .

... that the issuance of new ICOLs and COLs would encourage increased competition in the electronic communications sector, incentivize current providers to compete on both price and customer service and lead to greater consumer benefits.⁴⁶

Further, the RA reports that the Minister released a decision in which he lifted the Moratorium and authorized the RA to grant additional ICOLs and other public COLs subject to certain standards and criteria that it will determine through the newly announced public consultation.⁴⁷

The 2019 MR was issued on 15 February 2019 after the RA made its recommendation, but before the moratorium was actually lifted by the Minister. At the time of issuing the 2019 MR, the RA was clearly of the view that the moratorium was discouraging competition and preventing new entry. The RA goes on to explain:

The purpose of the Moratorium was to ensure a degree of market stability for both sectoral providers and consumers during the implementation of the new regulatory regime and licensing structure created by the ECA.⁴⁸

Almost coincidentally in time, the RA is considering whether “external destabilizing factors” exist in the relevant market, while it is issuing a Final Report to the Minister explaining that the moratorium was purposefully created to ensure “market stability”. It is, therefore, difficult to understand how the RA feels the need to infer tacit coordination and joint SMP. As part of its analysis under Criterion 3 from *Airtours*, the RA should have considered the implications of the moratorium as a “stabilizing” factor in the market. Instead, despite its own evidence to the contrary, confirmation bias wins out as the RA interprets outcomes to support its finding of joint SMP.

Joint SMP finding in retail mobile does not remove the need to analyze the wholesale market dynamic

As in broadband, the extrapolation of retail joint SMP to wholesale joint SMP in mobile is a cavalier conclusion based solely on superficial review of the wholesale market. The RA swiftly concludes “there is no reason not to extrapolate the joint SMP finding from the retail mobile market to the upstream wholesale market.” At no point does the RA actually consider the reasons why wholesale mobile services might not be thriving.

Similar to broadband, providing retail mobile services based on a wholesale reseller model (like MVNO) requires some investment and technical expertise. An MVNO does not need to incur

⁴⁶ The primary source or ‘Final Report’ does not appear to be publicly available. The quoted wording is taken from the RA’s new “Consultation: Grant of New Integrated Communications Operating Licences and Other Types of Communications Operating Licences”, Matter: 20190405, dated 5 April 2019, paragraph 14.

⁴⁷ Ibid. Paragraph 15.

⁴⁸ Ibid. Paragraph 13.

the full capital cost of a mobile network, but it does need to commit itself to building a marketing organization, a technical solution for provisioning, billing and support, and a product design/offering that addresses numbering, roaming, long distance and other aspects of mobile service. The complexities of MVNO relationships should not be underestimated. An investment of some time and money is still required.⁴⁹

With that in mind, the RA needs to consider not just the absence of MVNO in the Bermuda market, but also why that is the case. Part of the answer may be found in the limited size of the Bermuda market. At paragraph 73 of the 2017 MR, the RA stated:

... it should be noted that in small island nations such as Bermuda, or indeed any country, the minimum efficient scale required to fund the necessary network investment limits the number of facilities-based providers that can efficiently co-exist.

This economic concept does not just apply to facilities-based competition, it extends to MVNO and other reseller arrangements in any segment. With a population of just over 60,000 people and 2 national facilities-based providers in the market, it is difficult to understand how additional MVNO players can profitably enter.⁵⁰ The market may simply be too small to support 3 or more providers (facilities-based or MVNO). The minimum efficient scale of an MVNO operator may be significantly smaller than a facilities-based provider, but would still be challenged in a market the size of Bermuda.

Moreover, MVNOs in other jurisdictions tend to succeed by tailoring their service offerings to better target a specific niche group (e.g. youth, military, elderly, ethnicity, etc.). If we apply this segmentation practice to Bermuda, the target niches would be very small. The RA needs to consider whether would-be MVNO firms believe the addressable market in Bermuda is a large enough opportunity to justify their entry.

Subscription Television Specific Comments

The RA's segment analysis for subscription TV services arrives at the correct conclusion – that “there are currently no SMP operators in this market.”⁵¹ This amounts to a finding that the market is effectively competitive and, therefore, no ex ante remedies can be applied.

⁴⁹ The complexity of MVNO arrangements has given rise to mobile virtual network enablers (or MVNEs) who provide network infrastructure and related services, such as business support systems, administration and operations support systems to MVNOs. In markets where MVNOs thrive, MVNEs often exist to simplify the technical integration process and act as an operational facilitator. Initial discussions with an MVNE suggest that the costs of an MVNE may not be justifiable given Bermuda's market size.

⁵⁰ For the record, we note that OneComm has been and continues to be willing to work with any firm who would like to pursue an MVNO relationship.

⁵¹ Paragraph 419 of the 2019 MR.



A. Why is the SSNIP Analysis Only Done for Subscription TV?

In reaching this conclusion, we note the RA's consumer survey research⁵² and other efforts to analyze the competitive dynamic are far more rigorous in this segment than in broadband and mobile. The application of the SSNIP test appears to have been the most compelling aspect of the research. It raises the broader question of why this research was conducted for subscription TV, and not for other segments of the electronic communications market like broadband and mobile.

B. Another Illustration of the RA's Distrust for Competition

The RA is of the view that OneComm does not currently have SMP in subscription TV, and is unlikely to have SMP over the next few years. Despite this clear finding of effective competition, the RA remains suspicious of OneComm's future behaviour.⁵³

... the Authority intends to monitor closely the market trends and to ensure that certain OneComm customer cohorts are not being exploited or discriminated against. If the market were to evolve such that OneComm would have the ability and incentive to exploit its customer base, or even certain customer cohorts, by increasing prices, the Authority would intervene in the market. The Authority would consider what form of ex ante remedies may be necessary to address the competition concern.

This passage illustrates the RA's continuing distrust of the notion that competition will result in consumer benefits. In the presence of competition, exploitation or discrimination are either not possible, or simply not profitable, as highlighted in the RA's consumer research. Moreover, if problems were to arise in this competitive segment, the RA has its ex post competition powers to deal with the issues. The RA's willingness to implement ex ante remedies in this scenario is incorrect as that would require a full market review, a finding of SMP, and a determination that ex post powers are insufficient to deal with competition concerns.

C. Unlicensed OTT Providers Do Not Pay RA or Government Authorization Fees

The RA's research shows that OTT providers like Netflix, Amazon Video, and Hulu compete in Bermuda's market for electronic communications. There are other OTT services that were not considered or mentioned in the RA's analysis. OTT services like Ex-Pat TV Bermuda, Bermuda IPTV and Level 2 Bermuda Internet TV are some examples of subscription TV services competing in Bermuda that are also not properly considered in the RA's analysis.

⁵² Paragraph 182 of the 2019 MR references a consumer survey conducted in August 2018 that is supposed to be published on the RA's website. As of 14 April 2019, we can find no such survey on the website.

⁵³ Paragraph 418 of the 2019 MR.

The competitive effect of these services only further highlights the degree of competition in the market, and provides further support for the RA's conclusion that no SMP exists in the subscription TV segment currently, and for the foreseeable future.⁵⁴

We note that all of the OTT providers referenced above do not have the licence necessary to establish and provide electronic communications services within Bermuda, contrary to section 12 of the ECA. As such, they are not held to the same regulatory standards as licence holders, nor do they pay the required taxes. All licensed providers of subscription TV pay taxes on their related gross income. Each year 1.75% is paid to fund the activities of the RA, and 3.5% is contributed to the Government's Consolidated Fund.

To our knowledge, the RA is aware of their unlicensed activities, but has not yet enforced the provisions of the ECA against such providers. This outcome has a significant impact on the Bermuda market. Essentially, local licensed providers operate at a 5.25% cost disadvantage to the unlicensed providers, and are subject to regulatory compliance obligations that are not being enforced against the unlicensed providers. In effect, this skews the competitive playing field in Bermuda and explains, in part, the recent precipitous decline of licensed subscription TV services in the local market.

In our view, this problem needs to be studied and addressed by the RA. If left as is, the RA's partial regulation of the segment will continue to exacerbate secular trends to the ultimate detriment of local licensed providers.

Remedies Specific Comments

In its early commentary regarding remedies, the RA states:

The Authority is keen to ensure that any ex ante obligations imposed on operators are not too onerous or disproportionate. (paragraph 23)

Many of the existing regulations, which have proved not to be effective, or have been especially burdensome, will be removed. (paragraph 43)

Despite these statements, and the removal of certain 2013 SMP remedies (notably the price control rules), the RA proposes to replace the ineffective 2013 SMP remedies with a variety of modified (e.g. wholesale) and new remedies that are too onerous and burdensome, and disproportionate to their intended objectives.

⁵⁴ Paragraph 189 of the 2019 MR states that, "... free OTT services do account for a material amount of claimed switching." Paragraph 212 continues, "... the Authority plans to consider the impact of free OTT services within the market power analysis." We found no consideration of the competitive impact of free OTT in the market power analysis.

The RA has a statutory obligation to rely on market forces and withdraw, reduce or limit ex ante remedies in circumstances where it 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.⁵⁵ The problem is that the RA’s analytical biases favour a finding of tacit coordination and joint SMP.⁵⁶ In pursuing these findings, the RA’s analysis omits key data and/or misinterprets market outcomes. Efforts to correct the RA’s market views in the 2017 MR have gone largely unheeded.

The NERA Report is highly critical of the RA’s Airtours analysis:⁵⁷

The Consultation Document’s Airtours analysis fails to apply generally accepted criteria and analytical techniques. While acknowledging that the four criteria constitute only a “starting point” for the analysis of SMP, and stating correctly that they must be assessed in the context of “current and prospective market developments,” the Consultation Document neither accurately describes nor correctly applies the standards or tools used by European regulators in actual assessments of joint SMP.

The RA has not proven its tacit coordination theory in broadband and mobile, and should not find joint SMP in either segment. The need for ex ante remedies has not been proven. Given that analytical backdrop, we cannot agree with the suite of continuing and new remedies proposed by the RA in the 2019 MR.

A. RA has Not Properly Considered Whether Ex Post Competition Rules are Sufficient

The ECA requires a complex process and analysis be carried out before empowering the RA to implement ex ante remedies. The statutory approach is cautious because of the well accepted tenet that ex post competition rules are less intrusive and distortionary than ex ante regulation. That policy preference is clearly built into the ECA as a pre-condition in the identification of markets. Prior to imposing ex ante regulation, the ECA requires the RA to properly assess whether markets meet certain criteria, including whether “the application of ex post competition rules alone would not be sufficient to promote or preserve effective competition in the relevant market.”⁵⁸

⁵⁵ Section 21(e) of the ECA.

⁵⁶ Subscription TV is the exception. Secular change in that segment is highlighted by the undeniable competitive effect of international competition from well-known global players. Clear evidence of OneComm’s subscriber losses and the entry of Digicel made a finding of tacit coordination and joint SMP impossible. The clear absence of tacit coordination in subscription TV is mistakenly not considered in the *Airtours* analyses for broadband and mobile. See paragraph 23 of the NERA Report regarding the cross-segment relevance of Digicel’s entry in TV.

⁵⁷ Paragraph 14 of the NERA Report.

⁵⁸ Section 22(2)(c) of the ECA. See page 26 of OneComm’s response to the 2017 MR at Annex 3 where we detail the RA’s problematic application of this section.

The RA has stated its view that ex post powers are a key element of the proposed new regulatory regime:⁵⁹

***Making use of the Authority's wider set of regulatory powers** – the Authority is of the view that a combination of streamlined ex ante remedies and effective use of ex post competition powers is needed to achieve its objectives.*

The RA began the market review process in January 2016 with the help of Deloitte (Bermuda).⁶⁰ It continued the effort with Oxera Consulting in 2017, leading to the issuance of the 2017 MR. And now, the effort is continued in the 2019 MR with the advice of DLA Piper. At some point, the RA's consultants must have already advised regarding the use of ex post competition powers. That advice, and the RA's consideration of it, is a necessary part of this consultation.

At paragraph 451 of the 2019 MR, the RA reiterates the important role of ex post powers in effective market regulation, but then postpones discussions and guidance regarding the use of those powers:

...the Authority understands the important role that ex post competition powers, as specified in sections 85 and 86 of the RAA, can play in effective market regulation. As the Authority is seeking to ensure that the overall regulatory framework utilizes ex post regulation appropriately and effectively, the Authority plans to issue separate guidance on its use of ex post competition powers. In any event, the Authority has the power and the capability to investigate infringements and impose penalties for breaches of competition law in regulated sectors.

In writing the above, the RA illustrates its bias to ex ante remedies over ex post competition powers. If they play an "important role" in the overall regulatory framework, how can they not be detailed in the RA's proposed remedies in the 2019 MR? Delaying that guidance to some date still to be determined (outside of the current proceeding) is a material defect in the market review consultation process. If the RA proposes that certain ex ante remedies be combined with the use of ex post powers, it must consult on the interaction of the 2 forms of remedies.

Despite postponing the issuance of guidance, the RA is still willing to presume the insufficiency of ex post powers:

... in markets where sectoral providers hold single or joint SMP, competition law alone may not be sufficient to develop and sustain effective competition. (paragraph 452)

In markets with SMP operators, there may be ongoing competition concerns that could result in undesirable market outcomes in the absence of regulation.... Addressing such concerns solely with ex post regulatory tools would create a significant risk of consumer harm. (paragraph 453)

⁵⁹ Paragraph 342 of the 2017 MR attached as Annex 2.

⁶⁰ "Survey to assess Island's telecoms market", The Royal Gazette, 27 January 2016, as available at <http://www.royalgazette.com/article/20160127/BUSINESS/160129711>.

Specifically, if the Authority is able to intervene only after the fact [ex post], this may be too late to ensure access for a potential new entrant. (paragraph 454)

Without more detail around the RA's use of ex post powers, these statements cannot be properly assessed or challenged. Market review is a statutory public consultation process where the whole of the market is reviewed with a view to determining the appropriate regulatory framework; including in particular the sufficiency of using ex post powers to regulate that market. If guidance in that respect is still to be issued, the consultation process is deficient. Neither the RA, nor the public can properly assess the necessity and appropriateness of ex ante remedies, if details regarding the use of ex post powers have yet to be drafted and issued.

B. Well-Functioning Companies do not Maintain Accounting Separation, Regulatory Cost Accounting and the Fully Allocated Costs ("FAC") Standard

The RA is mistaken in its views regarding how companies function. Paragraph 45 of the 2019 MR states:

... the Authority considers that the accounting information being requested is not materially different from the cost accounting principles that any well-functioning company would already follow in order to set prices for, and analyze the profitability of, the different products it sells. Therefore, complying with these remedies should not represent a material burden, and they are therefore proportionate requirements that are essential to secure the success of the monitoring regime that the Authority is proposing.

Underlying this statement are a number of problematic assumptions. The RA is a regulatory body being advised by regulatory lawyers and consultants. We are unsure what expertise is being drawn upon for these assertions. No factual basis is provided for the RA's belief that these remedies should not represent a material burden.

The RA is proposing to require SMP operators adopt quarterly reporting with annual audits, based on a scheme of regulatory accounting that seeks to fully allocate costs. Under any accounting standard, the allocation of costs is a process that is usually driven by the main purposes for the reporting requirements. In financial markets, accounting is used to communicate the financial health of the organization in a timely manner so that investors can make investment decisions. This is a completely different purpose relative to the RA's regulatory purpose of ensuring prices are cost-oriented.

For the record, although we may not be a "well-functioning" company in the opinion of the RA, we confirm that the accounting information being requested is materially different from the financial information we gather and report under the U.S. generally accepted accounting principles ("GAAP") we have adopted. Our auditors have confirmed that view. We are also



advised that the RA's annual cost accounting audit requirement will require a "special purpose audit" be done which will incur additional fees. Complying with the RA's proposed accounting remedies clearly represents a material burden, contrary to the view expressed by the RA.

C. RA's 'Cost-Orientated' Pricing Ignores Basic Economic Principles

As per the NERA Report, the RA's requirement that pricing must be cost-oriented misunderstands the economic relationship between cost and price.⁶¹

It is a central principle of regulatory economics that, in markets with high fixed costs which are shared across multiple outlets (like telecommunications), the efficient price for each output will be based not just on costs but on the elasticity of demand.

While cost may be a contributing factor to pricing, it is not the sole determinant. Factors like perceived value ("prestige"), convenience, reliability, rarity, etc. all come into play when pricing is considered and buying decisions are made. Pricing can vary for the same product across different scenarios. Popcorn purchased at a movie cinema is much more expensive than popcorn purchased at the grocery store. Even when gas stations are in close proximity, gas prices can vary. Wifi is purchased when on an airplane, free at a Starbucks, and bundled with your home broadband connection for no additional fee.

The RA's proposed cost-oriented pricing requirement is a backward-looking version of rate regulation (or rate-of-return regulation), similar in kind to the traditional approach to regulating monopoly markets. The RA seeks better regulatory cost information, so it can then determine whether market participants are pricing "excessively high" or "excessively low". The RA intends to monitor and manage the margins of certain providers. Such regimes often trigger unintended consequences. Inefficient capital investment is the most common problem. There is little incentive to reduce costs and increase efficiency. A firm regulated in this manner will be allowed to earn more if costs are higher. In the end, customers will pay the cost of such inefficiencies through higher prices.

The RA's proposed cost-oriented pricing rule (based on accounting separation and FAC accounting) is a costly path to subjectively judging ICOL holders' profitability. Ironically, the proposed accounting and reporting scheme will materially raise costs and lessen the likelihood of "excessive" profitability. Clearly, this proposed regulatory outcome is contrary to sound economic principles and the overall objectives of the market review process as set out in the ECA.

⁶¹ Paragraphs 29 to 35 of the NERA Report.

D. The Way Forward: “Competition is the primary driver of effective and efficient markets, regulation as a back-stop”

OneComm agrees with the RA’s assertion: “Competition is the primary driver of effective and efficient markets, regulation as a back-stop.”⁶² Since 2013, ex ante regulation has been more the driver than the back-stop. As the RA has discovered, that approach was ineffective.

Despite its findings, the RA remains unwilling to trust competition as the primary driver of effective and efficient markets. The RA’s main reason appears to be an enduring suspicion that prices for broadband and mobile are too high, and have not fallen. We have demonstrated that these concerns are either factually incorrect⁶³ or the direct outcome of the severe price controls of the 2013 SMP remedies. The RA needs to properly consider this and other evidence provided in the consultation process before it implements a scheme of regulation designed to remedy problems it has misconstrued or, to a large extent, created.

Looking forward, we believe the RA has reason for optimism and greater trust in competition in both broadband and mobile services:

- Lifting of the ICOL moratorium removes a key statutory barrier to new entry
- Investments in 2 nationwide fibre-based broadband networks
- New wireless entry in broadband and the expected entry of another provider based on 5G technology
- Investments in 2 nationwide LTE networks with globe-leading performance
- Expected new entry by a 3rd mobile provider based on 5G technology
- Incumbents in home phone and subscription TV have entered each other’s respective core segments, evidencing a greater breadth of competition
- Development of a more broadly competitive Bluewave-TBI-East End telecoms group
- Post-2017, rapid launch of different and more aggressive service and bundle offerings

Given the above, we believe the statutory test for reliance on market forces is clearly met. As per the ECA, the RA “shall seek 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, taking into account actual and expected market circumstances.” (section 21(e)) The broadband and mobile segments are either currently effectively competitive, or will clearly become so within a reasonable period of time, especially when taking into account expected market circumstances.

If markets materially change unexpectedly, regulation still acts as a back-stop. The RA can commence a “further review” of any relevant market on its own initiative (section 23 (6) of the ECA) at any time. And, there remain ex post competition powers that may be exercised:

⁶² Paragraph 342 of the 2017 MR.

⁶³ See Annex 3 for an Illustration of Pricing Effects Related to Government/Regulatory Taxes and Fees.

- Investigation and enforcement regarding market conduct under Part 8 of the Regulatory Authority Act 2011 (the “RAA”)
- Prohibition of abuse of dominant position under section 85 of the RAA
- Prohibition of unreasonable restraints of trade under section 86 of the RAA
- Prohibition of unfair trade practices under section 88 of the RAA

We strongly recommend the RA allow developing competitive trends to further evolve for at least another 1 to 2 years before considering the implementation of new ex ante remedies. Most of the 2019 MR is focused on data from the 2013-2017 period when competitive dynamics were distorted by the 2013 SMP remedies. The RA needs to study the market dynamics in the absence of the 2013 price controls, and the moratorium on issuing ICOLs. In that interim period, the RA can consult on and finalize its guidance on the usage of ex post competition powers – a key element of any future regulatory framework.

There is growing evidence that price and product competition will continue to flourish if the market remains relatively uninhibited by ex ante regulation. And, with the lifting of the moratorium, new entry is no longer restricted. New technologies like 5G will facilitate entry and promise to disrupt the current economics of connectivity and related services.

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In closing, we ask the RA to consider the evidence and analyses provided in this response and our response to the 2017 MR. We strongly agree with the NERA Report:<sup>64</sup>

...the regulatory regime put forward in the document would constitute a continuation of the excessively intrusive and ultimately unsuccessful regulatory approach to electronic communications markets that has been in place since 2013.

We encourage the RA to rely on market forces, withdraw the 2013 SMP remedies, and allow the market to continue to evolve. By intervening less, and trusting the market more, the RA will see greater benefits for Bermudians than it did in the 2013-2017 period.

Sincerely,



Michael Tanglao  
General Counsel  
One Communications

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<sup>64</sup> Paragraph 42 of the NERA Report.



## ANNEX 1

Declaration of Jeffrey A. Eisenach, PH.D.  
Of NERA Economic Consulting

On behalf of

One Communications

April 29, 2019



## ANNEX 2

Non-Confidential Response of One Communications  
Dated 28 November 2017

to the

Regulatory Authority's  
"Review of the electronic communications sector  
Ensuring the delivery of benefits for Bermuda via regulation"  
Consultation Document  
Dated 17 October 2017



## ANNEX 3

### An Illustration of Pricing Effects Related to Government and Regulatory Taxes and Fees

## Pricing Effects of Government and Regulatory Taxes and Fees

|                                                  | 2013  | 2014                | 2015            | 2016                | 2017   | 2018              |
|--------------------------------------------------|-------|---------------------|-----------------|---------------------|--------|-------------------|
| Monthly Cellular Telephone Government Fees       | \$7   | Increased to \$7.35 | \$7.35          | Increased to \$9.50 | \$9.50 | Increased to \$12 |
| Government Authorization Fees as a % of Revenues | 2.05% | 2.05%               | 2.05%           | Increased to 2.5%   | 2.5%   | Increased to 3.5% |
| Regulatory Authority Fees as a % of Revenues     | 1.75% | 1.75%               | Reduced to 1.5% | Increased to 1.75%  | 1.75%  | 1.75%             |
| CPI – Inflation rate                             | 1.7%  | 1.8%                | 1.4%            | 1.7%                | 1.6%   | 1.3%              |

To illustrate the pricing effects, we provide the following chart showing monthly costs paid by a customer purchasing \$100 of mobile services:

|                               | 2013                                                      | 2018                                                       | % change   |
|-------------------------------|-----------------------------------------------------------|------------------------------------------------------------|------------|
| Customer pays                 | \$100 for services and \$7 for the government handset fee | \$100 for services and \$12 for the government handset fee | 4.7% more  |
| Government receives           | \$7 and \$2.05                                            | \$12 and \$3.50                                            | 71.3% more |
| Regulatory Authority receives | \$1.75                                                    | \$1.75                                                     | No change  |
| Service provider receives     | \$96.20 for services                                      | \$94.75                                                    | 1.5% less  |

This illustrates the pricing impact on customers. Where the service price is the same across the period, the customer is paying 4.7% more for the use of their mobile phone in 2018, and the service provider is receiving 1.5% less. This reduction is exacerbated by the cumulative effect of inflation. Taking inflation into account, the service provider is receiving approximately 7% less in real economic terms.

**Before the Bermuda Regulatory Authority**  
**Market Review of the Electronic Communications Sector**  
**(Matter: 2019021501)**



**NERA**  
ECONOMIC CONSULTING

**DECLARATION OF JEFFREY A. EISENACH, PH.D.**  
**On Behalf of OneComm**

**April 29, 2019**

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EXHIBIT A: CURRICULUM VITAE OF JEFFREY A. EISENACH, PH.D.

EXHIBIT B: SUMMERY OF PROPOSED BROADBAND AND MOBILE MARKET REMEDIES

## I. QUALIFICATIONS AND SUMMARY OF OPINIONS

1. My name is Jeffrey A. Eisenach. I am a Managing Director at NERA Economic Consulting, a member of its Board of Directors, and Co-Chair of its Communications, Media, and Internet Practice. I am also an Adjunct Professor at George Mason University Law School, where I teach Regulated Industries, and a Visiting Scholar at the American Enterprise Institute, where I focus on policies affecting the information technology sector, innovation, and entrepreneurship. Previously, I served in senior policy positions at the US Federal Trade Commission and the White House Office of Management and Budget and taught at Harvard University's Kennedy School of Government and Virginia Polytechnic Institute and State University.
2. My practice focuses on the economic analysis of competition, regulatory, and consumer protection issues. In the field of communications regulation in particular, I have submitted expert reports and testified in regulatory proceedings before the US Federal Communications Commission (FCC), national regulators in Australia, Canada, the Caribbean, the European Union and South America. I have also testified before the US Congress on multiple occasions.<sup>1</sup>
3. I have written extensively on communications regulation and related issues. I am the author or co-author of several books and monographs, including *Broadband Competition in the Internet Ecosystem*, *The Digital Economy Fact Book* and *The Telecom Revolution: An American Opportunity*, and I have edited or co-edited multiple books and monographs, including *Communications Deregulation and FCC Reform: What Comes Next?* and *Competition, Innovation and the Microsoft Monopoly: Antitrust in the Digital Marketplace*. My articles have appeared in peer-reviewed journals such as *Communications and Strategies*, *Review of Network*

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<sup>1</sup> In November 2012 I filed an expert report addressing issues raised by advisors to the Bermuda Government in *Pre-Consultation Document PC12/03: Comments on Market Review Process (Part B)*. See Expert Report of Jeffrey A. Eisenach, Ph.D. on behalf of Bermuda Digital Communications Ltd. (November 21, 2012).

*Economics*, and *Telecommunications Policy*, as well as in such popular outlets as *Forbes*, *Investor's Business Daily* and the *Wall Street Journal*.

4. Prior to joining NERA, I was a managing director and principal at Navigant Economics. Before that, I served as Chairman of Empiris LLC, Criterion Economics, and CapAnalysis, LLC. Among my other previous affiliations, I served as President and Senior Fellow at The Progress & Freedom Foundation and a scholar at the Heritage Foundation and the Hudson Institute. I received my Ph.D. in economics from the University of Virginia and my Bachelor of Arts in economics from Claremont McKenna College. Appendix A contains my curriculum vitae.
5. This Declaration was prepared at the request of One Communications Ltd. (OneComm), which asked me to provide my independent expert opinion on certain economic issues raised by Bermuda Regulatory Authority's (RA's) Consultation Document in Matter 2019021501, *Market Review of the Electronic Communications Sector* (February 15, 2019) (Consultation Document), including specifically the analysis of and proposed remedies in the markets for fixed broadband and mobile. My analysis focuses primarily on three specific issues: (1) The Consultation Document's proposed finding of joint dominance ("joint SMP") by Digicel and OneComm; (2) its proposal for "cost-orientated" pricing; and, (3) its proposal to impose regulation on both the wholesale and retail markets. As I explain more fully below:
  - The criteria necessary for a proper finding of Significant Market Power (SMP) based on joint (or collective) dominance are not established in the Consultation Document and, indeed, are not present. In the absence of SMP, the proposed regulations are likely to reduce incentives for investment and innovation, harming both competition and consumers.
  - Imposition of cost-orientated retail price regulation, even on a backwards-looking basis as proposed in the Consultation Document, is counter to the basic economics of the markets at issue here, which are characterized by heterogenous consumers and high fixed costs. Efficient prices in such markets are not set entirely or even primarily on costs; indeed, cost-based pricing would be inherently inefficient.
  - Intervention at both the wholesale and retail levels is unnecessary and, by international standards, unusual. Even if the RA were to conclude that SMP exists in some or all of the

markets at issue, the appropriate remedy would be to focus on facilitating efficient wholesale access, not imposing regulations at the retail level that are more likely to discourage than encourage competition.

6. The remainder of this report is organized as follows. Section II summarizes my understanding of the proposed remedies. Section III explains my opinion regarding the Consultation Document's analysis of joint dominance. Section IV addresses the proposal to require cost-orientated retail pricing. Section V explains my opinion with respect to the proposal to regulate Digicel and OneComm at both the wholesale and retail levels. Section VI summarizes my conclusions.<sup>2</sup>

## **II. THE PROPOSED REGULATIONS WOULD BE BURDENSOME AND COMPLEX**

7. Based on its finding that Digicel and OneComm possess joint SMP in the markets for fixed broadband (Market 1) and mobile services (including voice and data) (Market 2), the Consultation Document proposes to impose an array of *ex ante* remedies at both the wholesale and retail levels. (See Exhibit B.)
8. At the retail level, the RA would require the regulated firms to: offer both broadband and wireless service on a stand-alone basis at "cost-orientated" prices; create a system of accounting separation and regulatory reporting on costs and profitability; publish "key performance indicators;" and, take steps to "ensure customers can choose the right products for them and do not experience unnecessary difficulties when switching."
9. At the same time, at the wholesale level, the Consultation Document proposes to subject the regulated firms to a mandated resale requirement (consisting of bitstream and "virtual" access

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<sup>2</sup> The fact that I do not address certain issues (e.g., market definition) should not be interpreted as agreement with the Consultation Document's conclusions.

for fixed services and unspecified “wholesale mobile access and termination services” for mobile) on “fair, reasonable and nondiscriminatory terms.”<sup>3</sup>

10. The Consultation Document provides at best limited guidance on how many of these regulations would be implemented in practice.<sup>4</sup> For example, as the Ofcom document cited in the Consultation Document in support of its proposal to adopt a FAC standard for accounting separation makes clear, there are “numerous methods for generating FAC estimates.”<sup>5</sup> Yet the Consultation Document provides no guidance on which method the regulated firms should implement. Furthermore, it concludes that “strict application” of the FAC standard is “not appropriate” in any case, and that therefore the RA will consider the Cost Orientation standard violated only if revenues “are significantly and persistently above FAC.”<sup>6</sup> Yet it provides no guidance on what would constitute either “significant” or “persistent” deviations from cost.<sup>7</sup> The proposed FRAND obligation for wholesale services is similarly ambiguous.<sup>8</sup>
11. In my experience, which includes extensive participation in regulatory proceedings in North and South America, the Caribbean, Europe and Asia over the course of more than 20 years, proper

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<sup>3</sup> In the case of mobile, the Digicel and OneComm are obligated to provide “wholesale mobile access and termination services that enable the requesting party to provide the full range of mobile voice and data services to its customers on a resale basis” as a condition of their 4G licenses. See Consultation Document at ¶613. As I explain in Section V, imposition of both retail and wholesale price regulation is duplicative and virtually unprecedented.

<sup>4</sup> Consultation Document at Section 6.

<sup>5</sup> Ofcom, *Cost Orientation: Review* (2013) at ¶3.38 (“There are numerous methods for generating FAC estimates, although typically firms use some form of activity-based costing. This form of analysis involves allocating all costs (both incremental and common) to individual activities and services. Other approaches can involve simply allocating common costs to services in line with the incremental or variable costs incurred.”) (available at [https://www.ofcom.org.uk/data/assets/pdf\\_file/0018/63261/cost\\_orientation.pdf](https://www.ofcom.org.uk/data/assets/pdf_file/0018/63261/cost_orientation.pdf))

<sup>6</sup> Consultation Document at ¶¶480-481.

<sup>7</sup> In Section IV I explain why any application of the FAC standard, strict or otherwise, is inappropriate in this case.

<sup>8</sup> See Consultation Document at ¶¶535-543. The proposed approach to benchmarking predatory prices is also ill-conceived. See Consultation Document at ¶495 (“One approach could be to take the FAC value (as discussed above) and apply a LRIC/FAC ratio, likely to be benchmarked from other regulated jurisdictions where LRIC and FAC values are available, such as the UK. Applying this ratio to the computed FAC will provide an estimate for the LRIC, which could be the basis for the cost floor.”). The most obvious problem with this approach (in addition to the fact that it fails to provide any meaningful guidance on how the RA would determine in practice whether a price is predatory) is that there is no reason to believe that the relationship between LRIC and FAC would be constant across companies, let alone across geographic regions as different as Bermuda and the UK.

implementation of the multiple obligations contemplated in the Consultation Document would require extensive regulatory proceedings over the course of many years. The direct and indirect costs of such proceedings would be significant for both the RA and the regulated firms, and would include the diversion of management focus and attention and the need to account for regulatory risk. I would also expect the direct costs of complying with the proposed rules to be substantial. Thus, even if the contemplated obligations could be expected to generate some economic benefits – and for the reasons I explain below, in my opinion they would not – any benefits would need to be balanced against the regulatory delay, uncertainty and compliance burdens that would result from their adoption.

### III. THE CONSULTATION DOCUMENT DOES NOT DEMONSTRATE JOINT DOMINANCE

12. The RA’s authority to impose *ex ante* regulation on communications providers rests on a finding of SMP by at least one provider in a relevant market.<sup>9</sup> For the fixed broadband and mobile wireless markets, the Consultation Document relies on the theory of joint dominance, i.e., the ability of multiple firms in a market, without explicitly coordinating their actions, to raise prices, reduce quality or otherwise engage in anticompetitive activities through tacit coordination.<sup>10</sup> Specifically, the Consultation Document assesses the presence of joint SMP by applying the so-called *Airtours* criteria,<sup>11</sup> which are derived from a series of cases in which European courts have

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<sup>9</sup> SMP is defined in the Electronic Communications Act (ECA) as “[A] position of economic strength in the relevant market or markets that affords an undertaking, either individually or jointly with others, the power to behave to an appreciable extent independently of competitors, customers and ultimately consumers, which may provide the basis for the imposition of *ex ante* remedies.” See Bermuda Electronic Communications Act of 2011, Section 2.

<sup>10</sup> The statutory criteria for assessing joint SMP are found in section 23(3) of the ECA which provides that joint SMP may be, found if: (i) the relevant market is concentrated; (ii) each provider has a high and stable share of the market; (iii) significant and enduring barriers to entry exist; and (iv) there are grounds for thinking that these factors, together with others, are likely to give rise to tacit coordination and thereby prevent, restrict or distort competition.” (See Consultation Document at ¶264, citing ECA at Section 23(3)). The ECA also provides that the RA consider “other relevant factors,” including the criteria listed in Section 23(2). See ECA at Section 23(3)(d). See also Consultation Document at ¶261 (“Joint SMP does not require, or imply, that the two sectoral providers are engaging in illegal collusion, but refers to whether they constitute a collective entity, i.e. there is ‘tacit coordination’ between them, relative to their competitors, trading partners and customers.”).

<sup>11</sup> See Consultation Document at ¶265; see generally Consultation Document at Section 5.1.

adjudicated joint dominance<sup>12</sup> and subsequently have been incorporated in the European Commission’s guidelines for assessing joint SMP in communications markets.<sup>13</sup> As enumerated in the Consultation Document, the four *Airtours* criteria include: (1) the ability to reach terms of coordination around a focal point; (2) the ability to monitor partners for deviation from coordinated outcome; (3) stability in the face of external factors; and (4) the ability to impose credible punishment if deviation is detected.<sup>14</sup>

13. In my opinion, the RA’s application of these criteria to the markets for Broadband and Mobile is fundamentally flawed for two primary reasons. First, as I explain in the first subsection below, courts, regulatory authorities and practitioners agree that proper application of the *Airtours* criteria to assess joint SMP requires a high level of analytical rigor, as opposed to a “mechanical” or “checklist” approach. In my opinion, the Consultation Document neither embraces nor meets these generally accepted standards for analytical rigor. Second, as I explain in the second subsection, the Consultation Document’s application of the criteria to the broadband and mobile wireless markets either misinterprets or ignores key evidence which, when properly interpreted, demonstrates that these markets exhibit robust competition.

#### **A. The Consultation Document’s SMP Analysis Does Not Apply Accepted Standards**

14. The Consultation Document’s *Airtours* analysis fails to apply generally accepted criteria and analytical techniques. While acknowledging that the four criteria constitute only a “starting point”

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<sup>12</sup> Case T-342/99 *Airtours v Commission*.

<sup>13</sup> See *Commission guidelines on market analysis and the assessment of significant market power under the Community regulatory framework for electronic communications networks and services* (November 2002) (available at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2002:165:0006:0031:EN:PDF>) (hereafter EC Guidelines) at Section 3.1.2.

<sup>14</sup> Consultation Document at ¶266; see also Oxera, *Regulating Oligopolies in Electronic Communication Markets* (September 2017) at 40 (hereafter Oxera 2017 Report). Some authorities enumerate the *Airtours* criteria somewhat differently. See e.g., BEREC, *BEREC Report on Oligopoly Analysis and Regulation* (December 2015) at 28 (hereafter BEREC 2015 Report); see also Alexandre Verheyden and Jorge Padilla, *Joint Dominance In The New European Electronic Communications Code: An Opportunity to Ensure Consistency & Legal Certainty* (September 2017) at 14 (hereafter Verheyden and Padilla 2017).

for the analysis of SMP,<sup>15</sup> and stating correctly that they must be assessed in the context of “current and prospective market developments,”<sup>16</sup> the Consultation Document neither accurately describes nor correctly applies the standards or tools used by European regulators in actual assessments of joint SMP.

15. For example, as the European regulators group BEREC noted in a 2015 report to the European Commission, *Airtours* requires regulators to reach explicit findings with respect to the mechanism by which coordination is maintained. In fact, BEREC states:

[O]ne of the main messages of the *Airtours*’ judgement is that what is required is a coherent explanation of how the coordination is maintained, and how any difficulties in sustaining that are overcome, rather than mechanically using a check list approach.<sup>17</sup>

16. Similarly, a 2017 analysis of SMP findings involving EU telecom markets by Verheyden and Padilla found that “the Court requires a full-fledged analysis of the possible mechanism of coordination that could be used by the companies in question.”<sup>18</sup> By contrast, the Consultation Document contains no such “full-fledged analysis,” or even a “coherent explanation of how coordination is maintained,” but rather a presents a “check list” of potential disciplining mechanisms which it asserts “could be” effective in the retail markets for broadband and mobile wireless.<sup>19</sup>

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<sup>15</sup> Consultation Document at ¶265.

<sup>16</sup> Consultation Document at ¶267.

<sup>17</sup> BEREC 2015 Report at 43.

<sup>18</sup> Verheyden and Padilla 2017 at 21. Similarly, BEREC notes that, while analyses of profitability are sometimes employed, “in all cases, there was still some explanation of the mechanism for joint dominance, identifying the focal product, the monitoring and punishment mechanism, and considering the absence of destabilising external factors.” BEREC 2015 Report at 58.

<sup>19</sup> See Consultation Document at ¶¶301-303 (retail broadband) and ¶¶355-358 (retail mobile wireless). With respect to the wholesale markets, the Consultation Document contains no specific discussion of coordination mechanisms. See Consultation Document at ¶¶333-338 (wholesale broadband) and ¶¶368-374 (wholesale mobile wireless). As a 2017 submission from research firm Oxera notes, however, that “collusion over wholesale access is difficult to achieve,” and that “in finding collective dominance in the provision of wholesale access based on a refusal to supply wholesale access, it is not sufficient to show that the conditions of the market are consistent with tacit collusion. This is because it may equally be the result of firms having individual incentives to refuse access, especially when one operator is regulated to provide access and other operators refuse access.” (Oxera 2017 Report at 52-53).

17. With respect to price-cost margins, Verheyden and Padilla also note that proper analysis of joint dominance “typically requires access to information on actual prices, costs and volumes,” “must necessarily be performed *ex post* (i.e. once the market has operated for a sufficient period of time), and “typically requires complex econometric methods.”<sup>20</sup> By contrast, the analysis in the Consultation Document meets none of these criteria, as it is based on (at best) limited information on costs, analyses a market distorted by wholesale and retail regulation and recently disrupted by major technological and structural changes, and applies no econometric analysis at all.
18. The Consultation Document also fails to systematically analyze supplemental factors which are specifically identified in the European Commission’s SMP guidelines for the assessment of joint SMP in electronic markets.<sup>21</sup> For example, the Consultation Document presents no analysis of elasticity of demand in any of the four markets in which it finds SMP, and fails to give adequate consideration to factors such as rapid technological change and product heterogeneity. Yet the EC Guidelines specifically identify each of these factors as relevant to a determination of joint SMP.
19. It is also important to note that when the appropriate criteria are rigorously applied, joint SMP has very rarely been found in electronic communications markets. As Verheyden and Padilla point out, “[t]elecoms cases involving joint dominance are rare and few of those cases have been carried out, even fewer have resulted in legal decisions being taken.”<sup>22</sup> Similarly, BEREC

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<sup>20</sup> Verheyden and Padilla 2017 at 41.

<sup>21</sup> EC Guidelines at ¶97. The 14 factors are: mature market, stagnant or moderate growth on the demand side, low elasticity of demand, homogeneous product, similar cost structures, similar market shares, lack of technical innovation, mature technology, absence of excess capacity, high barriers to entry, lack of countervailing buying power, lack of potential competition, various kind of informal or other links between the undertakings concerned, retaliatory mechanisms, lack or reduced scope for price competition.

<sup>22</sup> See BEREC 2015 Report at 59. Even so, the report notes, “such assessment is far from fail-proof.”

concludes that of the “the four successful Article 7 notifications ... all manifested thorough economic analysis.”<sup>23</sup> And Oxera notes that:

The relative paucity of cases where regulators have found joint SMP (and which have survived scrutiny by the European Commission and national courts) is neither surprising nor a cause for concern. It is not surprising simply because telecommunications markets typically do not display the characteristics of markets that are prone to tacit collusion.<sup>24</sup>

20. In my opinion, the Consultation Document’s failure to apply generally accepted analytical standards and techniques creates the high likelihood of errors in its assessment of the evidence. In the following subsection I discuss the several significant errors and explain why they lead to erroneous conclusions on the issue of joint SMP.

## **B. The Consultation Document Incorrectly Assesses Market Characteristics and Conduct**

21. In my opinion, the Consultation Document’s assessment of market characteristics and conduct contains significant errors which lead to an erroneous finding with respect to joint SMP in all four markets. In the first section below I discuss how these errors affect the Consultation Document’s assessment of the retail markets for broadband and mobile wireless. The second section discusses its analysis of the corresponding wholesale markets.

### **1. Retail Markets**

22. The Consultation Document’s analysis of joint SMP in the retail markets for broadband and mobile wireless systematically ignores or mischaracterizes key evidence.

23. First, in my opinion, the entry by Digicel into the provision of IPTV constitutes irrefutable evidence that Digicel and OneComm are competitive rivals and are not capable of engaging tacit collusion. The Consultation Document acknowledges Digicel’s entry,<sup>25</sup> and even concedes its

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<sup>23</sup> Verheyden and Padilla 2017 at 31.

<sup>24</sup> Oxera 2017 Report at 4.

<sup>25</sup> See e.g., Consultation Document at ¶¶171,309, 390.

competitive significance,<sup>26</sup> but makes no effort to explain how Digicel’s strong challenge to OneComm in the key market for subscription TV can be reconciled with findings of joint SMP in the broadband and mobile wireless markets. In my opinion, no such reconciliation is possible, for several reasons. Most obviously, the fact that Digicel has successfully entered one of OneComm’s most important markets demonstrates that OneComm does not have the ability to effectively punish competitive deviations by Digicel in any market.<sup>27</sup> Moreover, Digicel’s entry into IPTV is inconsistent with joint SMP in the broadband market because it enables Digicel to compete more effectively with OneComm for broadband customers offering broadband-payTV bundles: Digicel’s ability to offer bundles will directly affect its share of the broadband market by increasing the attractiveness of its broadband product for consumers who prefer bundles. In addition, because subscription TV services are inherently differentiated products (offering differentiated combinations of channel lineups as well, in this case, as different features associated with technological distinctions between traditional cable and IPTV), Digicel’s entry will reduce the two firms’ ability to identify a stable focal point and detect deviations. Lastly, Digicel’s entry constitutes precisely the sort of market instability contemplated in the third *Airtours* criteria.<sup>28</sup>

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<sup>26</sup> Consultation Document at ¶397 (“One of the drivers of OneComm’s recent fall in market share has been the entry of Digicel Group. Specifically, Digicel Group was able to capture 4% of the market after only around 6 months of operation. Furthermore, the data shows that Digicel Group’s PayTV customer base is growing rapidly, indicating that its market share is likely to increase further.”).

<sup>27</sup> The fact that IPTV is part of the subscription TV market, which the Consultation Document defines as a separate from broadband and mobile wireless, is irrelevant. As the Consultation Document itself notes, firms competing in multiple markets can punish deviations from a tacit agreement in one market by retaliating in another. See Consultation Document at ¶¶267-268. (“In particular, one must evaluate whether current and prospective market developments support a joint SMP hypothesis. This is particularly important when considering complex market structures. *The fact that Digicel Group and OneComm compete in several markets within Bermuda might provide an extra layer of stability to any tacit coordination.*”) (Emphasis added.)

<sup>28</sup> See Consultation Document at ¶266(iii) and ¶93 (“In order for joint SMP between Digicel Group and OneComm to be found in the retail broadband market, there must also be limited external destabilizing factors. These factors could include the presence of substitute services, new consumer trends such as the rise in OTT usage, and/or entrants in the market.”).

24. Second, the deployment of new technologies in both mobile and wireline broadband demonstrates that Digicel and OneComm are engaged in dynamic competition. Dynamic competition refers to markets in which firms compete primarily on the basis of innovation and product differentiation – i.e., by offering new and improved services.<sup>29</sup> Dynamic competition has been shown to generate very large benefits for consumers, especially in communications markets,<sup>30</sup> and indeed the Consultation Document acknowledges Bermudians have reaped significant benefits from both the broadband transition to fiber-based services.<sup>31</sup> In my opinion, firms engaged in the exercise of joint SMP would not choose to make risky investments of millions of dollars because they would not need to do so in order to retain customers and earn supra-competitive returns. Furthermore, to the extent firms engaged in tacit coordination engaged in network upgrades, I would expect them to do in such a way as to avoid direct competition. For example, firms engaged in joint SMP would likely find a means to roll out network upgrades in different geographic regions, thereby avoiding head-to-head competition. Instead, I understand that both firms moved rapidly to deploy upgraded broadband capabilities on an island-wide basis.

25. The Consultation Document's argues that the timing of these investments constitutes evidence of joint SMP. I disagree. In general, the simple observation that firms in a market engage in parallel behavior is just as consistent with robust competition as with tacit collusion.<sup>32</sup>

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<sup>29</sup> See e.g., Jeffrey A. Eisenach, *Broadband Competition in the Internet Ecosystem* (American Enterprise Institute, 2012) at 14-17.

<sup>30</sup> See e.g., Jerry A. Hausman, "Valuing the Effect of Regulation on New Services in Telecommunications," *Brookings Papers: Microeconomics* (1997).

<sup>31</sup> See e.g., Consultation Document at ¶331. Consumers have no doubt benefited at least as much from the transition from 3G to 4G mobile wireless, though these benefits are ignored in the Consultation Document.

<sup>32</sup> See Massimo Motta, *Competition Policy, Theory and Practice* (Cambridge University Press, 2004) at 186 ("To observe that prices move in a similar way is not enough to establish that firms are guilty of collusion. Common exogenous shocks such as the increase in input prices of all suppliers, or an increase in inflation, or an increase in property prices would probably lead all the sellers to increase prices proportionally, without implying that they are colluding.").

Moreover, as OneComm explains in its response, regulation played a central role in determining the timing of both the broadband and mobile infrastructure upgrades. Here again, it appears that the conduct relied upon by the Consultation Document to demonstrate joint SMP is actually the result of faulty regulation, not a less-than-competitive market structure.

26. Third, the Consultation Document also misinterprets or mischaracterizes multiple pieces of evidence relating to the specific markets for broadband and mobile wireless. For example:

- Market Shares: The Consultation Document asserts that stable market shares in the market for broadband supports a finding of joint SMP. To the contrary, the evidence presented in the Consultation Document shows what appears to be significant market share movement in favor of OneComm in the 2015-2017 period,<sup>33</sup> which may well have prompted Digicel's competitive response of entry into IPTV and provision of broadband-payTV bundles. With respect to the market for wireless,<sup>34</sup> the fact that Digicel and OneComm have approximately equal market shares is entirely consistent with robust competition, especially since the high fixed costs of operating a mobile wireless network give each firm powerful incentive to maximise the size of its customer base.
- Prices: The evidence presented by the Consultation Document regarding prices also does not support a finding of joint SMP.<sup>35</sup> Such comparisons cannot capture non-price competition (i.e., variations in service quality), and the Consultation Document acknowledges that the introduction of fiber-based broadband services resulted in dramatic cuts in quality-adjusted prices.<sup>36</sup> Further, as OneComm demonstrates in its response, the price points identified in the Consultation Document represent only a small fraction of the services offered.<sup>37</sup> Moreover, it is significant that the recently introduced bundled offerings exhibit especially significant price differences, suggesting again that the 2013 remedies themselves have stifled rivalrous conduct.<sup>38</sup> With respect to mobile prices, the introduction of 4G services resulted in dramatic reductions in quality adjusted prices, which the Consultation Document simply ignores. Moreover, pricing surveys like those relied upon by the Consultation Document are inherently incapable of accommodating differences in costs,

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<sup>33</sup> Consultation Document at ¶321. Notably, the Consultation Document provides no discussion of how much market shares would need to shift in for the market to be deemed competitive.

<sup>34</sup> Consultation Document at ¶¶365-366. Contrary to the Consultation Document's discussion, high churn rates are not necessary for market share symmetry to be consistent with robust competition.

<sup>35</sup> Consultation Document at ¶309-12.

<sup>36</sup> Consultation Document at ¶314.

<sup>37</sup> See OneComm Response at 7.

<sup>38</sup> See e.g., See *Review of the Electronic Communications Sector: Ensuring the Delivery of Benefits for Bermuda via Regulation* (October 17, 2017) 6 ("The 2013 remedies limited the introduction of new retail pricing schemes for services, including bundling of the same with other services e.g. mobile and subscription television, etc.") and at 38 ("The Authority's view is that the Bermuda electronic communications sector and consumers would benefit from bundling of services on the basis that this would deliver easier purchases, better customer service and lower bills/prices.") (hereafter 2017 Consultation).

terms and conditions (such as the level and nature of handset subsidies) and a multitude of other factors across the jurisdictions being compared.<sup>39</sup>

- Pricing Transparency: The Consultation Document is also incorrect in arguing that pricing transparency constitutes evidence of joint SMP.<sup>40</sup> Pricing transparency is a common characteristic of retail markets, and in and of itself provides no evidence of SMP. Moreover, as OneComm notes, the fact that retail prices are transparent cannot be attributed to efforts by the competing firms to facilitate tacit collusion. Rather, pricing transparency is mandated by regulation.<sup>41</sup>
- Profits and Cost Orientation: As I explain in Section IV, the Consultation Document's contention that prices for individual services should be tied to costs is directly at odds with generally accepted economic principles. More broadly, however, the Consultation Document is also in error in asserting that high profits by Digicel and OneComm are indicative of SMP. First, the Consultation Document acknowledges its profit analysis is "preliminary,"<sup>42</sup> and it makes no effort to address evidence in the record that carriers in robustly competitive markets have similar levels of profitability.<sup>43</sup> In my opinion, the evidence presented simply does not support a finding that either Digicel or OneComm is earning profits in excess of a market return. Moreover, it is widely understood that, especially in markets with high fixed costs, rates of return calculated based on accounting data cannot be used to infer monopoly profits.<sup>44</sup> This is perhaps why profitability is not among the four *Airtours* criteria, is not one of the 14 supplemental factors identified in the 2002 EC Guidelines, and is not among the statutory criteria listed in the ECA for identifying joint SMP.
- Bluewave: The Consultation Document acknowledges that "[t]hrough the implementation of Bluewave's own network infrastructure, Bluewave has the capacity and technology to compete for customers directly with OneComm and Digicel Group"<sup>45</sup> in the market for broadband, but then discounts the significance of this fact by noting that the company has a relatively low market share. From an economic perspective, however, it is not necessary for a competitor to have a large market share in order to effectively discipline the prices of other firms in the market – rather, it is enough that, if one provider tries to raise prices above

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<sup>39</sup> See OneComm Response at 7-10. See also Jeffrey A. Eisenach, *Expert Report on Behalf of TELUS Communications before the Canadian Radio-television and Telecommunications Commission* (September 8, 2017) at 38-48.

<sup>40</sup> Consultation Document at ¶288.

<sup>41</sup> See OneComm Response at 11.

<sup>42</sup> Consultation Document at ¶346.

<sup>43</sup> See OneComm Response at 20-22.

<sup>44</sup> See e.g., Franklin M. Fisher and John J. McGowan, "On the Misuse of Accounting Rates of Return to Infer Monopoly Profits," *American Economic Review* 73;1 (March 1983) 82-97. See also BERC 2015 Report at 58 ("For NRAs in an unregulated environment it is still considered important to evaluate the *Airtours*' criteria, and to establish a focal point, monitoring and punishment mechanisms, and the absence of external destabilising forces. This is important because ... high prices and high profits may simply be the reward for innovation, and not evidence of a lack of effective competition.").

<sup>45</sup> Consultation Document at ¶323.

competitive levels, consumers have the choice to shift, thereby defeating the price increase. In my opinion, Bluewave constitutes just such a competitive alternative.<sup>46</sup>

- Cost Differences: The Consultation Document incorrectly dismisses, or fails to sufficiently assess, cost differences between Digicel and OneComm that would tend to impede efforts to engage in tacit collusion. For example, the Consultation Document disregards the fact that OneComm owns subsea connectivity, but Digicel Group does not, which could suggest that the two firms have significantly different cost structures for off-island connectivity.<sup>47</sup>

27. In summary, the Consultation Document's interpretation of market characteristics and firm conduct to find joint SMP in the retail markets for broadband and mobile wireless is erroneous. Correctly interpreted, the available evidence demonstrates that Digicel and OneComm are competitive rivals engaged in dynamic competition on multiple dimensions, generating significant benefits for Bermudians. Further, virtually all the evidence of parallel conduct cited by the Consultation Document is attributable to regulation, not an uncompetitive market structure.

## **2. Wholesale Markets**

28. The Consultation Document engages in only cursory assessments of the wholesale markets for broadband and mobile wireless, arguing that its findings of joint SMP at the retail level in each are sufficient to demonstrate joint SMP in the wholesale markets. From an economic perspective, this is simply incorrect. While it is true that market power in a downstream market is a necessary condition for anticompetitive foreclosure in the upstream market (since it is the existence of such market power that creates the incentive to protect downstream profits), the reverse does not hold: The fact that two firms may have joint SMP in a downstream market does not demonstrate that they can engage successfully in tacit collusion upstream. Rather, a separate analysis must be conducted of whether conditions in the upstream market meet the *Airtours* criteria. Such an

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<sup>46</sup> I also note that the price-quality options offered by Bluewave are distinct from those of Digicel and OneComm. See <https://bluewave.bm/residential/>.

<sup>47</sup> See 2017 Consultation Document at 22.

analysis might consider, for example, differences in network technologies may imply differences in the costs of engaging in network sharing, or the fact that wholesale arrangements may be confidential, such that discovery of deviations from the tacit bargain are impossible to detect. The Consultation Document engages in no such analysis. In my opinion, the Consultation Document provides no meaningful analysis of joint SMP in either the wholesale market for broadband or the wholesale market for mobile wireless, and its findings are thus completely unsupported.

#### **IV. COST-ORIENTATED PRICING VIOLATES BASIC ECONOMIC PRINCIPLES**

29. The centerpiece of the Consultation Document’s approach to both the assessment of SMP and remedies is that prices ought to be tied to costs.<sup>48</sup> While it is true that some forms of public utility rate regulation can be described as “cost-based” or “cost-orientated” (e.g., rate of return regulation), the form of cost-orientated pricing proposed in the Consultation Document is fundamentally inconsistent with generally agreed upon economic principles. If adopted, it would virtually mandate economic inefficiency to the detriment of consumer welfare.
30. It is a central principle of regulatory economics that, in markets with high fixed costs which are shared across multiple outputs (like telecommunications), the efficient price for each output will be based not just on costs but on the elasticity of demand. Initially developed by Frank Ramsey, this principle – called “Ramsey Pricing” – requires that price-cost margins be higher on services with less elastic demand, lower on services where demand is more sensitive to price.<sup>49</sup>

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<sup>48</sup> See e.g., Consultation Document at ¶301 (“In the absence of a cost evaluation, it is not possible to estimate exactly what the competitive price would be, and therefore how much revenue the first competing company would lose as a result of a price war.”)

<sup>49</sup> See Frank P. Ramsey, “A Contribution to the Theory of Taxation,” *Economic Journal* 37 (1927), 47-61. See also Dennis W. Carlton and Jeffrey M. Perloff, *Modern Industrial Organization*, 4<sup>th</sup> ed. (Addison-Wesley, 2005) at 702.

31. The proposition that demand factors must be considered in establishing efficient prices in telecommunications markets has been generally accepted by both practitioners and regulators for many years. As explained in the *International Handbook of Telecommunications Economics* (2000):

[T]he cost-based approach to regulation, which ignores demand factors and competitive factors, is wrong except under a very special set of assumptions. The assumptions, used in the “non-substitution theorem” are closely connected to Marx's labor theory of value, and never hold true, even approximately in real-world telecommunications networks. Thus, the regulatory attempt to set prices independent of demand does not make economic sense.<sup>50</sup>

32. Similarly, the Ofcom *Cost Orientation Review* relied upon by the Consultation Document specifically references the need to consider demand elasticity as one of the shortcomings of the FAC approach to cost accounting.

Setting a condition limiting all prices to ‘pure’ FAC will usually be too rigid to allow the bounded flexibility we consider desirable. Where the provision of services is characterised by high fixed common costs which have to be recovered through charges, efficient recovery of total costs will require prices to be set taking account of the responsiveness of demand to changes in price.<sup>51</sup>

33. Importantly, Ramsey Pricing is not just a regulatory principle: It is also the natural outcome of dynamic competition in markets with common costs and differentiated products.<sup>52</sup> Thus, by mandating cost-based prices, the Consultation Document would replace the economically efficient prices that would result from unregulated competition, with inefficient prices, thereby harming consumer welfare.

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<sup>50</sup> See Jerry A. Hausman, “Regulated Costs and Prices in Telecommunications Networks,” in Gary Madden and Scott J. Savage, eds., *The International Handbook of Telecommunications Economics, Volume II* (Edward Elgar, 2000) (available at <https://economics.mit.edu/files/1030>) at 3.

<sup>51</sup> Ofcom *Cost Orientation: Review* at 32.

<sup>52</sup> Jeffrey A. Eisenach, *Broadband Competition in the Internet Ecosystem*, American Enterprise Institute (2012) at 16-17; see also William J. Baumol and Daniel G. Swanson, “The New Economy and Ubiquitous Competitive Price Discrimination: Identifying Defensible Criteria of Market Power,” *Antitrust Law Journal* 70;3 (2003) 661–85.

34. The Consultation Document's focus on cost-orientated pricing is also misguided from the perspective of disincentivizing investment and innovation. As BEREC explains:

Any analysis of the need for regulatory intervention should take into account not only static efficiency (as short-term competition), but also dynamic efficiency, a term which encompasses the potential impact on incentives for investment and development of new products and services.<sup>53</sup>

35. While the Consultation Document refers on numerous occasions to the statutory requirement to consider incentives for investment and innovation,<sup>54</sup> its embrace of the erroneous cost-orientation principle is fundamentally at odds with this objective.<sup>55</sup> In my opinion, the requirement for cost-orientated prices, combined with the regulatory uncertainty that would result from the Consultation Document's vague and poorly defined cost standards, would significantly reduce incentives for investment and innovation by the regulated firms.

#### **V. RETAIL REGULATION IS DUPLICATIVE, UNNECESSARY AND COUNTERPRODUCTIVE**

36. As I have explained above, it is my opinion that the Consultation Document has failed to demonstrate joint SMP in any of the four markets. That having been said, even if the RA determines that some form of *ex ante* intervention is required, it should intervene at either the wholesale level or the retail level, but not both.

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<sup>53</sup> BEREC 2015 Report at 11. See also BEREC 2015 Report at 14 (citing Massimo Motta, *Competition Policy: Theory and Practice* (Cambridge University Press, 2004) at 57-58, 89) ("Allowing firms to exert some degree of market power or, more precisely, the expectation of future super-normal profits may increase dynamic efficiency by stimulating innovation and risky investments. These, in turn, might deliver benefits such as lower production costs or product innovation in the long-run that compensate for allocative inefficiencies (higher prices) in the short-run. By eliminating any prospect of super-normal profits, there could be a risk of limiting innovation and investment incentives

<sup>54</sup> See e.g., Consultation Document at ¶79.

<sup>55</sup> The distortionary effects of cost-based retain price regulation have been recognized for many years, resulting in the movement towards "incentive-based" or "price-cap" regulation. See generally David E. M. Sappington, "Price Regulation," in Martin E. Cave, Sumit K. Majumdar and Ingo Vogelsang, eds., *Handbook of Telecommunications Economics Volume 1: Structure, Regulation and Competition* (Elsevier, 2002) at 227-287.

37. In general, retail price regulation typically is justified only in circumstances in which competition is neither present nor likely, even in the presence of effectively designed wholesale regulation.

As the European Commission explained in 2007:

Regulatory controls on retail services should only be imposed where national regulatory authorities consider that relevant wholesale measures or measures regarding carrier selection or pre-selection would fail to achieve the objective of ensuring effective competition and the fulfilment of public interest objectives. By intervening at the wholesale level, including with remedies which may affect retail markets, Member States can ensure that as much of the value chain is open to normal competition processes as possible, thereby delivering the best outcomes for end-users.<sup>56</sup>

38. The preference for wholesale over retail remedies arises from the desire to promote competition, and the economic benefits it generates in the form of lower prices, more choices and more rapid innovation, in as much of the value chain as possible. That is, the *raison d'être* of wholesale regulation to avoid to the maximum extent possible the economic distortions and inefficiencies that arise from retail price controls. As the Commission explained in 2009:

The aim is progressively to reduce ex-ante sector specific rules as competition in the markets develops and, ultimately, for electronic communications to be governed by competition law only. Considering that the markets for electronic communications have shown strong competitive dynamics in recent years, it is essential that ex-ante regulatory obligations only be imposed where there is no effective and sustainable competition.<sup>57</sup>

39. The latest Recommendation on relevant product and service markets susceptible to *ex ante* regulation was issued by the European Commission in 2014, and comprises only five markets – all of them wholesale.

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<sup>56</sup> See Recommendation 2007/879/EC (17 December 2007). See also Recommendation 2014/710/EU (14 October 2014) (“*Ex ante* regulation imposed at the wholesale level should be considered sufficient to tackle potential competition problems on the related downstream market(s).”).

<sup>57</sup> Directive 2009/140/EC (25 November 2009).

40. While the 2014 Recommendation still allows for the possibility that a national regulatory authority could seek to designate a retail market for *ex ante* intervention, they are permitted to do so only if they “demonstrate that wholesale interventions have been unsuccessful” and also that there are high and non-transitory barriers to entry, that the market does not “tend towards effective competition within a relevant time horizon” and that “competition law alone would not effectively address the market failure(s) concerned.”<sup>58</sup>
41. In my opinion, none of these criteria are satisfied in the retail markets for broadband and mobile wireless in Bermuda, for two main reasons. First, as I have explained, both markets exhibit vigorous competitive rivalry and dynamic competition – they are not just “tending” towards effective competition, but rather are effectively competitive today. Second, the *ex ante* interventions in wholesale markets since 2013 have been clouded by regulatory uncertainty and accompanied by highly distortionary retail price regulations and regulatory barriers to entry that have distorted market outcomes at every level. In my opinion it is impossible to conclude that wholesale interventions have been tried and failed. Rather, they have not been fairly tried.

## VI. CONCLUSIONS

42. For the reasons explained above, it is my opinion that the Consultation Document fails to demonstrate the existence of SMP (joint or otherwise) in the markets for broadband and mobile wireless services, and that the regulatory regime put forward in the document would constitute a continuation of the excessively intrusive and ultimately unsuccessful regulatory approach to electronic communications markets that has been in place since 2013.

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<sup>58</sup> Recommendation 2014/710/EU (14 October 2014).

## **Exhibit A: Curriculum Vitae**

**JEFFREY A. EISENACH, PH.D.**  
**Managing Director**  
**Co-Chair Communications, Media and Internet Practice**

Dr. Eisenach is a Managing Director and Co-Chair of NERA's Communications, Media, and Internet Practice, and also serves on the firm's Board of Directors. He is also an Adjunct Professor at George Mason University Law School, where he teaches Regulated Industries, and a Visiting Scholar at the American Enterprise Institute. Previously, Dr. Eisenach has served in senior policy positions at the US Federal Trade Commission and the White House Office of Management and Budget, and taught at Harvard University's Kennedy School of Government and Virginia Polytechnic Institute and State University.

Dr. Eisenach's consulting practice focuses on economic analysis of competition, regulatory, intellectual property and consumer protection issues. He has submitted expert reports and testified in US federal court as well before the Antitrust Division of the U.S. Department of Justice, the Federal Trade Commission, the Copyright Royalty Board, the Federal Communications Commission, the International Trade Commission, US Tax Court, several state public utility commissions, and courts and regulatory bodies in Australia, Canada, the United Kingdom, the Caribbean, and South America. He has also advised clients in some of the world's largest information technology sector mergers.

He has written or edited 19 books and monographs, including *Broadband Competition in the Internet Ecosystem* and *Competition, Innovation and the Microsoft Monopoly: Antitrust in the Digital Marketplace*. His writings have also appeared in scholarly journals such as *The Review of Network Economics*, as well as in popular outlets like *Forbes*, *The New York Times*, and *The Wall Street Journal*.

Prior to joining NERA, Dr. Eisenach was a managing director and principal at Navigant Economics, and before that he served as Chairman of Empiris LLC, Criterion Economics, and CapAnalysis, LLC. Among his other previous affiliations, Dr. Eisenach has served as President and Senior Fellow at The Progress & Freedom Foundation; as a scholar the Heritage Foundation, and the Hudson Institute; as a member of the 1980-81 Reagan-Bush Transition Team on the Federal Trade Commission, the 2000-2001 Bush-Cheney Transition Team on the Federal Communications Commission, the Virginia Governor's Commission on E-Communities, and the Virginia Attorney General's Task Force on Identity Theft. In 2016-2017 he led the Trump-Pence Transition Team for the Federal Communications Commission.

Dr. Eisenach received his PhD in economics from the University of Virginia and his BA in economics from Claremont McKenna College.

## **Education**

1985 Ph.D. in Economics, University of Virginia

1979 B.A. in Economics, Claremont McKenna College

## **Professional Experience**

Jan 2014-present      Managing Director/Senior Vice President NERA Economic Consulting

Jan 2010-Jan 2014      Managing Director and Principal, Navigant Economics

Sept 2008-Jan 2010      Chairman and Managing Partner, Empiris LLC

June 2006-Sept 2008      Chairman, Criterion Economics, LLC

July 2005-May 2006      Chairman, The CapAnalysis Group, LLC

Feb 2003-July 2005      Executive Vice Chairman, The CapAnalysis Group, LLC

June 1993-Jan 2003      President, The Progress & Freedom Foundation

July 1991-May 1993      Executive Director, GOPAC

Mar 1988-June 1991      President, Washington Policy Group, Inc.

Sept 1986-Feb 1988      Director of Research, Pete du Pont for President, Inc.

1985-1986              Executive Assistant to the Director, Office of Management and Budget

1984-1985              Special Advisor for Economic Policy and Operations, Office of the  
Chairman, Federal Trade Commission

1983-1984              Economist, Bureau of Economics, Federal Trade Commission

1981                      Special Assistant to James C. Miller III, Office of Management and  
Budget/Presidential Task Force on Regulatory Relief

1979-1981              Research Associate, American Enterprise Institute

1980                      Consultant, Economic Impact Analysts, Inc.

1978                      Research Assistant, Potomac International Corporation

## **Teaching Experience**

2000-present              Adjunct Professor, George Mason University School of Law, (Courses  
Taught: Regulated Industries; Perspectives on Government Regulation; The  
Law and Economics of the Digital Revolution)

1995-1999              Adjunct Lecturer, Harvard University, John F. Kennedy School of  
Government, (Course Taught: The Role of Government in the 21st Century)

1989                      Adjunct Professor, George Mason University, (Course Taught: Principles of  
Economics)

1985, 1988              Adjunct Professor, Virginia Polytechnic Institute and State University,  
(Courses Taught: Graduate Industrial Organization, Principles of Economics)

- 1983-1984           Instructor, University of Virginia, (Courses Taught: Value Theory, Antitrust Policy)
- 1982-1983           Teaching Assistant, University of Virginia, (Courses Taught: Graduate Microeconomics, Undergraduate Macroeconomics)

**Honors & Professional Activities**

- 2018-present       Member, Board of Directors, NERA Economic Consulting
- 2016-2017         Leader, Trump-Pence Presidential Transition Team on the Federal Communications Commission
- 2012-present       Visiting Scholar, American Enterprise Institute
- 2011-present       Member, Board of Directors, Information Technology & Innovation Foundation
- 2011-2018         Member of the Board of Directors, Economic Club of Washington (Vice President for Education, 2012-2017)
- 2010-2011         Member, World Bank ICT Broadband Strategies Toolkit Advisory Group
- 2009-present       Member, Economic Club of Washington
- 2008-2009         Member, Board of Directors, PowerGrid Communications
- 2008-2012         Member, Board of Advisors, Washington Mutual Investors Fund
- 2002-2014         Member, Board of Advisors, Pew Project on the Internet and American Life
- 1993-2009         Member, Board of Directors, The Progress & Freedom Foundation
- 2002                Member, Attorney General’s Identity Theft Task Force, Virginia
- 2002-2003         Member of the Board of Directors, Privacilla.com
- 2001-2004         Member, Executive Board of Advisors, George Mason University Tech Center
- 2001-2002         Contributing Editor, *American Spectator*
- 2001                Member, Transition Advisory Committee on the FCC
- 2000-2001         Member, Governor’s Task Force on E-Communities, State of Virginia
- 1999-2001         Member, 2000-2001 Networked Economy Summit Advisory Committee
- 1998-2003         Member, Board of Directors, Internet Education Foundation
- 1998-2003         Member, Internet Caucus Advisory Committee
- 1996-2002         Member, American Assembly Leadership Advisory Committee
- 1995-2000         Member, Commission on America’s National Interests
- 1988-1991         Adjunct Scholar, Hudson Institute
- 1988-1991         Visiting Fellow, Heritage Foundation

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|-----------|----------------------------------------------------------------------|
| 1981-1984 | President's Fellowship, University of Virginia                       |
| 1981-1983 | Earhart Foundation Fellowship, University of Virginia                |
| 1981      | Member, Presidential Transition Team on the Federal Trade Commission |
| 1979      | Henry Salvatori Award, Claremont Men's College                       |
| 1978      | Frank W. Taussig Award, Omicron Delta Epsilon                        |

### **Testimony, Declarations and Expert Reports**

*In the Matter of Certain LTE and 3G Compliant Cellular Communication Devices, International Trade Commission Inv. No. 337-TA-1138, Expert Report on Behalf of Apple Inc. (January 25, 2019)*

*In the Matter of Expanding Flexible Use of the 3.7-4.2 GHz Band et al, Federal Communications Commission GN Docket No. 18-122 et al, Reply Declaration on Behalf of C-Band Alliance (December 7, 2018)*

*In the Matter of Certain Mobile Electronic Devices and Radio Frequency and Processing Components Thereof, International Trade Commission Inv. No. 337-TA-1093, Supplemental Report on Behalf of Apple Inc. (August 8, 2018)*

*In the Matter of Certain Mobile Electronic Devices and Radio Frequency and Processing Components Thereof, International Trade Commission Inv. No. 337-TA-1093, Rebuttal Report on Behalf of Apple Inc. (June 29, 2018)*

*In the Matter of Applications of T-Mobile US, Inc. and Sprint Corporation for Consent to Transfer Control of Licenses and Authorizations, Description of Transaction, Public Interest Statement, and Related Demonstrations, Appendix I: Declaration of Jeffrey A. Eisenach, Ph.D., WT Docket No. 18-197 (June 18, 2018) (Supplemental Declaration filed September 17, 2018)*

*In the Matter of Certain Mobile Electronic Devices and Radio Frequency and Processing Components Thereof, International Trade Commission Inv. No. 337-TA-1093, Expert Report on Behalf of Apple Inc. (June 15, 2018)*

*In the Matter of Certain Mobile Electronic Devices and Radio Frequency and Processing Components Thereof, International Trade Commission Inv. No. 337-TA-1065, Written Rebuttal Testimony on Behalf of Apple Inc. (May 11, 2018)*

*In the Matter of Certain Mobile Electronic Devices and Radio Frequency and Processing Components Thereof, International Trade Commission Inv. No. 337-TA-1065, Written Direct Testimony on Behalf of Apple Inc. (May 1, 2018)*

*U.S. Department of Justice, Antitrust Division Roundtable Series on Competition and Deregulation, Roundtable on Consent Decrees, Prepared Statement of Jeffrey A. Eisenach (April 26, 2018)*

*In the Matter of Certain Mobile Electronic Devices and Radio Frequency and Processing Components Thereof, International Trade Commission Inv. No. 337-TA-1065, Rebuttal Report on Behalf of Apple Inc. (March 30, 2018)*

*In the Matter of Certain Mobile Electronic Devices and Radio Frequency and Processing Components Thereof, International Trade Commission Inv. No. 337-TA-1065, Expert Report on Behalf of Apple Inc. (March 16, 2018)*

*Reconsideration of Telecom Decision 2017-56 Regarding Final Terms and Conditions for Wholesale Mobile Wireless Roaming Service, Canadian Radio-Television and Telecommunications Commission, CRTC 2017-259, Expert Report on Behalf of TELUS Communications Company (September 8, 2017)*

*Testimony on Addressing the Risk of Waste, Fraud, and Abuse in the Federal Communications Commission's Lifeline Program, Before the Committee on Commerce, Science and Transportation, United States Senate (September 6, 2017)*

*Effects of the AT&T-Time Warner Transaction on Competition in the Premium Channels Industry, Expert Report (with T. Watts) on behalf of Starz, Inc. (July 2017)*

*In Re: Determination of Royalty Rates and Terms of Making and Distributing Phonorecords (Phonorecords III), United States Copyright Royalty Judges, Written Supplemental Report of Jeffrey A. Eisenach on behalf of National Music Publishers Association and National Songwriters Association International (March 1, 2017)*

*In Re: Determination of Royalty Rates and Terms of Making and Distributing Phonorecords (Phonorecords III), United States Copyright Royalty Judges, Written Rebuttal Report of Jeffrey A. Eisenach on behalf of National Music Publishers Association and National Songwriters Association International (February 13, 2017)*

*SESAC Inc., SESAC LLC, and SESAC Holdings, Inc. Claimants vs. Radio Music Licensing Committee, Arbitration Before the Hon. Vaughn R. Walker, Kenneth R. Feinberg, Esq. and Lee A. Freeman, Esq., Expert Rebuttal Report of Jeffrey A. Eisenach on Behalf of SESAC (January 23, 2017)*

*SESAC Inc., SESAC LLC, and SESAC Holdings, Inc. Claimants vs. Radio Music Licensing Committee, Arbitration Before the Hon. Vaughn R. Walker, Kenneth R. Feinberg, Esq. and Lee A. Freeman, Esq., Expert Report of Jeffrey A. Eisenach on Behalf of SESAC (December 23, 2016)*

*In Re: Determination of Royalty Rates and Terms of Making and Distributing Phonorecords (Phonorecords III), United States Copyright Royalty Judges, Written Direct Report of Jeffrey A. Eisenach on behalf of National Music Publishers Association and National Songwriters Association International (October 31, 2016)*

*Examination of Differential Pricing Practices Related to Internet Data Plans, Canadian Radio-Television and Telecommunications Commission, CRTC 2016-192, Supplemental Expert Report on Behalf of TELUS Communications Company (September 21, 2016)*

*Balancing Efficient Pricing and Investment Incentives in the Migration from Copper to Fibre Networks: Assessing the Feasibility of a Temporary Copper Wedge*, Expert Report on Behalf of Vodaphone (July 13, 2016)

*Examination of Differential Pricing Practices Related to Internet Data Plans*, Canadian Radio-Television and Telecommunications Commission, CRTC 2016-192, Expert Report on Behalf of TELUS Communications Company (June 28, 2016)

*The Canadian Market for Wireless: Understanding the Bell-MTS Transaction*, Expert Report on Behalf of Bell Canada (June 2, 2016)

*Analysis of Online Music Copyright Issues; Copyright Tribunal of Australia CT 3 of 2013 – Reference by Phonographic Performance Company of Australia Limited (ACN 000 680 704) Under section 154 (1) of the Copyright Act of 1968*, Fifth Expert Report on Behalf of Phonographic Performance Company of Australia Ltd. (March 9, 2016)

*Analysis of Online Music Copyright Issues; Copyright Tribunal of Australia CT 3 of 2013 – Reference by Phonographic Performance Company of Australia Limited (ACN 000 680 704) Under section 154 (1) of the Copyright Act of 1968*, Fourth Expert Report on Behalf of Phonographic Performance Company of Australia Ltd. (February 8, 2016)

*Review of the Consultation Paper on Differential Pricing for Data Services (Consultation Paper No. 8/2015)*, Telecom Regulatory Authority of India, Expert Declaration on Behalf of Facebook, Inc. (December 30, 2015)

*In the Matter of the Joint Application of Frontier Communications Corporation, Verizon California Inc. (U 1002 C), Verizon Long Distance, LLC (U 5732 C), and Newco West Holdings LLC for Approval of Transfer of Control Over Verizon California Inc. and Related Approval of Transfer of Assets and Certifications*, California Public Service Commission, Expert Declaration on Behalf of Verizon Communications (August 24, 2015)

*Broadband Market Performance in Canada: Implications for Policy*, Canadian Radio-Television and Telecommunications Commission Notice of Consultation 15-134, Expert Report on Behalf of Bell Canada (July 2015)

*Analysis of Online Music Copyright Issues; Copyright Tribunal Proceeding CT 3 of 2013 – Reference by Phonographic Performance Company of Australia Ltd. Under s 154 of the Copyright Act of 1968*, Third Expert Report on Behalf of Phonographic Performance Company of Australia Ltd. (February 26, 2015)

*Analysis of Online Music Copyright Issues; Copyright Tribunal Proceeding CT 3 of 2013 – Reference by Phonographic Performance Company of Australia Ltd. Under s 154 of the Copyright Act of 1968*, Second Expert Report on Behalf of Phonographic Performance Company of Australia Ltd. (December 9, 2014)

*Testimony on Open Internet Rules*, Before the Committee on the Judiciary, United States Senate (September 17, 2014)

*Review of Wholesale Mobile Wireless Services, Canadian Radio-Television and Telecommunications Commission Notice of Consultation CRTC 2014-76, Supplemental Expert Report on Behalf of TELUS Communications Company (August 20, 2014)*

*Analysis of Online Music Copyright Issues; Copyright Tribunal Proceeding CT 3 of 2013 – Reference by Phonographic Performance Company of Australia Ltd. Under s 154 of the Copyright Act of 1968, Expert Report on Behalf of Phonographic Performance Company of Australia Ltd. (August 5, 2014)*

*The Economics of Pick-and-Pay, Canadian Radio-Television and Telecommunications Commission Broadcasting Notice of Consultation CRTC 2014-190, Expert Report on Behalf of Bell Canada (June 27, 2014)*

*Review of Wholesale Mobile Wireless Services, Canadian Radio-Television and Telecommunications Commission Notice of Consultation CRTC 2014-76, Expert Report on Behalf of TELUS Communications Company (May 15, 2014)*

*In the Matter of Special Access for Price Cap Local Exchange Carriers, AT&T Corporation Petition for Rulemaking to Reform Regulation of Incumbent Local Exchange Carrier Rates for Interstate Special Access Services, Federal Communications Commission, WC Docket No. 05-25, RM-10593 Expert Declaration (with Kevin W. Caves) on Behalf of Verizon Communications and Verizon Wireless (March 12, 2013)*

*In the Matter of Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions, Federal Communications Commission, Docket No. 12-268, Expert Reply Declaration on Behalf of the Expanding Opportunities for Broadcasters Coalition (March 10, 2013)*

*In the Matter of Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions, Federal Communications Commission, Docket No. 12-268, Expert Declaration on Behalf of the Expanding Opportunities for Broadcasters Coalition (January 24, 2013)*

*Testimony on the Digital Sound Performance Right, Before the Subcommittee on Intellectual Property, Competition and the Internet, Committee on the Judiciary, United States House of Representatives (November 28, 2012)*

*Response to Pre-Consultation Document PC12/03: Comments on Market Review Process (Part B), Before the Bermuda Telecommunications Regulatory Authority, Expert Report of Jeffrey A. Eisenach on Behalf of Bermuda Digital Communications Ltd. (November 21, 2012)*

*Order Instituting Rulemaking to Evaluate Telecommunications Corporations Service Quality Performance and Consider Modification to Service Quality Rules, Before the California Public Service Commission, Rulemaking 11-12-001, Reply Declaration of Jeffrey A. Eisenach on Behalf of Verizon Communications (March 1, 2012)*

*Order Instituting Rulemaking to Evaluate Telecommunications Corporations Service Quality Performance and Consider Modification to Service Quality Rules*, Before the California Public Service Commission, Rulemaking 11-12-001, Expert Declaration of Jeffrey A. Eisenach on Behalf of Verizon Communications (January 31, 2012)

*In the Matter of Howard Ferrer et al vs. Puerto Rico Telephone Company*, Before the Telecommunications Regulatory Board of Puerto Rico, Case No. JRT: 2009-Q-0014, Expert Declaration of Jeffrey A. Eisenach on Behalf of the Puerto Rico Telephone Company (December 1, 2011)

*Joint Declaration of Jeffrey A. Eisenach and Wayne A. Leighton before the Tribunal de Defensa de la Libre Competencia*, Santiago, Chile, on behalf of Telefónica Chile S.A. (July 22, 2011)

*In the Matter of Amendment of the Commission's Rules Related to Retransmission Consent*, Federal Communications Commission, MB Docket No. 10-71, Expert Reply Declaration (with Kevin W. Caves) on Behalf of the National Association of Broadcasters (June 27, 2011)

*In the Matter of an Application by Way of a Reference to the Federal Court of Appeal Pursuant to Sections 18.3(1) and 28(2) of the Federal Courts Act, R.S.C. 1985, C.F-7, Between: Cogeco Cable Inc. et al Applicants and Bell Canada et al Respondents, In the Supreme Court of Canada (on appeal from the Federal Court of Appeal)*, Affidavit and Expert Report on Behalf of Bell Media Inc. and V Interactions Inc. (May 27, 2011)

*In the Matter of Amendment of the Commission's Rules Related to Retransmission Consent*, Federal Communications Commission, MB Docket No. 10-71, Expert Declaration (with Kevin W. Caves) on Behalf of the National Association of Broadcasters (May 27, 2011)

*In the Matter of Section 36 of the Public Utilities Commission Act, Proposal to Establish a New Interconnection Agreement Between Digicel and GT&T*, Expert Oral Testimony on Behalf of Guyana Telephone and Telegraph Company, Guyana Public Utilities Commission (July 13, 2010)

*In the Matter of International Comparison and Consumer Survey Requirements in the Broadband Data Improvement Act, Federal Communications Commission GN Docket No. 09-47*, Supplemental Declaration Regarding the Berkman Center Study (NBP Public Notice 13) (with R. Crandall, E. Ehrlich and A. Ingraham), on Behalf of Verizon Communications (May 10, 2010)

*Testimony on Deployment of Broadband Communications Networks*, Before the Subcommittee on Communications, Technology and the Internet, Committee on Energy and Commerce, United States House of Representatives (April 21, 2010)

*Net Neutrality: The Economic Evidence*, Expert Declaration in the Matters of Preserving the Open Internet and Broadband Industry Practices, GN Docket No. 09-191 and WC Docket No. 07-52 (with Brito et al) (April 12, 2010)

*In the Matter of the Constitution of the Co-Operative Republic of Guyana and In the Matter of the Application for Redress Under Article 153 for the Contravention of the Applicant's Fundamental Rights Guaranteed by Articles 20, 146, and 149D of the Constitution of the Republic of Guyana and In the Matter of the Telecommunications Act No. 27 of 1990, U-Mobile (Cellular) Inc., v. The Attorney General of Guyana, "International Exclusivity and the Guyanese Telecommunications Market: A Further Response to DotEcon," Expert Report on Behalf of Guyana Telephone and Telegraph Company (March 9, 2010)*

*Universal Service Subsidies to Areas Served by Cable Telephony: Supplemental Report, Expert Report Submitted to the Federal Communications Commission, on Behalf of the National Cable and Telecommunications Association (January 2010)*

*Policy Proceeding on a Group-Based Approach to the Licensing of Television Services and on Certain Issues Relating to Conventional Television, Canadian Radio-Television and Telecommunications Commission, Broadcasting Notice of Consultation CRTC 2009-411, Oral Testimony on Behalf of CTVgm (November 16, 2009)*

*In the Matter of International Comparison and Consumer Survey Requirements in the Broadband Data Improvement Act, Federal Communications Commission GN Docket No. 09-47, Declaration Regarding the Berkman Center Study (NBP Public Notice 13) (with R. Crandall and E. Ehrlich) on behalf of the National Cable and Telecommunications Association and the United States Telecom Association (November 16, 2009)*

*Universal Service Subsidies to Areas Served by Cable Telephony, Expert Report Submitted to the Federal Communications Commission, on behalf of the National Cable and Telecommunications Association (November 2009)*

*Policy Proceeding on a Group-based Approach to the Licensing of Television Services and on Certain Issues relating to Conventional Television, Canadian Radio-Television and Telecommunications Commission Broadcasting Notice of Consultation CRTC 2009-411, Expert Report on the Economics of Retransmission Consent Negotiations in the U.S. and Canada, (with S. Armstrong) on Behalf of CTVgm (September 19, 2009)*

*Virginia State Corporation Commission, Second Order for Notice and Hearing In Re: Revisions of Rules for Local Exchange Telecommunications Company Service Quality Standards, Comments on Behalf of Verizon Virginia (March 13, 2009)*

*In the Matter of Review of the Commission's Program Access Rules and Examination of Programming Tying Arrangements, Federal Communications Commission Docket MB 07-198, Supplemental Report on Behalf of the Walt Disney Company (December 11, 2008)*

*In re: Investigation of Rates of Virgin Islands Telephone Corporation d/b/a Innovative Communications, PSC Docket 578, Rebuttal Testimony on Behalf of Virgin Islands Telephone Corporation (October 31, 2008)*

*Evidence Relating to the ACCC's Draft Decision Denying Telstra's Exemption Application for the Optus HFC Footprint, Australian Consumer and Competition Commission, Expert Report on Behalf of Telstra Corporation Ltd. (October 13, 2008)*

*In re: Investigation of Rates of Virgin Islands Telephone Corporation d/b/a Innovative Communications, PSC Docket 578, Direct Testimony on Behalf of Virgin Islands Telephone Corporation (September 26, 2008)*

*In the Matter of the Appropriate Forms of Regulating Telephone Companies, Maryland Public Service Commission, Case No. 9133, Rebuttal Testimony on Behalf of Verizon Maryland (September 24, 2008)*

*Virginia State Corporation Commission, Proposed Service Quality Rules for Traditional Landline Telecommunications, Comments on Behalf of Verizon Virginia (August 21, 2008)*

*In re: Complaint and Request for Emergency Relief against Verizon Florida, LLC for Anticompetitive Behavior in Violation of Sections 364.01(4), 364.3381, and 364.10, F.S., and for Failure to Facilitate Transfer of Customers' Numbers to Bright House Networks Information Services (Florida), LLC, and its Affiliate, Bright House Networks, LLC, Florida Public Service Commission, Docket No. 070691-TP, Rebuttal Testimony on Behalf of Verizon Florida LLC (July 25, 2008)*

*In the Matter of the Appropriate Forms of Regulating Telephone Companies, Maryland Public Service Commission, Case No. 9133, Direct Testimony on Behalf of Verizon Maryland (July 8, 2008)*

*Comparative Analysis of Communications Markets as it Relates to the Economic Viability of Optus' HFC Network and Telstra's Proposed HFC Exemption, Australian Consumer and Competition Commission, Expert Report on Behalf of Telstra Corporation Ltd. (June 23, 2008)*

*In the Matter of the Constitution of the Co-Operative Republic of Guyana and In the Matter of the application for redress under Article 153 for the contravention of the Applicant's fundamental rights guaranteed by Articles 20, 146, and 149D of the Constitution of the Republic of Guyana and In the Matter of the Telecommunications Act No. 27 of 1990, U-Mobile (Cellular) Inc., v. The Attorney General of Guyana, Expert Report on Behalf of Guyana Telephone and Telegraph Company (June 19, 2008)*

*In the Matter of Bright House Networks LLC et al v. Verizon California et al, Federal Communications Commission File No. EB-08-MD-002, Expert Declaration on Behalf of Verizon Communications (February 29, 2008)*

*In the Matter of Review of the Commission's Program Access Rules and Examination of Programming Tying Arrangements, Federal Communications Commission Docket MB 07-198, Reply Report on Behalf of the Walt Disney Company (February 12, 2008)*

*In the Matter of Verizon's 2007 Price Cap Plan for the Provision of Local Telecommunications Services in the District Of Columbia, District of Columbia Public Service Commission, Formal Case No. 1057, Rebuttal Testimony on Behalf of Verizon (January 31, 2008)*

*In the Matter of Review of the Commission's Program Access Rules and Examination of Programming Tying Arrangements, Federal Communications Commission Docket MB 07-198, Expert Report on Behalf of the Walt Disney Company (January 4, 2008)*

*In the Matter of Verizon's 2007 Price Cap Plan for the Provision of Local Telecommunications Services in the District Of Columbia, District of Columbia Public Service Commission, Formal Case No. 1057, Direct Testimony on Behalf of Verizon (December 7, 2007)*

*In the Matter of the Commission's Investigation Into Verizon Maryland, Inc.'s Affiliate Relationships, Maryland Public Service Commission, Case No. 9120, Rebuttal Testimony on Behalf of Verizon (November 19, 2007)*

*On Petition for a Writ of Certiorari to the United States Court of Appeals for the Ninth Circuit, Pacific Bell Telephone Company d/b/a AT&T California, et al., Petitioners, v. Linkline Communications, Inc., et al., Respondents, Brief of Amici Curiae Professors and Scholars in Law and Economics in Support of the Petitioners (with R. Bork, G. Sidak, et al) (November 16, 2007)*

*In the Matter of the Commission's Investigation Into Verizon Maryland, Inc.'s Affiliate Relationships, Maryland Public Service Commission, Case No. 9120, Direct Testimony on Behalf of Verizon (October 29, 2007)*

*Application of Verizon Virginia, Inc. and Verizon South for a Determination that Retail Services Are Competitive and Deregulating and Detariffing of the Same, State Corporation Commission of Virginia, Case No. PUC-2007-00008, Rebuttal Report on Behalf of Verizon (July 16, 2007)*

*Testimony on Single Firm Conduct, "Understanding Single-Firm Behavior: Conduct as Related to Competition," United States Department of Justice and United States Federal Trade Commission, Sherman Act Section 2 Joint Hearing (May 8, 2007)*

*Testimony on Communications, Broadband and U.S. Competitiveness, Before the Committee on Commerce, Science and Transportation, United State Senate (April 24, 2007)*

*Application of Verizon Virginia, Inc. and Verizon South for a Determination that Retail Services Are Competitive and Deregulating and Detariffing of the Same, State Corporation Commission of Virginia, Case No. PUC-2007-00008, Expert Testimony and Report on Behalf of Verizon (January 17, 2007)*

*In re: ACLU v. Gonzales, Civil Action No. 98-CV-5591, E.D. Pa., Rebuttal Report on Behalf of the U.S. Department of Justice (July 6, 2006)*

*In re: ACLU v. Gonzales, Civil Action No. 98-CV-5591, E.D. Pa., Expert Report on Behalf of the U.S. Department of Justice (May 8, 2006)*

*In re: Emerging Communications Shareholder Litigation, "The Valuation of Emerging Communications: An Independent Assessment" (with J. Mrozek and L. Robinson), Court of Chancery for the State of Delaware (August 2, 2004)*

*In the Matter of Review of the Commission's Rules Regarding the Pricing of Unbundled Network Elements and the Resale of Service by Incumbent Local Exchange Carriers, WC Docket No. 03-173, Declaration of Jeffrey A. Eisenach and Janusz R. Mrozek, Federal Communications Commission (December 2003)*

*In the Matter of Disposition of Down Payments and Pending Applications Won During Auction No. 35 for Spectrum Formerly Licensed to NextWave Personal Communications, Inc., NextWave Power Partners, Inc. and Urban Comm – North Carolina, Inc., Federal Communications Commission, (October 11, 2002)*

*In the Matter of Echostar Communications Corporation, General Motors Corporation, and Hughes Electronics Corporation, Federal Communications Commission (February 4, 2002)*

*In the Matter of United States v. Microsoft Corp. and New York State v. Microsoft Corp., Proposed Final Judgment and Competitive Impact Statement (with T. Lenard), U.S. Department of Justice, Civil Action No. 98-1232 and 98-1233 (January 28, 2002)*

*In the Matter of Implementation of Section 11 of the Cable Television Consumer Protection and Competition Act of 1992 (with R. May), Federal Communications Commission (January 4, 2002)*

*In the Matter of Request for Comments on Deployment of Broadband Networks and Advanced Telecommunications (with R. May), National Telecommunications and Information Administration (December 19, 2001)*

*In the Matter of Implementation of the Telecommunications Act of 1996, Telecommunications Carriers' Use of Customer Proprietary Network Information and Other Consumer Information; Implementation of the Non-Accounting Safeguards of Sections 271 and 272 of the Communications Act of 1934, As Amended (with T. Lenard and J. Harper), Federal Communications Commission (November 16, 2001)*

*In the Matter of Flexibility for Delivery of Communications by Mobile Satellite Service Providers (with W. Adkinson), Federal Communications Commission (October 22, 2001)*

*In the Matter of Deployment of Advanced Telecommunications Capability (with R. May), Federal Communications Commission (October 5, 2001)*

*In the Matter of Deployment of Advanced Telecommunications Capability (with R. May), Federal Communications Commission (September 24, 2001)*

*In the Matter of Nondiscrimination in Distribution of Interactive Television Services Over Cable (with R. May), Federal Communications Commission (March 19, 2001)*

*In the Matter of High-Speed Access to the Internet Over Cable and Other Facilities, Reply Comments (with R. May), Federal Communications Commission (December 1, 2000)*

*Testimony on Federal Communications Commission Reform, Before the Committee on Government Reform, Subcommittee on Government Management, Information and Technology, United States House of Representatives (October 6, 2000)*

*In the Matter of Public Interest Obligations of TV Broadcast Licensees (with R. May), Federal Communications Commission (March 27, 2000)*

*Testimony on Truth in Billing Legislation*, Before the Subcommittee on Telecommunications, Trade and Consumer Protection, Committee on Commerce, United States House of Representatives (March 9, 2000)

*In the Matter of GTE Corporation, Transferor and Bell Atlantic, Transferee for Consent to Transfer of Control*, (with R. May), Federal Communications Commission (February 15, 2000)

*Testimony on Reforming Telecommunications Taxes in Virginia*, Governor's Commission on Information Technology (October 26, 1999)

*Testimony on Telecommunications Taxes*, Advisory Commission on Electronic Commerce (September 14, 1999)

*In the Matter of GTE Corporation, Transferor and Bell Atlantic, Transferee for Consent to Transfer of Control*, Federal Communications Commission (December 23, 1998)

*In the Matter of Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996* (with C. Eldering), Federal Communications Commission (September 14, 1998)

*Testimony on Section 706 of the Telecommunications Act of 1996 and Related Bandwidth Issues*, Before the Subcommittee on Communications Committee on Commerce, Science, and Transportation, United States Senate (April 22, 1998)

*Testimony on the Impact of the Information Revolution on the Legislative Process and the Structure of Congress*, Before the Subcommittee on Rules and Organization of the House of the Committee on Rules, United States House of Representatives (May 24, 1996)

*Testimony on Efforts to Restructure the Federal Government*, Before the Committee on Governmental Affairs, United States Senate (May 18, 1995)

*Testimony on the Role of the Department of Housing and Urban Development and the Crisis in America's Cities*, Before the Committee on Banking and Financial Services, United States House of Representatives (April 6, 1995)

### **Academic Publications and White Papers**

*The Latino Contribution to U.S. Economic Dynamism* (with Robert Kulick) NERA Economic Consulting, March 2019

*The Impact of Online Video Distribution on the Global Market for Digital Content* (with David Blackburn and Bruno Soria) NERA Economic Consulting, March 2019

"Do State Reviews of Communications Mergers Serve the Public Interest?" (with Robert Kulick) *Federal Communications Law Journal*, March 2019

*Right-to-Work Laws: The Economic Evidence* (Update), NERA Economic Consulting, May 2018

*Do State Reviews of Communications Mergers Serve the Public Interest?* (with Robert Kulick) NERA Economic Consulting, October 2017

*Impacts of Potential Aluminum Tariffs on the U.S. Economy* (with David Harrison), NERA Economic Consulting for Emirates Group Aluminum, June 2017

*Balancing Incentives for the Migration to Fibre Networks* (with B. Soria), NERA Economic Consulting for Vodafone Group PLC, March 2017

“US Merger Enforcement in the Information Technology Sector,” *Handbook of Antitrust, Intellectual Property and High Tech* (Roger Blair and Daniel Sokol, eds.) Cambridge University Press, 2017

*Making America Rich Again: The Latino Effect on Economic Growth*, NERA Economic Consulting, December 2016

“The Economics of Zero Rating,” in *Net Neutrality Reloaded: Zero Rating, Specialised Service, Ad Blocking and Traffic Management* (L. Belli, ed.) Annual Report of the UN IGF Dynamic Coalition on Net Neutrality, December 2016

*The Long-Run Effects of Employment Regulation on California’s Economy*, U.S. Chamber of Commerce, July 2016

*A New Regulatory Framework for the Digital Ecosystem* (with B. Soria), GSMA and NERA Economic Consulting, February 10, 2016

*Broadband Market Performance in Canada: Implications for Policy*, NERA Economic Consulting, October 2015

“Looking Ahead: The FTC’s Role in Information Technology Markets” (with I.K. Gotts), *George Washington University Law Review* 83;6, November 2015

*Right-to-Work Laws: The Economic Evidence*, NERA Economic Consulting, June 18, 2015

*The Economics of Zero Rating*, NERA Economic Consulting, March 2015

“In Search of a Competition Doctrine for Information Technology Markets: Recent Antitrust Developments in the Online Sector” (with I. K. Gotts), in *Competition and Communications Law: Key Issues in the Telecoms, Media and Technology Sectors*, Kluwer Law International, 2014

*Economic Effects of Imposing Third-Party Liability on Payment Processors*, NERA Economic Consulting, July 2014

*Delivering for Television Viewers: Retransmission Consent and the U.S. Market for Video Content*, NERA Economic Consulting, July 2014

*The ABCs of “Pick-and-Pay,”* NERA Economic Consulting, June 2014

“Mobile Wireless Performance in the EU and the US: Implications for Policy” (with E. Bohlin and C. Caves), *Communications and Strategies* 93, 2014

“The Sound Recording Performance Right at a Crossroads: Will Market Rates Prevail?” *Commlaw Conspectus* 22, 2013–2014

*An Empirical Analysis of the Value of Information Sharing in the Market for Online Content* (with H. Beales), Navigant Economics, February 2014

*The Equities and Economics of Property Interests in TV Spectrum Licenses*, Navigant Economics, January 2014

*Mobile Wireless Market Performance in Canada: Lessons from the EU and the US* (with E. Bohlin and C. Caves), Navigant Economics, September 2013

“Avoiding Rent-Seeking in Secondary Market Spectrum Transactions,” (with H. Singer), *Federal Communications Law Journal* 65;3, June 2013

*Understanding Webcaster Royalties*, Navigant Economics, June 2013

*Mobile Wireless Performance in the EU and the US* (with E. Bohlin and C. Caves), GSMA and Navigant Economics, May 2013

“The Long-Run Effects of Copper-Loop Unbundling and the Implications for Fiber” (with R. Crandall and A. Ingraham), *Telecommunications Policy* 37, 2013

*Putting Consumers First: A Functionality-Based Approach to Online Privacy* (with H. Beales), Navigant Economics, January 2013

“What Happens When Local Phone Service is Deregulated?” (with K. Caves), *Regulation*, September 2012

“Economic and Legal Aspects of FLSA Exemptions: A Case Study of Companion Care” (with K. Caves), *Labor Law Journal*, September 2012

*The Long-Run Impact of Copper Unbundling and the Implications for Fiber* (with R. Crandall and A. Ingraham), Navigant Economics, March 2012

*Estimating the Economic Impact of Repealing the FLSA Companion Care Exemption* (with K. Caves), Navigant Economics, March 2012

*The Impact of Liberalizing Price Controls on Local Telephone Service: An Empirical Analysis* (with K. Caves), Navigant Economics, February 2012

“Spectrum Reallocation and the National Broadband Plan,” *Federal Communications Law Journal* 64;1, December 2011

*The Rural Utilities Service Should Reassess its Reliance on Universal Service High-Cost Support to Leverage Broadband Loans*, Navigant Economics, September 2011

*The Effects of Regulation on Economies of Scale and Scope in TV Broadcasting*, Navigant Economics, June 2011

*Evaluating the Cost-Effectiveness of RUS Broadband Subsidies: Three Case Studies*, Navigant Economics, April 2011

*Revenues from a Possible Spectrum Incentive Auction: Why the CTIA/CEA Estimate is Not Reliable*, Navigant Economics, April 2011

*Competition in the New Jersey Communications Market: Implications for Reform*, Navigant Economics, March 2011

*The Role of Independent Contractors in the U.S. Economy*, Navigant Economics, December 2010

“Vertical Separation of Telecommunications Networks: Evidence from Five Countries” (with R. Crandall and R. Litan), *Federal Communications Law Journal* 62;3, June 2010

*Video Programming Costs and Cable TV Prices: A Reply to CRA*, (with K. Caves), Navigant Economics, June 2010

*Video Programming Costs and Cable TV Prices*, Navigant Economics, April 2010

*Retransmission Consent and Economic Welfare: A Reply to Compass Lexecon*, Navigant Economics, April 2010

*The Benefits and Costs of Implementing ‘Return-Free’ Tax Filing In the U.S.* (with R. Litan and C. Caves), Navigant Economics, March 2010

“The Impact of Regulation on Innovation and Choice in Wireless Communications” (with E. Ehrlich and W. Leighton), *Review of Network Economics* 9;1, 2010

*Uncollected Sales Taxes on Electronic Commerce* (with R. Litan), Empiris LLC, February 2010

*The Economics of ESPN360.com*, Empiris LLC, November 2009

“Net Neutrality versus Consumer Welfare,” in *The Consequences of Net Neutrality Regulations on Broadband Investment and Consumer Welfare: A Collection of Essays*, American Consumer Institute, November 2009

*The Economics of Retransmission Consent*, Empiris LLC, March 2009

*Economic Effects of Tax Incentives for Broadband Infrastructure Deployment* (with H. Singer and J. West), Empiris LLC, January 5, 2009

“An Event Analysis Study of the Economic Implications of the FCC’s UNE Decision: Backdrop For Current Network Sharing Proposals,” (with P. Lowengrub and J.C. Miller III), *CommLaw Conspectus* 17;1, 2008

“Broadband Policy: Does the U.S. Have It Right After All?” in *Telecommunications Policy & Regulation*, Practising Law Institute, December 2008

“Broadband in the U.S. – Myths and Facts,” in *Australia’s Broadband Future: Four Doors to Greater Competition*, Committee for Economic Development of Australia, 2008

*The Benefits and Costs of I-File*, (with R. Litan and K. Caves), Criterion Economics, LLC, April 14, 2008

“Irrational Expectations: Can a Regulator Credibly Commit to Removing an Unbundling Obligation?” (with Hal J. Singer), *AEI-Brookings Joint Center Related Publication 07-28*, December 2007

*Due Diligence: Risk Factors in the Frontline Proposal*, Criterion Economics, LLC, June 28, 2007

*The Effects of Providing Universal Service Subsidies to Wireless Carriers* (with K. Caves), Criterion Economics, LLC, June 13, 2007

*Assessing the Costs of the Family and Medical Leave Act*, Criterion Economics, LLC, February 16, 2007

*Improving Public Safety Communications: An Analysis of Alternative Approaches* (with P. Cramton, T. Dombrowsky, A. Ingraham, H. Singer) Criterion Economics, LLC, February 6, 2007

*Economic and Regulatory Implications of Unregulated Entry in the Canadian Mortgage Insurance Market*, Criterion Economics, LLC, June 20, 2006

*The FCC’s Further Report on A La Carte Pricing of Cable Television* (with R. Ludwick) The CapAnalysis Group, LLC, March 6, 2006

*The EX-IM Bank’s Proposal to Subsidize the Sale of Semiconductor Manufacturing Equipment to China: Updated Economic Impact Analysis* (with J.C. Miller III, R. Ludwick), The CapAnalysis Group, LLC, November 2005

*Retransmission Consent and Cable Television Prices* (with D. Trueheart), The CapAnalysis Group, LLC, March 2005

*The EX-IM Bank’s Proposal to Subsidize the Sale of Semiconductor Manufacturing Equipment to China: An Economic Impact Analysis* (with J.C. Miller III, R. Ludwick, O. Grawe), The CapAnalysis Group, LLC, January 2005.

*Peer-to-Peer Software Providers’ Liability under Section 5 of the FTC Act* (with J.C. Miller III, L. Fales, C. Webb), The CapAnalysis Group, LLC and Howrey LLP, April 2004

*Mandatory Unbundling: Bad Policy for Prison Payphones* (with D. Trueheart, J. Mrozek), The CapAnalysis Group, LLC, March 2004

*UNE Rates Do Not Reflect Underlying Costs: A Rebuttal to Ekelund and Ford* (with J. Mrozek), The CapAnalysis Group, LLC, January 30, 2004

*Do UNE Rates Reflect Underlying Costs?* (with J. Mrozek), The CapAnalysis Group, LLC, December 2003

*Rising Cable TV Rates: Are Programming Costs the Villain?* (with D. Trueheart), The CapAnalysis Group, LLC, October 2003

*Economic Implications of the FCC's UNE Decision: An Event Analysis Study* (with J.C. Miller III, P. Lowengrub, The CapAnalysis Group, LLC, April 2003

“Telecom Deregulation and the Economy: The Impact of ‘UNE-P’ on Jobs, Investment and Growth” (with T. Lenard), *Progress on Point 10.3*, The Progress & Freedom Foundation, January 2003.

“The CLEC Experiment: Anatomy of a Meltdown” (with L. Darby and J. Kraemer) *Progress on Point 9.23*, The Progress & Freedom Foundation, September 2002

“The Debate Over Digital Online Content: Understanding the Issues” (with W. Adkinson, Jr.) *Progress on Point 9.14*, The Progress & Freedom Foundation, April 2002

“Electricity Deregulation after Enron,” *Progress on Point 9.11*, The Progress & Freedom Foundation, April 2002

“Political Privacy: Is Less Information Really Better?” *Progress on Point 9.2*, The Progress & Freedom Foundation, January 2002

“Communications Deregulation and FCC Reform: Finishing the Job” (with R. May), in *Communications Deregulation and FCC Reform: What Comes Next?* (ed., with R. May) Kluwer Academic Publishers, 2001

“Does Government Belong in the Telecom Business?” *Progress on Point 8.1*, The Progress & Freedom Foundation, January 2001

“Critics Fear Surveillance of Web Surfers Compromising Personal Privacy,” *Progress on Point 7.11*, The Progress & Freedom Foundation, July 2000

“Access Charges and The Internet: A Primer,” *Progress on Point 7.9*, The Progress & Freedom Foundation, June 2000

“The Need for a Practical Theory of Modern Governance,” *Progress on Point 7.7*, The Progress & Freedom Foundation, May 2000

“The Microsoft Monopoly: The Facts, the Law and the Remedy” (with T. Lenard) *Progress on Point 7.4*, The Progress & Freedom Foundation, April 2000

“Regulatory Overkill: Pennsylvania’s Proposal to Breakup Bell Atlantic” (with C. Eldering, R. May) *Progress on Point 6.13*, The Progress & Freedom Foundation, December 1999

“Is There a Moore's Law for Bandwidth?” (with C. Eldering, M. Sylla), *IEEE Communications Magazine*, October 1999

“The High Cost of Taxing Telecom,” *Progress on Point 6.6*, The Progress & Freedom Foundation, September 1999

“Creating the Digital State: A Four Point Program,” *Progress on Point 6.4*, The Progress & Freedom Foundation, August 1999

“How to Recognize a Regulatory Wolf in Free Market Clothing: An Electricity Deregulation Scorecard,” (with T. Lenard) *Progress on Point 6.3*, The Progress & Freedom Foundation, July 1999

“Into the Fray: The Computer Industry Flexes Its Muscle on Bandwidth,” *Progress on Point 5.9*, The Progress & Freedom Foundation, December 1998

“Surprise: Even in Electricity, the Market Works,” The Progress & Freedom Foundation, Nov. 1998

“Finally! An ‘Electricity Deregulation’ Bill That Deregulates,” *Progress on Point 5.7*, The Progress & Freedom Foundation, October 1998

“Time to Walk the Walk on Telecom Policy,” *Progress on Point 4.3*, The Progress & Freedom Foundation, July 1997

“The FCC and the Telecommunications Act of 1996: Putting Competition on Hold?” (with G. Keyworth), *Progress on Point 2.1*, The Progress & Freedom Foundation, October 1996

“Forebearance, Self-Certification and Privatization” (with J. Gattuso, et al) *Future Insight No. 3.2*, The Progress & Freedom Foundation, May 1996

“Privatizing the Electromagnetic Spectrum” (with R. Crandall, et al) *Future Insight No. 3.1*, The Progress & Freedom Foundation, April 1996

“Broadcast Spectrum: Putting Principles First” (with R. Crandall et al) *Progress on Point 1.9*, The Progress & Freedom Foundation, January 1996

“How (Not) to Solve the Liability Crisis,” in P. McGuigan, ed., *Law, Economics & Civil Justice Reform: A Reform Agenda for the 1990's*, Free Congress Foundation, 1995

“The Future of Progress,” *Future Insight 2.3*, The Progress & Freedom Foundation, May 1995

“American Civilization and the Idea of Progress,” in D. Eberly, ed., *Building a Community of Citizens: Civil Society in the 21st Century*, University Press of America, 1994

“Fighting Drugs in Four Countries: Lessons for America?” *Backgrounders* 790, The Heritage Foundation, Washington, DC, September 24, 1990

“Drug Legalization: Myths vs. Reality,” *Heritage Backgrounders* 122, The Heritage Foundation, January 1990

“How to Ensure A Drug-Free Congressional Office,” The Heritage Foundation, January 1990

“A White House Strategy for Deregulation,” in *Mandate for Leadership III*, The Heritage Foundation, 1989

“From George Bush, A Convincing Declaration of War on Drugs,” *Executive Memorandum* No. 250, The Heritage Foundation, September 14, 1989

“Winning the Drug War: What the States Can Do,” *Heritage Backgrounders* 715/S, July 7, 1989

“Why America is Losing the Drug War,” *Heritage Backgrounders* 656, June 9, 1988

“Selectivity Bias and the Determinants of SAT Scores,” (with A. Behrendt and W. Johnson) *Economics of Education Review* 5;4, 1986

“Review of Banking Deregulation and the New Competition in the Financial Services Industry,” *Southern Economic Journal* 52;3, January 1986

“Warranties, Tie-ins, and Efficient Insurance Contracts: A Theory and Three Case Studies,” (with R. Higgins and W. Shughart II), *Research in Law and Economics* 6, 1984

“Regulatory Relief under Ronald Reagan,” (with James C. Miller III), in Wayne Valis, ed., *The Future Under President Reagan*, Arlington House, 1981

### **Books and Monographs**

*An American Strategy for Cyberspace: Advancing Freedom, Security, and Prosperity*, (with C. Barfield, et al) American Enterprise Institute for Public Policy Research, June 2016

*Broadband Competition in the Internet Ecosystem*, AEI Economic Studies, American Enterprise Institute for Public Policy Research, October 2012

*The Impact of State Employment Policies on Job Growth: A 50-State Review* (with David S. Baffa, et al), U.S. Chamber of Commerce, March 2011

*The Digital Economy Fact Book 2002*, (with W. Adkinson Jr. and T. Lenard) The Progress & Freedom Foundation, August 2002

*Privacy Online: A Report on the Information Practices and Policies of Commercial Web Sites*, (with W. Adkinson, Jr., T. Lenard) The Progress & Freedom Foundation, March 2002

*The Digital Economy Fact Book 2001*, (with T. Lenard, S. McGonegal) The Progress & Freedom Foundation, August 2001

*Communications Deregulation and FCC Reform: What Comes Next?* (ed., with R. May) Kluwer Academic Publishers, 2001

*The Digital Economy Fact Book 2000*, (with T. Lenard, S. McGonegal) The Progress & Freedom Foundation, August 2000

*Digital New Hampshire: An Economic Factbook*, (with R. Frommer, T. Lenard) The Progress & Freedom Foundation, December 1999

*The Digital Economy Fact Book*, (with A. Carmel and T. Lenard), The Progress & Freedom Foundation, August 1999

*Competition, Innovation and the Microsoft Monopoly: Antitrust in the Digital Marketplace*, (ed., with T. Lenard), Kluwer Academic Publishers, 1999

*The People's Budget*, (with E. Dale, et al), Regnery Publishing, 1995

*The Telecom Revolution: An American Opportunity*, (with G. Keyworth, et al) The Progress & Freedom Foundation, 1995

*Readings in Renewing American Civilization*, (ed. with S. Hanser) McGraw-Hill, Inc., 1993

*America's Fiscal Future 1991: The Federal Budget's Brave New World*, Hudson Institute, 1991

*Winning the Drug War: New Challenges for the 1990's*, (ed.) The Heritage Foundation, Washington, DC, 1991

*Drug-Free Workplace Policies for Congressional Offices*, (ed.) The Heritage Foundation, Washington, DC, 1991

*America's Fiscal Future: Controlling the Federal Deficit in the 1990's*, Hudson Institute, 1990

*The Five-Year Budget Outlook*, Hudson Institute, 1988

*The Role of Collective Pricing in Auto Insurance*, Federal Trade Commission, Bureau of Economics Staff Study, 1985

### **Selected Short Articles and Op-Eds**

"Who Should Antitrust Protect? The Case of Diapers.com," *AEIdeas* (November 5, 2018)

"Needed: A Better Way to Open the Doors of Digital Opportunity," *AEIdeas* (September 13, 2017)

"Spectrum Favoritism is Bad Economics," *Forbes*, April 28, 2015

"Competition is the Only Way to Preserve an Open Internet," *Real Clear Markets*, December 18, 2014

“End the Internet Blackout on Airplanes,” *The Hill*, December 12, 2013

“Trolling for a Patent Policy Fix,” *Roll Call*, September 19, 2013

“A Good News Story: The Internet,” *AEIdeas*, May 31, 2013

“Should You Let the IRS Do Your Taxes for You?” *The Daily Caller*, May 1, 2013

“Net Neutrality as ‘Crony Capitalism,’” *AEIdeas*, November 2, 2012

“Broadband Competition in the Internet Ecosystem: A Conflict of Visions,” *AEIdeas*, October 18, 2012

“The Internet Doesn’t Need More Regulation,” *The American: The Journal of the American Enterprise Institute*, September 25, 2012

“Follow Obama’s Lead on Wireless,” *The Australian*, February 7, 2011

“The Radicalism of Net Neutrality,” *The Hill*, September 2, 2010

“Net Neutrality Rules Threaten Telecom Détente,” *Law360.com*, August 10, 2010

“Don’t Drag Broadband Into the Net Neutrality Morass,” *The Daily Caller*, July 13, 2010

“Coase vs. the Neo-Progressives,” (with A. Thierer), *The American: The Journal of the American Enterprise Institute* (October 28, 2009)

“The U.S. Abandons the Internet,” (with J. Rabkin), *The Wall Street Journal*, October 3, 2009

“A La Carte Regulation of Pay TV: Good Intentions vs. Bad Economics,” (with A. Thierer) *Engage*, June 2008

“A New Takings Challenge to Access Regulation,” American Bar Association, Section on Antitrust Law, *Communications Industry Committee Newsletter*, Spring 2007

“Reagan’s Economic Policy Legacy,” (with J.C. Miller III), *The Washington Times*, August 8, 2004

“Do Right by Minority Farmers,” *The Washington Times*, July 17, 2003

“Pruning the Telecom Deadwood,” *The Washington Times*, November 1, 2002

“The Real Telecom Scandal,” *The Wall Street Journal*, September 30, 2002

“Ensuring Privacy’s Post-Attack Survival,” (with Peter P. Swire) *CNET News.com*, September 11, 2002

“One Step Closer to 3G Nirvana,” *CNET News.com*, August 6, 2002

“Reviving the Tech Sector,” *The Washington Times*, July 10, 2002

“Broadband Chickens in Age of the Internet,” *The Washington Times*, March 11, 2002

“Watching the Detectives,” *The American Spectator*, January/February 2002

“Can Civil Liberties Survive in a Society Under Surveillance?” *Norfolk Virginian-Pilot*, November 18, 2001

“Microsoft Case: There Are Still Antitrust Laws,” *Newport News Daily Press*, July 6, 2001

“Dear Diary: There’s Still an Antitrust Law,” *Los Angeles Times*, June 29, 2001

“Lost in Cyberspace? Does the Bush Administration Get the New Economy?” *The American Spectator*, June 2001

“Local Loop: NASDAQ Noose, Al Gore’s Internet Socialism is Choking the Technology Sector,” *The American Spectator*, April 2001

“Local Loop, High-Tech Noose,” *The American Spectator*, March 2001

“Rescue Opportunity at the FCC,” *The Washington Times*, February 4, 2001

“Economic Anxieties in High-Tech Sector,” *The Washington Times*, December 12, 2000

“Nation’s Conservatives Should Support a Breakup of Microsoft,” *The Union Leader & New Hampshire Sunday News*, February 22, 2000

“Benefits Riding on a Breakup,” *The Washington Times*, November 14, 1999

“Still Wondering What Cyberspace is All About?” *Insight on the News*, Vol. 15, No. 11, March 22, 1999

“Computer Industry Flexes Its Muscle,” *Intellectual Capital.com*, January 28, 1999

“Ira Magaziner Targets the Internet,” *The Washington Times*, March 26, 1997

“Revolution – or Kakumei” *Forbes ASAP*, December 1996

“Digital Charity,” *Intellectual Capital.com*, November 28, 1996

“Time to Junk the Telecom Act,” *Investor’s Business Daily*, July 23, 1998

“Consumers Win in Mergers,” *Denver Post*, July 5, 1998

“Microsoft’s Morality Play,” *News.com*, March 11, 1998

“California Will Soon Be Eating Dust,” *Forbes Magazine*, August 1997

“Watch Out for Internet Regulation,” *The Washington Times*, July 9, 1997

“Those GOP Blockheads Just Don’t Get It; Block Grants are Merely another Bogus Solution,” *The Washington Post*, September 3, 1995

“Replace, Don’t Reinvent, HUD,” *The Wall Street Journal*, May 11, 1995

“Poor Substitute,” (with P. du Pont), *National Review*, December 31, 1994

“Just Say No to More Drug Clinics,” *St. Louis Post-Dispatch*, June 14, 1991

“Drug Rehab Funding is No Panacea,” *Chicago Tribune*, June 7, 1991

“The Vision Thing, Conservatives Take Aim at the ‘90’s,” *Policy Review* 52, Spring 1990

“What States Can Do To Fight the Drug War,” *The Washington Times*, September 4, 1989

“Congress: Reform or Transform,” (with P. McGuigan), *Washington Times*, June 12, 1989

“How to Win the War on Drugs: Target the Users,” *USA Today*, January 1989

“Invest Social Security Surplus in Local Project Bonds,” *Wall Street Journal*, January 4, 1989

“The Government Juggernaut Rolls On,” *Wall Street Journal*, May 23, 1988

“Is Regulatory Relief Enough?” (with M. Kusters), *Regulation* 6, March/April 1982

“Price Competition on the NYSE,” (with J.C. Miller III), *Regulation* 4, Jan./Feb. 1981

### **Selected Presentations**

“Regulating the New Digital,” Carnegie India Global Technology Summit (Bangalore, India) December 8, 2017

“A New Regulatory Framework for the Internet Ecosystem,” GSMA Mobile World Congress, Ministerial Program (Barcelona, Spain) February 22, 2016

“Regulatory Benefit-Cost Analysis: Applications Under Dodd/Frank,” Second Annual Attorney General Public Policy Institute Conference on Financial Services Regulation, Law & Economics Center, George Mason University School of Law, June 4, 2012

“Exploring Developments in the Communications Sector,” National Regulatory Conference, May 17, 2012

“Platform Competition in the Internet Ecosystem: Implications for Regulation,” Mercatus Institute, November 8, 2011

“Competition in the Internet Ecosystem,” American Consumer Institute, June 30, 2011

“The Future of Mobile Broadband: Platform Competition in the Internet Ecosystem,” Informa Telecoms and Media North America Broadband Traffic Management Conference, June 21, 2011

“The Communications Sector and Economic Growth,” Innovation Policy Institute, March 2, 2011

“The Benefits and Costs of I-File,” Council for Electronic Revenue Communications Advancement, May 2008

“Sell Globally, Sue Locally: The Growing Perils of Global ‘Dominance,’” Antitrust Section, Ohio State Bar Association, October 27, 2006

“The Growing Global Perils of ‘Dominance,’” Aspen Summit Conference, August 21, 2006

“Telecoms in Turmoil: What We Know and (Mostly) Don’t Know About the Telecom Marketplace in 2006,” National Regulatory Conference, May 11, 2006

“Mandatory Unbundling in the U.S.: Lessons Learned the Hard Way,” Telstra Corporation, November 25, 2005

“The Fourth ‘S’: Digital Content and the Future of the IT Sector,” Federal Communications Bar Association, May 2, 2003

“Restoring IT Sector Growth: The Role of Spectrum Policy in Re-Invigorating ‘The Virtuous Circle,’” National Telecommunications and Information Administration Spectrum Summit, April 2, 2002

“Restoring IT Sector Growth-Why Broadband, Intellectual Property and Other E-Commerce Issues Are Key to a Robust Economy,” August 2001

“Remarks at the 2000 *Global Internet Summit*,” March 14, 2000

“The Digital State: Remarks on Telecommunications Taxes,” Address Before the Winter Meeting of the National Governors Association, February 21, 1999

“The Digital Economy,” Address at the George Mason University Conference on *The Old Dominion and the New Economy*, November 1998

“A Convergence Strategy for Telecommunications Deregulation,” Remarks at the United States Telephone Association’s *Large Company Meeting*, September 1998

## Exhibit B: Summary of Proposed Broadband and Mobile Market Remedies

| Service type | Market # | Market description <sup>11</sup>              | SMP operator              | Remedies                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|--------------|----------|-----------------------------------------------|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Broadband    | 1        | <b>Retail</b> provision of fixed broadband    | OneComm and Digicel Group | <ul style="list-style-type: none"> <li>• Obligation to offer broadband on a stand-alone basis</li> <li>• Obligation to ensure Accounting Separation</li> <li>• Obligation to provide information to the Authority</li> <li>• Obligation to ensure prices are Cost Orientated</li> <li>• Obligation to publish retail keyperformance indicators</li> <li>• Obligation to ensure customers can choose the right products for them and do not experience unnecessary difficulties when switching</li> </ul>       |
|              | 2        | <b>Wholesale</b> provision of fixed broadband | OneComm and Digicel Group | <ul style="list-style-type: none"> <li>• Obligation to provide wholesale bitstream access and virtual unbundled local access</li> <li>• Obligation to ensure wholesale access is provided on fair, reasonable and non-discriminatory terms and that it is equivalent in terms of service output (i.e. equivalence of output)</li> <li>• Obligation to publish wholesale keyperformance indicators</li> </ul>                                                                                                   |
| Mobile       | 3        | <b>Retail</b> mobile services                 | OneComm and Digicel Group | <ul style="list-style-type: none"> <li>• Obligation to offer mobile services on a stand-alone basis</li> <li>• Obligation to ensure Accounting Separation</li> <li>• Obligation to provide information to the Authority</li> <li>• Obligation to ensure prices are Cost Orientated</li> <li>• Obligation to publish retail keyperformance indicators</li> <li>• Obligation to ensure customers can choose the right products for them and do not experience unnecessary difficulties when switching</li> </ul> |
|              | 4        | <b>Wholesale</b> mobile access                | OneComm and Digicel Group | <ul style="list-style-type: none"> <li>• Obligation to provide wholesale access</li> <li>• Obligation to ensure wholesale access is provided on fair, reasonable and non-discriminatory terms and that it is equivalent in terms of service output (i.e. equivalence of output)</li> <li>• Obligation to publish wholesale keyperformance indicators</li> </ul>                                                                                                                                                |