

PUBLIC CONSULTATION COMMENT SUBMISSION FORM

Policy Name: Towards the Treatment of Over-The-Top (OTT) Services
(http://tatt.org.tt/Forms/DownloadableDocuments.aspx?Command=Core_Download&EntryId=479)

In the information submitted below, please indicate what information should be considered as confidential by the Authority.

1. Respondent Category:

- (a) Regional regulatory or governmental agencies
- (b) Existing service and/ or facility providers and affiliates
- (c) Potential service and/ or facility providers and affiliates
- (d) Service provider associations/ clubs/ groups
- (e) Consumers/ consumer groups
- (f) General public

2. Interest

(Provide details of any relationship with/ interest in any of the above respondent categories):

The Trinidad and Tobago Computer Society (TTCS ; <http://www.ttcsweb.org/> ; <http://www.cs.tt/>) is a computer user group based in Trinidad. Operating since 1997 and incorporated as a non-profit organisation in 2004, we:

- are a forum where computers, related technologies and related social issues are discussed.
- keep current with the events in the local Information Technology (IT) and telecommunications industries.
- “Network local computer users” so that they can share knowledge and improve upon their experiences with modern technology

3. Contact Information:

Respondent's Name: Trinidad and Tobago Computer Society

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Email Address: info@ttcsweb.org

Contact Number: [redacted] (note: contact number should be treated as confidential)

4. Comments

Document Section	Comments	Recommendations
A general comment:	<p>For the past two decades, TATT has presided over a telecommunications sector which has experienced significant and ongoing growth for all commercial actors. The TATT "light touch" approach is one of the main factors contributing to the success of the sector. The status quo, as facilitated by TATT, should be maintained as the market can and will continue to innovate in the provision of value-added services as it has already done for the benefit of clients, consumers, service providers and the country as a whole. The TTCS fears that any change in the status quo *at the present time* will lead to a stifling of innovation and lead to significantly reduced domestic competition overall.</p> <p>The treatment of Over The Top (OTT) services is *fundamentally* a Network Neutrality (NN) issue. Once the Telecommunications Authority makes a final decision on where it stands regarding NN/zero rating of services, its way forward on topics such as OTT becomes much less complex and simple to execute. Over the top services (OTT) can be broad enough to apply to any service provided over the internet as a whole, or any future network. If TATT is to</p>	

consider competition described by providers as “unfair,” then Zero Rated services should also be considered by the authority in greater detail. Attempting to make a final decision on OTT without any final decision on NN issues may needlessly complicate the country's future regulatory landscape, and create precedents which may limit future regulatory agility and sector innovation and growth.

One of the realities of a competitive marketplace is that service providers must innovate constantly or else perish. The TTCS believes that any regulator should have no vested interest in stifling future sources of innovation in order to preserve revenue streams for service providers. More significantly, any request by service providers that TATT *must* intervene in the regulatory environment in order to mitigate any loss or potential loss of revenue as a result of technological changes in the sector misunderstands the responsibility of a regulator for the entire sector, and not just one part of it. Increased and differentiated competition and innovation in the telecoms space is to be encouraged, not stifled.

Page 15,16 ; Section 3 - What is Over-The-Top

Document Section	Comments	Recommendations
	<p>Technically, all internet traffic is over the top. This includes http, smtp, voip, iptv, pop3, imap. So the only justification for even using the name OTT is that VoIP (now) and IPTV (soon) will challenge the revenue streams of our service providers.</p>	

Page 24 ; Section 6 - Consumer Impact

Document Section	Comments	Recommendations
<p>Page 24 Section 6</p> <p>“With the increase in demand for OTT services by the public, there may be a negative impact on the market if such services are removed.”</p>	<p>The Trinidad and Tobago public has embraced the potential of the Internet and all its services to keep in touch with friends and family abroad, shop and to educate themselves. We are not only considering Skype and Viber. Any attempt to regulate VOIP is a potential first step to regulating YouTube, Khan Academy (the Backbone of Knowledge.tt), Coursera, EdX and other valuable services.</p> <p>Local businesses use Internet services to do research, facilitate innovation and conduct business transactions with suppliers and customers. Any action that restricts access to these services or raises the prices of same will harm local consumers as well as make local businesses less competitive.</p>	

<p>Page 26 Section 6.1 Advantages of OTT Services to Consumers Section 6.2 Disadvantages of Using OTT Services</p> <p>“The rapid pace of emerging technologies has driven the level of innovativeness in the telecommunications industry, making more services available to consumers.</p> <p>There are advantages, including consumer choice and affordability, associated with OTT services. However, there are disadvantages which must also be weighed.”</p>	<p>It is our position that the advantages from having OTT services widely available to consumers in a form undifferentiated from any other internet service far, far outweighs any possible disadvantage.</p> <p>The disadvantages would largely be a <i>potential</i> negative impact to Telecom providers’ revenue, but this hasn’t been borne out by the revenue figures at hand.</p>	
<p>Page 26-27 Section 6.3 Impact on Non-Telecommunications Businesses</p> <p>“OTT services offer a lower cost alternative to mobile voice and SMS services, and provide additional communications services such as video calls, group chats and non-text-based communications including voice recordings.</p> <p>These services may reduce the communications costs incurred on a daily basis in the operations of the business community.”</p>	<p>We agree.</p>	

Page 27 ; Section 6.4 - Discussion points for Comment - Consumer Impact

Document Section	Comments	Recommendations
<p>“1. OTT services, in particular OTT VoIP and messaging services, provide additional service options to consumers that are available within the environment. The availability of service options for consumers is consistent with one of TATT’s key mandates, viz.:</p>	<p>If OTT services are differentiated from other IP services in terms of pricing, this may fly in the face of TATT’s mandate to ensure persons are able to meet the financial obligations of these services.</p>	<p>OTT services should not be treated differently from other IP services.</p>

<p>‘to establish conditions that promote the interests of customers, purchasers and other users in respect of the variety of telecommunications services supplied, and ensure persons are able to meet the financial obligations related to those services.’</p>		
<p>“2. OTT services, in particular OTT VoIP and messaging services, are becoming pervasively used instead of traditional telephone local and international calling and SMS messaging.”</p>	<p>VoIP is almost certainly reducing the number of traditional voice minutes used. However, messaging, including SMS are probably having an equal or greater impact. Many of the short traditional phone calls like “don’t forget to buy bread”, “Pickup the children at 3pm” and “where are you?” have been replaced by messaging.</p> <p>OTT services also offer more features than standalone telecommunication voice and text services. They allow the ability to share text, documents, share screens, links, photos, images between multiple persons using desktops or mobiles anywhere in the world with an internet which are not possible or impractical with traditional telecommunications services.</p>	
<p>“3. OTT services used on smartphones, whether OTT VoIP or messaging, are primarily used when connected to the Internet via a Wi-Fi access point, as an option to the Internet accessed through mobile data plans.”</p>	<p>This is driven by simple economics. The cost per megabyte of a wired broadband connection (which supports a WiFi access point) is much lower than a 3G connection. Furthermore, the quality on a wired connection is better given that neither cellular provider offers true 4G services.</p>	
<p>“4. Mobile and Fixed Internet service providers should be allowed to apply an additional charge for subscribers who wish to access OTT services.”</p>	<p>Why should VoIP be treated any differently from HTTP or SMTP? This is the first step down a slippery slope. Will consumers be expected to pay more when they look at YouTube? The Internet is an empty highway until data traffic flows along it, and this is an attempt to classify that traffic for profit.</p> <p>Telecommunications companies must recognize</p>	

that the business model supporting voice and messaging died when the VoIP protocol was developed. This is the same creative destruction that has transformed so many other industries. New ways of doing business push out incumbents, for example, Amazon, Uber and AirBnB.

Providers are pointing to the glass as half-empty instead of planning for the half that's full of possibility. These new business models generate huge data streams.

We note that one telecom provider has seen increased mobile data revenues:

“TSTT CEO Ronald Walcott said the company's mobile data revenue went up by \$74 million in fiscal 2015, thanks to a 45 per cent increase in mobile data usage from smart phone penetration which climbed from 36 per cent to 50 per cent.”

Source : Trinidad Express, July 13, 2015
<http://www.trinidadexpress.com/20150713/news/tstts-mobile-revenue-up-74m>

“5. OTT services are used because they may be more affordable, accessible, and convenient than traditional telecommunications and broadcasting services.”

Yes, OTT services are used because they are free or extremely low cost. Telecommunications providers should also note that customers are willing, even keen to accept the compromises inherent in these nascent technologies.

OTT services also offer more, richer features than standalone telecommunication services such as voice. They allow the ability to share text, documents, links, photos, images between multiple persons using desktops or mobiles anywhere in the world with an internet which are

	not possible with traditional telecommunications services.	
“6. OTT services are used even though they may be less reliable, offer lower quality and lack essential services such as access to emergency services.”	<p>Further, the language in the statement is also very voice-centric. Emergency services and notification systems may eventually migrate to services like Twitter, Facebook. Wearable technology that monitors an individual’s vital signs and automobile monitoring systems may take over EMS contact even if the user is incapacitated.</p> <p>The ultimate judge for the quality of a service (be it traditional or OTT) is the consumer. Such services have to provide a service of sufficient quality for consumers to use and pay for. If the consumer's opinion of a service is poor, the consumer will seek other services.</p>	

Page 28 ; Section 7 - Impact of OTT Services on Authorised Public Telecommunications Services Providers

Document Section	Comments	Recommendations
<p>Page 29 Section 7.1 The advent of OTT Services</p> <p>“Authorised telecommunications service providers have lobbied for the regulation of OTT operators, particularly for the acquisition of relevant licences and compliance with the legislative requirements of countries.”</p> <p>“OTT players have countered such statements that any move to seek payment for the provision of OTT services may constitute regulation of the Internet and violate the concept of net neutrality.”</p>	<p>Digicel has sought to position their call to regulate OTT as a matter unrelated to net neutrality issue, but regulation of any Internet service is by definition a net neutrality issue.</p> <p>It might be useful to stop using the term OTT as it is imprecise and clouds the issues being raised here. VoIP and IPTV, which most concern telecommunications providers, are just two protocols in use on the Internet. There are hundred of others already existing and many more yet to be developed.</p> <p>The TTCS, together with ISOC-TT and IEEE TT has made a public statement on this issue previously: http://www.cs.tt/blog/ttcs-isoc-tt-and-ieee-tt-joint-statement-on-digicel-trinidad-and-tobagos-ban-on-voip-services/</p>	
<p>Page 30 Section 7.2 Focus on OTT VoIP Services</p> <p>The Authority has limited the scope of this analysis to OTT VoIP telecommunications services.</p>	<p>See general statement above. Given that this is a network neutrality issue, the issue of network neutrality needs to be examined first before deciding on different sets of rules for different data packets.</p>	
<p>Page 37 Section 7.3 Financial Impact</p> <ul style="list-style-type: none"> “With the introduction of various communications platforms including 	<p>Despite dramatic drops in traditional voice revenue and concerns about the potential of mobile data to take up the slack, the trend in device use is to untethered use of data and such use is exploding as more OTT services</p>	

<p>OTT, the reliance on traditional voice and SMS communication is declining;</p> <ul style="list-style-type: none"> • Authorised service providers will lose revenues from voice services with the proliferation of OTT VoIP services; • The fall in the mobile voice revenue market may be offset by an increase in mobile data revenues; • It is forecast that mobile data revenue will overtake voice revenue globally by 2018 	<p>arrive to make demands on capacity. WiFi access points will be used in the interim when mobile users have access to them, but that's another type of tethering, albeit a wireless one. Users with mobile devices will increasingly demand full mobility, which offers greater opportunities for providers capable of delivering such data streams on ever increasing wireless pipes.</p> <p>In the short-term, such data streams may need to be metered to ensure that there is revenue to support infrastructure spending, but ultimately fast enough wireless broadband may make even such strategies unnecessary.</p>	
<p>Page 42 Section 7.4 Financial Impact on the Trinidad and Tobago Telecommunications Market</p> <ul style="list-style-type: none"> • “Even with the introduction of OTT services, revenues generated by the domestic voice and SMS markets, as well as the domestic mobile Internet market, have increased in Trinidad and Tobago over the last four years.” • “The analysis of the Trinidad and Tobago market trends is consistent with global telecommunications revenue trends, that is, revenue generated by the mobile Internet market are growing at a faster rate than revenue from the domestic voice markets.” • As a result of the slowdown of growth in the international incoming voice market, it may be inferred that one of the reasons local telecommunications service providers may be losing 	<p>Is the role of the regulator to guarantee businesses a return on investment or is it to develop the market for the benefit of individual and commercial customers?</p> <p>TATT's role is for the protection of the consumer, not for the business, which can and will innovate as the free market makes demands on them.</p> <p>Telecommunications companies see the decline of their voice revenue as being driven by VoIP services, but their own messaging systems have improved to the point where text messages are often a preferred alternative to placing a phone call.</p> <p>Telecommunications companies need to be clearer about their business models.</p> <p>Any provider of IP services that believes they are in any business than the data business is operating on principles that are fundamentally wrong.</p>	

<p>potential international incoming voice revenues is the proliferation of OTT VoIP services.”</p>		
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Page 42 ; Section 7.5 - Impact on Authorised Public Service Providers

Document Section	Comments	Recommendations
<p>“1. For authorised cellular mobile operators, there is a relationship between the loss in voice and SMS revenues and the increase in mobile data revenues. The decline experienced in the mobile voice revenue market may be offset by an increase in mobile data revenues.”</p>	<p>I top up every month with TT\$200. Digicel’s cheapest monthly plan is \$172. And I am not a data hog by any means. It seems to me that Digicel’s data revenue should already be approaching it’s voice revenue. I guess, that given its origins, Digicel still sees itself as a telephone company rather than a data company. And perhaps Flow sees itself as a CableTV provider.</p>	
<p>“2. Mobile data subscribers pay to access the Internet with the understanding that it is inclusive of all services offered over the Internet. These subscription fees paid by customers should be sufficient to allow the authorised operator to cover its cost for the provision of OTT services to its customers and for any additional infrastructure build-out that may be necessary.”</p>	<p>Ensuring that this balance is kept is a core function of TATT. There is no other organisation in place to monitor the relationship between the cost of providing IP based services and the price that telecommunications companies charge for their services. A competitive market, as governed by TATT, also has its role to play in ensuring that prices are reasonable.</p>	
<p>“3. OTT services manifest themselves on networks as traffic. The decline experienced in the mobile voice revenue market may be offset by an increase in mobile data revenues.”</p>	<p>We note that one telecom provider has seen increased mobile data revenues: “TSTT CEO Ronald Walcott said the company's mobile data revenue went up by \$74 million in fiscal 2015, thanks to a 45 per cent increase in mobile data usage from smart phone</p>	

	<p>penetration which climbed from 36 per cent to 50 per cent.” Source : Trinidad Express, July 13, 0215 http://www.trinidadexpress.com/20150713/news/tsts-mobile-revenue-up-74m</p>	
<p>“4. Organizations that provide OTT services, particularly OTT VoIP services, should be required to register locally in order to fall under the country’s regulatory oversight and for the Government to collect relevant tax revenues.”</p>	<p>When it comes to OTT services, the matter requires more intelligent intervention and consideration. Why stop at VoIP? Why not ask YouTube to register as a television provider? Why not ask EdX to get accredited by the Accreditation Council of Trinidad and Tobago?</p> <p>Also, since any Internet Service can be seen as an OTT service, it is impractical to have all services registered with the government.</p>	
<p>“5. Organizations that provide OTT services should contribute fairly towards the use of the local telecommunications operators’ networks.”</p>	<p>This is another slippery slope. Should every organisational user of the network “contribute fairly” to its use?</p> <p>All organizations provide services over the internet. This includes eCommerce companies, newspapers, voice providers, hotels and more. The Internet has grown explosively over the last two decades with a very simple model; consumers pay for their connection and are free to use it as they see fit. Why play with a model that has benefited consumers and business in such full measure?</p>	
<p>“6. In the event that an OTT service provider requires ‘better than best effort’, then an authorised operator can consider engaging in a commercial arrangement with the OTT provider which may allow the OTT service to traverse the network at a quality of service better than ‘best effort’ Internet traffic.”</p>	<p>This seems to hint at tiered pricing and preferential access to data streams, which is a construct of commerce and not technology. The protocols and codecs have advanced sufficiently to provide a very high quality service over mediocre connections. In fact, the very</p>	<p>Disagree</p>

	<p>architecture of TCP/IP (slow start) takes into account poor connectivity and has done so for more than two decades.</p> <p>This will also serve to hamper innovation since the smaller, newer players are unlikely to be able to afford such tiered access.</p> <p>Customers should pay more for a higher quality version of an app. In this way new players can easily enter if they are favoured by the public.</p> <p>This only holds for the wireless part of the connection but typically this is the bottleneck.</p>	
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Page 65 ; Section 10 - ICT Perspectives in Trinidad and Tobago

Document Section	Comments	Recommendations
<p>Section 10.2 Stakeholder Perspective – Content of the Internet</p> <p>In a statement released by the Trinidad and Tobago Computer Society (TTCS), the Internet Society Trinidad and Tobago Chapter (ISOCTT), and the IEEE Trinidad and Tobago Section (IEEETT), the following views were expressed with respect to content on the Internet:</p> <p>‘The Internet Society in 2012 stated that: Internet Access Service allows users to essentially conduct three (3) basic sets of activities:</p> <ol style="list-style-type: none"> 1. Communicate 2. Access and provide content 	<p>We continue to support this statement.</p>	

<p>3. Use and develop applications</p> <p>To this end, the Internet is end-user centric. In general, users expect Internet traffic to be conveyed in a manner that is independent of its source, content or destination and in a manner that respects their privacy.</p> <p>Choice and transparency are at the heart of a user's Internet experience, enabling them to remain in control of their Internet experience, and thereby allowing them to benefit from, and participate in, the open Internet.'</p> <p>The above associations therefore continue to promote the independence and openness associated with the use of the Internet in Trinidad and Tobago.</p>		
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Page 68 ; Section 10.4 - Discussion Points for Comment -
Treatment of Internet Governance and Network Neutrality

Document Section	Comments	Recommendations
<p>2. The concept of a "free and open" Internet should be applied in the treatment of OTT services, therefore there should be no blocking of lawful content.</p>	<p>We agree with the concept of a "free and open" Internet. This allows users to have the right to send and receive lawful Internet traffic. A similar stand has been taken by the United States FCC: "Broadband providers may not block access to lawful content, applications, services or non-harmful devices."</p>	<p>Agree</p>

Page 73 ; Section 11.4 - Discussion Points for Comment - Regulatory Impact of OTT Services

Document Section	Comments	Recommendations
1. OTT telecommunications service may be classified as a public telecommunications service, based on the definition in the Telecommunications Act Ch 47:31 of Trinidad and Tobago.	So will we also try to regulate Amazon (store), YouTube (TV Station), Khan Academy (School) and Coursera (University) Why just stop at VoIP? The Internet is a fundamentally different space and the regulatory thinking that worked for the last 100 years will prove inadequate to this new space.	disagree
2. It is recognised that OTT telecommunications services are carried via the Internet. If OTT services are classified as public telecommunications services, then the Internet, which “switches” OTT traffic, can be classified as a public telecommunications network.	No. The internet is everywhere and nowhere. This is very much unlike telephone companies or cable TV providers where is it much easier to establish Jurisdiction. The regulatory approaches that worked reasonably well PTSNs will not work with the Internet and an attempt to use them will harm local consumers and place our businesses at a competitive disadvantage. The benefits will thus accrue to other jurisdictions who recognize the difference and exercise a degree of forbearance.	disagree
3. Regulatory oversight of OTT services, in particular OTT telecommunications services, implies regulatory oversight of an aspect of the “Open” Internet.	Not necessarily.	
4. In several jurisdictions, regulatory oversight of the Internet is not undertaken, and therefore a measure of forbearance may be needed in relation to OTT services.	agree	
5. If there is need for regulatory oversight of	Even the choice of words indicated voicentric	

<p>OTT services, there may be need to regulate the various types differently:</p> <ul style="list-style-type: none"> i. OTT VoIP, Messaging and Media ii. Interconnected and non-interconnected OTT VoIP iii. Number based and non-number based OTT VoIP and Messaging Services iv. Access to Emergency Services 	<p>thinking. That world is passing away and regulators will need to get their heads around the regulation of a flat global data network.</p>	
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Page 76 ; Section 12 - Discussion

Document Section	Comments	Recommendations
<p>The issue of regulating OTT VoIP services over the Internet is not a simple issue because of the many interests to be affected.</p>	<p>TATT also needs to consider its own tactical position given that it is the regulator of a very small market. What if TATT tries to regulate the VoIP or IPTV providers and they refuse to comply given that the T&T revenue is insignificant in their revenue stream? What recourse does TATT have apart from blocking them? In this scenario the people and business of Trinidad and Tobago will be the losers.</p> <p>It must also have a global perspective on this and consider what happens if 200 regulators try to impose 2000 different regulatory frameworks on VoIP providers?</p> <p>It can also kill the entrepreneurial spirit or innovation for local developers creating their own OTT services as any local business idea using VoIP will be blocked or made infeasible to operate in any market in the Caribbean or worldwide.</p>	

Page 81 ; Section 13.1 - Possible Approach to the Treatment of OTT Services

Document Section	Comments	Recommendations
<p>1. OTT VoIP services utilise network elements and capacity of authorised operators in the delivery of the service to customers. This can compromise the efficiency and effectiveness of authorised network operators</p>	<p>VoIP uses relatively little data and messaging uses miniscule amounts. OTT will only have a significant impact on data use if the traffic is prioritized.</p> <p>At present this is not the case and the resources required for OTT VoIP are small.</p> <p>The claims of intermittent quality of VoIP on the uplink causes congestion on the control channel but this is because the network is poorly designed.</p> <p>VoLTE is meant to carry PSTN traffic (switched voice) over the LTE PSN with performance just as good (or better) than circuit switched channels over 3G (which is presently used for CS voice). If operators plan to move to a single pricing strategy (a single data plan for everything) then they would have to modify the pricing scheme. This has not happened in the developed countries. At present, T&T is far from having to make these decisions.</p> <p>The only place where this argument has technical merit is video. Video accounts for 70% of Internet traffic already and will account for almost all of the growth in the next decade and video streaming upshifts to HDTV and 4k encoding.</p>	
<p>2. OTT/OTT VoIP providers should be treated</p>	<p>We could try but TATT has very limited</p>	

<p>as customers of authorised (PSTN) operators and be required to negotiate commercial agreements to provide OTT services.</p>	<p>negotiating leverage. We are not an India which could more or less compel Blackberry to allow the Indian government to decrypt secured traffic.</p>	
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Page 82 ; Section 14 - Recommendations

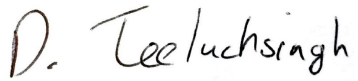
Document Section	Comments	Recommendations
<p>In view of the findings in the paper and the various considerations with respect to OTT services and OTT VoIP service, in particular, the following recommendations are made:</p> <p>i. TATT maintains the generally accepted “Free and Open” Internet policy and does not allow authorised public telecommunications services providers (operating as Internet service providers) to “block” any OTT services unless directed to so by the relevant authority, in accordance with national laws.</p>	<p>Given the benefits that the Internet brings to a small economy with very limited intellectual resources, negotiating leverage and the conceptual challenges of regulating Internet traffic this seems to be the most sensible policy.</p> <p>The countries that use a light touch in their regulatory approach will reap most of the benefits of an open internet.</p> <p>In the case of Trinidad and Tobago, the openness of our internet may become one of the criteria that investors consider when looking at out investment attractiveness.</p>	

5.

The information and comments stated above can be published by the Authority for the purposes of consultation except those which are considered confidential.

Agree

Do not agree

Signature: 

Position of signatory: Assistant Secretary
(This is only applicable for stakeholder categories **a** to **e**)

All comments should be submitted to the Authority:

via e-mail to consultation@tatt.org.tt and

by regular mail or by hand to the Authority's office at #5 Eighth Avenue Extension, Barataria, Trinidad