Trinidad & Tobago Computer Society, Internet Society Trinidad and Tobago Chapter & IEEE Trinidad and Tobago Section
Statement on Digicel Trinidad and Tobago's ban on VOIP Services

Summary of Issue

On the 5th July, 2014, Digicel (Trinidad and Tobago) announced that it will be blocking access to Voice over IP (VoIP) applications it considers to be 'unlicensed' or "unauthorized" on its "4G" service. The Trinidad and Tobago Computer Society (TTCS), the Internet Society Trinidad and Tobago Chapter (ISOC-TT) and the IEEE Trinidad and Tobago Section (IEEE-TT) consider this to be a grave error, and wish to make a public statement on this matter, both from a technical perspective and a social one.

Summary of our position

It is the position of the TTCS, ISOC-TT and IEEE-TT that this move is a violation of the concept of "Network Neutrality". In addition, they are forcing both consumers and suppliers of services to pay for the same service. Furthermore, from a technical perspective, their given reasoning is unsound, as 1) VoIP services do not present a significant load on the mobile data network and 2) their current network does not allow them to prioritise data packets by content.

We are of the firm belief that this move puts us, as Internet users, on a slippery slope, as it may well pave the way for the banning of other important Internet services for learning, innovation and productivity which use much more bandwidth. For example YouTube, which is used for educational as well as entertainment purposes, utilizes much more bandwidth than VoIP (i.e. hundreds of kbps instead of ~20kbps). Another example of a high bandwidth application that utilizes both high download and upload is VPN (Virtual Private Network). VPN allows users to remain productive while mobile, giving them the ability to remotely access files on private networks over a secured connection. The ability to remain productive even while being mobile is key to nation building.

What do we, the Internet users expect?

The Internet Society in 2012 stated that:

Internet Access Service allows users to essentially conduct three (3) basic sets of activities:

1. COMMUNICATE
2. ACCESS AND PROVIDE CONTENT
3. USE AND DEVELOP APPLICATIONS

*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**. **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**.*

Introduction of the concept of Network Neutrality

Tim Wu, who coined the term, "Network Neutrality" in the early 2000s has stated that:

> *"Network neutrality is best defined as a network design principle. The idea is that a maximally useful public information network aspires to treat all content, sites, and platforms equally.This allows the network to carry every form of information and support every kind of application. The principle suggests that information networks are often more valuable when they are less specialized – when they are a platform for multiple uses, present and future. (This is similar to what is often described as the "end-to-end" design principle)*
>
> The theory behind the network neutrality principle is that a neutral network should be expected to deliver the most to a nation and the world economically, by serving as an innovation platform, and socially, by facilitating the widest variety of interactions between people. The Internet isn't perfect but it aspires for neutrality in its

original design. **Its decentralized and mostly neutral nature may account for its success as an economic engine and a source of folk culture**."[1]

Double charging

Given that customers are paying for Internet data service, it is not accurate for Digicel to state that VoIP services amount to "illegal bypass activity". Digicel is effectively asking that both consumers and suppliers pay for the same service.

While we understand the need to ensure the integrity of their service, from a technical perspective, there is no reason to single out VoIP connections as a large consumer of bandwidth that can reduce the Quality of Service enjoyed by other customers as the throughput for a VoIP connection is very small (on the order of 20kbps)[2]. Compared to services such as YouTube, Netflix or even browsing media-rich web pages (on the order of hundreds of kbps)[3], throughput required by VoIP applications is negligible. Therefore, the argument that services such as VoIP has a significant impact on other data services is inaccurate (unless the number of VoIP users is orders of magnitude greater than the number of non-VoiP users).

The reasoning given by Digicel TT for the move that "VOIP services (are) putting enormous pressures on bandwidth – and customers' data usage experience (is) being negatively impacted" is also misleading since it is not technically possible for Digicel to give priority to VoIP traffic on their current data network. Such features are possible (but not yet deployed by major operators) in LTE in which the appropriate functionality has been built. In their current system, VoIP traffic is treated just as any other data service.

We can only conclude, therefore, that the reason for the proposed ban is to stop the loss of revenue from traditional circuit switched voice services rather than any move to protect the integrity of its data service to customers.

Summary & Conclusion

It is important that Internet Service Providers are committed to the concept of Network Neutrality in Trinidad and Tobago so as to encourage innovation and avoid the potential for censorship. Digicel should certainly backtrack on this move, in the interest of national development. The Telecommunications Authority of Trinidad and Tobago (TATT) should engage all stakeholders in a broader discussion with respect to how we should move forward on the issue of Network Neutrality in order to achieve an outcome that is good for investment, consumers, and competition. TATT should also strive towards making a more competitive environment by accelerating the introduction of a 3rd service provider as well as accelerate the long promised implementation of Number Portability to promote the competitiveness in the telecommunications space that would prevent similar anti-consumer, anti-innovation and anti-economic growth policies. Barriers to connectivity locally and across the world are clearly impacted on the policy and regulatory environment, and the extent to which it promotes the use of innovative ICT applications, is key to bridging the digital divide.

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[1] *Tim Wu, Network Neutrality FAQ*, http://timwu.org/network_neutrality.html

[2] *P. Hosein, "Capacity of Packetized Voice Services over Time-Shared Wireless Packet Data Channels", IEEE INFOCOM, Miami, Florida, March, 2005.*

[3] *P. Hosein, "Pricing for QoS-Based Wireless Data Services and its Impact on Radio Resource Management", IEEE Management of Emerging Networks and Services Workshop (Globecom), Miami, FL, Dec. 2010.*