



TATT BYTES MAGAZINE

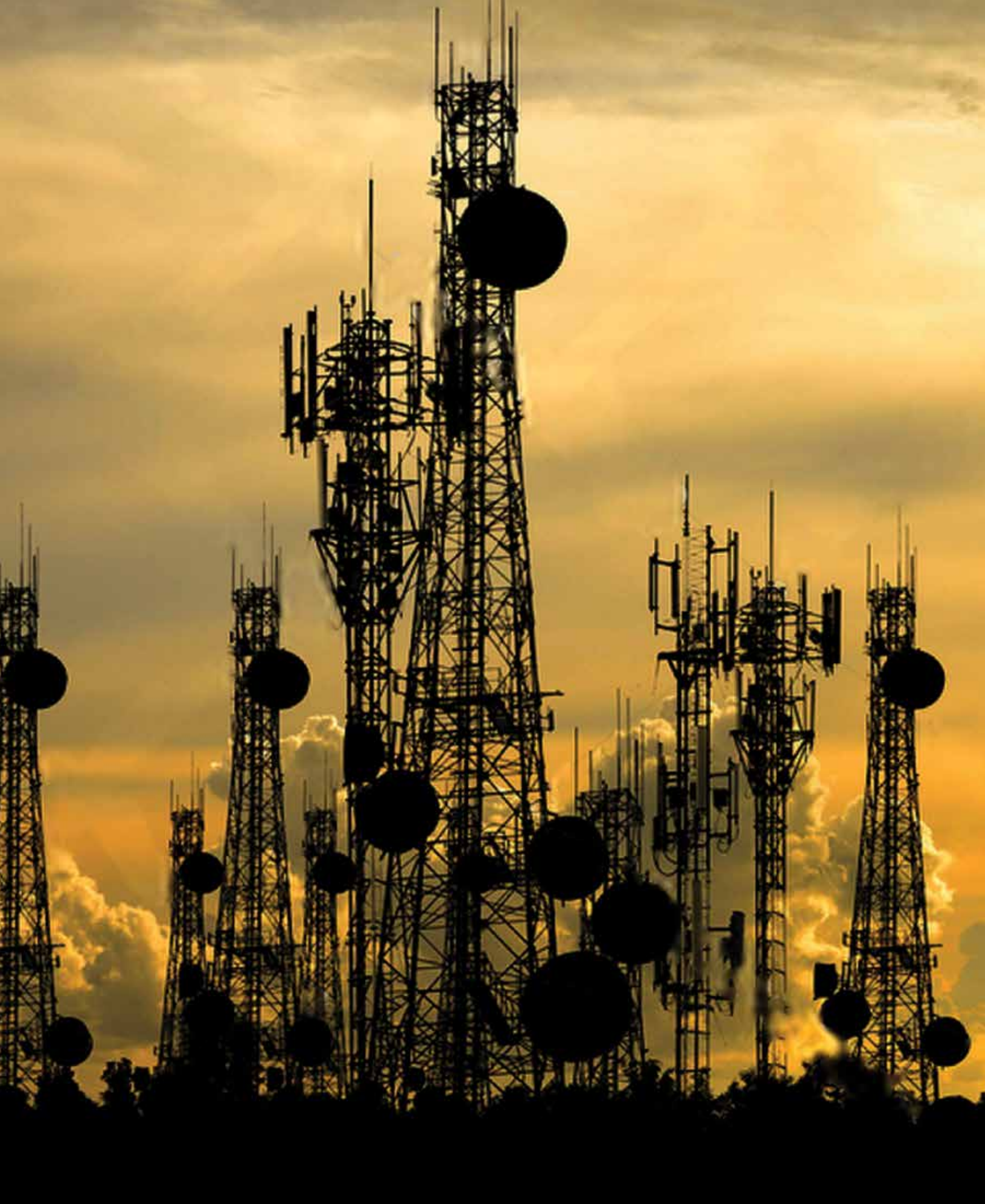
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Broadcasting in the 21st Century

Finding New
Media Models for
Survival and Success





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Broadcasting in the 21st Century: FINDING NEW MEDIA MODELS for Survival and Success



Andy Johnson, Journalist, puts forward his views

Traditional media houses in the future will become more heavily dependent on their readers paying for their news directly, while content distributors like Facebook and Google will become the primary beneficiaries of advertising dollars in the digital space.

So said David Ho, a United States-based independent media consultant, while sharing insights and experiences about transformations in the media landscape as a consequence of the growing preference for digital media.

Mr. Ho presented on *Traditional Media and Digital Media—Are There Business Models for Survival?* at the 2nd Annual Broadcasters' Forum hosted by the Telecommunications Authority of Trinidad and Tobago (TATT), in conjunction with the Trinidad and Tobago Publishers and Broadcasters Association (TTPBA).

According to Mr. Ho, "Facebook and Google are not your [traditional broadcasters] friends." He stressed that this issue of developing new models for success in the digital era had implications for both the traditional print and electronic media, which depend heavily on advertising revenue for their survival.

Mr. Ho drove home the point that, if consumers continue to gravitate towards the Internet as their main news source, advertisers would very likely move more of their business to that platform.



Kiran Maharaj, President of TTPBA, addresses the audience



Wesley Gibbings, Journalist, made several points

The Transition to Mobile

Broadcasters in Trinidad and Tobago as well as in the rest of the Caribbean are also quickly coming to terms with the reality of the smartphone being the primary source of access for news and current affairs. Consequently, the smartphone is quickly rendering traditional communications tools archaic.

While data on the Caribbean scenario may not be readily available, a 2017 Pew Research Center survey provided some United States statistics. These statistics showed mobile devices becoming one of the most common ways Americans get news, outpacing the desktop or laptop computers. The survey revealed that 58% of U.S. adults often get news on a mobile device, whilst 39% often get news on a desktop or laptop computer.

Smartphone owners can get news via social media, traditional websites and mobile apps, and what these consumers do with the content they access is also changing. Sharing articles, commenting on news items and features, and conducting research in real time, either to verify or refute the content, is now commonplace.



Karel Douglas, TATT's Corporate Secretary/Manager, Legal and Enforcement, presented his topic

Additionally, the smartphone allows the content generator to send alerts and information directly to the consumer's phone on a regular basis, or immediate alerts on breaking global news.

Changing lifestyles and the ways that people consume and interact with news and information have changed radically. Media houses must creatively navigate through this new reality from an advertising revenue perspective if they are to survive.

The Evolution of Traditional Media Consumption

Another speaker at the Forum, David Oxenford, a United States Attorney-at-Law, said it is worth noting that both opportunities as well as responsibilities are created for traditional media outlets entering cyberspace.

Mr. Oxenford's regulatory expertise comprises all areas of broadcast law, including the technical rules of the Federal Communications Commission (FCC), media ownership limitations, political broadcasting rules and equal opportunity policy.

He noted that rights to broadcast programmes on television do not necessarily translate to rights to broadcast these programmes online. Since our local television broadcasters depend heavily on foreign-based media content, this information was useful to prevent unwanted litigation.

Mr. Oxenford stressed the general point that, just because something is on the Internet, does not mean that any entity has a right to use it on its website. It must be assumed that pictures, videos and articles found online are copyrighted and permission must, therefore, be sought to reproduce them.

Oxenford continued, "This should shut the door on the misconception that the Internet is a free 'open house' of content from which anyone is at liberty to download anything and upload to any Internet platform."

He gave the example of a landmark copyright case in New York in 2013 where two media companies, Agence France-Presse and Getty Images, were ordered to pay US\$1.2 million to freelance photojournalist, Daniel Morel, for their unauthorised use of his photographs posted to Twitter. The jury found that the companies willfully violated the Copyright Act when they used photos Mr. Morel took in his native Haiti after the 2010 earthquake.



Participants at the 2nd Annual Broadcasters' Forum, hosted by TATT in conjunction with TTPBA

Another example cited by Oxenford occurred in 2017 when CBS Broadcasting Inc. sued photographer Jon Tannen for posting still images from the *Gunsmoke* television show episode, "Dooley Surrenders" first aired in 1958. In the complaint, CBS accused him of copyright infringement when he posted the image on social media.

Regulatory Highlights

All popular social media platforms have rules and regulations pertaining to what can be published. For broadcasters, these rules and regulations, which are agreed upon when they sign up for the service, should be carefully scrutinised, as violation could result in cancelled or limited access accounts.

One example is that YouTube informs its subscribers that there can be no sale of advertising, sponsorships or promotions placed on or within the service or content "without YouTube's consent". However, YouTube allows creation of content channels where they share the income.

Facebook states that pages promoting firearms, alcohol, tobacco or adult products must be limited to persons 18 years or older. There must be no promotion of gambling

without Facebook's approval, and no promotion of prescription drugs. These restrictions will be pertinent for a media house intending to engage in affiliate marketing.

Furthermore, social media platforms' rules and regulations can also affect a media outlet's intellectual property rights to its content such as photographs and videos.

For example, Facebook's Terms of Service state, inter alia:

"Specifically, when you share, post, or upload content that is covered by intellectual property rights (like photos or videos) on or in connection with our products, you grant us a non-exclusive, transferable, sub-licensable, royalty-free, and worldwide license to host, use, distribute, modify, run, copy, publicly perform or display, translate, and create derivative works of your content (consistent with your privacy and application settings)."

Instagram's Terms of Use state, inter alia:

"When you share, post, or upload content that is covered by intellectual property rights (like photos or videos) on or in connection with our service,

you hereby grant to us a non-exclusive, royalty-free, transferable, sub-licensable, worldwide license to host, use, distribute, modify, run, copy, publicly perform or display, translate, and create derivative works of your content (consistent with your privacy and application settings)."

Given these stipulations, media outlets must be prepared to relinquish some control of content when posting on these social media platforms, and will have to determine whether the potential increase in exposure, and possibly revenue, will be worth this seeming loosening of their grip on their own intellectual property rights.

Whilst adapting to the changing media ecosystem and embracing new media models, traditional media houses will need to find a balance between their rights and their need for continued advertising revenue streams if they are to survive.



TV Broadcasting Quality of Service

TATT recognises that it is important to ensure that customers receive a good quality of experience (QoE). The International Telecommunication Union (ITU) defines that QoE as the “overall acceptability of an application or service, as perceived subjectively by the end user.”

According to the Telecommunications Act, Chap. 47:31, one of the functions of the Telecommunications Authority of Trinidad and Tobago is to establish national telecommunications industry standards and technical standards. These ensure that consumers receive a good QoE at a minimum.

TATT’s Consumer Rights and Obligations Policy (CROP) seeks to ensure that consumers have a right to access the following:

- Essential telecommunications and broadcast services
- Sufficient and necessary information, in a convenient manner, to make informed decisions
- The highest possible standard of consumer-related quality of service (QoS)
- Effective and efficient complaint recognition, handling and resolution

The revised technical QoS standards for television broadcasting services is being established to safeguard consumers in the television broadcasting industry and would, therefore, complement the CROP document. The document for the establishment of technical QoS standards has undergone the second round of consultation. The final version of the document is now being reviewed prior to being published on TATT’s website.

Service to the Consumer

TATT has received consumer complaints regarding the quality of television service over the years. In response,



an audit was carried out in 2011/2012 by TATT to monitor the quality of the television signals, both at the head-ends of operators and at consumer locations throughout Trinidad and Tobago.

Based on the results of the audit, it was noted that for some of the television-type services, in particular digital TV and Internet protocol television (IPTV) formatted services, the standards utilised by the operators were more up-to-date than the standards utilised in TATT’s concession instruments. TATT, therefore, deemed it necessary to update the quality of standards for subscription television services—Internet protocol (IP) and cable as well as free-to-air (FTA) television services—analogue and digital, by publishing a new document entitled *Broadcasting Technical Quality of Service Standards: Subscription and Free-to-Air Television Broadcasting Services in Trinidad and Tobago*.

Achieving Good Quality of Experience

Customer interaction is a feature of IPTV subscription services, making it doubly important to ensure that customers receive a good QoE. TATT has adopted the ITU’s Recommendation G.1080 for testing and monitoring of the QoE of an IPTV video service. Good QoE is reliant upon error-free delivery of packet data without retransmission and is built on the foundation of good technical QoS standards. For QAM¹-based

hybrid fibre-coax (HFC) subscription systems and analogue cable systems, TATT proposes to adopt standards from internationally recognised bodies such as the Society of Cable Telecommunications Engineers (SCTE) and the Federal Communications Commission (FCC), respectively. For non-QAM systems such as the VDSL² and ADSL2+³ systems, there are no established standards to measure the QoS from these types of systems.

Although in Trinidad and Tobago analogue FTA television may be considered unpopular with consumers, this type of television service is still utilised in remote areas where cable and Internet services are not available. The migration from analogue FTA television to digital FTA television is an ongoing collaborative project between TATT and the television broadcasters, and standards are required to ensure good digital FTA television QoS. For digital FTA television, TATT proposes to adopt the Advanced Television Systems Committee (ATSC) broadcasting standards.

For analogue FTA television, there are no recognised technical QoS standards applicable to the signal after it has been transmitted. However, to ensure the best quality of signal at the consumer set-top box or receiver, TATT has adopted standards in relation to receiving power, frequency and video colour characteristics.

1 Quadrature Amplitude Modulation

2 Very-High-Bit-Rate Digital Subscriber Line

3 Asymmetric Digital Subscriber Line



Key Highlights of the Annual Market Report 2017

SUBSCRIPTIONS

318,700


Increase of 17.1%
over 2016

REVENUES

TT\$689 million

Decrease of 4.8%
over 2016

FIXED VOICE MARKET



PENETRATION

24 of every
100 inhabitants
66 out of every
100 households

SUBSCRIPTIONS

2.03 million
Decrease of 6.2%
over 2016

PENETRATION

150 per 100
inhabitants

PROPORTION OF SUBSCRIPTIONS

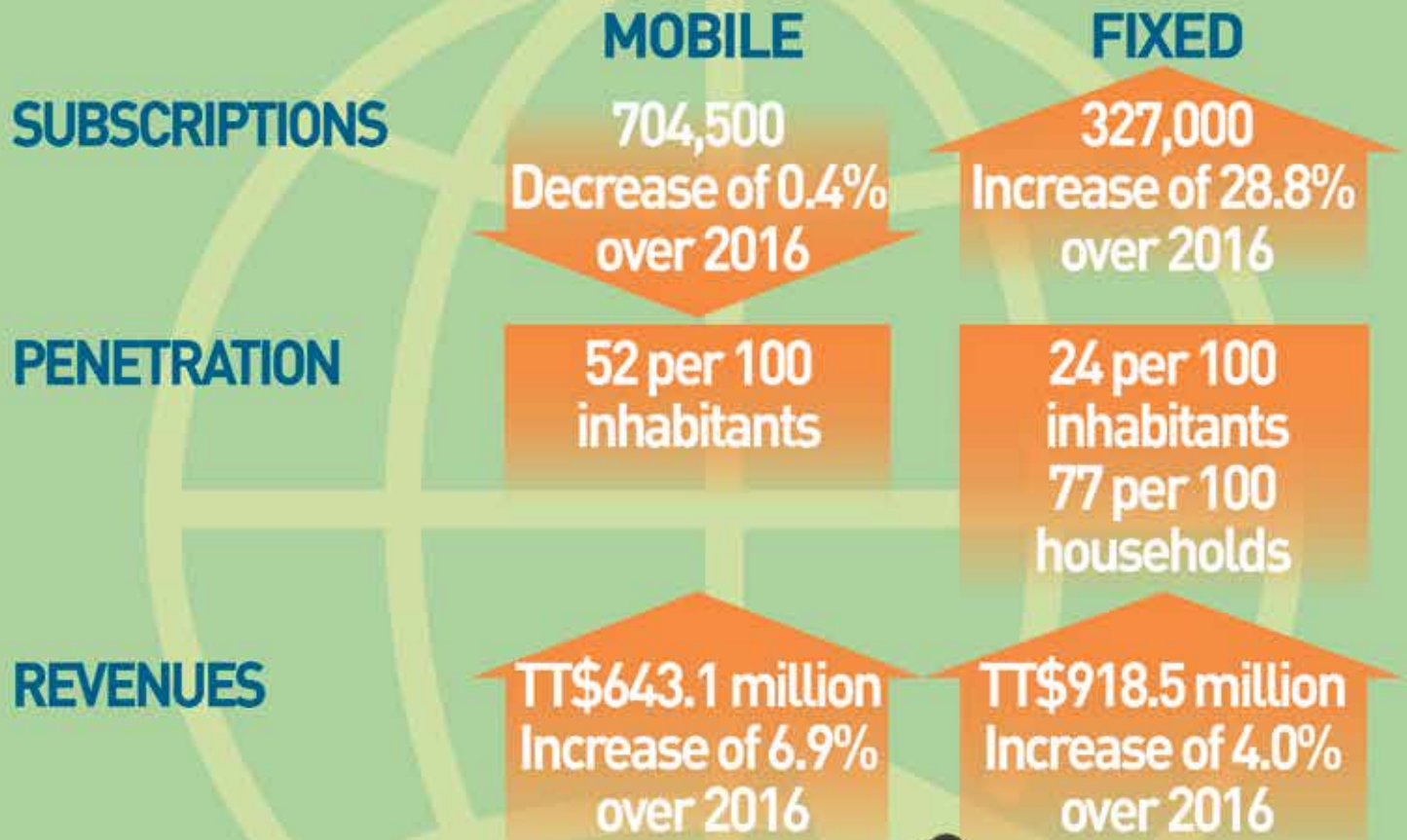
Prepaid
subscriptions: 77%
Postpaid
subscriptions: 23%

REVENUES

TT\$1,555 million
Decrease of 17.7%
over 2016



MOBILE MARKET



INTERNET MARKET

NUMBER OF MINUTES

Incoming international calls:
192,900 million minutes
Decrease of 4.9% over 2016

Outgoing international minutes:
125,200 million minutes
Decrease of 26.8% over 2016

REVENUES

Total international revenues:
TT\$352 million
Increase of 6.2% over 2016

Incoming and international
voice revenues:
TT\$238.8 million
Increase of 10.1% over 2016

Outgoing international voice
revenues TT\$88.5 million
Decrease of 19.6% over 2016



INTERNATIONAL VOICE MARKET

PAY TV SUBSCRIPTIONS

246,700
Increase of 19.4% over 2016

PAY TV PENETRATION

18 per 100 inhabitants
60 per 100 households

REVENUES

Free-to-air radio
TT\$151.1 million
Decrease of 9.5% over 2016

Pay TV
TT\$695.3 million
Decrease of 3.2% over 2016

Free-to-air TV
TT\$77.2 million
Decrease of 21.4% over 2016



Net Neutrality in Trinidad and Tobago

The subject of net neutrality has sparked intense debates between policy makers, service providers and consumers worldwide. Trinidad and Tobago is no stranger to these discussions, as the local market has not been spared nor is it immune to practices that potentially challenge the principles of net neutrality, particularly as they relate to over-the-top (OTT) services such as WhatsApp, Netflix, etc.

The issues relating to net neutrality are a matter of national interest. It is imperative that policy considerations be given to the concept of net neutrality from a national perspective. Decisions taken on the subject should align with policies geared towards the development of the sector and, by extension, the country.

To address this debate, TATT has drafted a *Discussion Paper on Net Neutrality and OTT Services in Trinidad and Tobago* for public consultation. The following sections summarise the main discussion points and recommendations presented in the paper.

Definition of Net Neutrality

Professor Tim Wu, one of the earliest proponents of equal treatment of data, has asserted that all content, sites and platforms should be treated equally. He defined net neutrality 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” (Wu, Net Neutrality FAQ n.d.).



In the open Internet model described above, data transmitted was primarily on “best effort”, which is on a first come, first served basis. In an era of a large volume of Internet users and a variety of bandwidth intensive applications, net neutrality opponents have debated that the end-to-end principle is unsustainable.

They argue that congestion experienced as a result of the increasing Internet traffic deteriorates the overall performance of the network, forcing Internet service providers (ISPs) to manage the deluge of traffic, either by overprovisioning network capacity or implementing quality of service (QoS) traffic management policies.

Net Neutrality Interferences

It is usually conceded that traffic management mechanisms are required to manage the influx of data intensive applications and services. As a result, network operators implement traffic management policies that seek to address the problem of congestion and the ensuing degradation of QoS in order to protect the integrity of their networks.

Blocking

One traffic management practice that has been at the forefront of the net neutrality discussion is the intentional blocking of lawful content. Advanced traffic management methods such as deep packet inspection (DPI) provide network operators with unprecedented information on the data packets that traverse their networks. This form of data profiling assists network operators in the application of traffic management policies that sometimes include blocking of identified lawful applications, services or websites that are either data intensive or in direct competition with their own service offerings, e.g., OTT voice applications.

Throttling

Throttling is the intentional slowing of Internet traffic to reduce bandwidth congestion. Like blocking, service providers rely on sophisticated traffic management methods to engage in this practice at certain times of the day when data transfer is at its peak, if the traffic is of a particular type or from a particular website, or all types of data, once a certain threshold is reached by the end user (Fisher 2016).

Paid Prioritisation

Paid prioritisation is a practice that is growing among ISPs who seek flexibility in their traffic management practices and business models used to transit traffic on their networks, particularly in light of challenges they face with the rise of OTT services. It offers preferential treatment or prioritised delivery to a content provider’s traffic in exchange for monetary compensation. Paid prioritisation is not supported by some consumers who consider it to be a violation of net neutrality principles. Some consumers, however, share the view that it is an acceptable practice, regarding it as product differentiation and not product discrimination, and that ISPs should be able to offer higher quality services based on the customer’s willingness to pay (Gharakheili 2017).

Zero-Rated Pricing

To gain a competitive advantage, ISPs employ various pricing and marketing strategies to differentiate their network’s services from those of their competitors. A common pricing strategy is zero-rating. This practice allows mobile subscribers to access certain online content, such as a website or application, “for free”, that is, without having the data counted against their usage (Eisenach 2015).

Guiding Principles for Net Neutrality in Trinidad and Tobago

In addressing the topic of net neutrality within the Trinidad and Tobago market, TATT recognises the need for a policy approach that values protecting the “openness” of the Internet, while making allowances for “reasonable”¹ traffic management practices.

The five principles set out below seek to balance these two competing interests. They are informed by TATT’s overarching *Guiding Principles for Regulatory Decision Making* and, in particular, seek to: promote fair and effective competition; encourage investment within the sector; facilitate market development; and promote and protect the interests of consumers.

Principle 1: Reasonable Traffic Management

TATT recognises that well-functioning broadband networks require operators to manage their networks reasonably. Thus, traffic management techniques

¹ The FCC describes network management practice as reasonable “if it is appropriate and tailored to achieving a legitimate network management purpose, taking into account the particular network architecture and technology of the broadband Internet access service” (FCC 2015).

that are reasonable and serve to address specific needs should be allowed. This principle is based on TATT's mandate to promote the advancement and development of the sector as found in section 3(b) of the Telecommunications Act, Chap. 47:31.

Principle 2: No Unreasonable Discrimination

The principle of no unreasonable discrimination follows from TATT's commitment to addressing anti-competitive pricing and acts of unfair competition, pursuant to its legislative mandate included in section 29 of the Act. TATT considers unreasonable discrimination as practices that harm actual or potential competitors (e.g., the degradation of competing VoIP applications or services) and end users (e.g., blocking end users from accessing lawful content of their choice). It also includes acts that impair free expression, such as the deliberate slowing down of lawful traffic due to the nature of the content.

TATT thus proposes net neutrality rules that specifically prohibit network operators from intentionally downgrading and/or blocking lawful content,

applications and/or services to render them effectively unusable to consumers. Conversely, discriminatory practices may be allowed for societal issues that are of paramount importance. These include but are not limited to: public safety, emergency situations, national security issues and child pornography. Discriminatory practices should also allow for the filtering of unlawful content, inclusive of violations of intellectual property rights.

Principle 3: Encouraging Investment

This principle builds on section 3(f) of the Act, which posits that one of the objectives of the Act is "promoting the telecommunications industry in Trinidad and Tobago by encouraging investment in, and the use of, infrastructure to provide telecommunications services."

TATT believes that any policy position taken on net neutrality should ensure that market opportunities and investment prospects are not unduly disrupted by regulation. In fact, policy decisions should seek to ensure that the market environment sends out the



correct signals that encourage rather than hamper investment through regulatory certainty, e.g., through sector stability and the expectation of reasonable rates of return on investment opportunities.

Principle 4: Transparency

Pursuant to section 3(c) of the Act, one of the objectives of the Act is to promote and protect the interests of the public by providing for the protection of customers. This involves ensuring consumers are able to make informed choices in their decision-making process. Customers must, therefore, have access to information regarding the Internet services they intend to purchase. This in turn promotes competition within the industry, as informed consumers are more likely to select service providers offering the best service/s.

This principle calls for network operators to exercise due diligence in disclosing their traffic management policies to customers in a format that is easily comprehended. It includes disclosure of network practices such as paid prioritisation and zero rating and other traffic management practices and application-specific behaviour². In addition, commercial terms and conditions, including pricing and privacy policies, are to be adequately provided to the customer. Moreover, all data privacy policies should be established in accordance with the relevant laws of Trinidad and Tobago.

Notwithstanding the above, TATT recognises that the disclosure of traffic management information that is commercially sensitive in nature, or which may compromise the security of a network, should be exempted from the principle of transparency.

Principle 5: Promoting Local Innovation and Entrepreneurship

The basis of this principle can be found in *fastforward II Trinidad and Tobago's Draft National ICT Plan*, which aims to foster the diversification of the economy through ICT sector development.

Innovation is critical to the economic development of countries and is, therefore, imperative for economic diversification. In particular, the development of local digital systems is vital for building digital literacy,

2 This includes disclosure as to whether and why the provider blocks or rate controls specific protocols or protocol ports, modifies protocol fields in ways not prescribed by the protocol standard, or otherwise inhibits or favours certain applications.

serving local needs and boosting competition in international digital services markets (World Economic Forum 2015). To capitalise on these opportunities, there should, therefore, be a thrust towards cultivating digital innovation within Trinidad and Tobago.

As such, any policy framework on net neutrality should be guided by the stimulation of local innovation and entrepreneurship utilising ICTs, as this would allow for customised solutions to meet the specific needs of Trinidad and Tobago.

Recommendations

The above guiding principles strive to strike the delicate balance between protecting the openness of the Internet while preserving and promoting the conditions required for a vibrant and competitive free market. TATT thus proposes the adoption of regulations that proscribe practices expected to cause anti-competitive/detrimental effects within the market, while taking a light-touch approach towards those interferences that may provide pro-competitive³ effects.

Blocking and Throttling

A key component of ensuring the openness of the Internet is the ability of users to send and receive lawful content without fear of being blocked by their ISPs. Notwithstanding the reasonable traffic management practices discussed above, TATT proposes the implementation of rules which prohibit ISPs from blocking end users from freely accessing lawful information, content, services and applications. Additionally, in the interest of safeguarding the open Internet, ISPs should not be allowed to intentionally restrict, alter, degrade or impair specific content, services or applications.

Paid Prioritisation and Zero-Rated Pricing

TATT proposes a more flexible approach to paid prioritisation and zero-rated pricing. The adoption of this approach is based on the argument that paid prioritisation and zero-rating practices are not universally harmful and may provide opportunities where consumer welfare can be enhanced. Placing a general ban on such practices may, therefore, result in the loss of substantial benefits to society. For example, it has been contended that the practice of zero-rating

3 These are effects that promote competition within the marketplace.

may result in lower prices and increased Internet uptake (Eisenach, Jeffrey A. 2015). Similarly, allowing practices such as paid prioritisation has been linked to advancements in the field of medicine through the use of applications and services, for example, telemedicine (Pai 2017).

There may, however, be instances of harmful offences of paid prioritisation and zero-rating practices, such as conduct involving anti-competitive behaviour. The recommended approach thus calls for the punishment of actual harmful and proven offences, as opposed to the absolute banning of paid prioritisation and zero-rating practices. It is, therefore, proposed that each case be evaluated on its individual merit and that regulatory action be taken only where one or more of the guiding principles are violated.

As broadband networks continue to be deployed in Trinidad and Tobago, and Internet subscriptions trend upwards, the Authority, in its capacity as the regulator of broadband services, has engaged in the net neutrality debate with an interest in formulating policy approaches that continue to promote broadband development and uptake, foster effective competition, promote and protect the interest in consumers and foster innovation.

The debate centres on two opposing but key tenets: the regulation of broadband providers, which entails the imposition of restrictions on their traffic management practices, thus preserving unfettered access to the Internet; and, the non-regulation or hands-off approach which gives providers the autonomy to manage traffic on their networks in accordance with their established traffic management policies.

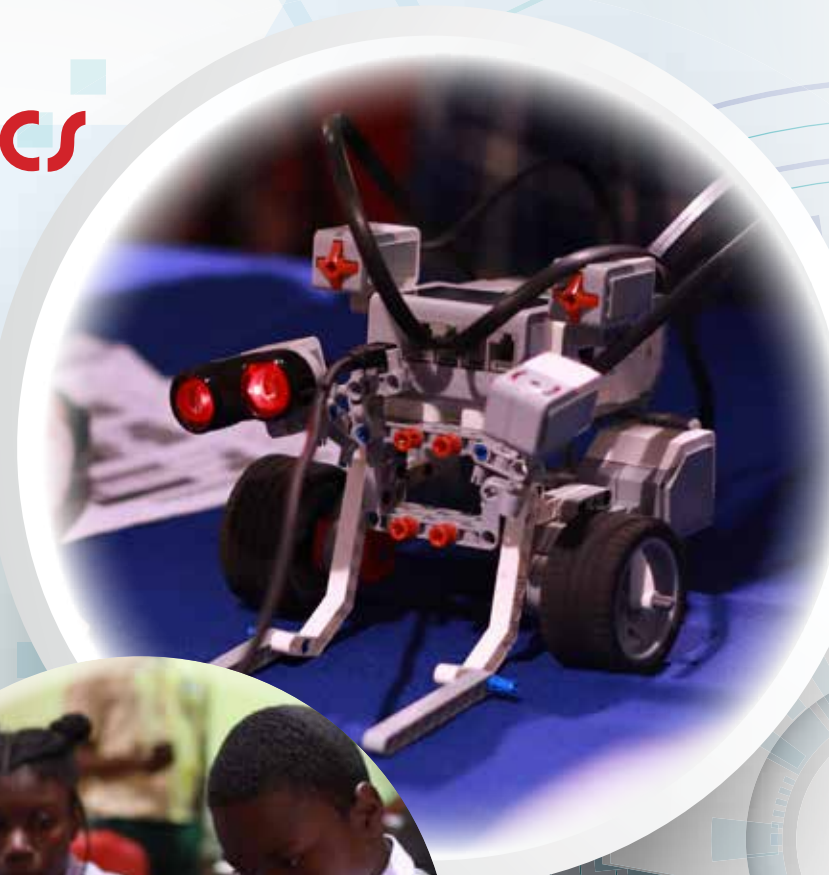
Noting the growth in the broadband market from the perspectives of network roll out and subscribership, discussions on regulating broadband access to the Internet is of paramount importance to end users and network operators alike. To end users, approaches which favour open access to the Internet are welcomed thus ensuring that their quality of Internet experience is not compromised. On the other hand, network operators advocate for approaches which afford them the flexibility to manage their networks such that they can recoup the cost of their investment. In the interest of satisfying these two competing views, TATT's discussion on net neutrality seeks to solicit feedback from all stakeholders with the goal of striking a balance between open access to the Internet and allowing operators to reasonably manage their networks.

Taking Robotics to Tobago: WTISD 2018

In commemoration of World Telecommunication and Information Society Day (WTISD), TATT hosted a robotics workshop for secondary school students in Tobago. The aim was to help raise awareness of the possibilities that the use of the Internet and other information and communications technologies (ICTs) can bring to societies and economies, and to foster ways to bridge the digital divide.

The theme for WTISD 2018 was *Enabling the Positive Use of Artificial Intelligence for All*.

The title of the Tobago workshop, which took place at the Anne Mitchell-Gift Auditorium in the NALIS Library, Scarborough, was *The Future is Now: Exploring Artificial Intelligence through Robotics*. It was facilitated by two staff members of the National Institute of Higher Education, Research, Science and Technology (NIHERST).



Thirty-six students, representing all secondary schools in the island, built simple robots using fixed instructions, then used the robots as testbeds for software exercises.

They learnt the basics of using computer-based EV3 Programming software and were guided to create a very small program. The program created was tested on the robots during a mini-competition, which was won by students of Bishop's High School, Tobago.

International Telecommunication Union (ITU) member states celebrate WTISD on May 17 each year.



A PRESENTATION OF THE
Telecommunications Authority
of Trinidad & Tobago

"YUH DON'T KNOW
WHAT YUH DON'T KNOW"



"YUH DON'T KNOW WHAT YUH DON'T KNOW"

A series of videos titled "Yuh Don't Know What Yuh Don't Know" was produced by TATT and aired on popular social media platforms close to the 2018 Christmas season.

Featuring actors, who are members of staff of TATT, the videos are aimed at educating and thus empowering local consumers of telecommunications and broadcasting services.

The messages range from encouraging customers to carefully consider the terms and conditions of services before agreeing, to the provision of data conservation tips.

The narrative highlights challenges encountered by the characters, which are subsequently resolved as they pool their collective knowledge.

"YUH DON'T KNOW
WHAT YUH DON'T KNOW"

Episode 2





Smart Living For Everyone

Connected People
A Connected Nation

TECHNOLOGY
WORK
PLAY
HOME



Telecommunications
Authority
of Trinidad and Tobago



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