NTRC

NATIONAL TELECOMMUNICATIONS REGULATORY COMMISSION

ANNUAL REPORT 2020

ABOUT COVER PHOTO

The image depicted on the cover photo shows various aspects of the installation of a subsea cable by the specialized vessel, the CS Intrepid in 2019 between the mainland Saint Vincent, and the Grenadine islands of Bequia, Mustique, Canouan, and Union Island, with connections to Carriacou and Grenada.

The laying of the cable forms part of the World Bank funded Caribbean Regional Communications Infrastructure Programme (CARCIP) National Broadband Project. The laying of the cable is expected to improve the delivery of telecommunications services in the Grenadine islands which are being serviced by unreliable microwave backhaul links.

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1. MISSION STATEMENT

To facilitate quality, relevant, and affordable Telecommunications Services throughout St. Vincent and the Grenadines.

2. VISION STATEMENT

To ensure that the demand for existing and future Telecommunications Services is met, in order to support economic growth and diversification, by providing a suitable environment for the tourism, information and financial sectors through a liberalized and competitive Telecommunications environment.

3. FUNCTIONS

The National Telecommunications Regulatory Commission (NTRC) in collaboration with the Eastern Caribbean Telecommunications Authority (ECTEL) is responsible for carrying out a variety of functions that are associated with regulating the Telecommunications Sector in St. Vincent and the Grenadines. These functions are outlined in detail in the Telecommunications Act (CAP 418) of the Revised Laws of St. Vincent and the Grenadines 2009.

4. THE COMMISSIONERS

Mrs. Roxann Williams
Deputy Chairperson

Dr. Alston Stoddard
Commissioner

Mr. Petrus Gumbs
Commissioner

5.STAFF MEMBERS

Apollo Knights
Director

Nadine Hull
Spectrum Manager

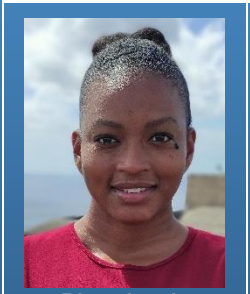
Cyron Cyrus
USF Administrator (Ag)

Mishka L. Quashie
Accountant

Andra Keizer
Administrative Officer

Shonden Baptiste
Executive Assistant

Marcellus Constance Jr.
Technical Operations Manager



Rhea Lewis
Consumer & Public Relations Manager

Eustasha Walter
Public Relations Officer

Jori Thorne
Accounting Officer

Shadeja Gordon
Customer Experience Officer

Khalisa Peters
Intern

Rolano Nanton
Intern

6. SWOT ANALYSIS

Strengths

- Availability of sufficient ICT infrastructure and software to efficiently carry out the NTRC's regulatory functions.
- Diversity of relevant skills and experience among current staff.
- A balanced combination of experienced staff alongside young, innovative, and qualified interns.

Weaknesses

- Inadequate price control mechanisms for dominant suppliers of services specifically in areas of mobile, voice, data, Fixed Broadband and Cable TV retail rates.
- Lack of regulatory oversight on promotional activities of mobile network operators.
- Absence of Quality of Service (QoS) regulations in the sector.
- Office space is inadequate for the current staff size.

Opportunities

- Ability to develop projects under the Universal Service Fund capable of reducing the digital divide that exists within our communities relating to data communication and knowledge sharing.
- Ability to address some of the current regulatory legislative deficiencies with a new electronic communications act.
- Potential for the harmonization of Internet access speeds on the Grenadine islands with those that exist on mainland St. Vincent with the establishment of the Subsea fiber cable implemented under the CARCIP project in 2019.
- Potential for Quality of Service (QoS) improvements among mobile service providers as an indirect spin off from mobile number portability that was launched in 2019.

Threats

- Cybercrime is a threat not only to the NTRC, but to our country and the region.
- The continued convergence of the ICT sector facilitated by IP technology which facilitates Over the Top Services (OTTs).
- The current duopoly market for most of our telecommunication services is not functioning in the best interest of consumers.
- The recent deployment of low earth orbiting (Leo) satellite constellations that have the ability to compete with terrestrial service providers in delivering Broadband access directly to homes. Such services if not properly licensed and regulated could negatively affect the financial status of both the existing licensed service providers and our regulatory institutions across our sub region.

7. CRITICAL ISSUES

Currently, there are three critical areas that need to be addressed in the sector:

Cyber Security

On February 24 and 25, 2020, the NTRC hosted a series of Workshops entitled "Get the Commonwealth Safe Online" in partnership with the Get Safe Online organization from the United Kingdom. The workshops were intended to raise awareness of internet security and to help individuals and small businesses use the internet confidently and safely. The workshops held were as follows:

1. Community Awareness - persons with little experience and/or little access to online safety information from the public
2. SME's and Third Sector Organizations Training Workshop – Aimed towards protecting organizations from the inside.
3. Child Protection Workshop – This catered for persons who need to understand the risks posed to children online, such as teachers, social workers, NGOs, and parents.

The NTRC has used the information and resources shared within this workshop on its social media platforms to sensitize the public throughout the year.

Notwithstanding the above, there is a need for increased capacity building initiatives where cyber security is concerned as we seek to increase our broadband penetration levels. Consideration should be given to establishing a dedicated full-time team in the Public service to address cyber security and

safety issues at the national level which may include adjusting the curriculum of our schools to cover this critical area.

Broadcast Standards

In the absence of broadcast legislation or content/programming provisions within the new Electronic Communications Bill, the Government may consider alternative mechanisms, such as, agreements with the licensees to address issues such as local content and programming schedules. We continue to see a situation of little oversight on what is played on local radio and in our public transport vehicles.

Broadband Penetration Level

If the country is expected to compete on the global market, irrespective of the sectors targeted, it is critical that as a country, we focus on increasing the penetration levels of broadband access to consumers. Broadband is seen as an essential service globally which is comparable to that of electricity, telephone, and water. In relation to water and electricity St. Vincent and the Grenadines has a household penetration exceeding 90%. In comparison, for fixed broadband, at the household level we are at about 55% penetration. Such a penetration rate of (55%) in electricity and water today is unimaginable, as such our broadband penetration levels must be increased such that it is comparable to that of our electricity and water penetration. It is imperative that the Government formalize a National Broadband Policy via a national broadband plan that can be used to decrease the digital divide that exists among our households.

We saw in 2020 the impact of such a low penetration rate on the ability of some of our students to actively participate in online classes while face to face classes were suspended due to the Covid-19 pandemic.

Digital Transformation

Several countries within the OECS including St. Vincent and the Grenadines have embarked on several initiatives geared towards the transformation of their societies via digital technologies. Of specific relevance is the new Caribbean Digital Transformation Project funded by the World Bank which commenced in 2020 and will close in June 2026. This project will touch on many aspects of the pillars of our economy including innovation, investment, digital financial services, e-commerce etc. While the

project touches on many important areas both nationally and regionally, it is missing a very critical component which if left unaddressed would hamper the success of this project and others to come. This is the lack of a national addressing system in St. Vincent and the Grenadines and other states of the OECS. It is the main reason why there is very little domestic ecommerce in our islands. It is also the reason why there are delays in delivery of goods and services at the domestic level which affects productivity and can have life threatening implications where the police, fire and health officials can be delayed in responding to emergencies.

8.SECTOR REVIEW

Financial Data Review

Total Telecom Revenue 2020

Revenue of the NTRC and ECTEL for the period 2002 to 2020

Frequency fees are shared between the NTRC and ECTEL. There was an increase of 3% for frequency fees collected in 2020 compared to 2019. In 2019, the NTRC collected $3,037,136.81 while in 2020, $3,126,872.40 was received. $240,109.90 in additional fees were collected for a modification billed for in September 2020. Furthermore, there remains frequency fees not paid by the year-end amounting to $145,006.25.

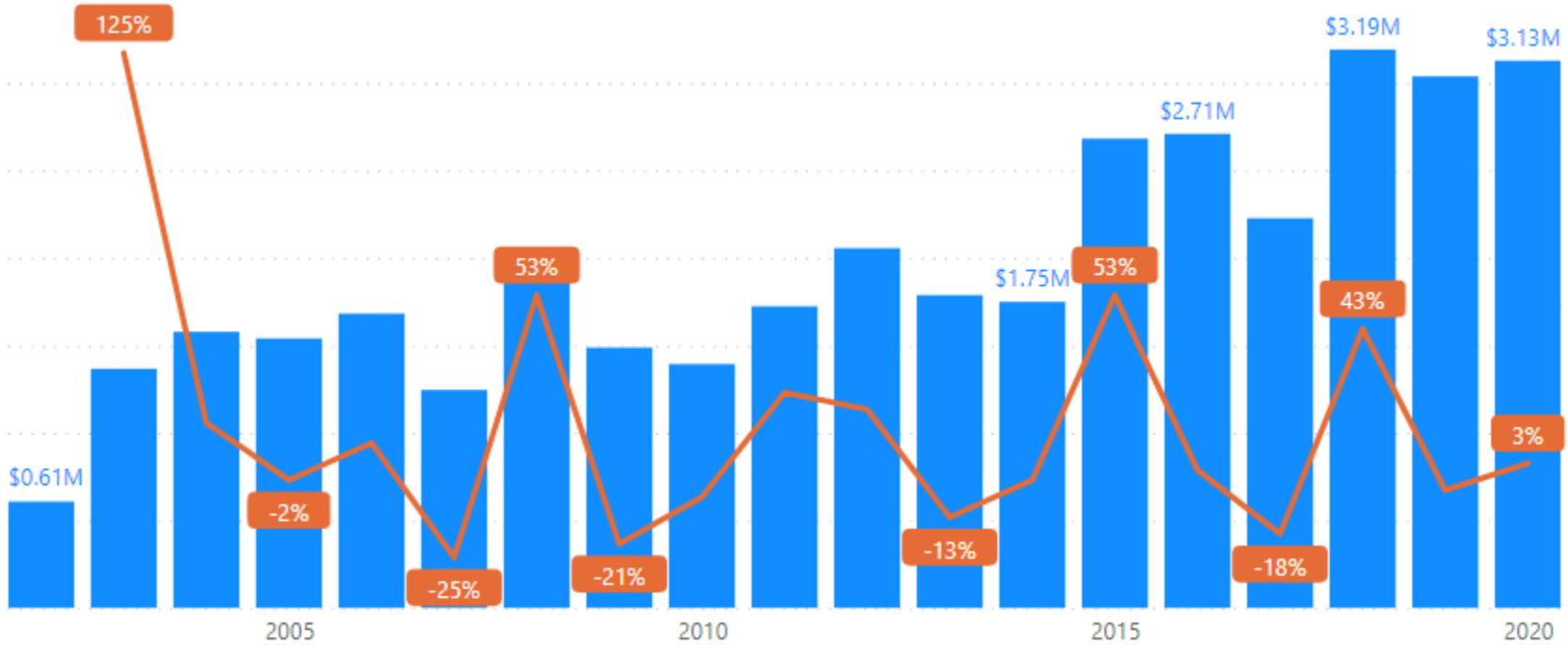


Figure 1 Frequency Fees 2002 - 2020

For application fees, in 2020, there was a 17% reduction compared to 2019. The NTRC collected $28,198.91 in 2019 and $23,520.74 in 2020. In 2019, the NTRC collected more application fees for frequency authorizations and class licenses. However, in 2020, more application fees were received for Individual Licenses only which led to the reduction.

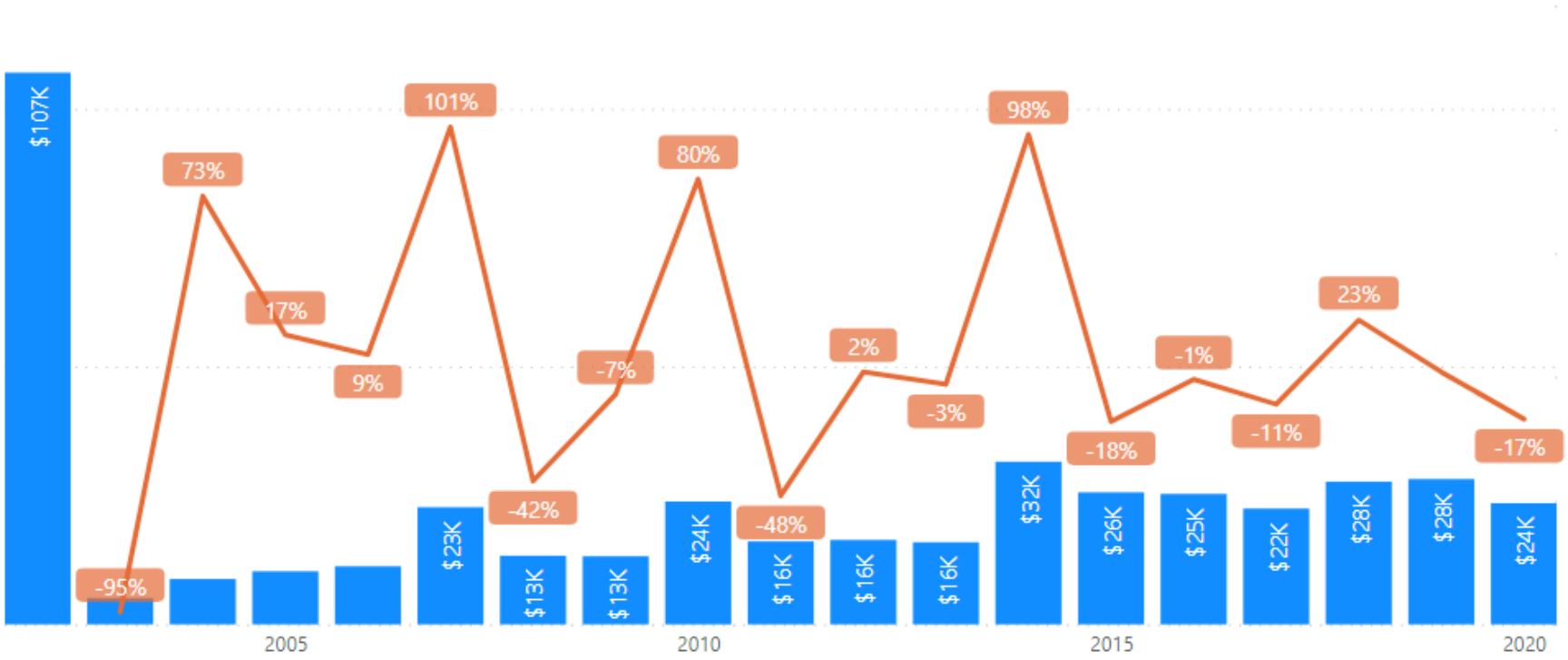


Figure 2 Application Fees 2002 - 2020

Licence fees received by the Government for the period 2002 to 2020.

There was an 83% increase in revenue for licence fees collected by the NTRC on behalf of the Government in 2020 compared to 2019. This was mainly due to the collection of the 2019 receivable in 2020 for one of the major Telecommunications Providers. Had these fees been paid when due, we would have received $3,527,609.06 in 2019 and $3,519,508.73 in 2020.

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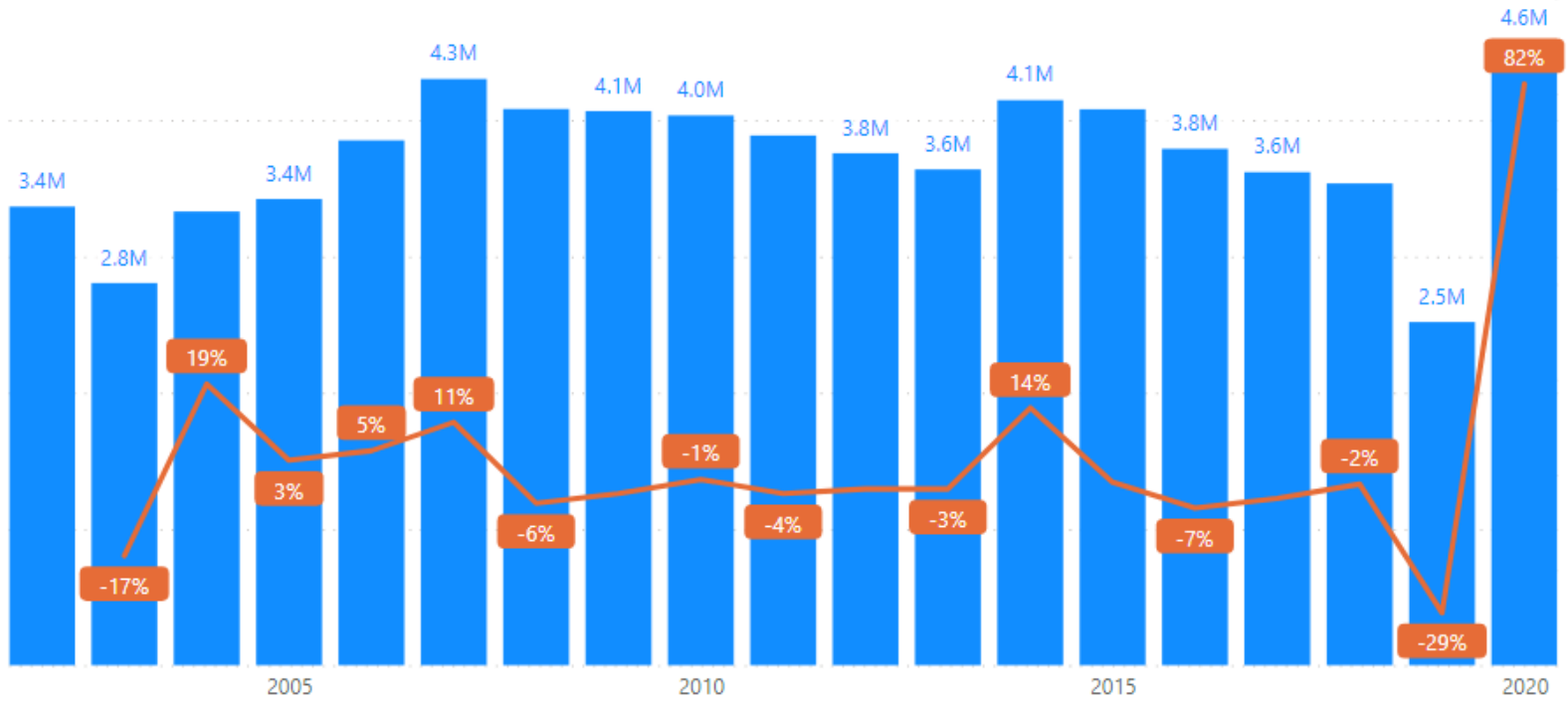

Figure 3 License Fees collected by Government

Financial Performance of the NTRC

A. Revenue

The NTRC's projected revenue for the year ending December 31, 2020 was $1,375,586.70 while $1,382,736.68 was collected. New short codes were issued during the year and additional interest revenue was received on account. There is a further $820.00 to be collected for numbering fees.

B. Expenditure

i. Recurrent

For the year ending December 31, 2020, the NTRC had projected to spend $1,327,585.09 on recurrent expenditure; however, $1,310,941.66 was spent. The Commission also had accrued expenses at the end of 2020 amounting to $28,766.30.

ii. Capital

The amount of $36,000.00 was budgeted for capital expenditure for the financial year 2020, while $36,148.62 was spent in line with the projected amount.

Conclusion

The NTRC's financial performance over the 2020 financial year was commendable.

Projected Revenue for 2021

For the fiscal year 2021, the NTRC expects the projected spectrum revenue to remain constant over the projected amount for 2020. The NTRC has projected to collect $3,086,275.00 in 2021 which is a 0.03% or $800.00 increase from $3,085,475.00 in 2020.

Figure 4

Human Resource Development for 2020

The NTRC continues to expose its staff and Commissioners to relevant courses and seminars that would benefit the organization both in the short and long-term considering the limited resources available.

The areas covered during 2020 were as follows:

- BSc. Management Studies (Human Resource Management). This program is being done online via UWI Open Campus St. Vincent and the Grenadines.
- BSc. Management Studies (Marketing). This program is being done online via UWI Open Campus St. Vincent and the Grenadines.
- Certificate in Financial Management. This program was conducted online via UWI Open Campus St. Vincent and the Grenadines
- Certificate in Digital Marketing. This program was conducted online via UWI Open Campus St. Vincent and the Grenadines
- Certificate in Managing People Effectively. This program was conducted online via UWI Open Campus St. Vincent and the Grenadines
- Certificate in Introduction to Events Management This program was conducted online via UWI Open Campus St. Vincent and the Grenadines
- Accounting Essentials. This training was conducted online via BPP in Association with ACCA.
- Google IT Automation with Python Certification. This training was done online via Coursera.
- Viral Marketing and how to craft contagious content. This training was done online via Coursera.

Regulation

No new Telecommunications Regulations were gazetted during 2020.

Staff

In 2020, we hired a new Consumer and Public Relations (CPR) Manager, Ms. Rhea Lewis. In addition, we appointed two new interns, Ms. Khalisa Peters and Mr. Rolano Nanton.

Policy Development

In September 2019, ECTEL submitted the final draft of the new electronic communications bill to member states for their passage into law. This new draft bill will replace the current telecommunications Act that has been in place since 2001. It is expected that this draft bill will be taken to Parliament in 2021.

Spectrum Management

The NTRC continued to conduct its weekly spectrum monitoring and management activities in the year 2020. Our spectrum monitoring activities focused on St. Vincent and Bequia. No monitoring was done in the Southern Grenadines due to limitations in travel resulting from the COVID-19 pandemic.

Also, during the year, as a part of the new Integrated Spectrum Management and Monitoring System (ISMMS) the second of the two spectrum monitoring probes received in 2019 was installed in October 2020 in Union Island. The first probe was installed in Bequia in December 2019.

Cellular Sites

The visualization below shows the number of LTE cellular sites in St. Vincent and the Grenadines. Cable & Wireless has 42 sites while Digicel has 50 sites. 40 of the sites operated by Cable & Wireless have LTE technology deployed while all Digicel's 50 sites have LTE.

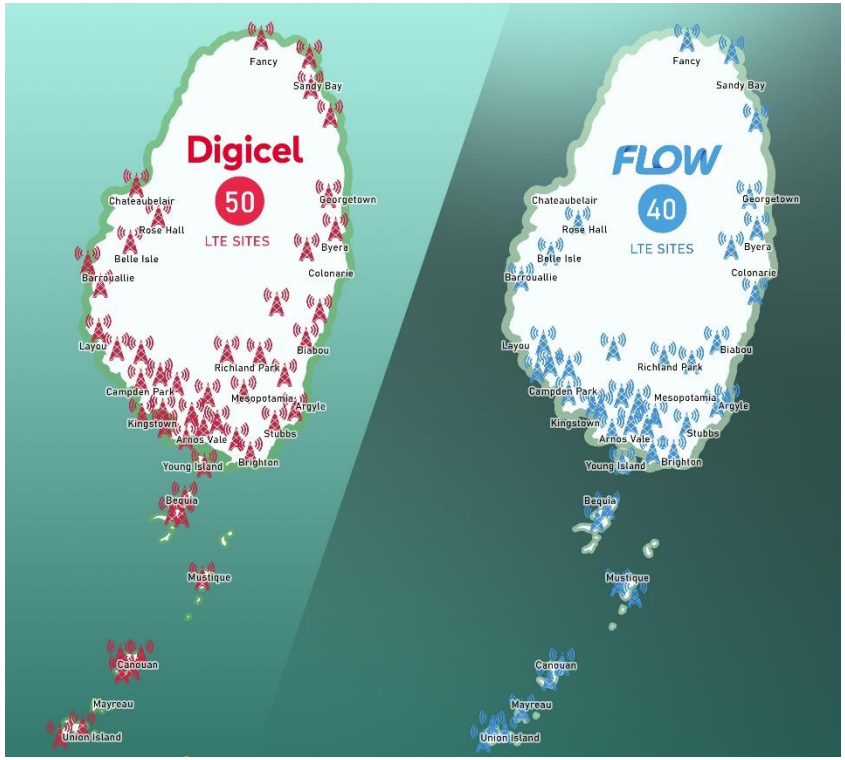

Figure 5 Cell Sites in St. Vincent and the Grenadines

The sites provide coverage to most of the populated areas on mainland St. Vincent, however, there is a need for better coverage on most of the Grenadines islands and in rural areas on mainland St. Vincent.

Internet Access

As of December 2020, the total number of Fixed internet subscribers in St. Vincent and the Grenadines was Twenty-Four Thousand, Seven Hundred and Four (24,704). This figure shows a 11 % increase over the number of subscribers in 2019. In 2020, the NTRC was unable to execute new projects under the Universal Service Fund but renewed the SMART project contract and conducted various monitoring exercises to ensure our existing free Wi-Fi service is functional throughout the country.

Public Consultation

The NTRC conducted a public consultation in 2020 based on a recommendation from the Eastern Caribbean Telecommunications Authority (ECTEL) to consult on the following regulatory instruments in the ECTEL Member States:

1. Market Assessment of Regulated and Unregulated Retail Services and Proposed Recommended Measures for Retail Services

2. Proposed changes to Regulation 17(c) of the draft Electronic Communications (Consumer Protection) Regulations (Specific Rules on Consumer Protection in the Electronic Communications Sector).

The objective of this consultation was to gather the views of stakeholders as it related to:

- Implementing a new retail price regulation regime ("New RPRR") for Regulated Services offered by Cable and Wireless. The proposed New RPRR would replace the price cap plans ("PCPs") that are currently in place for C&W's Regulated Services.
- Proposed changes to Regulation 17(c), to address concerns raised on prepaid subscription.

Public Awareness

In 2020, the NTRC executed several public awareness initiatives.

1. icode784 competition

On Tuesday September 15, 2020, the Commission launched its 8th icode784 competition which was streamed live on the NTRC's Facebook page. There was an increase in the number of entries for the competition, Eighty-Six (86) entries were received in 2020 as compared to Fifty-Seven (57) entries which were received for the 2019 competition. Thirty-two (32) groups entered the Secondary Idea Category, thirty (30) groups entered the Secondary Mobile Application Category, and for the Open Category, consisting of Individuals under the age of thirty-five (35) years, there were Twenty-four (24) entries.

The competition consisted of four phases, these were the Launch which opens the registration period, the Preliminary Judging round where the groups presented their projects to a panel of judges, the Good Tips Presentation with the Toastmasters Organization and the Grand Finale which concludes the competition.

The schools that participated in the secondary level were Petit Bordel Secondary School, Mountain View Adventist Academy, Union Island Secondary School, St. Vincent Girls High School, St. Vincent Grammar School, Georgetown Secondary School, and the St. Joseph's Convent Kingstown.

The Open Category saw participation from Twelve (12) teams from the public.

The finals of the competition concluded on Tuesday November 17, 2020 at the Kingstown Methodist Church Hall. For this year's competition two persons from the winning team along with their mentor from the secondary mobile application category will go to Barcelona in June 2021 to attend an event for startups. The winners of the various categories of the competition were as follows:

- Secondary Idea Category: "Astra" from the St. Vincent Grammar School.
- Secondary Mobile Application Category: "SciGirls" from the St. Joseph's Convent Kingstown.
- Open Category (Individuals under the age of 35 years): "Charismatechs".

2. Financial Assistance Program

In 2017, the NTRC developed a yearly program where financial assistance was given to one (1) Primary school student and one (1) Secondary school student. This program continued for its fourth consecutive year, where Jahrett Prescott a student of the Argyle R C Primary School received an amount of $500.00 and Jaheim Pompey a student of the Troumaca Ontario Secondary School received an amount of $1,000.00. The program targets students attending all schools in St. Vincent and the Grenadines. A letter was sent to all Primary and Secondary schools for the principals to submit the names of students that would qualify for the assistance and the reason/s why they should be considered. As such, the NTRC selected the neediest students based on the objectives of the program. The financial assistance program will continue for the foreseeable future.

3. The NTRC's MyApp Summer Program

For 2020 the commission did not host the MyApp Summer program due to the Covid-19 pandemic. Noting this, based on the Covid-19 protocols for 2021 the Commission will decide whether the program will be held.

4. Radio and Interview Sessions

Radio and Television interviews were conducted at the Agency for Public Information (API), Xtreme FM, WE FM, Star FM, Boom FM, Hot 97.1 FM and the National Broadcasting Corporation

Radio Station (NBC). These interviews were used as a promotional tool to relay information to the general public regarding the activities that were being carried out by the NTRC such as the NTRC's 2020 icode784 competition and Funding for online courses in ICT.

5. Social media Campaign

In an effort to reach a wider audience, the NTRC engaged the public on Facebook and Instagram providing them with information about our organization. This has helped to engage the public and increase our followers on Instagram and our likes on Facebook.

6. Global Maritime Distress and Safety System (GMDSS) Training Sessions

   During the period September to November 2020, the Commission partnered with the St. Vincent and the Grenadines Coast Guard Services and the Fisheries Division to host a series of GMDSS Radio Training Sessions for fishermen and persons involved in maritime activities across the St. Vincent & the Grenadines. The training sessions advised individuals of the new GMDSS system which was implemented by the NTRC to facilitate emergency and non-emergency communications at sea. The training also provided demonstrations on how to use the GMDSS radios which have features that allow you to communicate with the GMDSS system and other ships that possess the system. The training sessions were held at the Barrouallie Police Station, Rose Hall Police Station, Calliaqua Town Hall, Owia Government School, and the Paget Farm Community Center in Bequia. The audience target was 30 persons per session and after each session a GMDSs radio was raffled to the attendees. In addition, for the sessions at the Police Stations a GMDSS radio was donated to these Police Stations.

Universal Service Fund

For the year ended December 31, 2020, the Universal Service Fund had projected to receive a total of $2,865,626.00 from Telecommunications Service Providers and an interest of $14,000. The actual revenue received by the Universal Service Fund in 2020 was $2,897,806.90. A 2019 receivable of $13,315.73 was collected from a Telecom provider in 2020.

The USF equipment and services located at various sites under the Six projects funded by the Universal Service Fund are currently in place and functional. The NTRC did not seek to pursue any new projects in 2020 but will seek to do so as soon as funds become available.

More details on the USF projects can be found in the 2020 USF Annual Report.

Statistics

The NTRC continued in 2020 with the provisioning of statistical data from the Telecommunications sector to several local, regional, and international entities. The following graphs depict some of the more relevant information on the sector while Table 5 on page 45 gives a detailed overview of customer data supplied by the Telecommunications Providers.

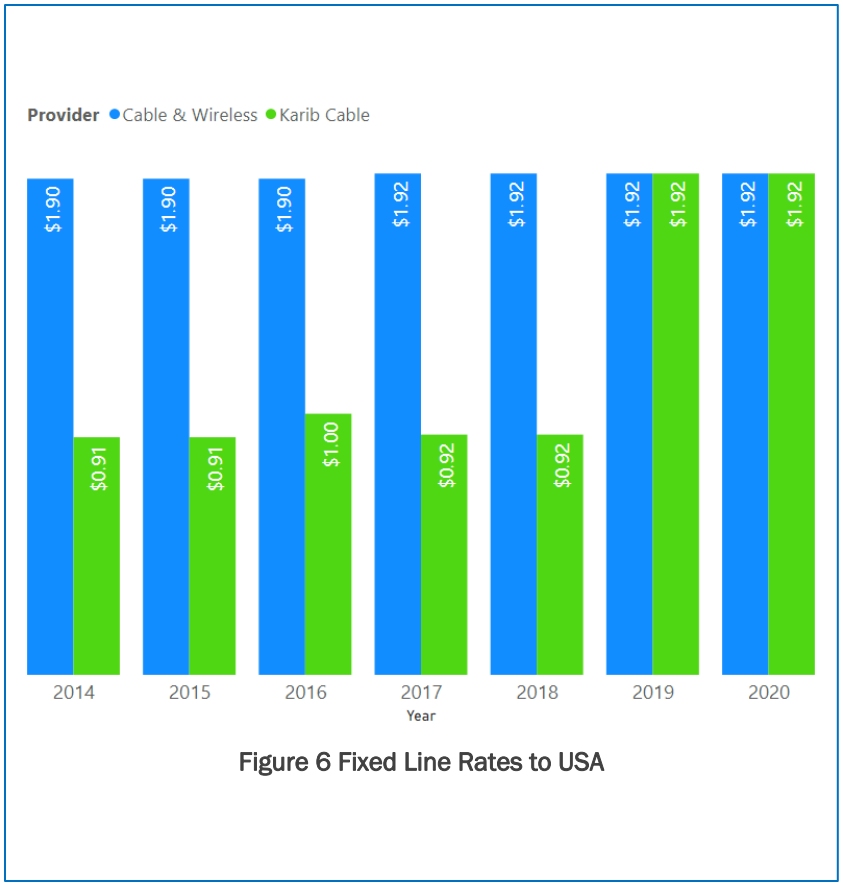

Figure 6 Fixed Line Rates to USA

The rates depicted in Figure 6 are not regulated. In 2020 we saw that Karib Cable (Columbus Communications) and Cable and Wireless fixed line rates remained unchanged.

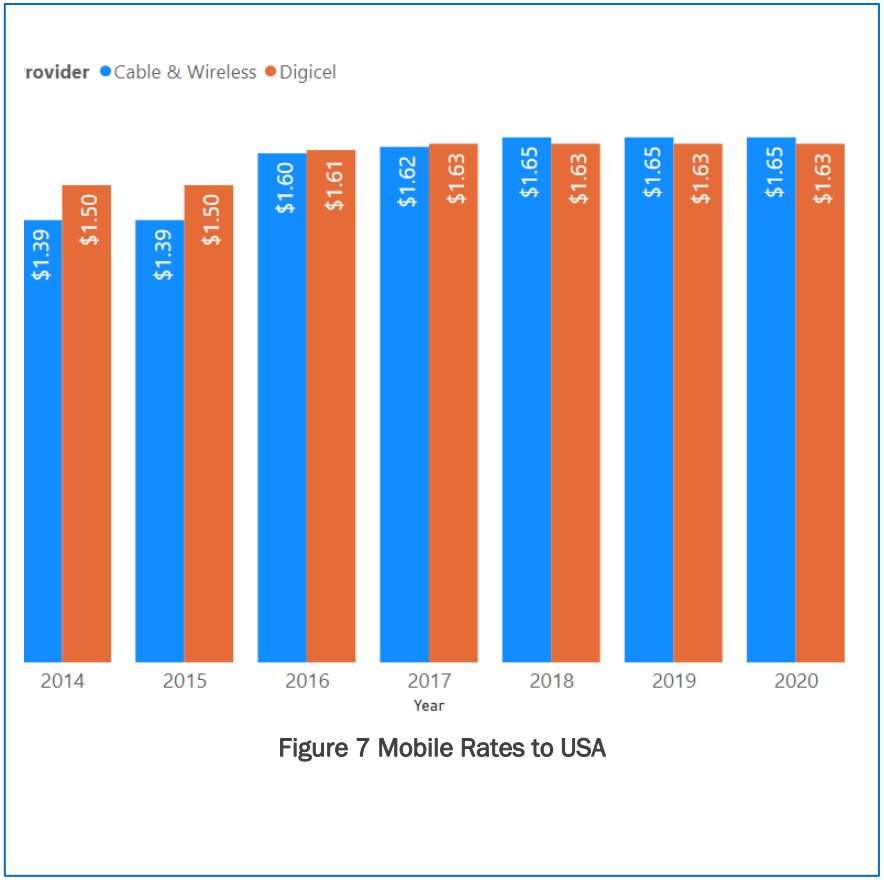

Figure 7 Mobile Rates to USA

The rates depicted in Figure 7 are not regulated. In 2016 and 2017 we saw slight increases in the Digicel rates. However, from 2019 to 2020 the rates remained unchanged for both Cable and Wireless and Digicel.

Figure 8 Domestic on Network Rates

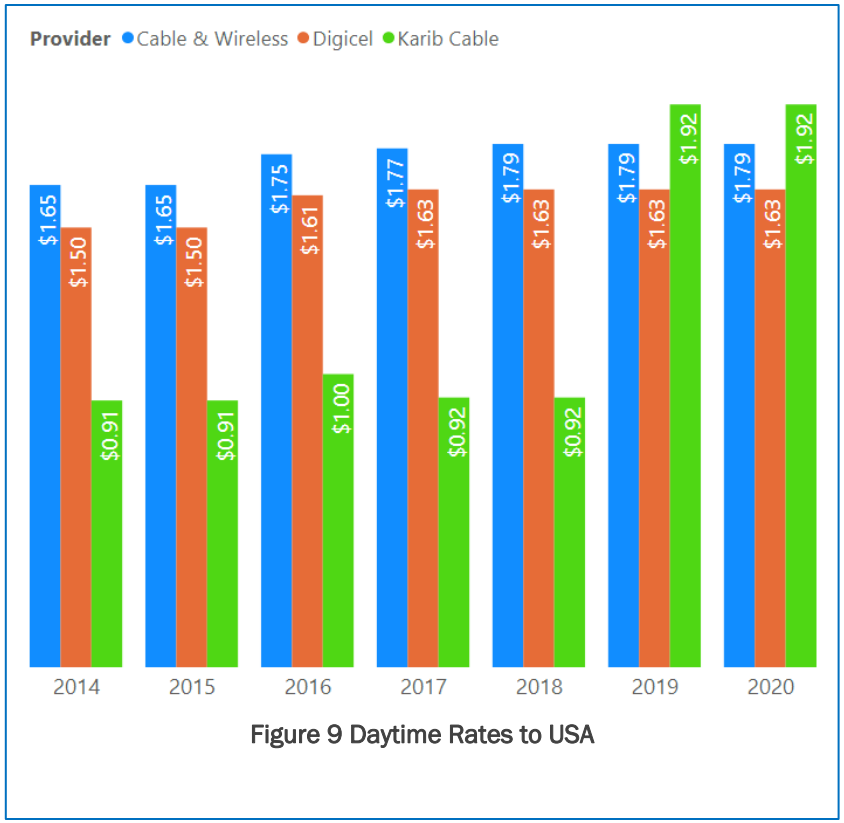

Figure 9 Daytime Rates to USA

The domestic rates in Figure 8 are the daytime rates for calls made to customers on the same network. Cable and Wireless' and Digicel's mobile domestic rates remained unchanged in 2020 while Cable and Wireless' fixed line rates slightly increased.

The international rates in Figure 9 are the daytime rates for calls to the USA for all providers. Karib Cable (Columbus Communications), Digicel and Cable and Wireless remained unchanged in 2020.

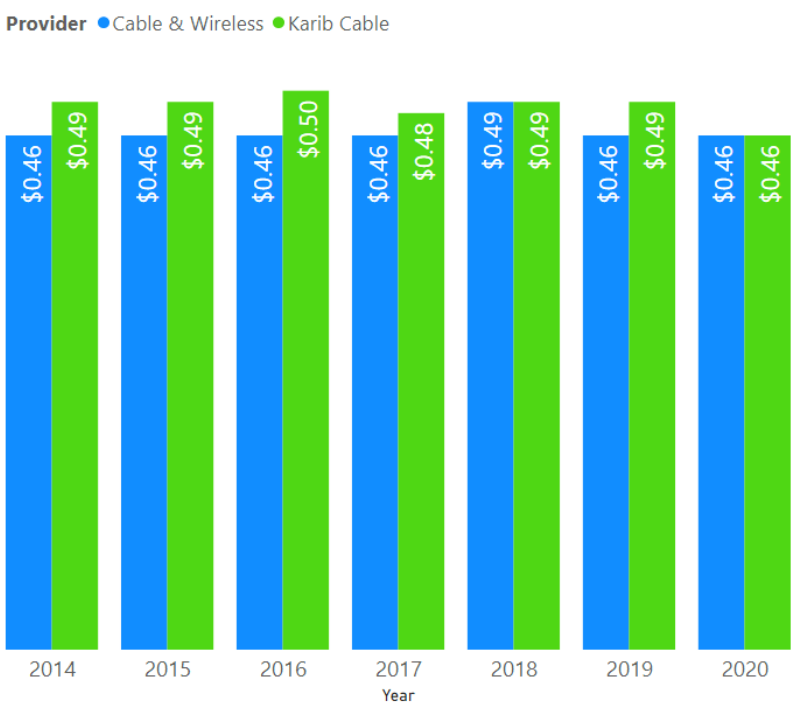

Figure 10 Fixed Line to Mobile Rates

Figure 11 Mobile Subscribers 2020

Figure 10 shows Cable & Wireless' and Karib Cable's (Columbus Communications) fixed line to mobile rates for 2014 to 2020. Cable & Wireless rates remained unchanged 2020. However, in 2020, Karib Cable (Columbus Communications) rates decreased.

Figure 11 shows the number of mobile subscribers for 2020. It is noted that Cable & Wireless' mobile subscribers increased while Digicel subscribers decreased in 2020.

Figure 12 Mobile Data Subscribers 2020

Figure 12 shows a comparison of the total Mobile Data Subscribers for Cable & Wireless and Digicel. It is noted that Digicel's mobile data subscribers saw a reduction in 2020 and Cable and Wireless saw an increase in their subscribers.

Figure 13 Fixed Line Subscribers 2020

Figure 13 shows a comparison in Fixed Line Subscribers for Cable & Wireless and Karib Cable (Columbus Communications). In 2020, Cable & Wireless recorded a decrease in their Fixed Line Subscribers. However, in 2020 Karib Cable (Columbus Communications) recorded and increase in their Fixed Line Subscribers.

Figure 14 Broadband Subscribers by Operator 2020

Figure 14 shows the number of Broadband Internet Subscribers per provider. Cable and Wireless experienced a decline in broadband subscribers in 2019, however there was an increase in broadband subscribers for Karib Cable (Columbus Communications) within this year. Also, Digicel recorded 750 broadband internet subscribers in 2020.

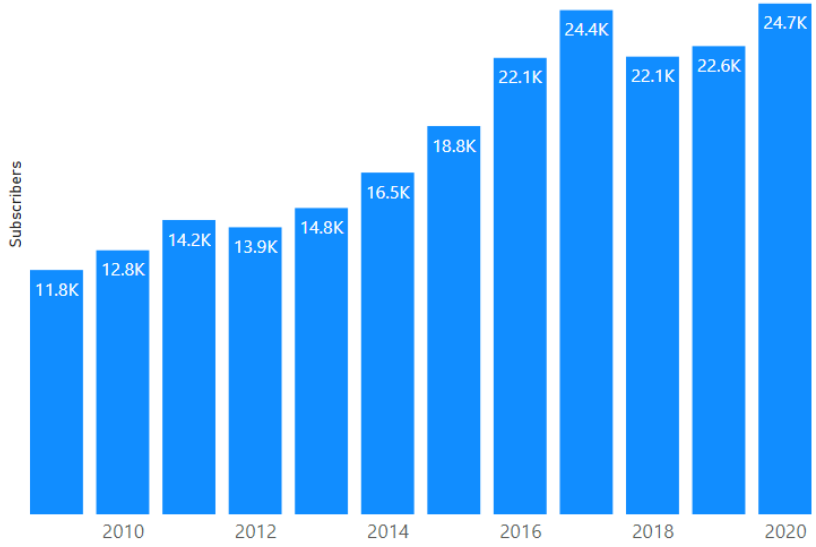

Figure 15 Broadband Subscribers

Figure 15 shows the total number of Broadband Internet Subscribers from 2009 to 2020. In 2020 we saw an increase in the broadband subscribers.

Figure 16 Cable TV Subscribers

Figure 16 shows that Karib Cable (Columbus Communications) recorded a decrease in Cable TV subscribers in 2020 and Silvakast had no Cable TV subscribers towards the end of 2020.

Licensing

The NTRC continued in 2020 to facilitate the application process for new licences under the Telecommunications Act (CAP 418) of the Revised Laws of St. Vincent and the Grenadines 2009. Applications for Individual licences were forwarded to ECTEL for evaluation while those for Class licences were evaluated by the NTRC. The NTRC also evaluated and made recommendations to the Minister on a number of frequency applications.

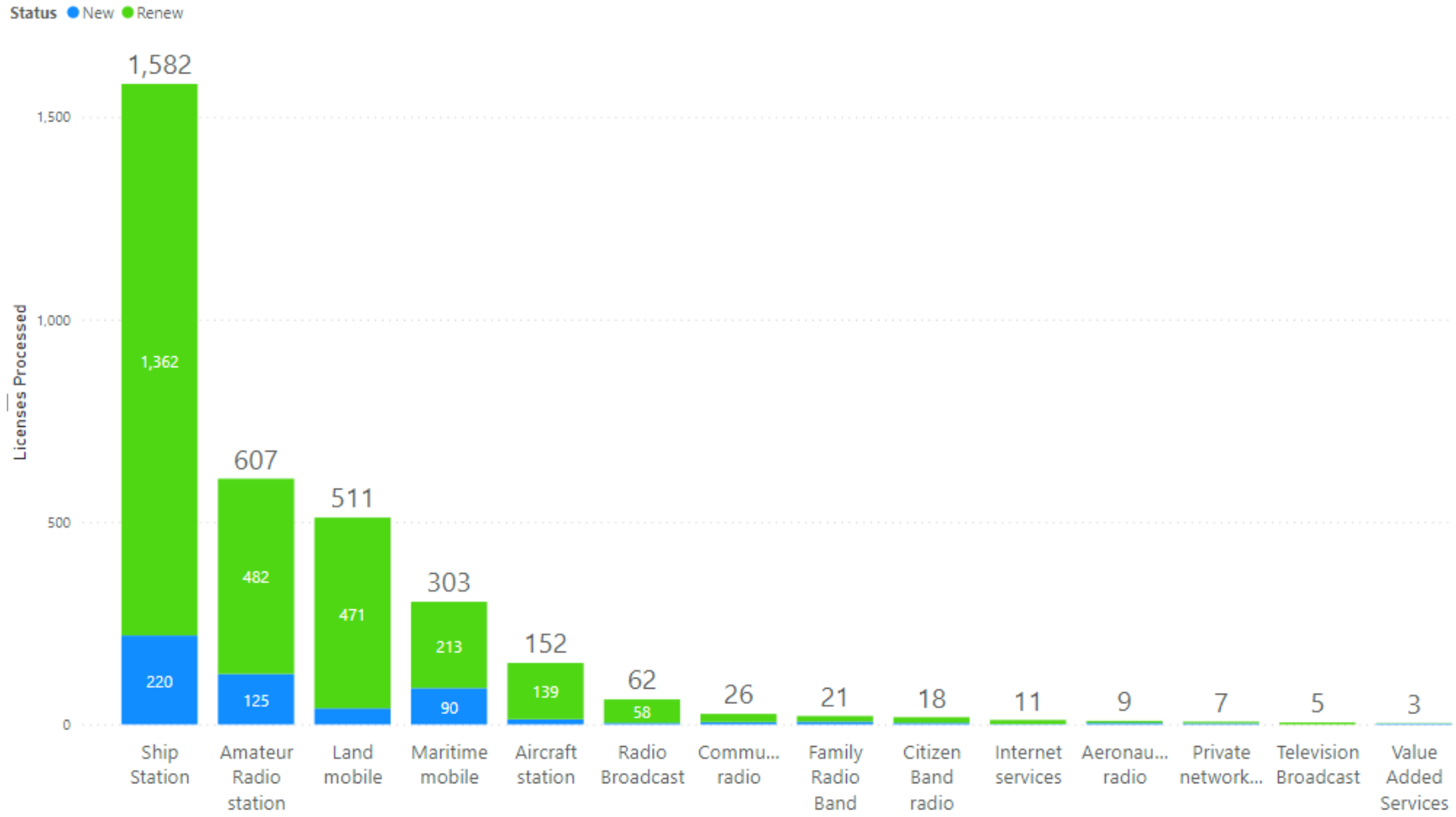

Figure 17 Class Licenses Processed in 2020

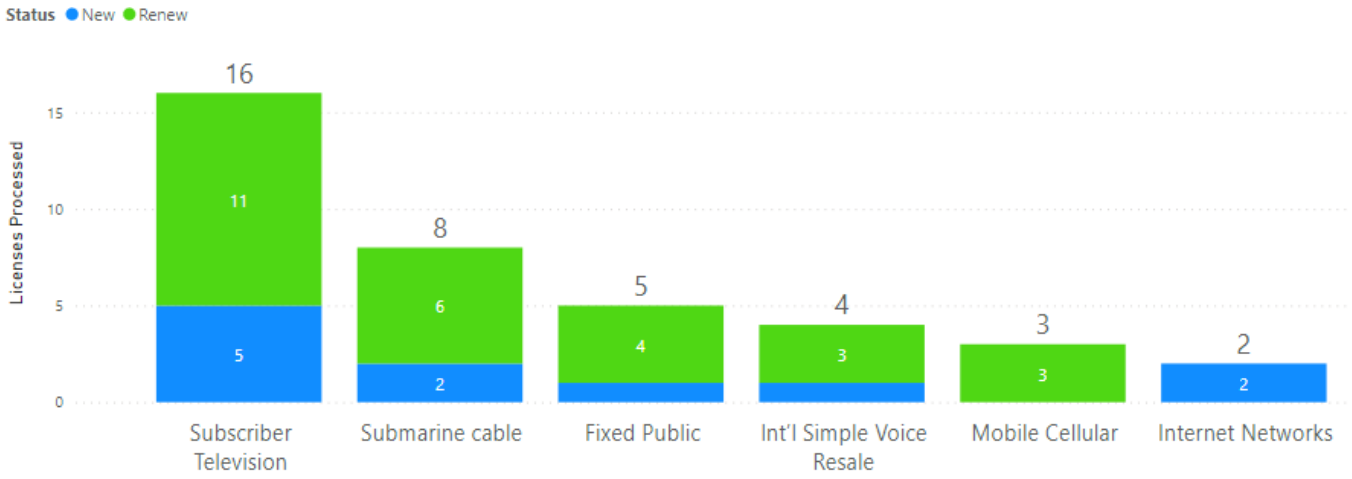

Figure 18 Individual Licenses Processed in 2020

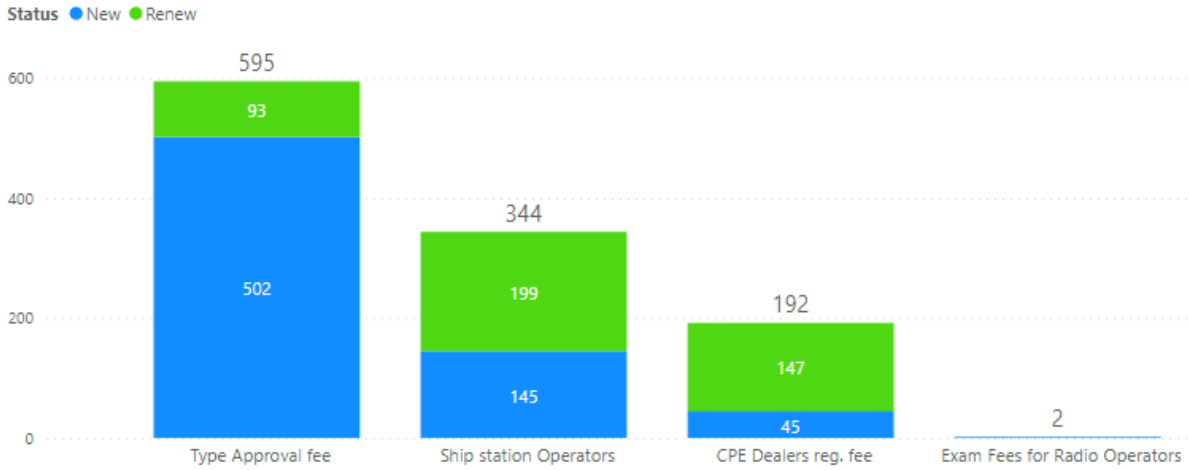

Figure 19 Misc. Licenses Processed in 2020

9. BROAD RESPONSE STRATEGIES

As the Telecom/ICT Sector continues to function within a liberalized environment, the NTRC, in collaboration with ECTEL and the Government, must respond to the expectations of a competitive sector to protect the interests of both the providers and the consumers and facilitate a relevant regulatory framework that will cater for the increased rate of change in the sector.

The NTRC must operate within the harmonized framework of the ECTEL Treaty and the Telecommunications Act (CAP 418) of the Revised Laws of St. Vincent and the Grenadines 2009. Many of the substantive objectives cannot be pursued solely by the NTRC due to the mandate given to ECTEL on certain issues. However, the Universal Service Fund allows for some flexibility at the national level and the NTRC SVG has strategically utilized the available resources for maximum benefits via practical and needed projects that meet the needs of our citizens.

Recognizing the limitations outlined above, the NTRC aims to continue working closely with ECTEL, the Ministry/Minister responsible for Telecommunications and relevant stakeholders to facilitate the enactment of the new Electronic Communications Bill and subsidiary legislation. The final draft of this new bill was sent to ECTEL member states in 2020 for adoption and enactment.

11. RESULT INDICATORS 2020

1. To execute the 8th annual NTRC's Icode784 competition (formerly i2 Competition).

   This objective is complete. The competition was launched on September 15, 2020. The preliminary judging was held October 20-22, 2020, and the finals were held on November 17, 2020. In 2019 there was a total of fifty-seven (57) entries received for the icode784 competition and in 2020 this number increased to eighty-six (86) entries.

2. To improve the Wi-Fi speeds and coverage in all primary and secondary schools.

   This objective is complete. The speeds at 92 schools were increased to 100 Mbps download and 15 Mbps upload while the speeds at 15 schools were increased to 100 Mbps download and 100 Mbps upload via the use of Fiber connections. Also, 118 additional access points were purchased to be placed at 56 schools and existing access points were relocated to improve the Wi-Fi coverage at schools throughout the country.

3. To establish Wi-Fi service at 15 playing fields and hard courts.

   This objective is incomplete. This is due to this objective being omitted from the USF Workplan for 2020 in error. As such this objective was not worked on. However, this was added to the USF Workplan for 2021 and will be completed within the fourth quarter of 2021.

4. Working jointly with the Ministry of Finance, Economic Planning, Sustainable Development and Information Technology, in having new licences issued to Cable and Wireless and Columbus Communications.

   This objective is incomplete. The NTRC received the amended licence templates from ECTEL in September 2020. However, the final licences have not yet been prepared due to changes the NTRC has requested to the

templates. The NTRC will continue to work with ECTEL to finalize the templates which is expected to be completed within the second quarter of 2021.

5. Working jointly with ECTEL and the Ministry of Finance, Economic Planning, Sustainable Development and Information Technology, in having the new electronic communications bill and relevant subsidiary regulations enacted.

   This objective is incomplete. The Ministry of Finance, Economic Planning, Sustainable Development, and Information Technology received the draft Electronic Communications Bill from ECTEL in September 2019. However, the draft legislation is being reviewed by the Attorney General before it is sent to Cabinet for approval for onward submission to Parliament to be enacted.

6. To execute four (4) training workshops to raise awareness on internet security and to aid individuals and smaller businesses to use the internet safely.

   This objective is complete. The workshops were hosted in collaboration with the Get Safe Online organization on February 25-26, 2020. The aim of these workshops was to raise awareness of internet security and help individuals and smaller businesses to use the internet confidently and safely. These workshops targeted an audience of teachers, parents, social workers, NGOs and small business owners along with any other individual who use the internet and could potentially be exposed to cyber-crime.

7. Develop and bring to the market two mobile apps based on ideas from the icode784 competition.

   The NTRC began working on two mobile apps in 2020. One app targets the Ministry of Tourism and the other targets the Argyle International Airport. These mobile apps were being developed by two interns who were unable to complete these apps before their one-year tenure at the NTRC came to an end. We have since hired two new interns who are working towards having these apps completed by second quarter of 2021.

8. To connect 300 Households with subsidized Internet Access.

   This objective is complete. In September 2020, the NTRC connected three hundred forty (340) households with subsidized internet access.

9. To work along with ECTEL and the other NTRC's to implement the Integrated Spectrum Management and Monitoring System

   This objective is incomplete. The NTRC continued to work with ECTEL and the other NTRC's on the implementation of the software aspect of the system to aid in spectrum management. It is anticipated that the software implementation will be completed by the second quarter of 2021. As it relates to the remote monitoring sites, the NTRC was successful in having its second remote monitoring site installed in Union Island in 2020.

10. Conduct training on VHF DSC radio usage for Police Officers at 5 Police stations

    The objective is incomplete. GMDSS Trainings were conducted at the following four police stations in 2020: Rose Hall, Owia, Barrouallie and Paget Farm. The training sessions informed attendees about the new GMDSS system which was implemented by the NTRC to facilitate emergency and non-emergency communications at sea. However, due to the covid-19 pandemic, the 5th training session in Spring Village was not able to be hosted. This training session will be conducted in the second quarter of 2021.

11. To host two MyApp summer programs.

    This objective is incomplete. The MyApp summer programs were scheduled to be held from July 15 to August 2, 2020, however, the programs were cancelled due to the Covid-19 pandemic.

12. MAJOR OBJECTIVES FOR 2021

1. To execute the 9th annual NTRC's Icode784 competition (formerly i^2 Competition).

2. Install an additional 100 access points at primary, secondary and tertiary level institutions with the objective of filling in coverage gaps and reducing congestion at large schools.

3. To establish Wi-Fi service at 15 playing fields and hard courts.

4. Work jointly with the Ministry of Finance, Economic Planning, Sustainable Development, and Information Technology, in having new licences issued to Cable and Wireless, Columbus Communications and Digicel.

5. Work jointly with ECTEL and the Ministry of Finance, Economic Planning, Sustainable Development and Information Technology, in having the new electronic communications bill and relevant subsidiary regulations enacted.

6. Develop and bring to the market two mobile apps based on ideas from the icode784 competition.

7. Connect a further 340 Households with subsidized Internet Access.

8. Provide internet connectivity to 1000 students that has a Government issued tablet.

9. To work along with ECTEL and the other NTRC's to complete the Regional Integrated Spectrum Management and Monitoring System.

10. Seek a new location that can provide the required office space for the NTRC staff.

13. ANNEX A

Technical Definitions/Terminology

CANTO Caribbean Association of National Telecommunication Organizations

CANTO provides a platform for all Caribbean telecommunications operators to speak with one voice to policy makers, regulators and other stakeholders in the sector in influencing the creation of a favourable business environment for all stakeholders.

CIDA Canadian International Development Agency

CIDA supports sustainable development in developing countries in order to reduce poverty and to contribute to a more secure, equitable and prosperous world.

CITEL Inter-American Telecommunication Commission

CITEL is an entity of the Organization of American States, it is the main forum in the hemisphere in which the governments and the private sector meet to coordinate regional efforts to develop the Global Information Society. CITEL endeavours to make telecommunications a catalyst for the dynamic development of the Americas by working with governments and the private sector.

The US Agency for International Development

Coursera provides universal access to the world's best education, partnering with top universities and organizations to offer courses online. Every course on Coursera is taught by top instructors from the world's best universities and educational institutions. Courses include recorded video lectures, auto-graded and peer-reviewed assignments, and community discussion forums. When you complete a course, you'll receive a sharable electronic Course Certificate.

CTO Commonwealth Telecommunications Organization

The (CTO) is a partnership between Commonwealth governments and telecommunications businesses to promote ICT in the interests of consumers, businesses and social and economic development. It's Program for Development and Training

	(PDT) is a unique program of training and expert assistance in every aspect of telecommunications for Commonwealth developing countries
CTU	Caribbean Telecommunications Union CTU is the major Telecommunications policy organ in the Region, directed by Inter-Governmental specialized action under a special Agreement establishing the Union.
Frequency	The rate of a repetitive event. The standard unit for frequency is the hertz (Hz), defined as the number of events or cycles per second. The frequency of electrical signals is often measured in multiples of hertz, including kilohertz (kHz), megahertz (MHz), or gigahertz (GHz).
GMDSS	Global Maritime Distress and Safety System The GMDSS provides for automatic distress alerting and locating in cases where a radio operator doesn't have time to send an SOS or MAYDAY call.
ITU	International Telecommunication Union ITU works closely with all standards organizations to form an international uniform standards system for communication.
Land Mobile	A mobile service between base stations and land mobile stations, or between land mobile stations
Maritime Mobile	A mobile service between coast station and ship stations, or between ship stations, or between associated on-board communication stations; survival craft stations, and emergency position- Indicating radio beacon stations may also participate in this service
MMSI	Maritime Mobile Service Identity MMSI are formed of a series of nine digits which are transmitted over the radio path in order to uniquely identify ship stations, ship earth stations, coast stations, coast earth stations, and group calls. These identities are formed in such a way that the identity or part thereof can be used by telephone and telex customers connected to the general telecommunications network principally to call ships automatically.
Radio frequency spectrum	That part of the electromagnetic Spectrum used for communications; includes frequencies used for AM- FM radio and cellular phones and television etc.
Ship Station	A Mobile station in the maritime mobile service Located on board a vessel which is not permanently moored, other than a survival craft station

Spectrum	"(Electromagnetic Spectrum) is an ordered array of the components of an emission or wave. Sound, Radio Frequency Spectrum, Infra-Red, Visible Light, Ultraviolet Rays, X-Ray etc. are all part of the Electromagnetic Spectrum in that order.
Stations	One or more transmitters or receivers or a combination of transmitters and receivers, including the accessory equipment, necessary at one location for carrying on a radio communication service, or the radio astronomy service
Telecommunications	Any transmission, emission or reception of signs, signals, writings, images and sounds or intelligence of any nature by wire, radio, optical or other electromagnetic systems.
Universal Service	universal service" includes the provision of – a. Public voice telephony. b. Internet access. c. Telecommunications services to schools, hospitals and similar institutions and the disabled and physically challenged; or d. Other service by which people access efficient, affordable and modern telecommunications.
USAID	The US Agency for International Development

14. ANNEX B

Year	Cable and Wireless (SVG) Ltd								Digicel St. Vincent Ltd				
	Mobile Revenue (EC$)			Fixed Line Revenue (EC$)		Internet Revenue (EC$)	Other Revenue (EC$)	Total	Mobile Revenue (EC$)		Data Revenue (EC$)	Other Revenue (EC$)	Total
	International Revenue (EC$)	Domestic Revenue (EC$)	Data	International Revenue (EC$)	Domestic Revenue (EC$)				International Revenue (EC$)	Domestic Revenue (EC$)			
2014	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX
2015	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX
2016	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX
2017	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX
2018	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX
2019	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX
2020	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX

Table 1 Total Revenue earned by providers of telecommunications services from 2014 to 2020.

Year	Kelcom Int'l (Columbus Communications)						Silvakast	Andre Walker	Spectra		
	Fixed Line Revenue (EC$)		Cable TV Revenue (EC$)	Internet Revenue (EC$)	Other Revenue (EC$)	Total	Cable TV Revenue (EC$)	Voice Resale (EC$)	Cable TV Revenue (EC$)	Internet Revenue (EC$)	Total
	International Revenue (EC$)	Domestic Revenue (EC$)									
2014	xxxxxxxxxx	xxxxxxxxxx	xxxxxxxxx	xxxxxxxxx	xxxxxxxxx	xxxxxxxxxx	xxxxxxxxx	xxxxxxxxx	xxxxxxxxx	xxxxxxxxx	xxxxxxxx
2015	xxxxxxxxxx	xxxxxxxxxx	xxxxxxxxx	xxxxxxxxx	xxxxxxxxx	xxxxxxxxxx	xxxxxxxxx	xxxxxxxxx	xxxxxxxxx	xxxxxxxxx	xxxxxxxx
2016	xxxxxxxxxx	xxxxxxxxxx	xxxxxxxxx	xxxxxxxxx	xxxxxxxxx	xxxxxxxxxx	xxxxxxxxx	xxxxxxxxx	xxxxxxxxx	xxxxxxxxx	xxxxxxxx
2017	xxxxxxxxxx	xxxxxxxxxx	xxxxxxxxx	xxxxxxxxx	xxxxxxxxx	xxxxxxxxxx	xxxxxxxxx	xxxxxxxxx	xxxxxxxxx	xxxxxxxxx	xxxxxxxx
2018	xxxxxxxxxx	xxxxxxxxxx	xxxxxxxxx	xxxxxxxxx	xxxxxxxxx	xxxxxxxxxx	xxxxxxxxx	xxxxxxxxx	xxxxxxxxx	xxxxxxxxx	xxxxxxxx
2019	xxxxxxxxxx	xxxxxxxxxx	xxxxxxxxx	xxxxxxxxx	xxxxxxxxx	xxxxxxxxxx	xxxxxxxxx	xxxxxxxxx	xxxxxxxxx	xxxxxxxxx	xxxxxxxx
2020	xxxxxxxxxx	xxxxxxxxxx	xxxxxxxx	xxxxxxxxx	xxxxxxxxxx	xxxxxxxxxx	xxxxxxxxx	xxxxxxxxx	xxxxxxxxx	xxxxxxxxx	xxxxxxxx

Table 2 Total Revenue earned by providers of telecommunications services from 2014 to 2020.

ECTEL & NTRC Revenue

Year	NTRC Application fees	Percent increase	NTRC & ECTEL Frequency Fees	Percent increase
2002	$107,036		$607,600	
2003	$5,100	-95%	$1,366,604	125%
2004	$8,800	73%	$1,577,400	15%
2005	$10,300	17%	$1,539,669	-2%
2006	$11,275	9%	$1,681,560	9%
2007	$22,725	101%	$1,245,183	-25%
2008	$13,325	-42%	$1,906,089	53%
2009	$13,225	-7%	$1,487,390	-21%
2010	$23,846	80%	$1,392,962	-7%
2011	$16,109	-48%	$1,723,158	24%
2012	$16,390	2%	$2,055,433	19%
2013	$15,927	-3%	$1,787,020	-13%
2014	$31,547	98%	$1,748,588	-2%
2015	$25,617	-18%	$2,681,489	53%
2016	$25,324	-1%	$2,708,686	1%
2017	$22,473	-11%	$2,226,562	-18%
2018	$27,685	23%	$3,190,599	43%
2019	$28,199	2%	$3,037,137	-5%
2020	$23,521	-17%	$3,126,872	3%

Table 3

Table 4

Year	License Fees	Total	Percent Increase
2002	3,365,391	3,365,391	
2003	2,803,927	2,803,927	-17%
2004	3,329,145	3,329,145	19%
2005	3,421,159	3,421,159	3%
2006	3,850,955	3,850,955	5%
2007	4,301,521	4,301,521	11%
2008	4,081,151	4,081,151	-6%
2009	4,065,706	4,065,706	-4%
2010	4,034,096	4,034,096	-1%
2011	3,886,912	3,886,912	-4%
2012	3,756,898	3,756,898	-3%
2013	3,638,128	3,638,128	-3%
2014	4,146,265	4,146,265	14%
2015	4,079,164	4,079,164	-1.6%
2016	3,788,925	3,788,925	-7%
2017	3,617,662	3,617,662	-5%
2018	3,535,564	3,535,564	-2%
2019	2,517,823	2,517,823	-29%
2020	4,570,250	4,570,250	82%

Mobile Network Operator	Location	Number of Cell Sites	Number of LTE Sites
Cable & Wireless	St. Vincent	31	31
	Grenadines	10	10
Digicel	St. Vincent	38	38
	Grenadines	12	12

			2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Cable & Wireless (WI) Ltd	Fixed Line Subscribers	Residential	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
		Business	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
		Total	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
	Internet Subscribers	Dialup	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
		ISDN	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
		ADSL (Residential)	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
		ADSL (Business)	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
		Total	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
	Mobile Subscribers	Post paid	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
		Prepaid	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
		Total	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
Digicel	Mobile Subscribers	Post paid	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
		Prepaid	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
		Total	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
	Broadband subscribers	Residential	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
		Business	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
		Total	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
Karib Cable	Cable TV Subscribers	Residential	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
		Business	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
		Free Service	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
		Total	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
	Internet Subscribers	Residential	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
		Business	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
		Free Service	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
		Total	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
	Fixed Line Subscribers	Residential	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
		Business	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
		Free Service	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
		Total	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
SilvaKast	Cable TV Subscribers	Residential	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
		Business	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
		Total	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx

Table 5

		2013		2014		2015		2016		2017		2018		2019		2019	
		New	Renew	New	Renew	New	Renew	New	Renew	New	Renew	New	Renew	New	Renew	New	Renew
Individual Type Licenses	Fixed Public	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A	0	1	1	1	0	2
	Internet Networks	0	N/A	1	N/A	1	N/A	0	N/A	0	N/A	0	0	0	N/A	0	0
	Subscriber Television	1	N/A	1	N/A	1	N/A	1	N/A	1	N/A	0	4	0	4	0	3
	Int'l Simple Voice Resale	0	N/A	1	N/A	0	N/A	0	N/A	0	N/A	0	1	0	1	0	1
	Mobile Cellular	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A	0	1	0	2
	Public Radio paging	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A	0	0
	Submarine cable	0	N/A	0	N/A	0	N/A	0	1	1	1	0	1	1	1	0	2
Class type Licenses	Private network/services	0	N/A	0	N/A	1	1	1	1	1	1	0	1	0	N/A	0	0
	Internet services	0	N/A	0	N/A	0	N/A	0	2	1	1	0	2	0	2	0	3
	Radio Broadcast	0	3	1	5	1	6	1	7	1	8	0	12	0	11	0	6
	Value Added Services	0	N/A	1	N/A	1	N/A	0	0	0	0	0	1	0	N/A	0	0
	Community radio	0	N/A	0	N/A	1	1	2	3	2	4	0	5	1	3	0	4
	Television Broadcast	0	N/A	0	N/A	0	N/A	0	1	0	2	0	0	0	2	0	0
	Maritime mobile	35	31	35	31	1	16	1	26	3	44	10	18	2	24	3	23
	Land mobile	2	155	3	204	0	10	10	20	12	28	2	17	4	18	7	19
	Aeronautical radio	0	0	0	0	1	1	0	0	0	0	0	0	3	2	0	2
	Aircraft station	4	17	3	17	1	18	1	17	1	18	3	18	0	18	0	16
	Amateur Radio station	25	84	26	82	8	47	20	20	23	14	8	76	12	76	3	83
	Citizen Band radio	0	0	0	0	2	3	0	0	0	0	2	2	0	5	0	4
	Family Radio Band	1	3	1	3	1	2	2	1	1	1	0	2	0	2	1	0
	Ship Station	15	182	18	157	46	177	41	184	40	163	22	175	28	168	10	156
Miscellaneous	CPE Dealers reg. fee	14	16	10	17	2	10	5	18	5	20	6	22	2	25	1	19
	Exam Fees for Radio Operators	1	N/A	1	N/A	0	N/A	0	N/A	0	N/A	0	N/A	0	0	0	0
	Type Approval fee	22	N/A	27	N/A	56	N/A	85	N/A	102	N/A	125	N/A	85	N/A	0	93
	Ship station Operators	27	7	29	21	17	40	16	28	18	30	6	22	26	17	6	34
	Aircraft Station Operators	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 6 outlines the number of licences issued from 2013 to 2020. The issued licences are broken down as new licences, issued in the specific year, and renewals of existing licences, first issued in previous years.

15. AUDITED FINANCIAL STATEMENTS 2020