



Telecommunications

SECTOR REPORT

2021



EXECUTIVE SUMMARY

Connectivity through digitalisation of telecommunications/ICT content and services has become an important driver for Vanuatu in enabling the continuance of economic and social activities during the COVID-19 epidemic and will continue to remain so, even in the post-world of the pandemic. In the face of lockdowns, Vanuatu businesses and educational institutions have continued to benefit from mobile connectivity to ensure that daily operations continue and at the same time enable the provision of a medium for individuals to socialise, work and access services that enhance and protect daily lives.

For Vanuatu's telecommunications sector, mobile internet has and will continue to connect people from every island, including the remote areas, to new opportunities for doing business and to access life enhancing services. The changes in business ideas

and landscapes inspired by the COVID-19 situation have confirmed with confidence the importance of Telecommunications/ICT to drive economic growth and advance Vanuatu towards achieving not only the United Nation's Sustainable Development Goals (SDGs) but also the goals of the Vanuatu National Sustainable Development Plan (NSDP).

This fast pace of digitalisation by Telecom operators has also ensured that Vanuatu's economy continues to function and support recovery from the impact of both COVID-19 and Tropical Cyclone (TC) Harold.

Telecom operators have been playing a vital role in actively supporting customers as well as Government to provide important services and robust networks during TC Harold recovery as well as addressing the COVID-19 situation. Though operators have benefitted from the

surge in data traffic, the telecom sector has witnessed an improvement in data packages and bundling with huge value in terms of data allowances that has pushed the average market price per MB to below VUV0.9 per MB. This highlights the continuous investments the operators have committed to ensure the network is resilient and capacity is sufficient to meet the increasing demand.

This is the fifth Telecommunications, Radiocommunications and Broadcasting Regulator (TRBR) Telecommunications Sector Report, highlighting the trends, status and development of telecommunications in Vanuatu for the year ending 2020, as a result of continuously monitoring the changes taking place in the Vanuatu Market. This Report is unique as it provides an in-depth assessment and analysis of the impact of both TC Harold and the COVID-19 pandemic and is aimed to provide primary information for the TRBR's stakeholders, Government, aid donors, the business community and the people of Vanuatu.

The COVID-19 pandemic has triggered a major blow to Vanuatu's telecom sector, erasing over VUV97 million worth of revenue in 2020. This reflects the dip in the overall telecommunications revenue by 2% due to a large increase in unemployment, business closures and the overall decline in economic activities that created a business environment where telecom operators struggled to generate revenue. While the decline in international roaming may also have contributed to this trend, another contributing factor was the destructive impact of TC Harold that instigated massive disruptions to the telecom services and in turn, affected consumer consumption. Though short-term impacts are visible, market outlook remains positive as telecom companies will continue to benefit from an in-flow of data traffic stimulated

by the increasing uptake in both mobile and fixed broadband services.

The COVID-19 situation reaffirms the importance of mobile technology in sustaining social and economic activities. However, the disastrous impact of TC Harold in the northern parts of the country has led to an unexpected decline. Mobile cellular subscription declined for the first time in 6 years in 2020 by 7%, recording 250,000 subscribers less in 2020. Consequently, this has led to a decline in mobile penetration by 9% hitting a lower penetration rate of only 84% in the same year. Additionally, this has contributed to a further drop in mobile call revenue and traffic by 5% and 6% respectively in 2020.

Furthermore, while the average advertised retail price of mobile calls remained unchanged at VUV29 per minute in 2020, the prepaid average call bundling price has seen further decline by 20% to a lower price of VUV1.74 in 2020. In contrast, average postpaid mobile call bundling price slightly increased by 2%, recording a new price of VUV9.06 per minute while the combined weighted average price has dropped by 10% to a new price of VUV2.21 per minute in the same year.

The COVID-19 situation has reaffirmed the importance of internet connectivity and digitisation of services in Vanuatu. The unexpected demand in broadband services has stimulated internet access and capacity usage for both fixed and mobile broadband networks while the high demand for data bundles with improved speed in the market to sustain social and economic activities has boosted international bandwidth usage. However, the exit of Speedcast Ltd and Telsat Broadband from the market has resulted in a decline in international bandwidth acquired from ICL by 2%, recording a new capacity of less than 7.5Gbps.

TABLE OF CONTENTS

Vanuatu's reliance on mobile broadband services accompanied by the increasing usage of online content applications such as Netflix, TikTok, YouTube, Facebook and other social media platforms, as well as OTT services, 3G and 4G technologies has continued to boost mobile data traffic recording over 6,300TB of data usage in 2020. This represents an annual growth of mobile data traffic by 66% from the previous year.

Moreover, the experience of digital transformation has enabled mobile operators to become more innovative in creating mobile packages bundled with high volume voice and SMS. This has facilitated average prepaid data bundling price to drop by 12% to a new price of VUV0.30 per MB in Q4 of 2020, while the average postpaid data bundling price also dipped by 24% to VUV0.28 per MB in the same year.

For fixed internet subscriptions, the Fiber-to-Home (FTH) subscriptions fell by 1%, recording less than 1,400 subscribers in 2020 while fixed wireless also recorded a decline in subscriptions by 83% registering less than 1000 subscribers in the same year. In addition, satellite subscriptions also went down by 72%, recording less than 100 subscribers in 2020. These trends are due to the destructive impact of TC Harold that caused damage to homes and a lot of telecom infrastructure.

Furthermore, SMS volume has increased by 7%, recording over 90 million SMS in 2020. Though SMS volume has increased, SMS revenue has plunged by 31% earning below VUV70 million

in the same year. While average standard SMS price remained at VUV11 per SMS, the average prepaid SMS bundling price has dropped to VUV0.62 per SMS. The average postpaid SMS bundling price also went down recording a lower price of VUV5.1 per SMS in 2020.

Fixed Telephony continued to decline with subscriptions tumbling by 9%, registering less than 3,500 subscribers in 2020. Consequently, fixed telephone revenue has declined by 19% in 2020. This trend can only be anticipated to continue in the coming years as demand for mobile data services continue to dominate the market. This reflects the global trend of fixed voice.

International outbound calls continue to see a decline in traffic by 18%, resulting in a further drop in the international outbound call revenue by 7%, recording less than VUV98 million in 2020. This trend is expected to continue as voice services will continue to be substituted for OTT services.

In contrast, though international inbound roaming minutes has dropped by 85% in Q4 2020, revenue earned for this service has also declined by 78%, recording less than VUV4.5 million in the same period. This has been due to travel restrictions from COVID19 that forced Vanuatu Government to close all its borders to protect its citizens. International outbound roaming has also experienced a decline in both call traffic and revenue by 84% and 50% respectively in 2020.

Executive Summary	ii
1 Introduction	1
2 Data Source Disclaimers	3
3 Key Trends in the Telecommunications Sector	5
4 Gross Telecommunications Revenue	7
5 Mobile Phone Services	9
5.1. Mobile Cellular Subscriptions	10
5.2. Mobile Call Revenue Vs Call Traffic	11
5.3. Average National Mobile Call Pricing	12
5.4. Average Mobile Revenue per Subscriber	13
6 Internet Services	14
6.1. International Bandwidth	15
6.2. Mobile Broadband Services	16
6.3. Fixed Internet Services	19
6.4. Fixed Internet Subscriptions	19
6.5. Fixed Internet Revenue	19
6.6. Average Fixed Internet Revenue per Subscriber	19
7 Traditional Short Message Service (SMS)	21
7.1. SMS Traffic & Revenue	22
7.2. Average SMS Pricing	23
7.3. On-net and Off-net SMS	24
8 Fixed Telephony Services	25
8.1. Fixed Telephony Subscription	26
8.2. Fixed Line Telephone Revenue	26
9 International Calls	27
9.1. International Outbound Call Traffic	28
9.2. International Call Roaming	29
Conclusion	33

List of Figures

Figure 1: Illustrating Trend on Revenue Collected	8
Figure 2: Vanuatu Mobile Subscribers & Penetration	10
Figure 3: Mobile Call Revenue Vs Mobile Call Traffic	11
Figure 4: Average Mobile Call Pricing	12
Figure 5: Mobile Call ARPU Vs Mobile Data ARPU	13
Figure 6: International Cable Bandwidth sold by ICL	15
Figure 7: Showing growth of Mobile Data Traffic	16
Figure 8: Showing Mobile Data Revenue Vs Mobile Voice Revenue	17
Figure 9: Showing Mobile Data Average Pricing	18
Figure 10: Showing Total Internet Revenue	20
Figure 11: Showing Trend of Fixed internet Revenue per Subscriber	20
Figure 12: Showing Trend of Traditional SMS Revenue & Volume	22
Figure 13: Showing Average SMS Pricing	23
Figure 14: Showing Fixed Line Telephone Subscription	26
Figure 15: Showing Fixed Line Telephone Revenue	26
Figure 16: Showing International Outbound Call Revenue & Traffic	28
Figure 17: Showing International Outbound Roaming Call Traffic & Revenue	30
Figure 18: Showing Trend of International Inbound Minutes & Revenue	30



1 INTRODUCTION

This 2021 Telecommunications Sector Report was developed by the Telecommunications, Radiocommunications and Broadcasting Regulator (TRBR), building on from the fourth report released in 2020. This annual Sector Report covers the period beginning January 2020 to December 2020.

The Report updates the status and evolution of the telecommunications market in Vanuatu. The Report also provides an in-depth analysis of the impact of TC Harold and COVID-19 in the telecommunications sector in Vanuatu from a regulatory perspective as well as key events and developments in 2020.

The collection, analysis and dissemination of accurate and timely market information is critical for a wide range of stakeholders as well as the TRBR, playing a vital role in assisting the designing of effective, proportionate and efficient market regulations to foster and importantly to maintain a competitive telecommunications sector. The TRBR collects statistics bi-annually for that purpose and continues to improve its collection of a range of detailed data and statistics from telecommunication service providers. These statistics are also used for awareness and an understanding of the trends in the Vanuatu telecommunications markets, as well as enabling transparent and aggregated information to be available to the Vanuatu Government, the telecommunication industry and the general public. The data and this Sector Report are also extremely useful for international and regional comparison and transparency.

Furthermore, this data collection framework has been a very effective regulatory tool that continues to assist the Vanuatu Government to monitor and assess the progress of working towards achieving ECO 2.9 of the Vanuatu National Sustainable Development Plan (NSDP) by giving an overall view of how the commitment the Government and Mobile Operators has been put in place to “increasing use of and access to information and communications technologies, including on-line Government.”

The TRBR would like to acknowledge all the telecom service providers for honoring their commitments in submitting the required data to enable the statistical analysis for this Report to be developed. The TRBR welcomes their support and cooperation and looks forward to their continuous cooperation going forward.

This Report is also available in electronic format on the TRBR’s website (<https://www.trbr.vu/en/public-register/reports/telecommunications-sector-report>) and we welcome any comments or feedback on any aspect of this Report.

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2 DATA SOURCE DISCLAIMERS

Under Section 8 (Information Gathering) of the Telecommunications, Radiocommunications, and Broadcasting Regulations Act N0. 30 of 2009, as amended by Amendment No. 22 of 2018, the TRBR has specific powers to request the provision of relevant information by telecommunications service providers.

The data in this Sector Report originates from a variety of sources namely, the TRBR data collection framework, Department of Customs and Inland Revenue, National Statistics and more. However, the analysis presented is predominantly based on data collected in the TRBR's bi-annual collection of market statistics from the industry under the TRBR's Order No. 1 of 2018 (Order 1) and information that is collected, ad-hoc, under the powers contained in the Telecommunications Licenses, Exceptions Licenses or the TRBR Act.

The data collected under Order 1 covers the previous six-month period, from 1st January to 30th June and 1st July to 31st December respectively. Where this Report, or the prior Report, indicates a value for a period prior to 1st January 2015, that information has typically been provided to the TRBR under prior reporting frameworks, or through an ad-hoc request for information by the TRBR under Section 8(1) of the Act. The TRBR is unable to confirm or deny the accuracy or consistency of data for the period of this Report.

For information collected under Order 1 of 2018 where the data is a measure of volume, such as revenue and minutes, the information is related to the volume utilised or accrued during a specific monthly period. Where the information describes a variable that is a snapshot in time, such as subscriber numbers, then it is related to the number of subscribers counted on the last day of the calendar month. For example, in relation to the number of mobile subscriptions, this number represents the number of users that have initiated a chargeable event during the preceding 90-day period.

In instances where data is related to a measure of volume (e.g. a volume of usage such as total SMS sent, call minutes made, or revenue earned and so on), this data is presented as a quarterly or annual value and the TRBR has, at times, sought to combine specific values to provide more workable and useful insight on longer term trends. On occasions where a variable is a snapshot in time, such as for subscriber numbers, then the TRBR has provided the value at the end of the last month of the same quarter. For example, at 31st December for any annual subscriber values presented or the 31st March for the value for the first quarter of the year (i.e. Q1).

The Act, however, provides restrictions on the use and disclosure of information collected by the TRBR under Section 8(7) which states:

"Information furnished or documents provided under this section must not be disclosed by the Regulator except:

(a) with the written permission of the person from whom the same was obtained; or

(b) in the course of proceedings under Part 9; or

(c) was required by a court order; or

(d) where, in the opinion of the Regulator, the information comprises, or will be reproduced in, aggregated data so that it does not identify any particular service provider; or

(e) where such disclosure is required by this Act or any other law."

The TRBR is currently under no obligation under the Act to report on specific statistical indicators or to produce this Telecommunications Sector Report. It is only compelled to release an Annual Report. Therefore, the TRBR is currently restricted to only disclosing information with prior approval from the provider of that information, or where the information provided is in aggregated form.

In some instances, the TRBR has chosen not to report on specific indicators so as not to compromise its adherence to Section 8(7) (d) and to avoid the disclosure of the specific service provider to which it relates.

The data used may be revised by the respondents or the TRBR when it appears inaccurate, an error has been made or was an estimate. Consequently, some prior year figures used previously in other publications have been revised. We also note that not all respondents were able to provide sufficient information in order for the TRBR to appropriately compare or segregate or report on specific indicators. In such instances, the TRBR has sought to combine or estimate specific indicators or values in order to display the relevant information. In the case of estimated values, the TRBR has indicated and/or attempted to provide a further rationale, if appropriate, where such estimations have been made.

In light of such challenges, the TRBR does not make any warranties that the information in this Report is free from inaccuracies, errors or omissions, is exhaustive, is of merchantable quality and fit for a particular purpose and is not liable for any inaccuracy, error or omission in the information contained in this document.

3 KEY TRENDS IN THE TELECOMMUNICATIONS SECTOR

Key observation trends that TRBR has been able to capture for the year ending in 2020, are shown below:

Mobile subscription decreased by

7%



Mobile voice revenue declined

5%

Fixed internet

Subscription declined by

65%

Revenue dipped by

44%



Mobile penetration fell to 84%



International bandwidth acquired fell by 2%



Gross market revenue declined



2%



Fixed telephony

subscription declined

9%



revenue fall

19%



20%

Mobile data revenue increase

66%

Mobile data traffic (MB) increase

International inbound roaming revenue sank by 78%

International outbound call revenue dropped by 7%

7%



SMS volume increased



SMS revenue declined

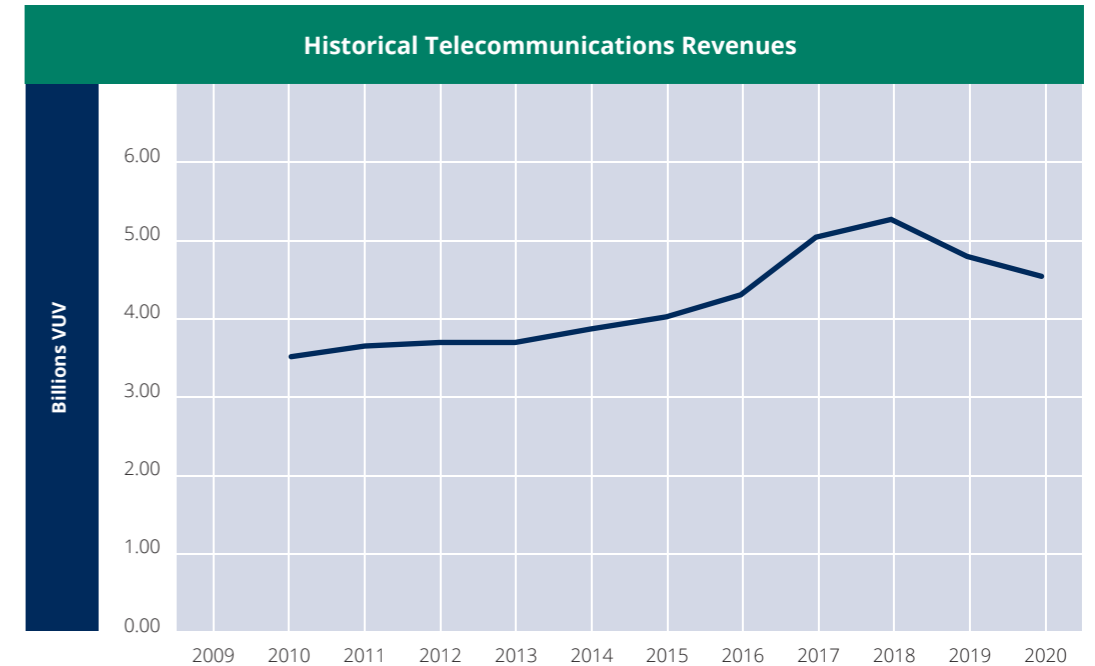


11%



4 GROSS TELECOMMUNICATIONS REVENUE

Figure 1: Illustrating Trend on Revenue Collected



The COVID-19 outbreak corresponded with a year-on-year decline in overall telecommunications revenues by 2% in 2020. The revenue dip was stimulated by large increase in unemployment, business closures and the overall decrease in economic activity that created a challenging business environment for telecom operators to generate revenue. Furthermore, while the decline in international roaming services has contributed to this fall, the destructive impact of Tropical Cyclone Harold in the northern parts of the country is also another causative factor to this trend creating massive disruptions to telecom businesses and consumer consumption.

Although total market revenue has experienced a downward trend, broadband services that account for over 50% of the telecom revenue

tend to be more resilient than other business telecoms services during the economic downturn. Market outlooks remain positive as telecommunications companies continue to benefit from a flow in traffic of data. As a result, the sector still maintains and performs well compared to other sub-sectors. Some companies are strengthened by the short-term spike in data traffic and increases in use of broadband services as more people are working, studying or teaching from home. Traffic growth has in fact demonstrated increased reliance on connectivity and digital services.



5

MOBILE PHONE SERVICES

The importance of mobile technology in sustaining social and economic activities has led to the Government to classify the technology, along with other electronic communication services, as an essential public service. The Government continues to support and encourage use of mobile technology to protect citizens and to discourage physical group meetings to avoid any possibility of community transmission. Mobile operators have largely engaged with citizens and the Government for the provision of important services, ensuring continuity of access to mobile services and at same time accommodating pressures on revenue and network capacity due to price reductions and changing consumer behavior during COVID-19 and the impact of TC Harold.

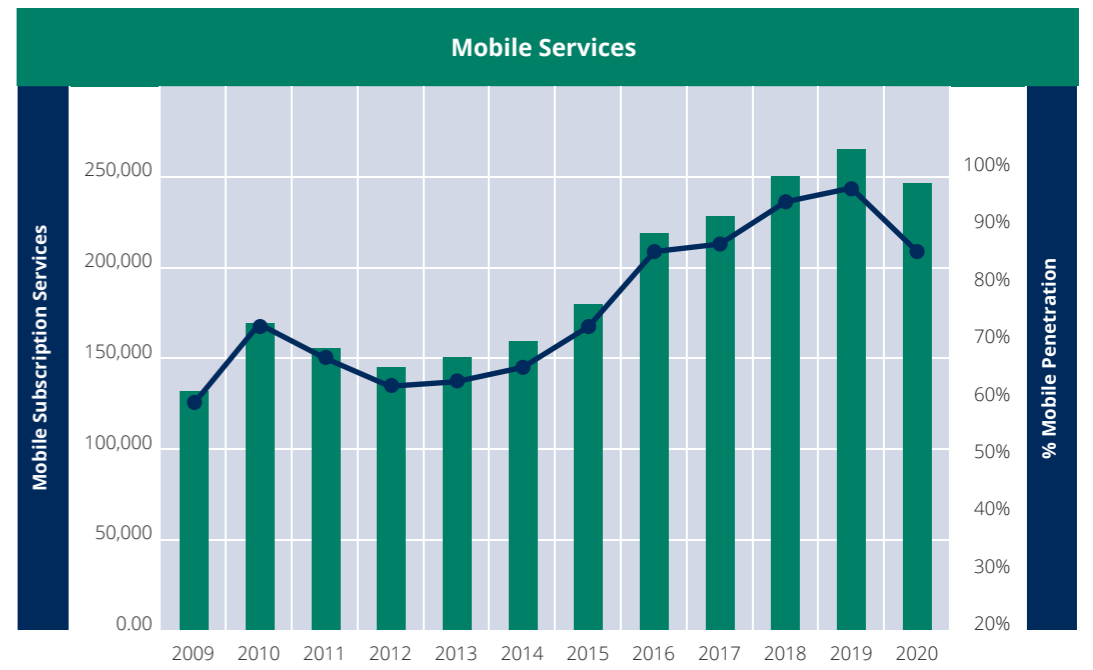
5.1. Mobile Cellular Subscriptions

Mobile cellular subscription in Vanuatu fell for the first time in six years in 2020. The trend in Figure 2 illustrates an annual decrease in mobile subscriptions by 7% from 2019 to record less than 250,000 subscribers in 2020. The damage to homes and telecommunications infrastructure caused by TC Harold in the northern islands of Vanuatu has left a lot of citizens with challenges in using cell phones. Most of the areas continued to experience poor to no mobile services. Consequently, this has led to the downward trend of mobile penetration in Vanuatu as data shows that mobile penetration also went down by 9% recording a new penetration rate of only 84% in 2020. While this penetration calculation

does not eliminate the effect of dual SIM mobile handsets, another important factor contributing to the rapid drop in mobile subscriptions and mobile penetration rate is due to damaged dual SIM mobile handsets where it would result into a fall of more than one subscriber per a damaged dual SIM mobile handset.

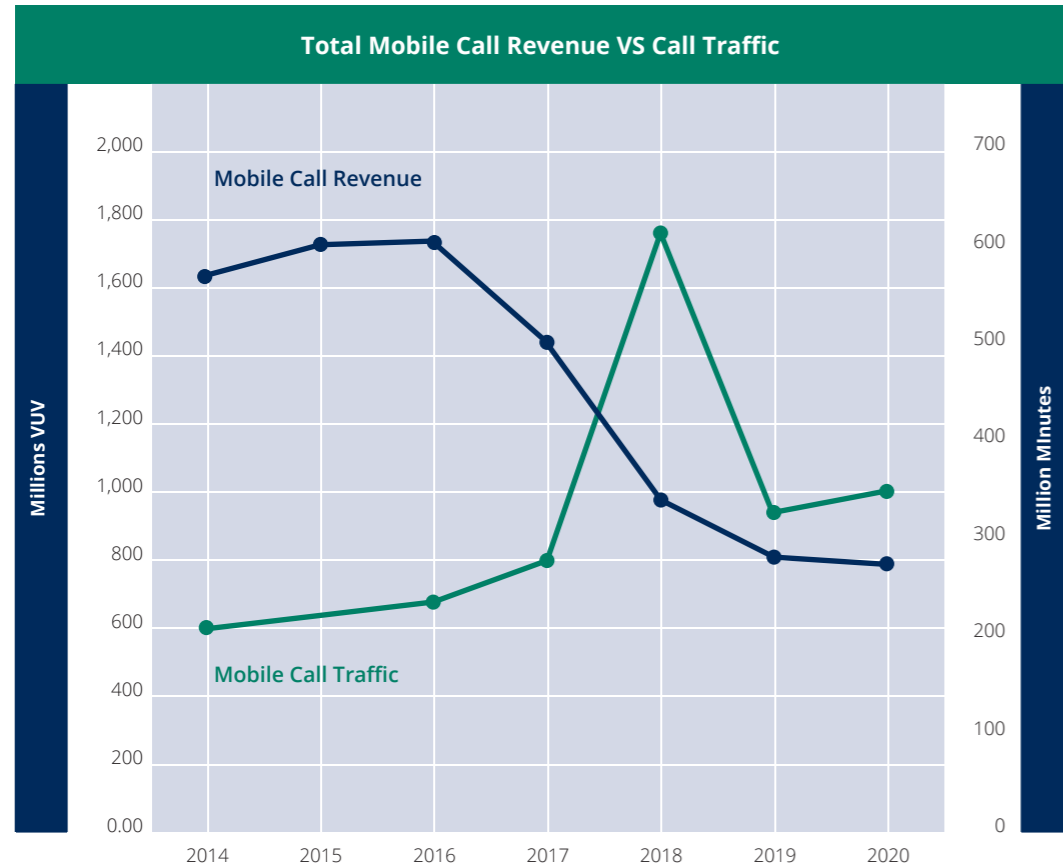
Furthermore, the downturn of the Vanuatu's economy due to COVID-19 situation is also a challenging factor that has contributed to these downward trends as consumers such as those financially struggling in the service sectors have become unemployed or earning very low income and were not able to afford the use of mobile services.

Figure 2: Vanuatu Mobile Subscribers & Penetration



5.2. Mobile Call Revenue Vs Call Traffic

Figure 3: Mobile Call Revenue Vs Mobile Call Traffic



The mobile call market has witnessed a year-on-year decline in revenue, hitting another low point of below VUV779 million in 2020. This represents a decline of 5% between 2019 and 2020 recording a total revenue of around VUV823 million in 2020. Figure 3 illustrates an increase of mobile call traffic by 6%, recording over 353 million minutes in 2020. This has been due to COVID-19 related restrictions, such as lockdowns and constraints on movements being reflected in people's communications. The geographical shift from schools, public and office locations to homes and remote work locations has stimulated the uptake of mobile call traffic.

The downward trend of mobile call revenue has also been experienced due to the competition and COVID-19 situation involving both the two major telecommunication operators in Vanuatu. The intense and effective competition during COVID-19 has compelled the operators to introduce bundled services at low rates in the market. Though the impact of these low packages is visible in the mobile market, OTT services are also having a significant impact on the decline of mobile call revenue.

5.3. Average National Mobile Call Pricing

Figure 4: Average Mobile Call Pricing

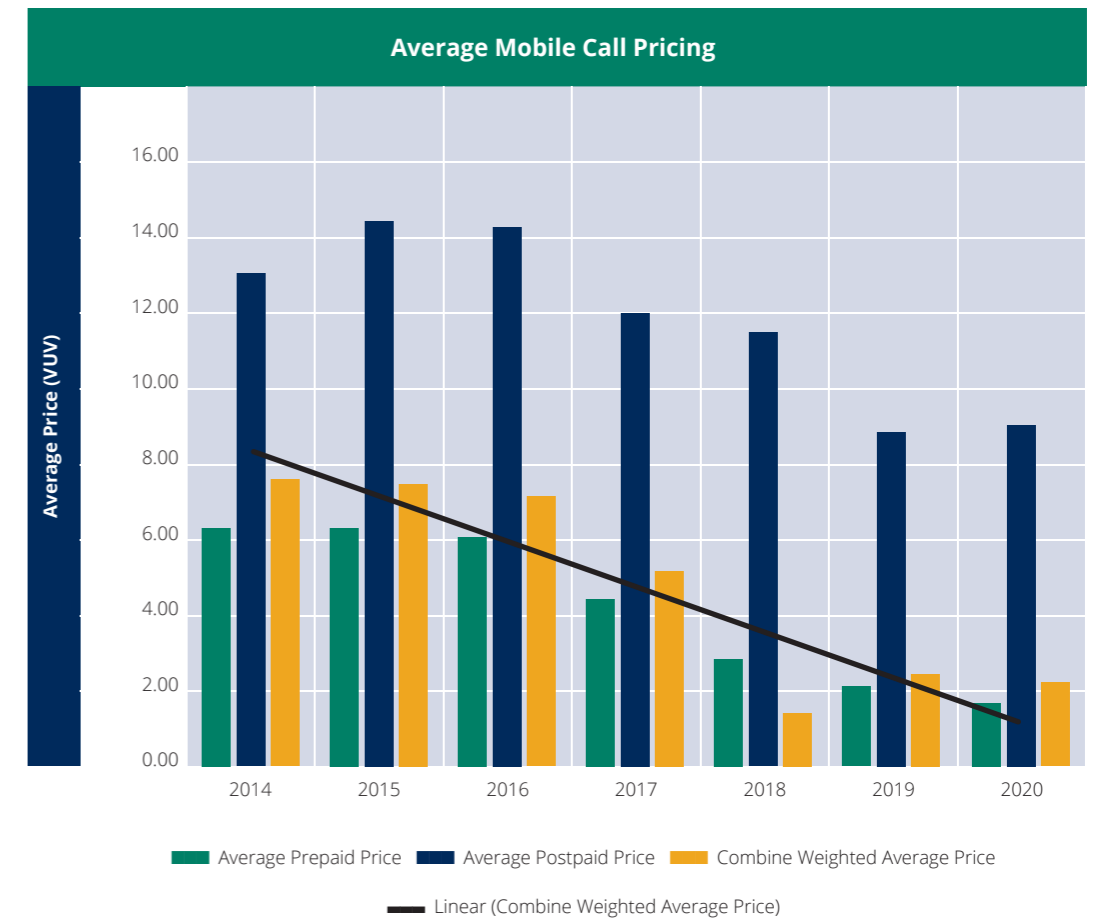
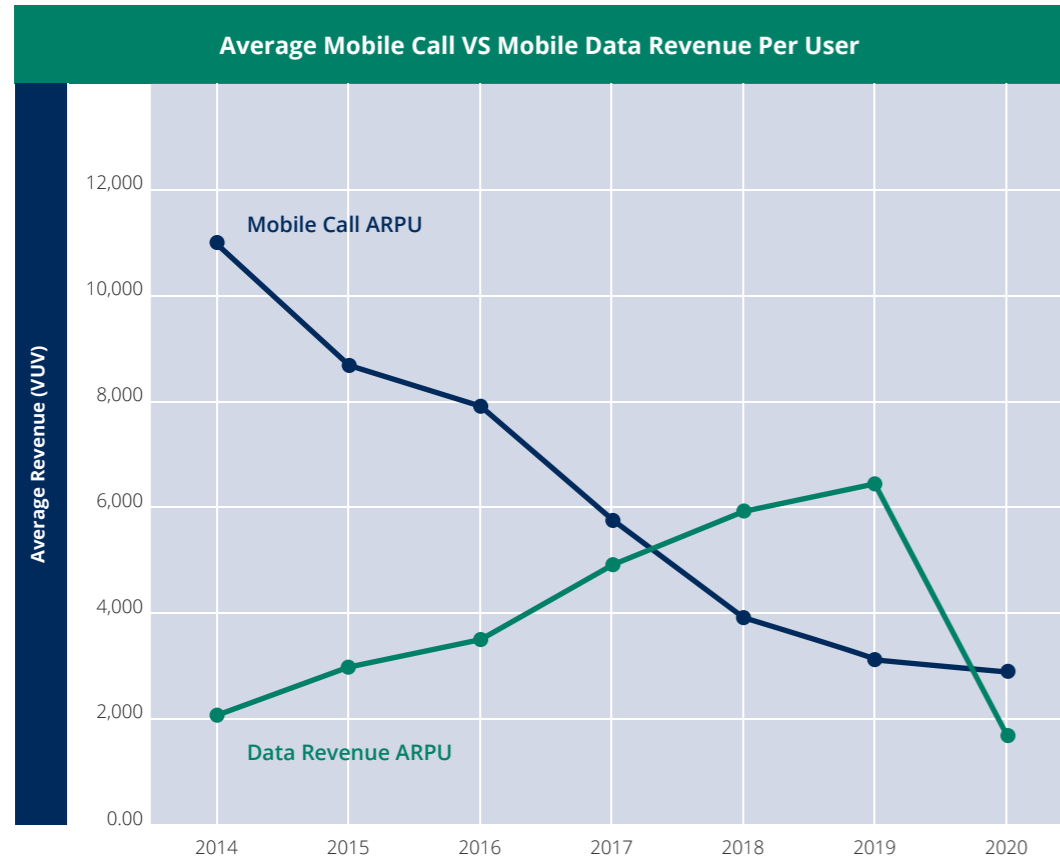


Figure 4 illustrates that the average prepaid call prices have further dipped from 2019 by 20%, recording a lower price of VUV1.74 per minutes in 2020. On the other hand, average postpaid call prices have slightly gone up from 2019 by 2%, hitting a higher point of VUV9.06 per minute in 2020. Furthermore, the combined weighted average price per minute has declined from

2019 by 10%, recording VUV2.21 per minute in 2020. The price decrease has occurred due to the sudden upsurge in the total mobile call minutes from 2019 by 5% recording a total minute of more than 350 million minutes in 2020. The TRBR accepted the rationale for the increase in postpaid prices and continues to actively monitor any price increase.

5.4. Average Mobile Revenue per Subscriber

Figure 5: Mobile Call ARPU Vs Mobile Data ARPU



When considering Average Revenue Per User (ARPU), Figure 5 illustrates that the average mobile call revenue per user has continued its downward trend, recording a lower revenue point of below VUV2,900 per user in 2020. In contrast, average mobile data revenue per user has shown an unusual trend in 2020 recording a sudden reduction in average revenue by 73% hitting VUV1,714 per user. This was due to the fact that both mobile operators responded to the COVID-19 situation by offering data

plans with huge value in terms of mobile data allowance at very low cost and also offering a few 1GB packages at no cost, resulting in the decline in the average revenue per user.

Furthermore, the impact of TC Harold and financial challenges brought by the pandemic has changed the consumer's behavior and spending patterns, causing a 13% decline in mobile data subscription in 2020 forcing the average data revenue per user to go down.



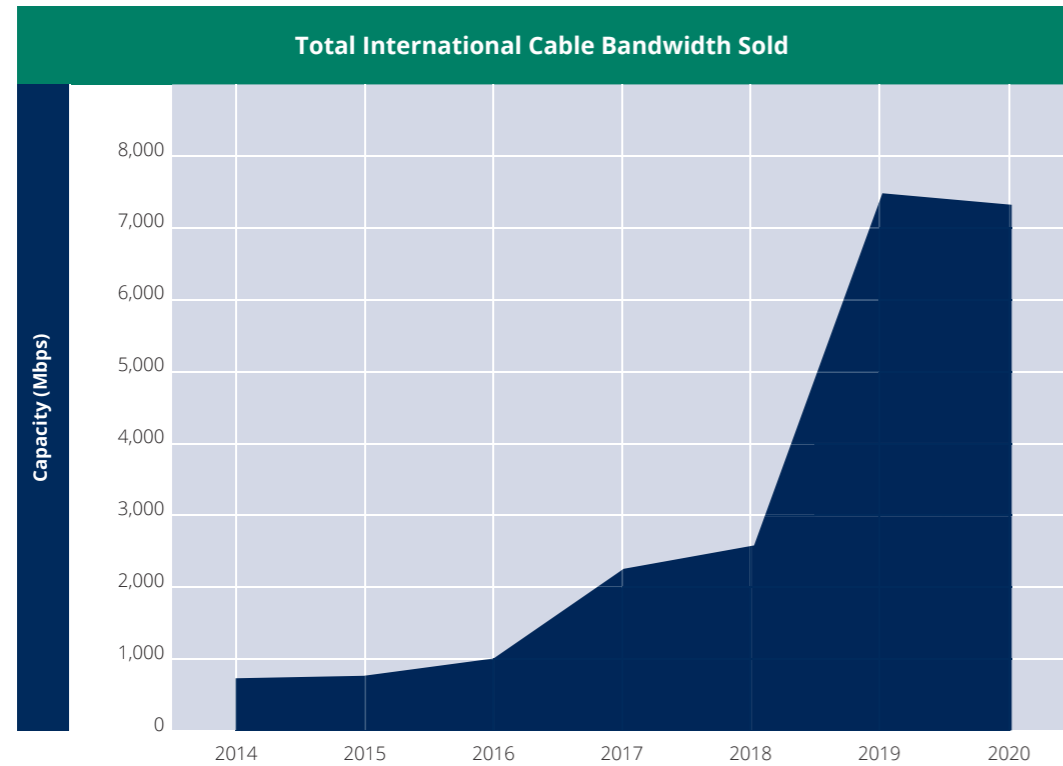
6 INTERNET SERVICES

Like many other countries in this unexpected fight against COVID-19, internet services offered via digital technologies in Vanuatu presented the only opportunity for the Government, individual and businesses to respect social distancing requirements, ensure business continuity and preventing service interruptions. The increasing reliance on connectivity has stimulated rapid uptake of demand and supply of internet services.

The TRBR continues to assess and address the challenges of accessibility and affordability. Currently Wantok, Pacific Link Limited (PLL), SPIM, 3 Link and Aelan Internet continue to provide fixed internet services in urban and rural areas while Digicel and TVL/Vodafone continue to serve both urban and rural areas through provision of mobile and fixed internet services.

6.1. International Bandwidth

Figure 6 International Cable Bandwidth sold by ICL



The international bandwidth via submarine cable and satellite made available to the local market is driven by a growing demand for the provision of higher internet capacity as demand for data by the mobile broadband users continues to grow.

The provision of access by the ICL underwater cable provides attribution of higher transmission speed of large data with very little latency. This has boosted demand from local operators and consumers stimulating an explosion of data volumes currently offered in the market.

The international bandwidth market has experienced a slight slump due to the exit of Telsat and Speedcast from the market. Figure 6 illustrates that the international bandwidth made available to the local market has dropped,

with the capacity sold having plummeting by 2%, recording its new lower capacity of below 7.5Gbps by the end of 2020.

However, the entry of Kacific Broadband Satellite operator providing high-speed broadband for both urban and rural markets has fostered greater internet usage and boosted economic growth and improvement in service delivery across the islands of Vanuatu. The development has attracted and encouraged the approval of new Internet Service Providers (ISPs) into the market by the Telecom Regulator. The ISPs, including 3 Link and Aelan Internet, continue to provide universal internet access to targeted consumers as well as to the education and health centers throughout Vanuatu.

6.2. Mobile Broadband Services

Mobile broadband services have never been more important, and the dependence of Vanuatu on the internet has never been in higher demand. The COVID-19 situation has emphasised the significance of internet and the vital role that mobile technologies are playing as the primary mode of connectivity as well as accessing the internet in the wider communities

of Vanuatu. The uptake of mobile broadband access and services has had a positive impact on all sectors to ensure the functioning of emergency services, allowed distancing of friends and families to stay informed and keep in touch, and most importantly enabled schools, health centers and the workforce to continue operating throughout the pandemic.

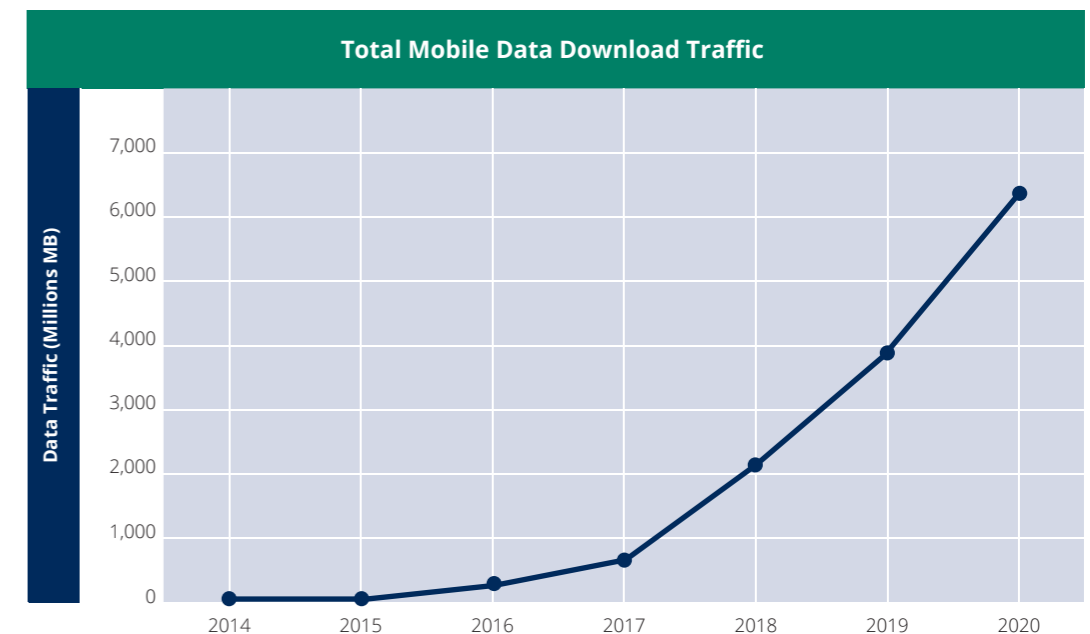
6.2.1. Mobile Data Traffic

The need to accelerate digital transformation and virtualisation during the COVID-19 pandemic has stimulated explosive growth of mobile data traffic as the market has experienced a rapid increase in demand for mobile broadband services. As illustrated in Figure 7, total mobile data traffic has increased by 66%, hitting another higher peak of over 6,300TB in 2020. This was due to the COVID-19 precaution measures that also allowed students with internet access to continue to study online and attend class remotely. Many employees started working from home and

many firms adopted digital business models to maintain operations thereby hastening the uptake of mobile broadband services.

Another important factor contributing to this trend is the increasing use of smartphones with affordable prices available on the market, combined with the now range of affordable mobile data plans. These smartphones with improved capabilities have boosted demand for data-intensive contents (such as Netflix, TikTok, Facebook and YouTube) that in turn have led to huge growth of data traffic.

Figure 7: Showing growth of Mobile Data Traffic



Furthermore, the on-going investment in the deployment of new mobile base stations and upgrading of the current 3G, 3G+ network to 4G/LTE network in the 700Mhz around Vanuatu is also facilitating and enabling the growth of mobile data traffic, as mobile broadband coverage continues to extend around Vanuatu, thereby stimulating the growth of mobile data traffic.

This growth outlook can be projected to remain positive, with mobile data traffic anticipated to significantly increase in the next few years as demand and supply for mobile data services can be expected to persist, especially during the prolonged COVID-19 pandemic.

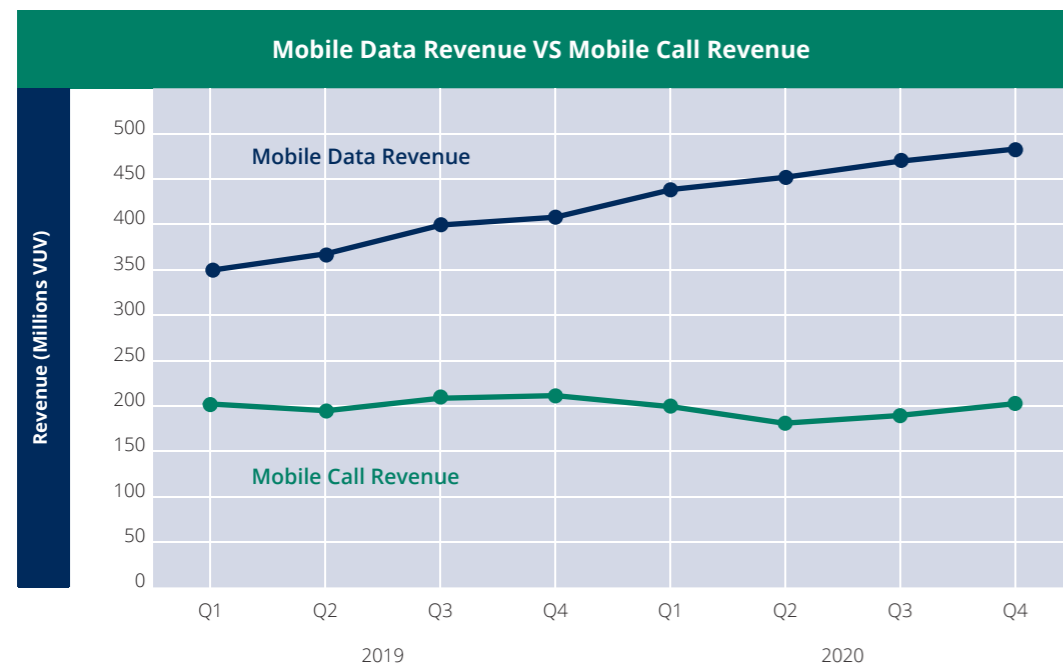
6.2.2. Mobile Data Revenue Vs Mobile Voice Revenue

The 3G and 4G/LTE mobile technologies have continued to gain pace and to become dominant in the mobile markets across Vanuatu. These mobile connections and accessibility continued to grow, boosting access to a range of affordable services, including vital life-enhancing services from the Government and private sector. While Vanuatu has experienced rapid uptake in mobile data services, the telecom sector has witnessed a prominent increase in mobile data revenue recording over VUV1.8 billion in 2020. This represents an annual growth rate of 20%.

mobile data revenue continued its upward trend over the Quarters, peaking to over VUV475 million in Q4 of 2020. On the other hand, mobile call revenue has continued to decline over these Quarters recording a lower revenue of below VUV200 million in Q4 of 2020. An important factor contributing to these trends is the uptake in the use of mobile data services in lieu of mobile voice during this pandemic and the fact that users continuously choose OTT services over traditional call services as a primary means of communication.

Comparing both revenue streams over each Quarter of 2019-2020, Figure 8 illustrated that

Figure 8: Showing Mobile Data Revenue Vs Mobile Voice Revenue



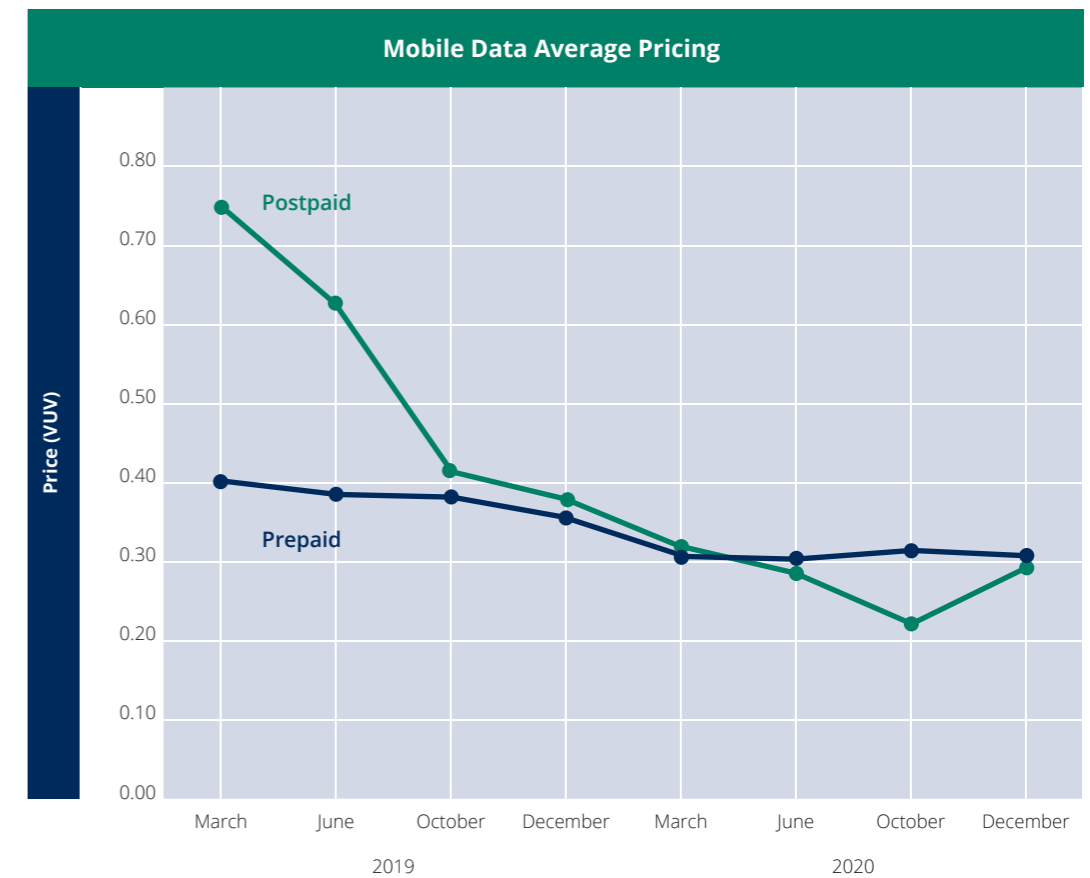
6.2.3. Average Price of Mobile Data

The telecom industry is at a critical juncture, with increasing users, rapid technology shifts, usage shifts to content services, exponential growth in data usage that has been boosted by the ever-increasing effective and competitive environment. This has encouraged and necessitated service providers to develop innovative strategies, solutions, and ways of attracting users to consolidate their data customer base, including offering competitive mobile data packages bundled with high volumes of voice and SMS that tend to reduce the average mobile data price per Mb.

for both Prepaid and Postpaid throughout the quarters of 2019-2020. The graph shows that average prepaid mobile pricing has fallen by 12% from Q4 of 2019 to record the lowest average price of VUV0.30/MB in Q4 of 2020. Furthermore, the average postpaid pricing has also declined by 24% to reach a lower average price of VUV0.28/MB in Q4 of 2020. The fluctuation in average prices, especially for the postpaid prices, was due to continuous increase of values of existing packages and offers by service providers that have led to stimulating an explosion of data traffic since Quarter 1 of 2019. Consequently, this has encouraged growth of revenue while at the same time lowering the average prices.

Figure 9 illustrates that mobile operators have reduced average mobile data price per MB

Figure 9: Showing Mobile Data Average Pricing



6.3. Fixed Internet Services

The deployment and improvement of fixed internet connectivity has helped many communities, businesses, schools and health centers to cope with the economic crisis from COVID-19 and the post-effects of TC Harold. The pandemic has raised bars for digitalisation to stimulate demand for fast and reliable fixed internet as the fiber and satellites broadband services in addition to the ever-increasing use of mobile broadband services.

6.4. Fixed Internet Subscriptions

With the growing trend of technological advancements and digitisation of services, Vanuatu continues to benefit from broadband internet connections even to areas with no access to fiber optic network or mobile network. This has given hopes to customers in remote areas to finally connect to internet via satellite and enjoy a broader range of services at (now) relatively lower costs that enable providers to offer better quality of service and a wider range of services. While the fixed internet market anticipated a strong growth, the unexpected downturn of the economy due to COVID-19 and destruction caused by TC Harold of infrastructure has led to a decline in total fixed internet subscription by 65%, recording only less than 3,000 subscribers.

Available data shows that Fiber to Home (FTH) subscriptions went down by 1% recording a drop in revenue earned by the service providers by 0.27% in 2020. The fixed wireless market also experienced a decline in subscription by 83%, recording a lower revenue of less than VUV155 million. While satellite subscriptions fell by 71%, revenue collected has increased, recording over VUV34 million in the same year.

6.5. Fixed Internet Revenue

The destructive impact of TC Harold caused a lot of damage to homes and most of the fixed internet infrastructure were also damaged. This, combined with the prolonged economic impact of COVID-19, saw many fixed internet consumers unable to afford the restoration or continuation of their services, leading to a decline in annual total revenue. Figure 10 illustrates that total annual fixed internet has dipped by 44%, hitting a new lower revenue point of less than VUV533 million in 2020.

(See Figure 10: Showing Total Internet Revenue)

6.6. Average Fixed Internet Revenue per Subscriber

Though total annual revenue has dropped, Fixed Internet revenues per subscriber has increased by 58% in 2020. While subscription has dropped, this was driven by the increasing demand and spending on high-speed internet as users preferred to continue to subscribe to faster and larger internet packages. The increase in user spending on fixed internet data - particularly the satellite services - has resulted in and been an encouragement to users to allocate more money to internet services, thereby boosting revenue per subscriber as illustrated in Figure 11.

(See Figure 11: Showing Trend of Fixed internet Revenue per Subscriber.)

Figure 10: Showing Total Internet Revenue

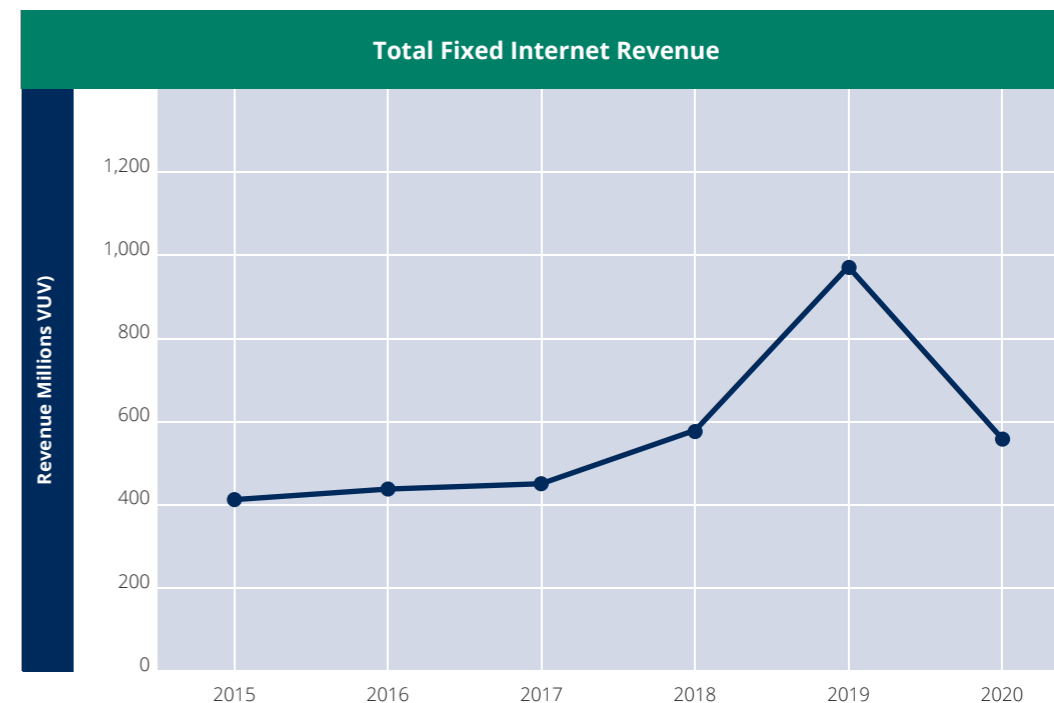
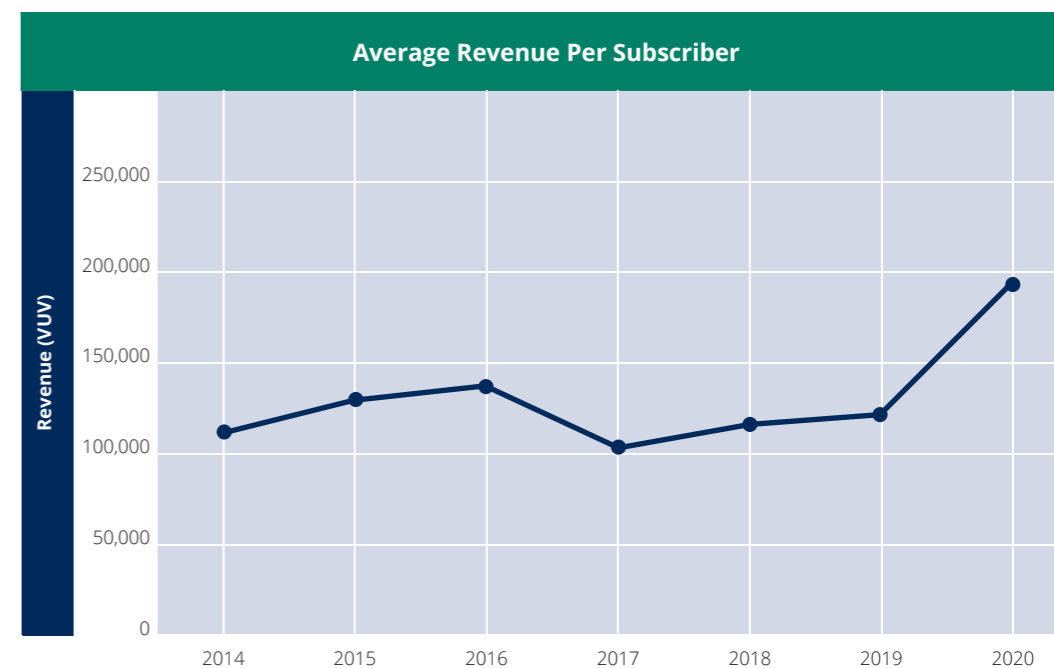


Figure 11: Showing Trend of Fixed internet Revenue per Subscriber





7 TRADITIONAL SHORT MESSAGE SERVICE (SMS)

The global pandemic and social distancing have proven the importance of digital readiness for individuals, businesses, Government departments and schools. SMS on the other hand, has been one of the most important and effective ways to communicate and allows individual or businesses to connect immediately with their audience while maintaining personal experiences even when group meetings are restricted. For that, Service Providers have been very innovative in offering discounts, promotions and bundles at a very affordable prices to stimulate the uptake of SMS services in these unprecedented times.

7.1. SMS Traffic & Revenue

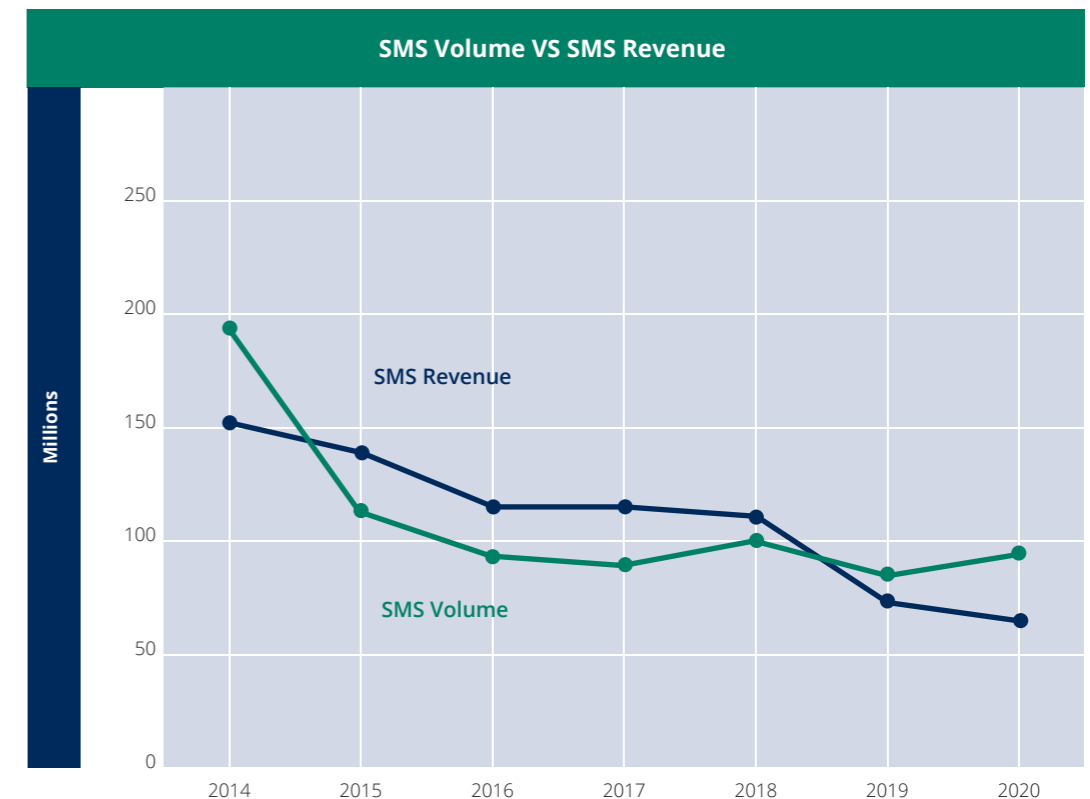
The uptake of mobile technologies and shift of consumption behaviors have been the key factors influencing service providers to change the landscape of business-to-customers interaction through instant messaging. The new business model has opened new avenues to conduct business and at the same time allowed exploring of innovative ways to offset the downfall of traditional SMS revenue.

The increasing availability and growing demand for OTT instant messaging services has led to a further decline in traditional SMS revenue by 11% earning only less than VUV70 million in 2020. The instant messaging services comes with attractive features, such as video chatting, multiple user messaging and instant file sharing capabilities at lower costs and provides an

efficient and convenient way of communication. This has triggered consumer's shift of preference to instant messaging over traditional SMS resulting in the decline in traditional SMS revenues. In contrast, traditional SMS services have recorded a spike in SMS volume by 7%. This has been due to continuous utilisation of bundling offers offered by the service providers at an affordable cost in terms of average unit prices.

Though traditional SMS revenue is expected to continue its downward trend, operators continue to create innovative ways such as competitive SMS bundling and value-added services using SMS to levy revenue from this service and mitigate the risk of further reducing revenues from SMS.

Figure 12: Showing Trend of Traditional SMS Revenue & Volume



7.2. Average SMS Pricing

Digicel's standard pricing per SMS still stands at VUV10 for on-net and VUV12 off-net, while Vodafone has dropped its prices to charge VUV10 per SMS for both on-net and off-net in 2020. The level of competition in the market to address the COVID-19 crisis has enabled both mobile operators to become more innovative in creating and offering promotions and bundling packages that tend to drive SMS average prices down.

Figure 13 illustrates that the average SMS prepaid price has continued to fall by 14% to a new lower unit price of VUV0.62 per SMS in

2020. The average postpaid price also dipped by 22% to VUV5.10 per SMS in the same year. With the downward trend of both average prepaid and postpaid SMS prices, the average combined weighted SMS price has also recorded another lower point of VUV0.76 per SMS in 2020. This represents an annual decline of 18% from an average price of VUV0.93 in 2019.

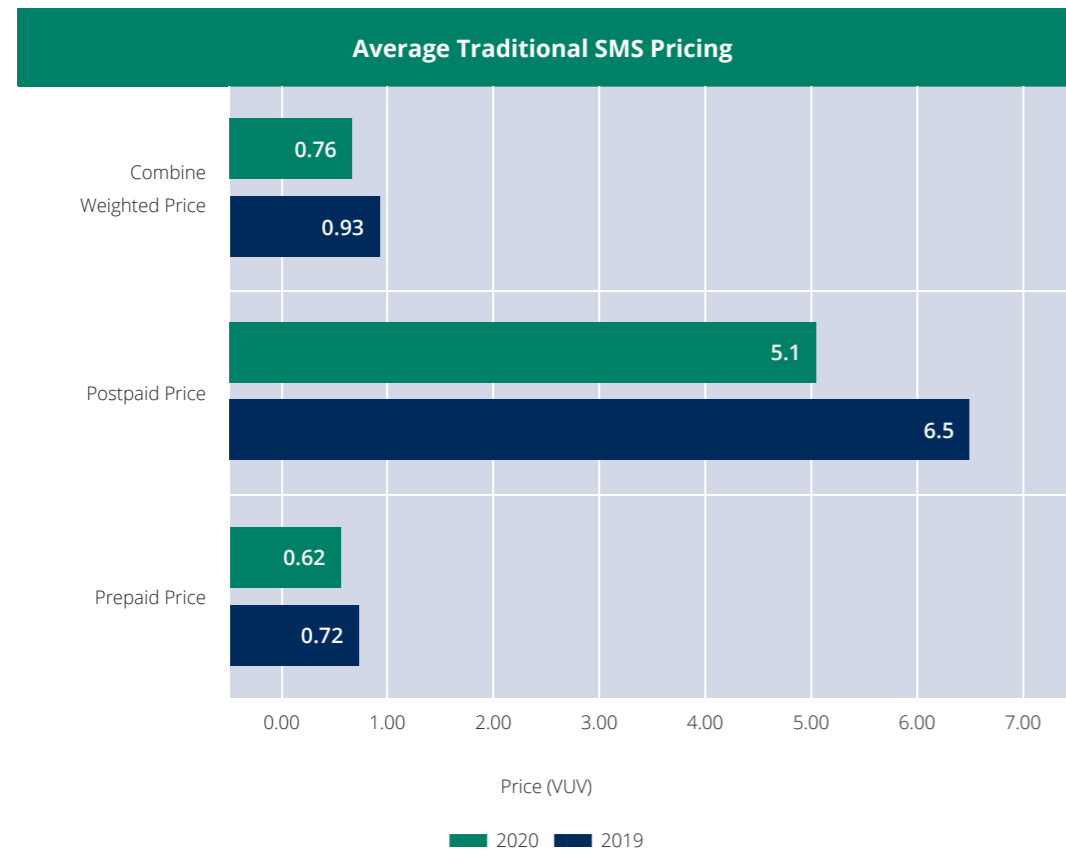
The continuous decline of SMS prices reflects the impact of increasing uptake in OTT services that tend to divert revenue to mobile data. This has led to the on-going decline in SMS revenue causing average SMS prices to fall as well.

7.3. On-net and Off-net SMS

Data analysed by TRBR shows that on-net SMS volume has spiked by 16%, recording over 85 million SMS in 2020 but earning a lower revenue of less than VUV45 million in 2020 compared to 2019. This reflects the on-going increase in value of bundling services at lower average unit price of below VUV1 per SMS than the Standard (PAYG) rates that tend to push SMS revenue down while boosting the increase in prepaid SMS volume. Furthermore, off-net SMS volume

has declined to record only 2.2 million SMS in 2020 and at the same time recording a drop in revenue by 27% hitting a lower peak of VUV18 million in the same year. The overall downward trend of SMS is fueled by increasing mobile data usage that stimulated the use of instant messaging services to the detriment of SMS services.

Figure 13: Showing Average SMS Pricing





8

FIXED TELEPHONY SERVICES

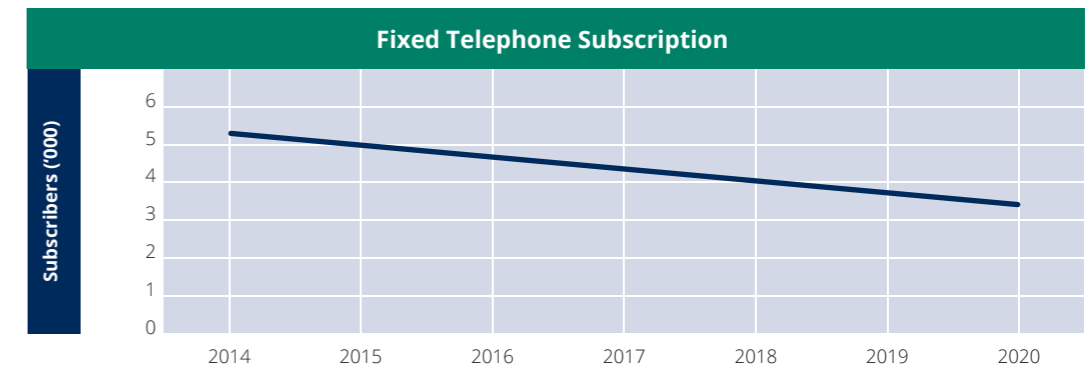
Over the past years, fixed line-telephone network has been the most effective and standard method of communications between people or businesses. Many corporate businesses, Government Institutions, and individuals continue to adopt this technology. However, as the digital transformation continues to gain pace, digital hardware, software and the internet have taken over and are driving the current and future of communications. Although fixed lines are rapidly losing relevance, service providers are exploring opportunities to upgrade, innovate and invest in new technologies to provide consumers with more reliable services over the fixed networks.

8.1. Fixed Telephony Subscription

The Vanuatu fixed-line telephone market continued to experience significant downfall in the total number of active analogue fixed lines and voice-over-IP (VoIP) subscriptions. Statistics presented in Figure 14 illustrates that total

subscription went down by 9% recording less than 3,500 subscribers in 2020. This trend can be expected to continue declining in the future as mobile services continue to experience rapid uptake in popularity and usage.

Figure 14: Showing Fixed Line Telephone Subscription

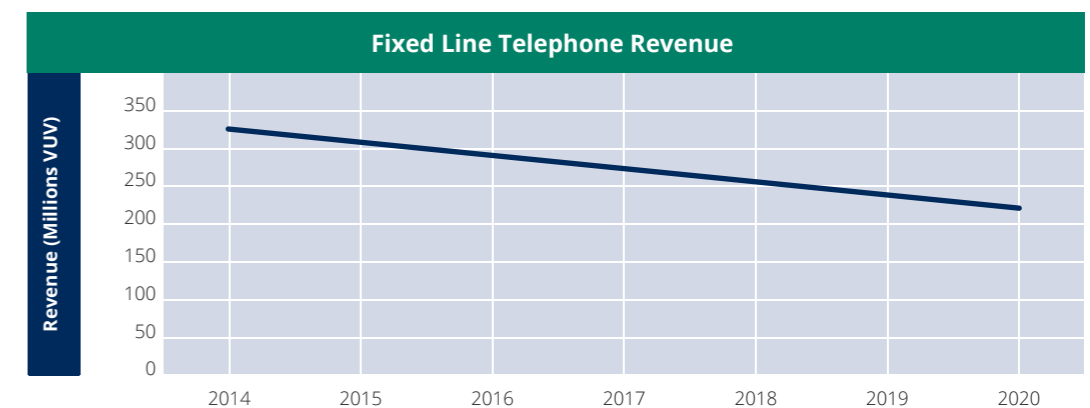


8.2. Fixed Line Telephone Revenue

The decrease in the total number of subscribers accompanied by a 16% dip in the total fixed call minutes has led to a decline in the total fixed-line revenue by 19%, hitting a new record of less than VUV200 million in 2020. The important factor causing this downward trend is the increasing demand for mobile services as more and more people are adopting alternative means of communications such as app based (Viber, WhatsApp, Facebook Messenger and more). Many businesses, corporate entities and

Government departments are switching slowly to IP (VoIP) for their voice and data traffic rather than using traditional telephone systems that require lines and customers spending more than these VoIP services. However, with the existing demand of fixed telephone in the market, service providers are becoming more innovative in offering more attractive services bundled at the low cost with other services to ensure revenue is generated from this service.

Figure 15: Showing Fixed Line Telephone Revenue





9 INTERNATIONAL CALLS

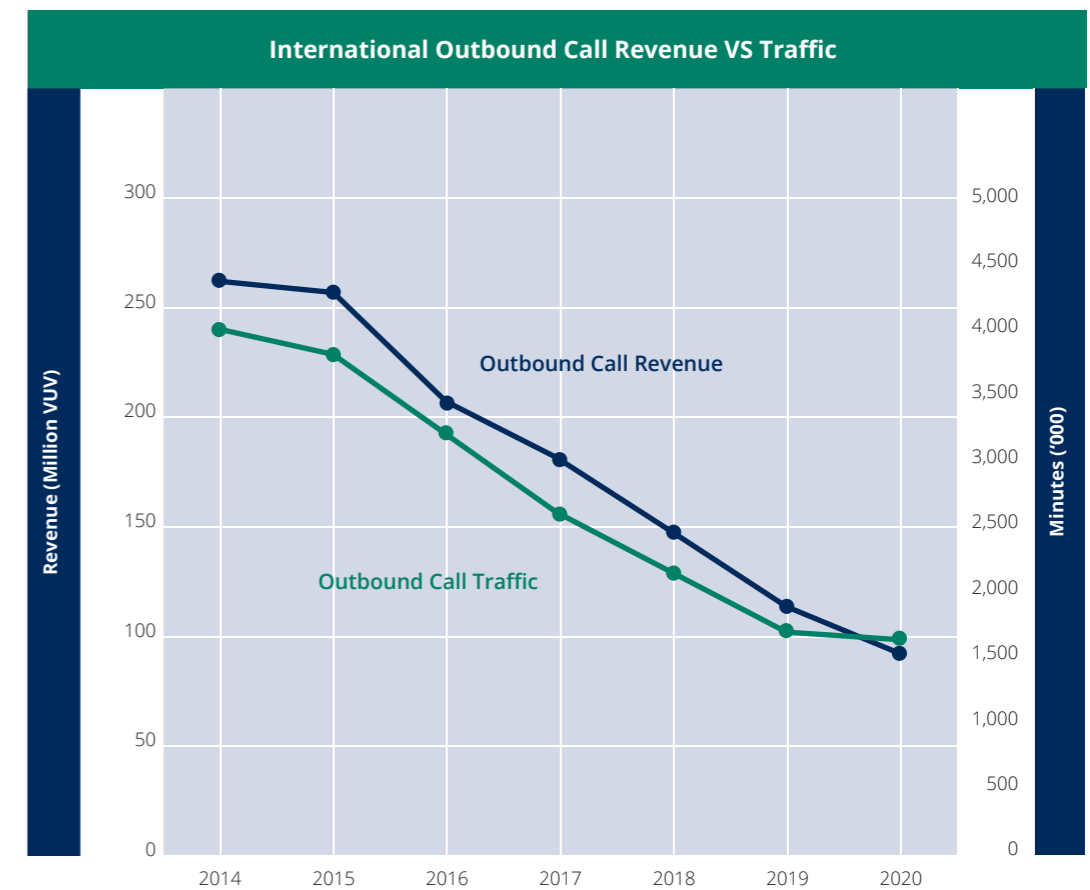
The COVID-19 pandemic has completely altered the way the world lives, work, and connects. Changing user behaviors because of travel restrictions and boarder closures, have had a direct impact on the international voice market and consumers had been very mindful in prioritising their spending due to financial challenges.

9.1. International Outbound Call Traffic

In alignment with the global downward trend of voice communications, International outbound call traffic has slumped with no end in sight. Operators had already suffered from revenue stagnation due to slow traffic growth and decline in consumer's spending power. Data analysed by the TRBR in Figure 16 shows that international outbound call traffic has dipped by 18% hitting a new lower peak of only 1.5 million minutes in 2020.

The COVID-19 situation – and its associated economic and social impact - has upended the way people are spending on international call services. Figure 16 illustrates that international outbound call revenue has further dropped by 7% to record a revenue of below VUV98 million 2020. This trend is anticipated to continue as the impact of COVID-19 is expected to be prolonged and due to the increasing use of alternative services, such as OTT, which are expected to continue to grow, in influence and adoption.

Figure 16: Showing International Outbound Call Revenue & Traffic



9.2. International Call Roaming

While the Vanuatu telecom sector continue to experience significant uptake in mobile services, international roaming services continue to emerge strongly as labor mobility to Australia and New Zealand has encouraged operators to seek innovative opportunities to offer packages that are convenient to these workers. The roaming services are part of the overall mobile market proposition and operators continue to commit to setting roaming rates at a level that increases the use of these services and differentiates them from the competition.

9.2.1. International Outbound Roaming

The travel restrictions due to COVID-19 have led to a drop in International outbound roamers by 44%. Consequently, data presented in Figure 17 shows that the total roaming minutes has fluctuated and fell throughout the Quarters by 84% recording less than 149 thousand call minutes in Q4 of 2020. In contrast, revenue is also fluctuating while going down seeing the same trend earning less than VUV4.3 million in Q4 of 2020. This represents a declining rate of 50% from over VUV8.4 million worth of revenue recorded in Q4 of 2019.

9.2.2. International Inbound Roaming

The Vanuatu's international inbound roaming market is under-going challenging times as a result of the current global pandemic travel restrictions and boarder closures. Data analysed by the TRBR revealed that total international roamers have declined to a lower peak of less than 12,000 roamers in 2020. This represents an annual negative growth rate of 64% from 34,000 roamers recorded in 2019.

The decline in the number of total international inbound roamers due to travelling restrictions has had a huge impact in the market. Figure 18 shows that international inbound roaming traffic has continued to fall throughout the

The international call roaming communications market has experienced a downward trend in 2020. Data shows that total international call roaming traffic has declined by 60% recording less than 2.5 million minutes in 2020 while revenue has also decreased by 52% recording a new lower peak of below VUV54 million in the same year. This has forced average price per minute upwards by 19% charging VUV22 per minute.

While both call traffic and call revenue went downward, the uptake of this service depends entirely on the number of the local customers who are willing and able to afford this service while travelling overseas. This year, COVID-19 has been seen to influence all the international outbound roaming figures negatively.

(See Figure 17: Showing International Outbound Roaming Call Traffic & Revenue)

Quarters, recording a new lower point of below 84,000 minutes in Q4 of 2020. This represents an annual growth rate of negative 85% from a total inbound roaming traffic of over 500,000 minutes in Q4 of 2019. In contrast, international inbound roaming revenue has also experienced a downward trend over the quarters hitting a lower peak of less than VUV4.5 million in Q4 of 2020. This again signifies falling annual growth rate of 78% from a revenue of over VUV20 million in Q4 of 2019.

(See Figure 18: Showing Trend of International Inbound Minutes & Revenue)

Figure 17: Showing International Outbound Roaming Call Traffic & Revenue

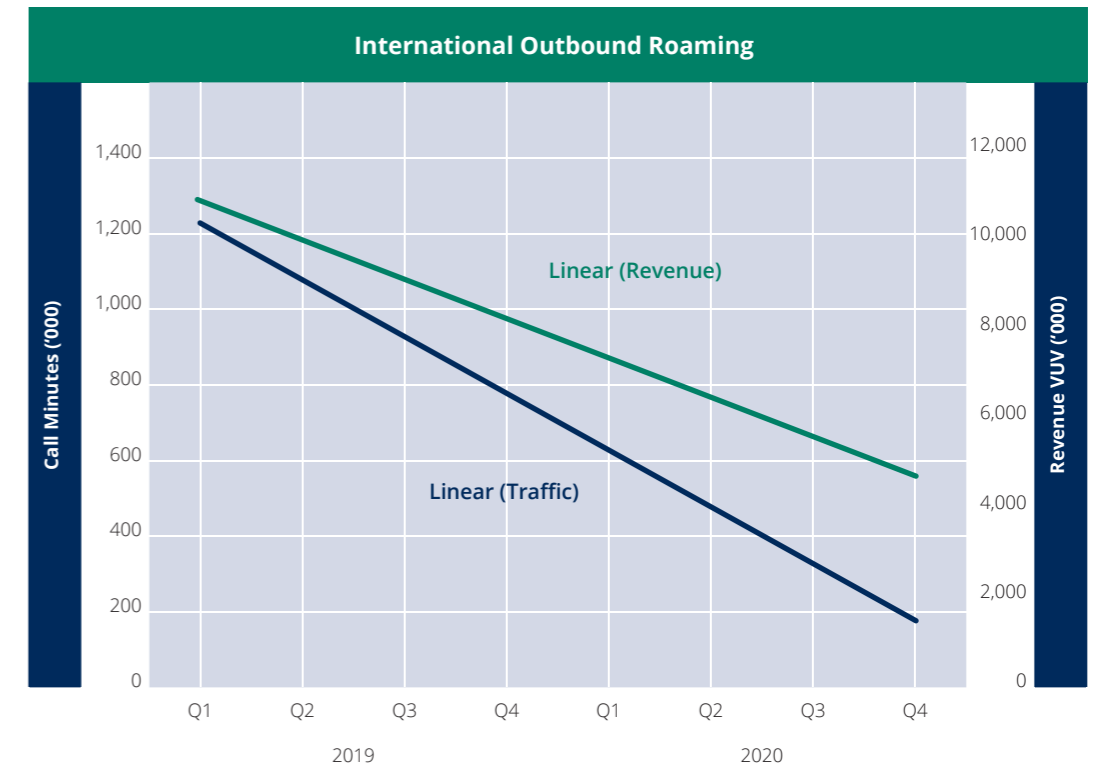


Figure 18: Showing Trend of International Inbound Minutes & Revenue

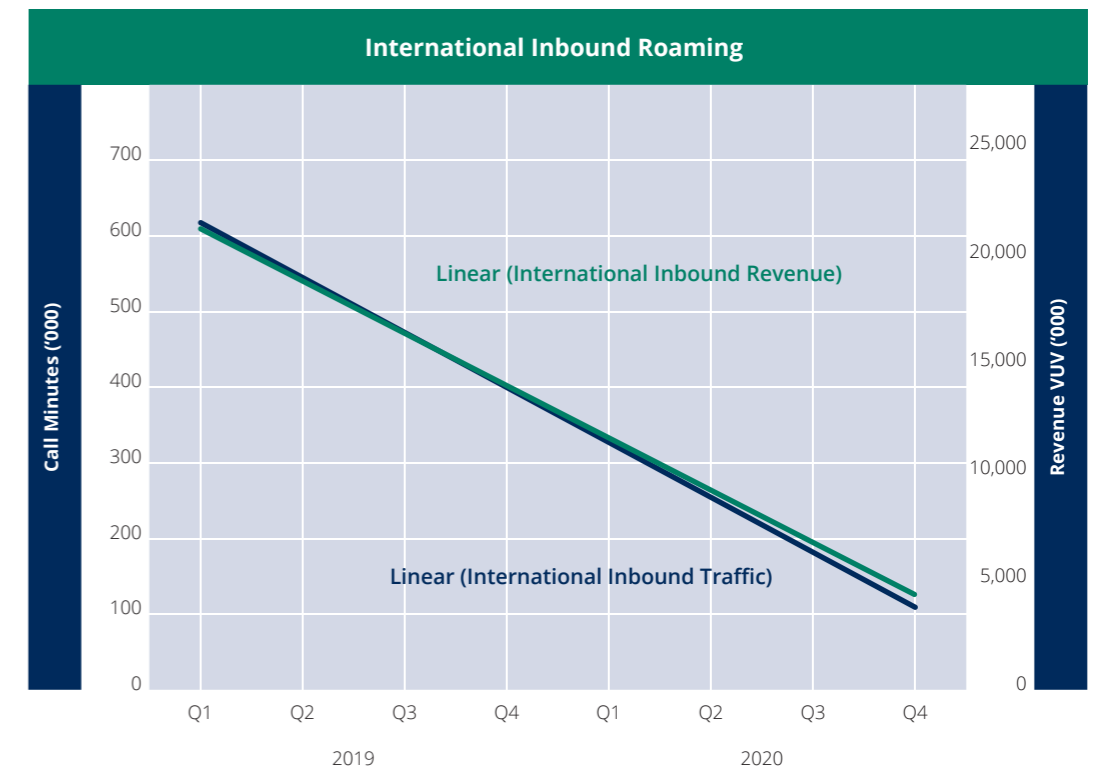


Table 1: Summary of Overseas Migration

YEAR	MONTH	ARRIVALS					DEPARTURES						CRUISESHIP ARRIVALS	
		PORT VILA		LUGANVILLE		TOTAL		PORT VILA		LUGANVILLE		TOTAL		
		Residents	Visitors	Residents	Visitors	Residents	Visitors	Residents	Visitors	Residents	Visitors	Residents		Visitors
2016		24,801	89,358	359	5,759	25,160	95,117	20,118	91,064	165	4,406	20,283	95,470	256,482
2017		27,418	103,463	830	5,707	28,248	109,170	25,845	108,427	441	3,831	26,286	112,258	223,551
2018		28,426	111,296	510	4,338	28,936	115,634	28,160	120,736	231	3,840	26,322	124,576	234,567
2019		34,575	117,154	326 #	3,474	34,901	120,628	35,876	142,012	529	3,303	36,405	145,315	135,357
2020		10,392	21,764	17 #	201	10,409	21,965	9,122	28,095	253	39	9,375	28,134	60,401
2016	March	1,293	3,902	1	253	1,294	4,155	1,350	4,202	10	252	1,360	4,454	26,776
2017	March	1,633	6,113	60	243	1,693	6,356	2,629	5,672	10	213	2,639	5,885	19,242
2018	March	1,594	6,864	58	252	1,652	7,116	2,647	6,073	60	189	2,707	6,262	30,844
2019	March	2,151	6,807	37	219	2,188	7,026	2,717	7,940	13	233	2,730	8,173	12,237
2020	March	1,229	3,438			1,229	3,438	1,904	4,793		2	1,904	4,795	7,885
	April							39	228			39	228	
	May							19	54			19	54	
	June	1,460				1,460		11	121		11	121		
	July							41	37		41	37		
	August	141				141		29	15		29	15		
	September	1,156				1,156		237	49		237	49		
	October	705				705		228	22		228	22		
	November	515				515		94	28		94	28		
	December	506				506		337	53		337	53		
2021	January	325				325		660	15		660	15		
	February	209				209		936	15		936	15		
	March (p)	279				279		882			882			

Source - Department of Customs and Inland Revenue

The critical factor influencing such trends has been due to the Vanuatu Government locking down its international borders as a measure to prevent COVID-19 from spreading in Vanuatu. With these restrictions, provision of data collected by Department of Customs in Figure 19 shows that Vanuatu has recorded zero arrivals of

international visitors by air and cruise ship since March 2020. The number of visitors departing has also declined through the remaining months of 2020. This has reflected the current downward trends of international inbound roaming services.



10 CONCLUSION

With the COVID-19 outlook remaining unpredictable, economic activities have been brought to a near-standstill as Vanuatu and other countries continue to impose strong restrictions on the movement of people to stop the spread of the virus. Associated economic risks have been the vital concern for the Vanuatu Government and businesses across every sector as fears for bankruptcy, industry strengthening, failure for industries to recover and disturbance of supply chains has continued to remain challenging fallouts from the pandemic.

For the Vanuatu's telecommunications sector, mobile internet has and will continue to connect people from every island including the remote areas to new opportunities of doing business and life enhancing services. The changes in business ideas and landscapes inspired by the COVID-19 situation to fast track the operators to change business models and offer innovative digital solutions. The COVID-19 have confirmed with confidence as well the importance of Telecommunications/ICT to drive economic growth and advance Vanuatu towards achieving not only the UN's SDGs but also the Vanuatu National Sustainable Development Plan goals. This fast pace of digitalisation by the Telecom operators has also ensured that Vanuatu's economy continues to function and supports recovery from the impact of both COVID-19 and

TC Harold. Thus, it is critically important that people around Vanuatu realise the economic benefits that mobile internet can offer, and that people are able to have access to these services.

The growth of mobile internet has been unsurprisingly challenged by the pressure on revenues that operators are earning as a result of changing consumer consumption behavior during COVID-19. The reduction in incomes due to lay-offs and revised working hours in various sectors has enabled consumers to prioritise their spending and at the same time affected the operator's efforts to extend and improve their network services to connect the unconnected areas and people.

On that note, in ensuring that telecommunications sector is fully contributing to the socio-economic development of the people of Vanuatu, it is more crucial now than ever before, that there is an effective collaboration between the government, the TRBR and key industry stakeholders to create markets, establish regulatory frameworks that complement the Universal Access Policy (UAP) to address cost barriers of deployment, support the extension of sustainable network services for meaningful connectivity and most importantly address affordability and other the key challenges to the uptake of mobile internet use.

