

ANNUAL REPORT 2019



TELECOMMUNICATIONS COMMISSION SOLOMON ISLANDS



Mr David Kusilifu
Clerk to the National Parliament
Parliament House
Honiara

Dear Clerk,

TELECOMMUNICATIONS COMMISSION SOLOMON ISLANDS ANNUAL REPORT 2019

I am pleased to submit to you the Annual Report of the Telecommunications Commission for the financial year ending 31 December 2019, in accordance with the provisions of section 23 of the Telecommunications Act 2009.

The report contains the overview of the telecommunication sector and a summary of the key initiatives of TCSI on the regulatory issues with specific reference to the functions mandated to it under the Act.

The audit of the Commission's Financial Statements for the 2019 financial year are still in progress at the Office of the Auditor General.

Yours faithfully,

Haggai Arumae
Acting Telecommunications Commissioner



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1.0 Commissioner's overview

2019 was the tenth anniversary of the legislation which created the Telecommunications Commission and gave it national responsibility for administering the telecommunications services sector, independently of the Government.

The most significant event in 2019 was the completion of the long-anticipated Coral Sea submarine cable (CS2) to Sydney. Completed at the same time, the Solomon Islands Domestic Network (SIDN) submarine cable links the international cable to each of Auki in Malaita Province, Noro in Western Province and Taro in Choiseul Province. This will ensure that key Provincial Centres can benefit fully from the new International cable system and support the advancement of domestic telecommunications in the Solomon Islands.

The Commission is taking a lead role in the establishment of a Solomon Islands internet exchange peering point (SIIXP) that complements the submarine cable and allows local content caching that will improve the quality of service for Solomon Islanders.

The Commission welcomes the positive response by all service providers to the SIIXP.

Now that international bandwidth is no longer a constraint, the focus must shift to the last mile to take advantage of the possibilities unleashed by the new submarine cables. The sharing of towers and other terrestrial infrastructure can be supported in a small market like the Solomon Islands if it improves service coverage in rural areas. But the Commission is not prepared to support supply-side universal service funding.

The report card on the improvement across all market performance indicators over the last decade is a vindication of Parliament's termination of public service oversight of the sector, and ministerial involvement in the commercial aspects of telecommunications.

2019 saw further improvements in the quality and coverage of mobile services. But the Commission would like to see more price competition to make services more affordable. This report shows there has been a lack of price competition in recent years and the retail cost of data is high compared with our Pacific neighbours.

The Commission believes that a change from the traditional bandwidth pricing of submarine cables to traffic pricing (i.e. from Gbps to GB) could kick-start competition from new entrants. This is something SISCC is actively considering.

There is also scope for either or both the mobile operators to voluntarily offer resale (or mobile virtual network operators) over their respective networks. Major carriers in other countries have found using resellers stimulates the market profitably.

2020 will be challenging. The Solomon Islands declared a state of public emergency on 25th March 2020 and the emergency period has been extended by Order from the Prime Minister to July 2020. International supply chains have been disrupted and demand fuelled by tourism has disappeared.



2.0 The Telecommunications Regime

TELECOMMUNICATIONS COMMISSION SOLOMON ISLANDS

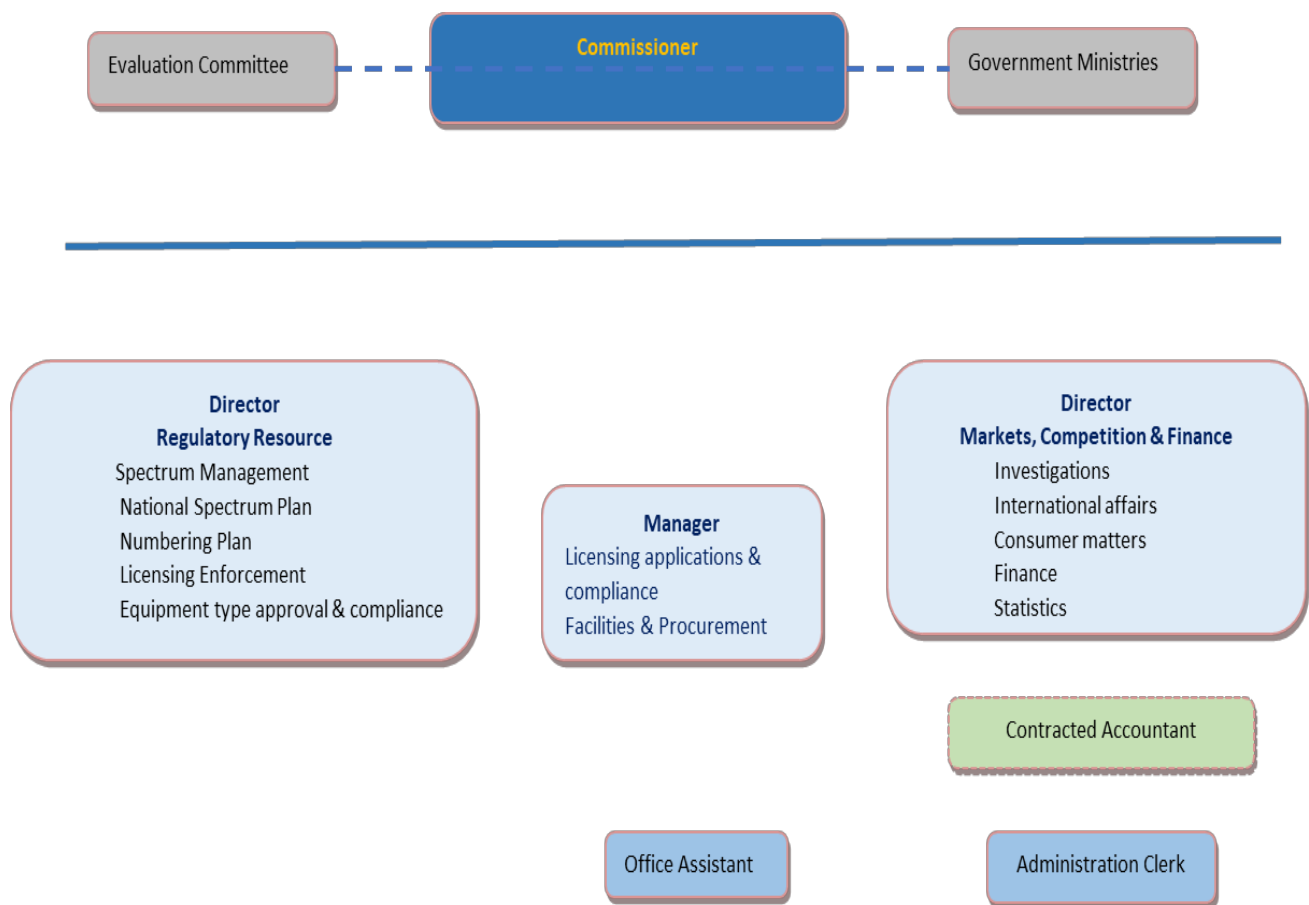
The Telecommunications Commission as an independent statutory authority is charged with the economic and technical management of the telecommunications sector in Solomon Islands.

The Commission's core functions are to regulate and facilitate the development of the telecommunications sector, to manage Solomon Island's radio-frequency spectrum resource and to safeguard competition and the interests of consumers. The Commission is funded independently of parliamentary budget appropriations, through services licences fees paid to the Commission by the operators. In the exercise of its statutory powers and functions the Commission is not subject to the direction and control of government ministers.

The Commissioner, in consultation with the statutory Evaluation Committee, is responsible for the strategic and operational management of the organisation. The Commission office is made up of one commissioner, three professional staff, two support staff and a contracted accountant. The current Commissioner was to leave the office at the end of 2019 but his contract was extended for another three months.



Commissioner Bernard. M. Hill



THE EVALUATION COMMITTEE

The Evaluation Committee constituted under section 7 of the Telecommunications Act 2009, maintains financial administrative oversight of the Commission. The Committee reviews the Commission's budgets and activity plans annually.

The members of the Committee who hold office *ex officio* are:



Howard Lawry



Dr Luke Forau



Jeremy Bartlett

Mr. Howard Lawry – Chairman, Public Solicitors Office
Mr. Luke Forau – Member, Governor, Central Bank of Solomon Islands
Mr. Jeremy Bartlett – Member, Chairman, Solomon Islands Chamber of Commerce & Industry
Mr. Frank Paulsen – former chairman, term expired in November 2019
Mr. Denton Rarawa – former member, term expired in October 2019

INSTITUTIONAL STRENGTHENING

Since appointment of the Commissioner Mr. Bernard Matthew Hill in 2011, the local capacity building of staff has transformed the office into a highly capable and professional team enforcing the regulatory regime functions under the 2009 Act. As noted in previous Annual Reports, under his leadership there has been much one-on-one training and mentoring in the areas of legal, marketing, competition, technical and other international telecommunications issues.

His contracts which ended at the end of the year 2019 were extended for another three months in 2020, whilst preparation is underway for recruiting his replacement.

Some of the trainings and workshops attended by the Commission's staff in 2019:

Internet Exchange Point – Sub Regional

A sub regional event in strengthening efficient Internet traffic management through a sub-regional Internet Exchange Point (IXP) in Pacific Island Countries was hosted at University of the South Pacific (USP), Suva from 3-5 December 2019. The meeting was focused on establishing a regional IXP to harness the positive impacts on affordability, latency and traffic capacity. The majority of other Pacific island countries do not have IXPs and the need to collectively address the high cost associated with the establishment of an IXP was considered beneficial.

Through the Asia-Pacific Information Superhighway (AP-IS) initiative Pillar 2, 'Internet Traffic & Network Management', ESCAP and the Internet Society (ISOC), in collaboration with the Asia-Pacific Network Information Centre (APNIC), the University of the South Pacific as Chair of the Pacific CROP ICT Taskforce, and the Pacific Islands Telecommunications Association (PITA) initiated a feasibility study on the possible deployment of a regional IXP in the Pacific.



The Director Resources attended this event at USP 3 – 5 December 2019

Radio Monitoring Systems According to ITU-R Recommendations

Maintaining the professional and technical capacity of the Commission staff is the key driver for the ongoing development of staff capability. The dynamics of telecommunications spectrum and standards significantly requires up to date skills and knowledge in terms of its standards and regulatory aspects. In collaboration with Rohde & Schwarz Singapore, the International Telecommunications Union (ITU) hosted hands-on training on the Implementation of Radio Monitoring Systems According to ITU-R Recommendations, from 2 to 6 September 2019 and it was attended by Mr. Aaron Hopa – manager resources.

The goal of spectrum monitoring is to support spectrum management strategy, dependent on national regulatory policy:

- Spectrum engineering/planning
- Frequency management
- Frequency co-ordination and notification
- Licensing/authorisation
- Network roll-out/Quality of Service (QoS)
- Enforcement



Manager Resources attended the Spectrum Monitoring Station exercise at Rohde & Schwarz lab, Singapore

Telecom cost-pricing modelling Training

PITA organised a two days practical training on telecom cost and pricing modelling using costing methods of (LRIC, FAC) in pricing, forecasting, business cases and financial analysis. The training was attended by our finance officer Stella Bubulu who finds it useful for the commission's tariff and cost analysis of the operators' products offered in the market.



TCSI Finance Officer attended the event that held on 16 - 20 Sept 2019, Nadi, Fiji



3.0 The Telecommunications Market

3.1 OVERVIEW

In the first section that follows, we review the progress of the telecommunications sector in the last decade. There have been significant achievements.

The following section looks at access lines both as fixed and wireless options. Fixed lines continue their downward trend; although that may reverse with improved international connectivity. In the mobile space and the telecommunications sector overall, prepaid mobile access services dominate the picture.

The migration from 2G to 3/4G mobile technology becomes more important with the new submarine cables. But with the pandemic, sourcing of handsets and equipment is difficult.

Revenues are growing but not as fast as might be expected. It is not declining prices that are holding back a faster growth in revenue. While average revenue per user (ARPU) declined sharply with the arrival of Bemo in late 2010, there has been little downward movement since 2013 despite the arrival of Satsol in 2016.

More prepaid users are downloading increasing amounts of data. The large numbers of prepaid users meant that they accounted for 63% of total downloads of 267 Terabytes in 2019; a 40% increase over 2018. This is before the impact of the new submarine cables.

There was a small uptick in the number of voice minutes per prepaid mobile user in 2019. Otherwise the migration of voice from switched networks has continued strongly.

Competition in mobile telecommunications services in the Solomon Islands has been largely confined to improvements in geographical coverage and other non-price factors. While there has recently been some movement in prices with the opening of the submarine cables, the prices in December 2019 were not much different from the prices reported in the 2016 TCSI Annual Report.

International comparisons with our Pacific neighbours show PNG and the Solomon Islands to have the most expensive prepaid data plans.

3.2 MARKET PERFORMANCE INDICATORS

The summary indicators table shows the significant improvements in telecommunications services over the last decade.

Coverage and take-up of communications services has been satisfactory and further improvements are expected with international connectivity extended to the provinces through the SIDN.

Indicator	2010	2019
	Actual	Actual
<i>Mobile Subscribers</i>	115,500	478,116
Mobile penetration (calculated)	20%	77%
Mobile coverage (calculated)	20%	96%
Fixed lines	8,400	7,007
<i>Internet Subscribers</i>		
Mobile (3G/4GLTE)	8,205	128,961
Wireless (hotspot)	127	78
ADSL	1,359	872
Dial-Up	1,163	81
<i>Internet Penetration</i>		
Mobile (Broadband)	1.80%	21%
Fixed line (ADSL)	0.2%	0.14%
Internet providers (Active)	1	4
Gross Total Revenue (SBD) \$million	106	433
Number of mobile network service providers	2	2

From a Commission and national development perspective, the increased availability of cheap international bandwidth should be coupled with increasing competition if the benefits are to be realised.

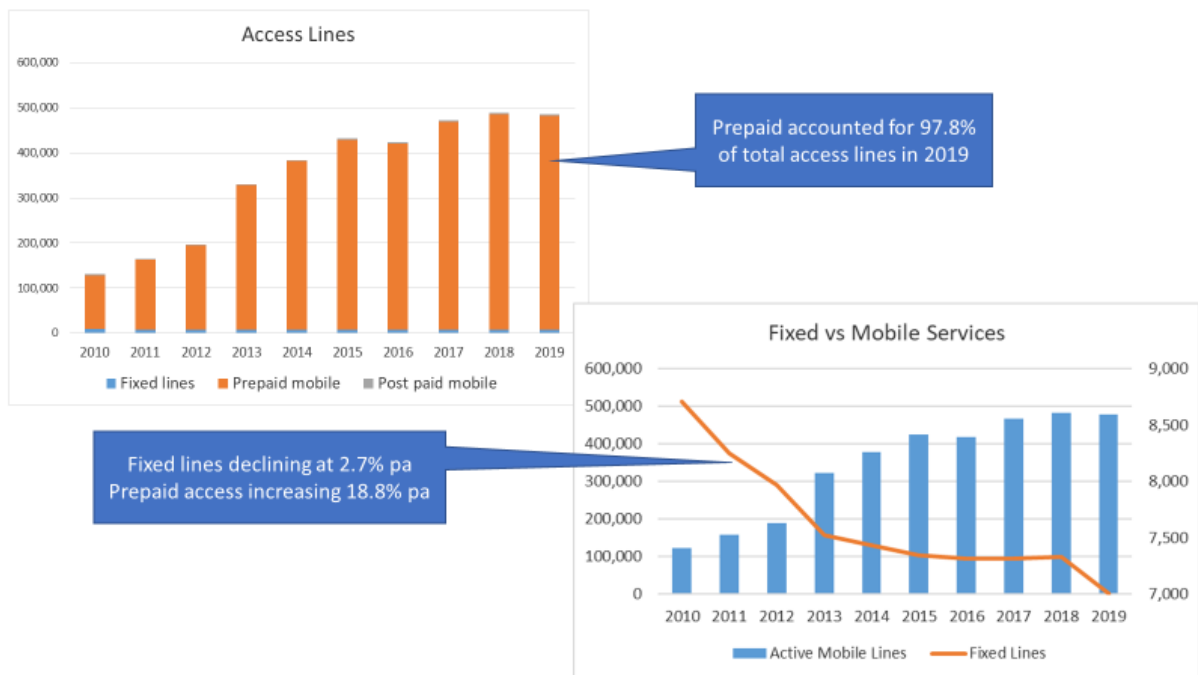
Each of these indicators is considered in more depth in the sections below.

3.3 ACCESS LINES BY TECHNOLOGY

Now that international bandwidth is no longer a constraint, the focus must shift to the last mile to take advantage of the possibilities unleashed by the new submarine cables. As well as continued extension of mobile coverage by population and geography, the continued migration to 3/4G mobile technology will enable the Solomon Islands to fully exploit the economic and social potential of the new submarine cables.

The telecommunications sector in the Solomon Islands is dominated by prepaid mobile services. This is typical of emerging markets. Mobile access lines are cheaper to deploy than fixed networks and prepaid is the most affordable way of acquiring service.

This is shown in the first chart below showing all access lines for both voice and data.



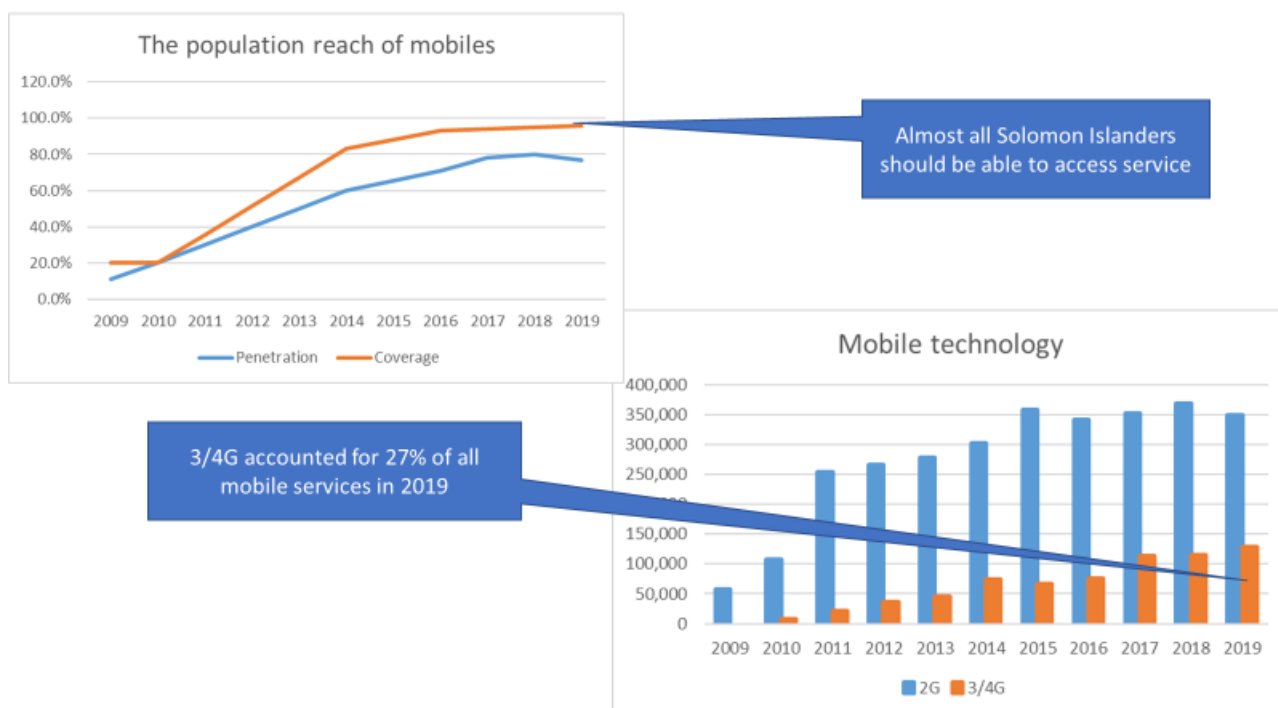
The second chart above shows the number of mobile services has been growing, apart from 2016 and 2019. In 2019, the total number of mobile subscriptions was 478,116; down slightly from 482,029 subscribers in 2018.

The second chart also shows the decline in the number of fixed lines had steadied in recent years but saw a sharp downturn in 2019.

It is still possible the decline in fixed services could reverse. With improved international connectivity and local caching. Fixed lines are less prone to congestion than mobile services and can handle greater amounts of data. Cloud based services for business become possible.

While 2G is a digital mobile service, the world is seeing all services going digital for which faster technologies like 3G or better is needed. In Honiara, some 4G service is now offered by Our Telekom.

As shown below, 2G is still the most common mobile technology in the Solomon Islands with 3G accounting for less than a third of all mobile services.



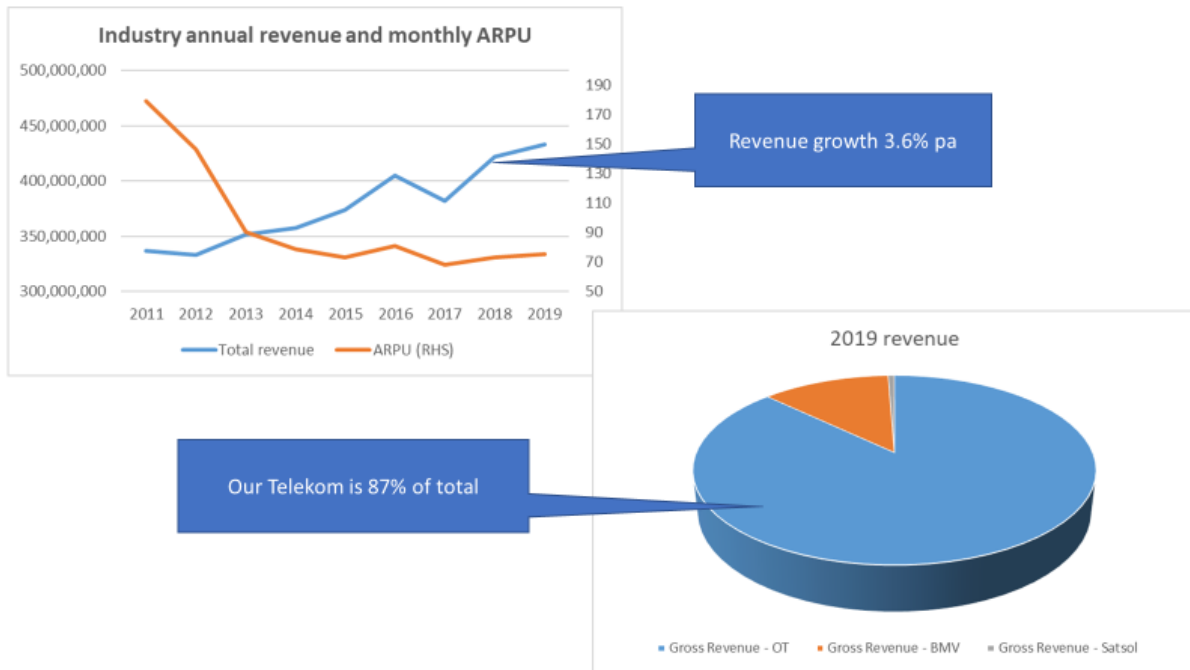
The pandemic will affect the sourcing of 3/4G handsets and network equipment.

3.4 REVENUES AND ARPU

The TCSI monitors revenues for Our Telekom, Bmobile/Vodafone and Satsol. Total nominal (actual) revenues for these three is increasing steadily as shown in the first chart below.

The growth in revenue could be faster. The Central Bank of the Solomon Islands reports that over the period 2011-2018, the compound annual growth in real terms of the communications sector was just 3.0% versus 3.4% for the whole economy (GDP).

It is not declining prices that are holding back a faster growth in revenue. The second chart below shows that while average revenue per user (ARPU) declined sharply with the arrival of Bmobile in late 2010, there has been little downward movement since 2013 despite the arrival of Satsol in 2016. The flatness is confirmed by the discussion below on prepaid mobile data pricing.

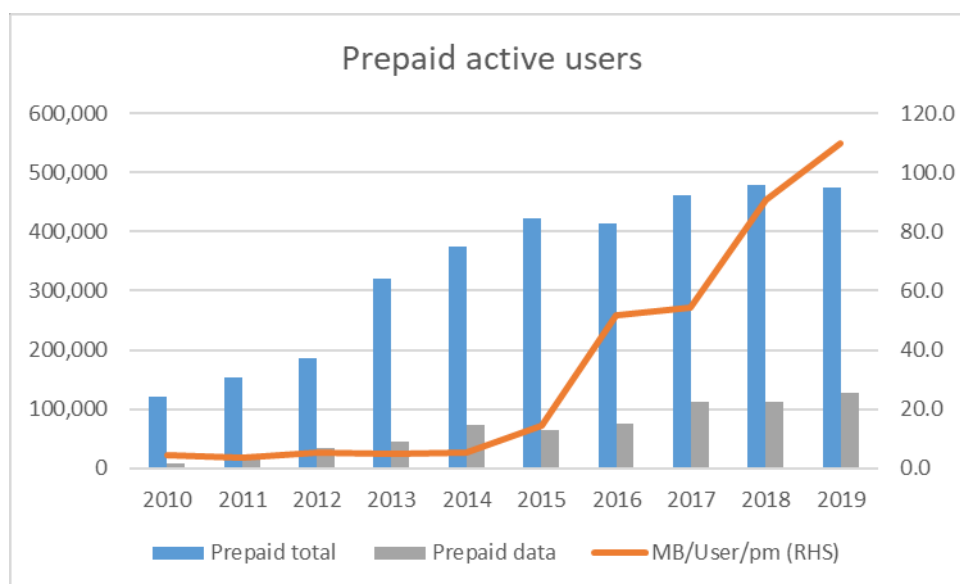


3.5 INTERNET

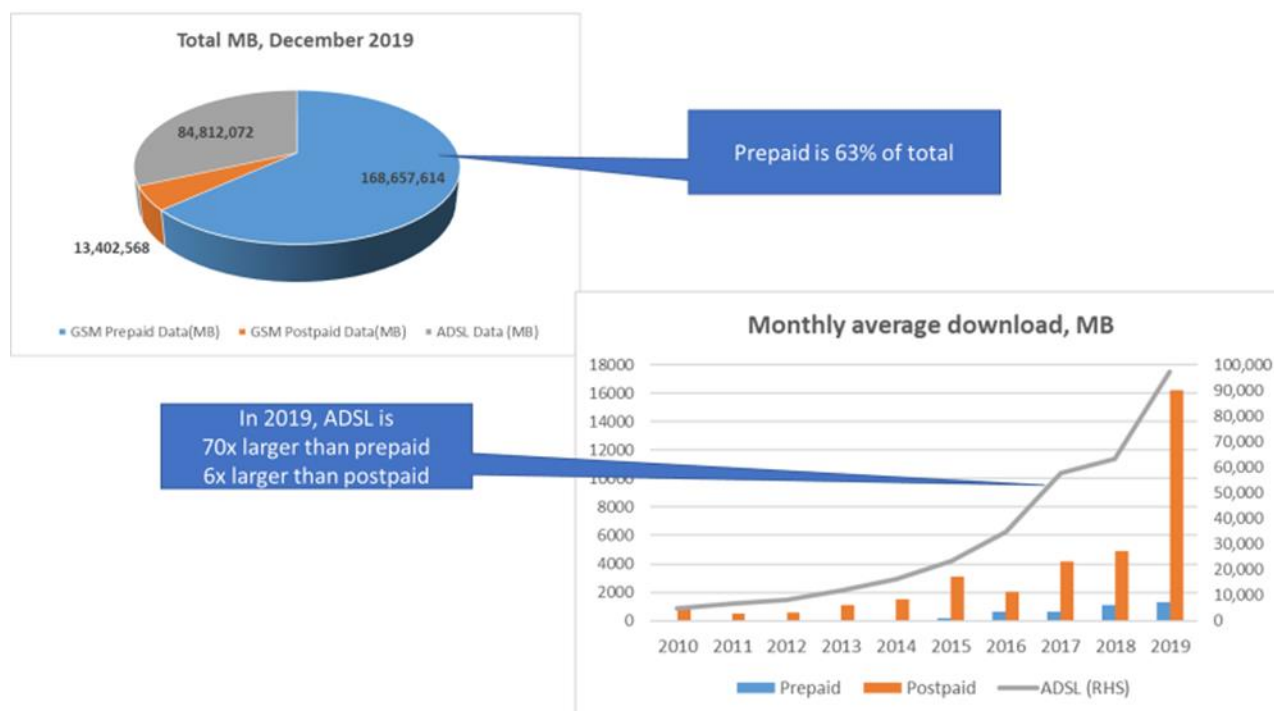
The digitisation of services including voice is shaping how communications services are delivered.

It has already been noted that the market is dominated by prepaid mobile. The Solomon Islands offers a young demographic where 60% of the population is below the age of 25 and are keen to gain improved access to communication and digital services.

As shown below, the growth in prepaid data users is driving increasing downloads in this segment of the market.



In December 2019, prepaid downloads accounted for 63% of total downloads of 267 Terabytes. Total downloads saw a 40% increase over 2018. This is before the impact of the new submarine cables.

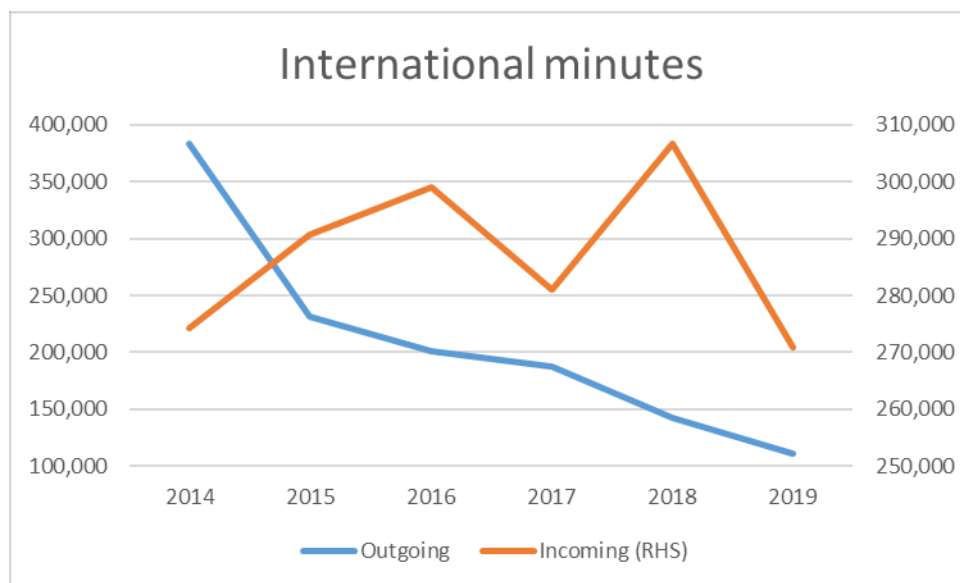


Postpaid mobiles saw the average download per user per month in December 2019 more than double over a year. The corresponding increases for ADSL and prepaid mobile data users were just 54% and 21% respectively. It is not clear whether the large increase in average downloads for postpaid customers was due to increasing smartphone penetration or changes in postpaid retail plans.

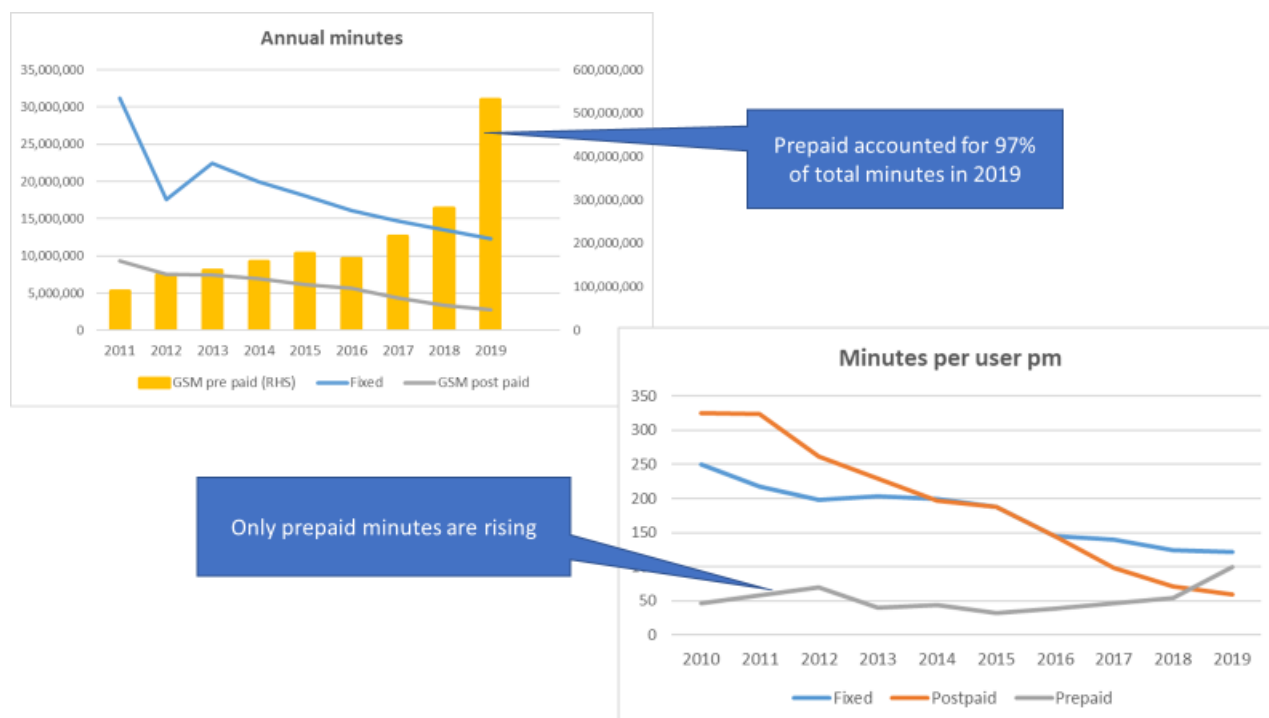
3.6 TELEPHONY

There is a global trend reflecting the increasing importance of over-the-top services on mobiles (applications or 'apps' such as Skype and Facebook). These services have been replacing phone calls on fixed networks and making fixed networks less attractive. The clearest expression of this in every country has been in outbound international call minutes; with Skype being the first of many apps to drive this trend.

In the chart below, inbound international call minutes have been increasing. This is probably because of roaming arrangements agreed by Bemobile with its partner in the Solomon Islands, Vodafone. Of course, users calling people and business in the Solomon Islands over-the-top of data using apps like Skype will not show in the chart. With improved international connectivity there is likely to be more such calling; both ways.



Solomon Telekom remains the only the fixed line telephony provider. The traditional voice service on the fixed network is gradually declining in popularity with customers of this service concentrated in Honiara. The graphs below show the declining trend for the fixed line telephony both in terms of the total number of minutes and the number of minutes per fixed line.



The second chart above shows that both fixed line and postpaid mobile users have been leading the migration away from switched networks for voice to digital services.

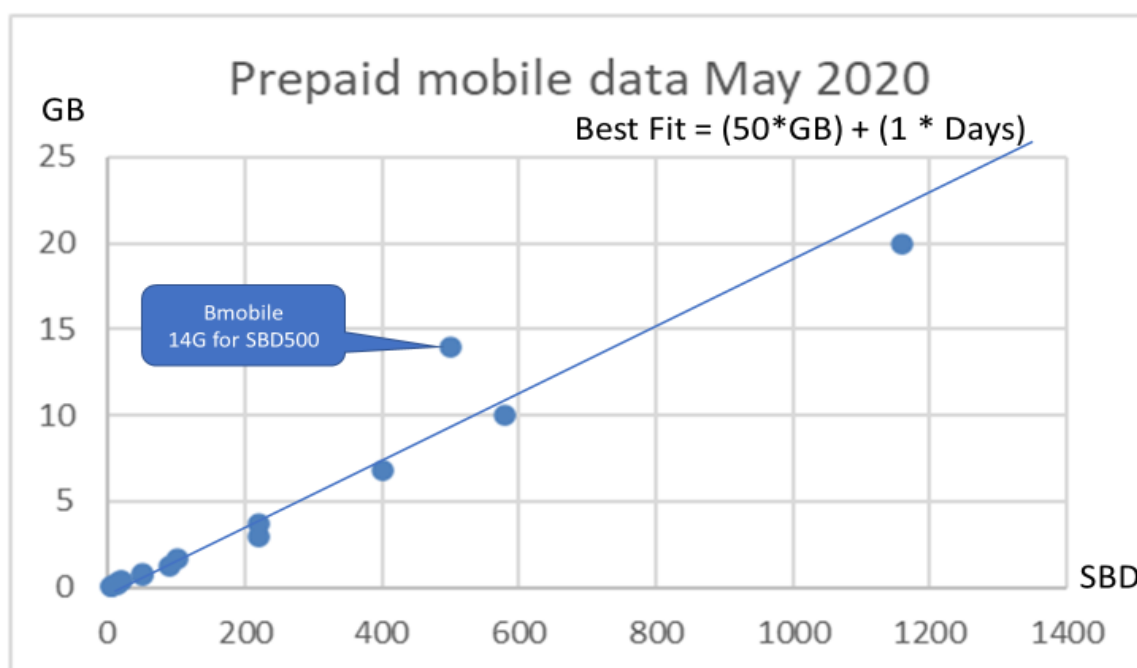
3.7 COMPETITION

Competition in mobile telecommunications services in the Solomon Islands has been largely confined to improvements in geographical coverage and other non-price factors. Both mobile operators continue to upgrade their infrastructure for 3/4G services.

However, price competition in mobile data has been absent for some years. While there has recently been some movement in prices with the opening of the submarine cables, the prices in December 2019 were not much different from the prices reported in the 2016 TCSI Annual Report. The prepaid mobile data plans for Our Telekom and Bmobile at different times are shown below.

	TCSI Annual Report 2016			Prices in late 2019			21st May 2020		
	SBD	GB	Days	SBD	GB	Days	SBD	GB	Days
Bemobile	5	0.06	1	6	0.09	1	6	0.09	1
	15	0.2	2	15	0.225	2	15	0.225	2
	20	0.36	3	20	0.4	3	20	0.4	3
	50	0.75	7	50	0.75	7	50	0.75	7
	90	1.25	14	90	1.25	14	90	1.25	14
	220	3	30	220	3	30	220	3	30
	500	7	30	500	7	30	500	14	30
Telekom	6	0.09	1	6	0.09	1	6	0.1	1
	15	0.21	7	15	0.21	7	15	0.25	3
	20	0.25	7	20	0.25	7	20	0.4	4
	20	0.4	4	20	0.4	4	50	0.85	7
	50	0.46	6	50	0.76	6	100	1.7	14
	100	1.5	14	100	1.5	14	220	3.7	28
	240	3.5	30	240	3.5	30	400	6.8	28
	450	6	30	450	6	30	580	10	28
	900	11	28	900	11	30	1160	20	28

This conclusion about lack of price competition may not be obvious from looking at the table above. But, a simple way of describing the retail market is to estimate the best-fit across the mobile plans by a regression analysis. The result across the Our Telekom and Bmobile prepaid plans at 21st May 2020 is shown below.



The best-fit equation means that a 10 GB plan with a 14 day term should cost about SBD 514. The 14 G plan offered by Bmobile is an outlier and the only change made by Bmobile since the new submarine cables became available. Excluding this plan, the cost of the 10 GB plan with a 14 day term would be SBD 574.

Using this approach, the following table compares prices in 2016 and 2019. They are virtually identical, as shown below.

	Cost per GB pm	Cost per day validity	Fit (100% is perfect)
2016	83.95	- 1.64	>99%
2019	84.48	- 1.74	>99%
2020	50.35	+ 1.03	>96%
2020 excl 14G	56.46	+ 0.87	>99%

The new submarine cables have prompted the introduction of more generous plans with greater data allowances reducing the implicit price of data by a third (see table above). More reductions should be expected as the price of international connectivity is now very low.

Satsol is not a mobile operator but is providing competition through its fixed wireless and satellite services. It does not have prepaid plans so instead of term validity its postpaid plans base price on speed. The following table shows some of Satsol's Jet plans before and after the introduction of the new submarine cables. The peak monthly data allowance is shown. Once the peak allowance is used, data can still be consumed over a slower connection speed until the end of the month. At night, speed is maintained and all data is free.

The Satsol table shows that both speeds and peak data allowances have been doubled on all plans following the availability of the new submarine cables.

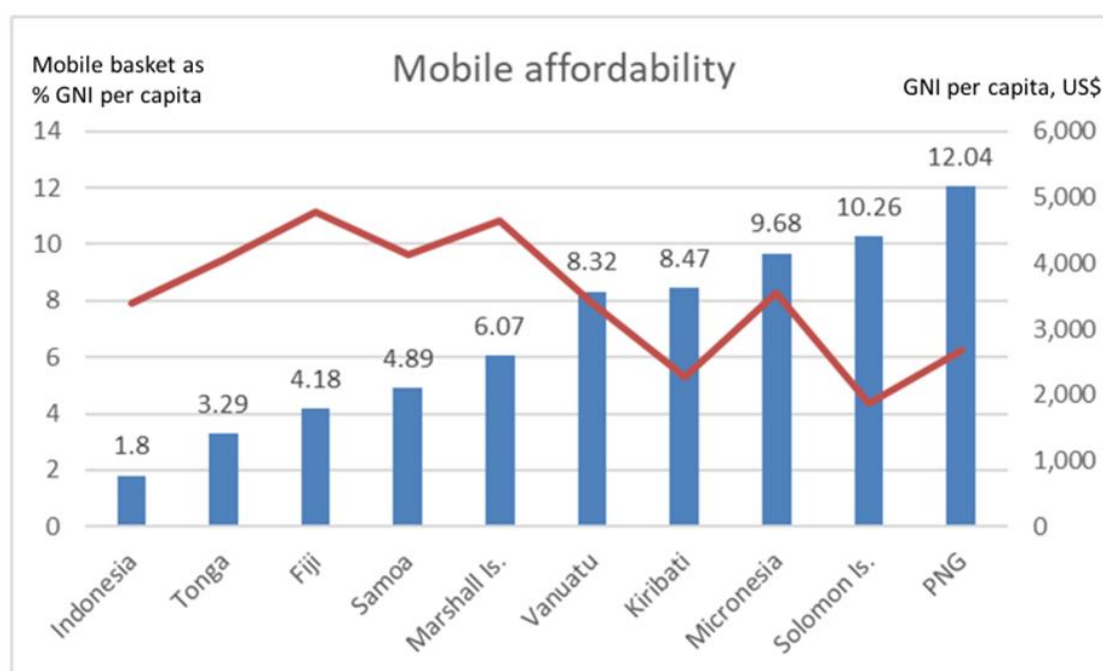
	2019 prices in late 2019			21st May 2020		
	SBD pm	peak GB	mbps	SBD pm	peak GB	mbps
Satsol				450	0.25	0.5
	800	0.25	0.5	800	0.5	1
	1400	0.5	1	1400	1	2
	2400	1	2	2400	2	4
	3800	1.5	3	3800	3	6
	4800	2	4	4800	4	8
	9600	4	8	9600	8	16

The example that Satsol has set should spur others into making further price reductions. During 2019, Pacific Vaizeds started operating a new ISP service over 4G.

3.8 International Comparisons

Price competition is necessary because prices are not yet affordable at over 10% of Gross National Income (GNI) per capita and they seem high by comparison with our Pacific neighbours.

The United Nations defines an affordable basket of mobile services as costing no more than 5% of GNI per capita. The Commission has found many wage and salary earners are spending 30-40% of after-tax income on mobile credits. It is not too surprising to find that the Solomon Islands is second only to PNG in terms of high costs as it is the poorest country in the comparisons below.

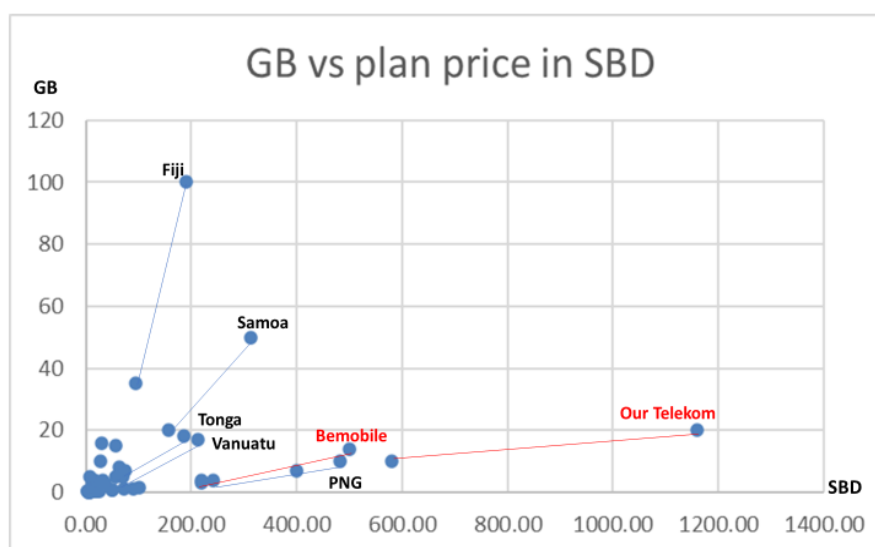


(Sources: ADB for GNI per capita (2016) and Table 16, Broadband Connectivity in Pacific Island Countries, UN ESCAP, 2018)

Most of these markets have more than one mobile operator. Digicel operates in five of the markets in the chart above: Tonga, Fiji, Samoa, Vanuatu and PNG. All these countries have submarine cables for international connectivity.

The following scattergram plots Digicel prepaid plans with those for Our Telekom and bmobile as they stood in May 2020 (details in Annex 2). GB per month is plotted against the vertical axis and the cost in Solomon dollars (SBD) on the horizontal axis.

The cheapest prepaid data plans can be found in Fiji and the most expensive in PNG and the Solomon Islands. The most expensive plans have been joined by a line to help identify countries.



(Source: Appendix 2)

In all these countries, the cost of the prepaid plan depends not only on the data (GB) allowance but also on the term of the plan; which can range from a few hours to 30 days. Term is not included in the scattergram above. But we can do a regression analysis on each country's plans to find the significance of both data and term to the cost of the plan.

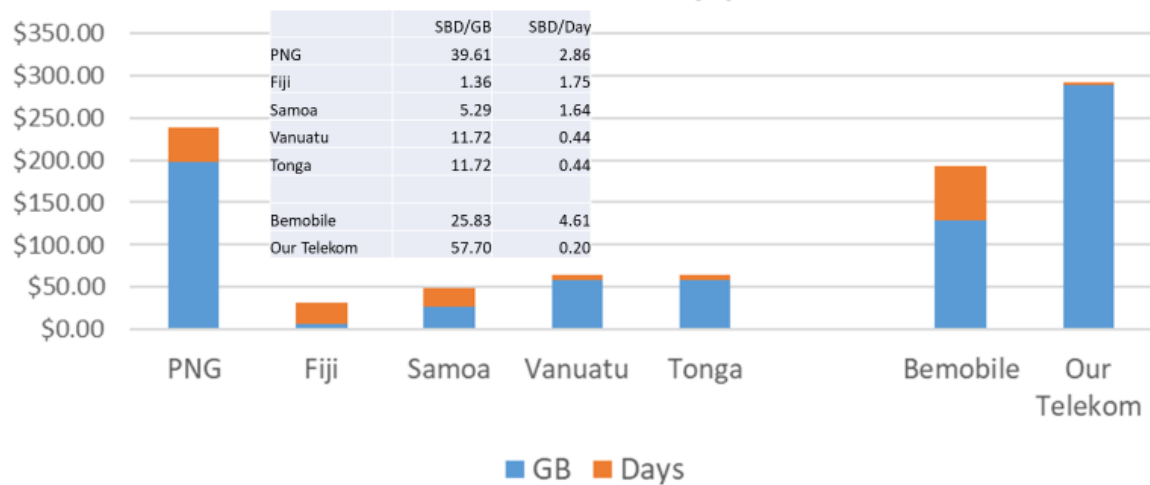
The following chart shows data is the main driver of the price of the plan in every country except Fiji.

The inset table shows the parameters for data and term estimated for each country. The implicit cost of data is very cheap in Fiji and very expensive in PNG and the Solomon Islands.

Apart from helping to make sense of the many data points represented in any set of plans, the estimation method can also be used to construct a hypothetical plan that is consistent with pricing in each country that allows comparisons across countries.

Below, the estimated parameters are used to estimate the price of a 5GB plan with 14 days validity. The lower (blue) part of the price stack is the cost of data to which the cost of term (the orange) is added.

Price of a 5GB , 14 day plan, SBD



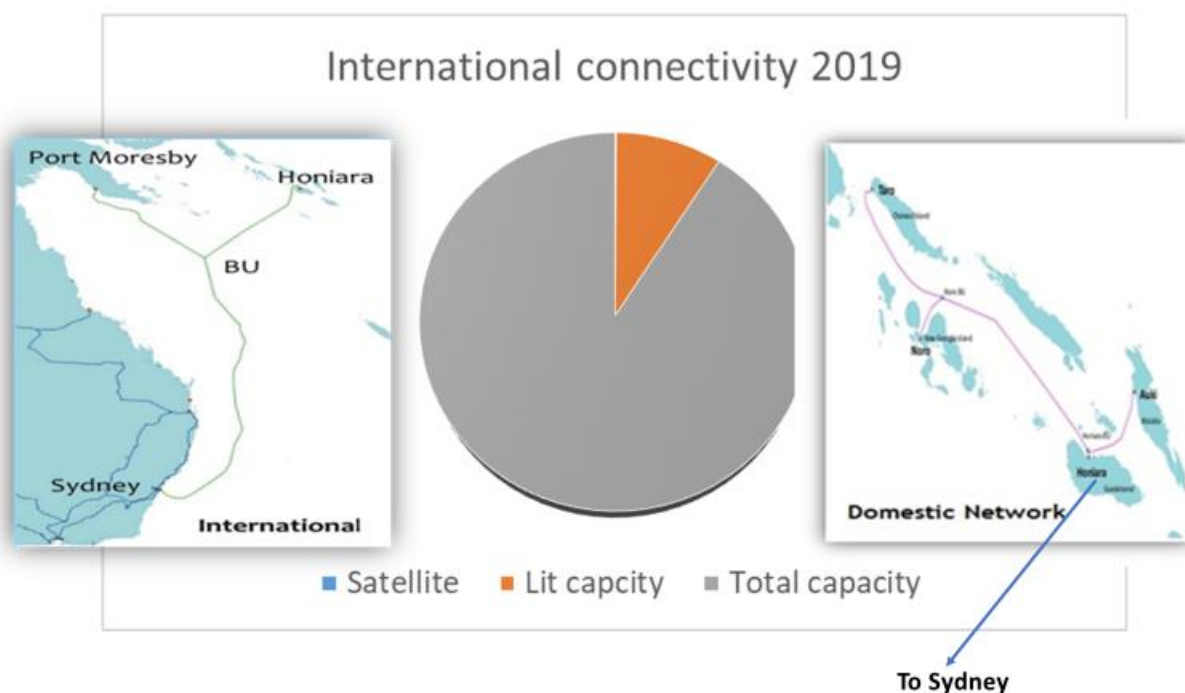


4.0 International Connectivity

The first TCSI Annual Report in 2010 lamented that *“During 2010, the World Bank and Asian Development Bank have promoted a project to secure financing, including potential donor funds, to bring a submarine fibre-optic cable to the country. The cost of the project is not small and prospective shareholder engagement has been limited so far”*.

Now the International Coral Sea Cable System (CS2) links Honiara in the Solomon Islands and Port Moresby in PNG to Sydney Australia. CS2 comprises a 4 fibre pair cable from Australia through the Coral Sea to a Branching Unit that separates the 4 pairs into separate two pair paths. Then 2 pair branch cables extend from the Branching Unit to Honiara and Port Moresby respectively where they terminate.

This is a powered repeated system engineered to provide a minimum of 10 Terabits/s over a single fibre pair so each country has a potential 20 Terabit/s capacity with today’s established cable technology.



Completed at the same time, the Solomon Islands Domestic Cable Network (SIDN) links the international CS2 cable to Auki, Noro and Taro from Honiara. Taro is the best location for a future expansion of the system to Arawa in Bougainville where it would join the PNG domestic network as a useful bridge between the countries and provide an important diverse path in the event of serious failure on the Sydney International route.

An Interim Licence was issued to the Solomon Islands Submarine Cable Company (SISCC) in January 2020. The SISCC is owned by two government-controlled entities, the Solomon Islands National Provident Fund (SINPF) and Investment Corporation Solomon Islands (ICSI)

and sells international and domestic capacity to any licensed operators in the Solomon Islands on a non-discriminatory basis.

SISCC is also responsible for selling capacity on the SIDN. The SIDN will ensure that key Provincial Centres can benefit fully from the new International cable system and support the advancement of domestic telecommunications in the Solomon Islands.

Also, the TCSI is taking a lead role in the governance of the Solomon Islands internet exchange peering point (SIIXP) hosted by SISCC. This complements the submarine cable and allows ISPs (e.g. Our Telekom) and content delivery networks (CDNs, like Google, Amazon and Facebook) to exchange traffic between their networks. All service providers will be required to connect at the SIIXP. Local content caching that will improve the quality of service for all Solomon Islanders.

The satellite capacity provided by O3B and Kacific-1 will continue to remain essential for reach into villages where mobile coverage is poor or non-existent. Moreover, the newer satellite services will have very low signal latency, making them comparable with cable services for sensitive applications such as financial transactions.

In the short term, satellites remain the only back-up for the Coral Sea cable. But there are good prospects for a second submarine cable to either PNG and/or Vanuatu which would provide back-up for the new Coral Sea cable.

In May 2020 SISCC started offering a 50% increase in bandwidth over current contract bandwidth at no additional cost to the operator for the duration of the extended emergency period in anticipation of increased Government and retail usage.

The measure is part of a \$309 million economic stimulus package announced by the Government, designed to address the impacts of the corona virus (COVID-19) pandemic.

In November 2019, the TCSI Commissioner was invited by the Office of the Prime Minister and Cabinet (OPMC) to join the Cable Adoption Working Group (CAWG). This coordinating group included representatives from the Ministry of Communications and Aviation (MCA), the Australian Department of Foreign Affairs and Trade (DFAT), SISCC, the Information and Communications Technology Support Unit (ICTSU) and was supported by external technical and economic consultants. The purpose of the CAWG was to ensure a successful launch of commercial services over the submarine cables and ensure the realisation of the Government's Digital Transformation goal of high-speed affordable internet access for all.



5.0 Activities of the Commission

(The activities requiring specific report further to Section 23 of the Telecommunications Act 2009.)

DETERMINATIONS, ORDERS AND DIRECTIONS MADE

The appointment of an interim Commissioner Order was gazetted on the 2 December 2019 for the extension of the current incumbent commissioner for another three months ended 31 March 2020.

STEPS TAKEN IN CONNECTION WITH UNIVERSAL ACCESS

There have been ongoing steps in improving telecommunications services across all major islands and remote locations by all service operators. Upgrading of services to 3G and 4G/LTE as well as fixed wireless internet to remote locations and stations has been actively progressing.

Considering the competition aspects of the market, Commission has not fully enforced any universal access policy or plan that would distort the market.

APPLICATIONS, DISPUTES AND COMPLAINTS FILED

On the July 4th 2019, a major complaint was filed from Bmobile Solomon Islands which alleged that Solomon Telekom is illegally blocking Bmobile's corporate customers using PABX services.

The issue concerns call diversion and call bypass and focuses specifically on two commercial customers, Tradeco/GTS and the Seventh Day Adventist Church (SDA). The preliminary assessment process involved making visits to the customer premises and having discussions with the customers regarding the issue, while also physically inspecting the premises network build structure and making appropriate test calls subject to the call diversions and bypass issue. TCSI carried out a physical assessment of the SDA Mission headquarter PABX system on 5 August and 12 August.

The case summary of the complaint is as follows;

Bmobile Solomon Islands Letter of Complaint, 4 July 2019

- Alleged illegally blocking of termination calls from Bmobiles corporate customers (GTS/Tradeco and the Seventh Day Adventist Church using PABX services)

- Telekom claims that the PABX connection and service offered by Bmobile SI was illegal and so calls terminating to Telekom's network were blocked/barred
- Telekom further asserts that Bmobile SI has engaged in call diversion service practice and activities
- Meeting was arranged with CEO Telekom Mr Arthur Yen to resolve the issue and complaint
- Further dialogue to resolve the issue with Telekom was not successful
- Bmobile asserts that Telekom have been unfair with its trade practices and has been anti-competitive with its behaviour

Solomon Telekom Co Ltd response to Bmobile SI Letter of complaint, 7 August 2019

- Blocking of Bmobile SI numbers due to SIM Bypass
- Alleged both Bmobile's customers (GTS/Tradeco, SDA) are using Telekom's PABX hardware fixed line system that physically terminates on Telekom's copper/fiber optic cables
- Test calls were made by Telekom to prove that the Bmobile customer numbers were used for both incoming and outgoing calls terminating at the customers PABX systems. Further proof of call bypass with CDR terminated charges recorded by Telekom's Billing system
- Interconnect traffic was also detected using the respective customer Bmobile SI numbers with interconnect charges related to the interconnect traffic were also recorded by Telekom's Billing system
- Alleged call diversions and Sim bypass was also detected using Telekom's SIM box detection in relation to International Traffic to Solomon Telekom Network
- Telekom uses algorithm method to detect call diversions and call bypass

A network topology describing the assessment conducted by the Commission have also been included in the assessment.

PROCUREMENT AND OUTSOURCING ACTIVITIES

No major procurement of goods during the year. However, the continued services outsourced were; legal advice, accounting, website redevelopment and the Geo-database.

MATERIAL LITIGATION

No material litigation eventuated during 2019. The Commission continued to retain legal counsel in relation to a number of matters with future litigation implications.

STATUTORY OBJECTIVES AND 2019 PLAN OF ACTIVITIES

As demonstrated by the detailed statistics and other information in this report, during 2019, satisfactory progress was made towards the principal objectives in the Telecommunications Act in terms of improvements in the “... *availability, affordability, quality of service and kinds of telecommunications services in Solomon Islands.*”

During 2020 the Commission’s plan of activities will carry on from 2019 includes:

- Resolving an appropriate form of licence, and appropriate licence conditions for the Government owned entity SISCC to undertake the operation of the Australian sponsored undersea cable to the Solomon Islands.
- Working with Government and other stakeholders on digital transformation objectives.
- Considering the introduction of general licensing conditions suitable for the expansion of the wholesale market for broadband capacity, and fee regulations for licensing applications and retail and wholesale services.
- Working with Government on proposed compulsory SIM card registration

Cable Adoption Working Group (CAWG)

The CAWG was established in early November 2019, co-chaired by Secretary to Prime Minister Dr Jimmie Rodgers and DFAT Counsellor Mr Andrew Schloeffel. Membership included officials from TCSI, SISCC, OPMC, MCA, ICTS and expert advisors from Caedus Systems Ltd and De Ridder Consulting Pty Ltd. This coordination group was an effective mechanism to help all stakeholders present their priority requirements for appraisal and allowed consensus building with recommendations on mass adoption and pricing for the Coral Sea submarine cable access and Internet connectivity.

Solomon Islands Internet Exchange Point (SIIXP) and Caching

The Solomon Islands Internet Exchange Point (SIIXP) is a not-for-profit, carrier-neutral, local peering exchange to be hosted and supported by SISCC at its premises in Lengakiki, Honiara. It will allow Internet Service Providers (ISPs) and Content Delivery Networks (CDNs) in the Solomon Islands to inter-connect locally without sending traffic destined for each other’s networks through international circuits. It is an exchange that will operate independently of all other networks.

TCSI is taking the lead responsibility for the implementation of the SIIXP including its governance arrangements. It has completed the Solomon Islands local peering policy, secured the required ASN and global IP address space from APNIC. The TCSI also approved USD\$40,000 from its 2020 budget to cover the establishment costs, and following the roadmap prepared by Caedus Systems Ltd, which was engaged by Solomon Islands Government with assistance from Australia. During the consultation process, senior officials and executives from TCSI, SISCC, OPMC, MCA, ICTS agreed to mandatory connections to the SIIXP. The existing licenced service providers were part of the consultation process and expressed their full support.

SUMMARY OF INCOME AND EXPENDITURE

Under the Telecommunications Act, the Commission is to be funded primarily by annual telecommunications licence fees and special levies. The annual fee level is currently set at the statutory maximum of 2% of a licensee's gross revenue.

The Commission's statutory rolling budget is for three years and is approved by the Evaluation Committee annually. For the financial year ended 2019, the budget variance for income was due to the Gazetted supplementary licence fees imposed on operators until the end of 2019, for anticipated legal costs.

	Actual	Budget*	Variance
Income	9,892,753	9,164,488	728,265
Less: Expenditures	(10,379,754)	(10,708,742)	328,988
Surplus (Shortfall)	(487,001)	(1,544,254)	1,057,253
<i>*3 years rolling budget</i>			

Summary of Actuals vs Budget

The statement of cash receipts and payments for financial year 2019 appears in *Appendix 1* to this report.

Review of Gross Revenue - Licence Fees

In October, the Commission carry out a review on its licence fees paid by all the licenced Service Operators based on their gross revenue for the full years 2016, 2017 and 2018. The review shows that following the amendment to the sales tax legislation some three years ago, all service providers exclude the amount of the sales tax in the gross revenue amount, from which its telecommunications licence fee amount is calculated. Under the statutory definition, "gross revenue" is to be determined before deduction for taxation.

The full definition provides that: *"Gross revenues' is defined in the Act as "revenues earned by a service provider from the provision of telecommunications services and access, after deducting amounts paid on an arms' length basis to domestic and foreign service providers*

for telecommunications services and access but before any deduction for costs (COGS), taxation(GST/Sales), accounting or other purposes (Unearned/Deferred)".

The assessment was carried out in light of other main objectives of the Telecommunications Act 2009 that had not been fully implemented due to understatement of the revenue to cover the commission's budget cost and its regulatory activities. The assessment has been delivered to all service providers and negotiations continues to address these underpayments and the way forward.

LIST OF LICENCES IN FORCE AND EXEMPTIONS ORDERS

There were no exemption orders applied for or granted in 2019.

The number of active licensees providing services were:

Type of Services	Type of Licence	No. of Licensee
Fixed telephony	Individual	1
Fixed Internet (ADSL + DSL)	Individual/Class	3
Fixed Internet (Wireless)	Individual/Class	3
Mobile (Voice) 2G	Individual/Class	2
Mobile (Voice + Data) 3-3.9G	Individual/Class	2
Leased lines	Individual/Class	3
TV	Individual/Class	2

The most active licensees reported during the year were; Solomon Telekom, Bmobile and Satsol.

SUMMARY OF RADIO FREQUENCIES ALLOCATED

The radio spectrum licences issued during 2019 were in the table below;

Type of Radio Spectrum Licence	Licensees	Licences
Amateur	9	9
Aeronautical	1	5
Maritime	57	119

Land mobile	6	6
VSAT Satellite	4	4
Handheld	None	None
Fixed Station	2	2
Broadcasting (Sound)	5	5
Television	5	5

LIST OF INTERCONNECTION AND ACCESS AGREEMENTS FILED

The only interconnection agreement filed in 2018, remains valid and will expire in 2020.

INTERNET COUNTRY CODE TOP LEVEL DOMAIN (ccTLD .SB) MANAGEMENT

The Commission continue to assume the administrative responsibility of the country code top level domain, ".sb". This year the Commission envisages to examine the best practical domain administrative model including policies through a public and stakeholders consultation process which the Commission had been working on the framework since 2019.

The establishment of the best practical domain administrative model is to ensure competition and efficient services is maintained in conjunction with evolution of technology and eminent cyber threats and challenges to the Domain Name Services.

The administrative model framework places emphasis on the following key market factors;

- To provide ongoing conducive competitive environment and efficient service for the domain registry services
- To provide ongoing conducive competitive environment and efficient web hosting and internet services
- To promote and provide a conducive environment for investors

The implementation of the new ccTLD administrative model is a priority agenda for the Commission to execute in 2020.

RADIO SPECTRUM MANAGEMENT

The population of the National Spectrum Management Data Base using the ITU SMS4DC software is progressing and ongoing since 2018. The completion of the national spectrum management data base will certainly enhance the administrative aspects of spectrum management in Solomon Islands.

The Commission continued with spectrum monitoring and licensing interference compliance enforcement program with the deployment of the radio frequency signal monitoring equipment with no major interference issues occurred or have been reported to the Commission by network operators and service providers.

The Commission further progress the review of the National Frequency Allocation Table and Band Plan in accordance with the outcome of the ITU (International Telecommunication Union) ratification of the WRC-19 (World Radio communication Conference) held in October and November 2019, the review anticipated to be completed in 2020.

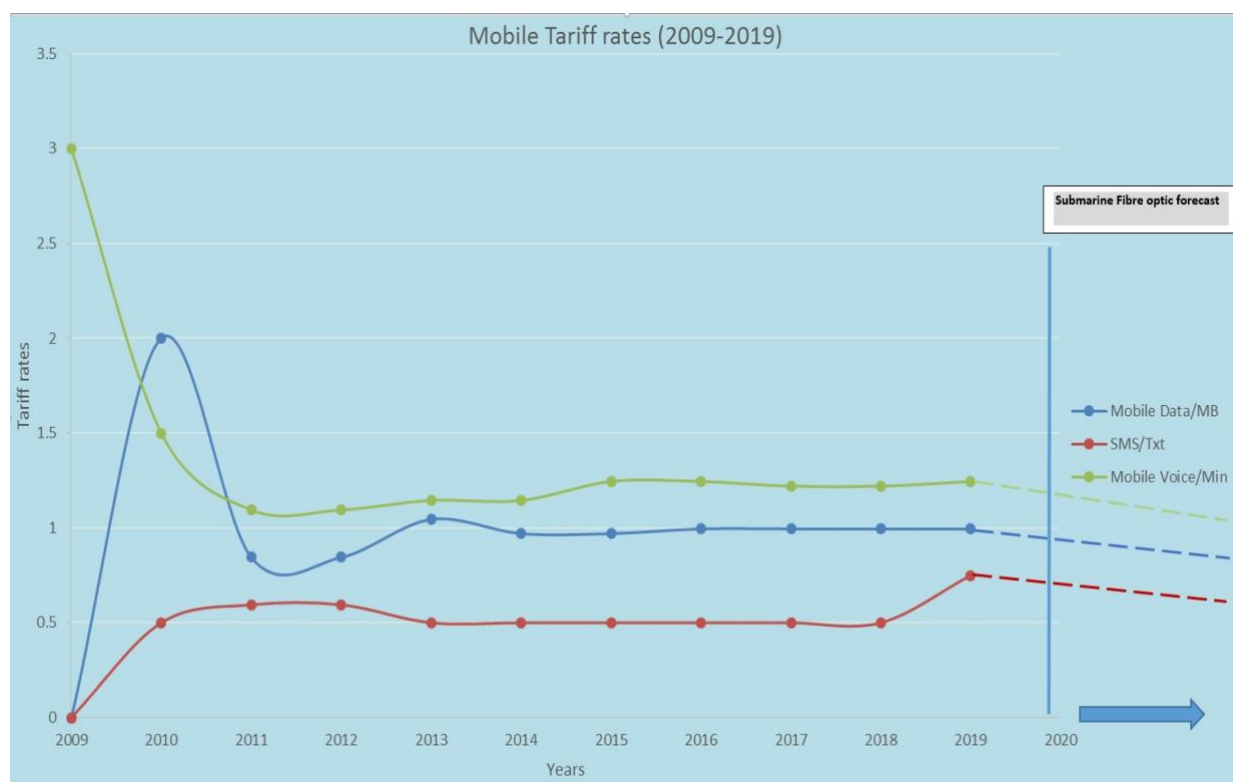
‘Equipment Type Approval’ is defined as the technical evaluation of equipment against prescribed specifications with the objective of determining its conformity to these specifications. The ratification of the ITU WRC-19 makes provision for the further review of the equipment type approval policy by the Commission, with the review anticipated to be completed in 2020

SUMMARY OF REGULATED PRICES

There were no regulated prices for telecommunications services during 2019.

However, the mobile tariff for voice, data and SMS filed with TCSI from the licence operators since 2009 shows a huge drop in prices for all mobile services, as it was reflected in the graph below.

The expectation for the new cable to further decrease the wholesale prices is not imminent but will gradually decrease the retail prices over the next 2 years.



Tariff trend (2009-2019)



6.0 International Affairs

ITU - Global Symposium for Regulators (GSR-19)

GSR-19 was organized by the International Telecommunication Union (ITU) in collaboration with the Government of Vanuatu and the Telecommunications, Radio communications and Broadcasting Regulator, the theme of GSR-19 was “Inclusive connectivity: The future of regulation”. The first lucky Pacific Island country to host such a global ITU event.

Regulators and experts from all over the world attended the event in Port Vila from 9-12 July to discuss the future of regulation in terms of the fast changing ICT landscape – with new technologies like Artificial Intelligence, Blockchain, the Internet of Things and 5G, as well as new business and investment models.

The event main emphasis was based around strong partnerships, innovative regulatory tools and approaches, and for collaborative regulatory mechanisms across sectors to help connect the remaining 3.7 billion people who are still not using the Internet.

The event was attended by a powerful Solomon Islands delegation led by Minister Hon. Peter Shanel Agovaka, Permanent Secretary Moses Virivolomo, and Director Alwyn Danitofea and John Stanley from Ministry of Communications and Aviation. The Commission’s delegation were Haggai Arumae, Wilson Leguvaka and Aaron Hopa.



GSR 19 Port Vila 9-12 July 2019

North America Expo 2019, Silicon Valley, Santa Clara

The director of markets and competition was privileged to attend the fourth annual North American Expo, the world's leading AI & Big Data, IoT Tech, Cyber Security and Clouds, BlockChain and 5G event series in the heart of Silicon Valley, Santa Clara on November 11 - 14th 2019.

The expo itself bring together key industries from across the globe for two days of top-level content and discussion across 5-colocated events covering, AI, big data, IoT, cyber security, cloud, block chain, and 5G. The director also visits, Facebook, Google, Microsoft, Cisco, and other Tech companies in Silicon Valley.



North America Expo 2019, Silicon Valley, Santa Clara

E-government

Partnering with the e-Governance Academy of Estonia and the Australian Strategic Policy Institute the project worked with Fiji, Tonga, Samoa, Vanuatu, Papua New Guinea, Solomon Islands, and Kiribati to develop a baseline assessment of existing e-Governance capabilities and required resources to achieve each country's desired digital transformation.

The final project workshop was held in Canberra on 1-3 October 2019 to share key findings and observations of the baseline assessment and to discuss some common issues to all Pacific states, including single access digital platform, national digital ID and security by design.



Opening the second workshop, Cameron Archer from DFAT outlined Australia's cyber engagement in the Pacific. (Photo: DFAT)

United Nations Department of Economic and Social Affairs (UN DESA)
Division for Public Institutions and Digital Government (DPIDG)

Expert Group Meeting on “The Future of Digital Government for Sustainable Development in Less Developed Countries (LDCs), Small Island Developing States (SIDS) and Landlocked Developing Countries (LLDCs)” held 4-5 June 2019 Incheon, Republic of Korea.

This was part of the Preparatory Process for the United Nations E-Government Survey 2020

United Nations Department of Economic and Social Affairs (UN DESA) Division for Public Institutions and Digital Government (DPIDG)



At UNDESA Expert Group meeting 4-5 June 2019 Incheon, Republic of Korea



7.0 Telecommunications and ICT Developments

ESTABLISHING THE SOLOMON ISLANDS DIGITAL TRANSFORMATION AUTHORITY

Since 2010, information technologies such as Internet of Things (IoT), cloud computing, artificial intelligence, cybersecurity and business platforms from the likes of Amazon, Apple, Google and social media platforms like Facebook have changed markets and consumer behaviour. Fast, reliable and cheap Internet connectivity together with ready access to business platforms, content sharing on social media and inclusive participation is giving power to small businesses, churches and individuals, rural villages and remote communities.

Establishing the “Digital Transformation Authority” is part of the government’s proposed digital innovation strategy for its ‘whole of government’ response to e-government and digital economy opportunities. In partnership with SIG ministries, service providers, the private sector and civil society, TCSI is playing a role in promoting the government’s digital transformation objectives.

ICT FOR GIRLS EVENT – ITU

The International Girls in ICT Day is an initiative supported by all International Telecommunication Union (ITU) Member states in ITU Plenipotentiary Resolution 70 (Rev. Busan, 2014). This event is usually celebrated in April each year. With the aim to inspire, empower and encourage girls and women to stay and consider career paths in the growing field of ICT, Women in IT Solomon Islands (WITSI), joined other member states of ITU in hosting a Girls in ICT Day conference which was held on the 23rd of May, 2019, at the A’hara and Nahona Conference room at the Heritage Park hotel. Due to the political situation following the Prime Minister’s election, WITSI had to postpone this event a couple of times therefore was celebrated in May and not April as initially planned. This year is the second time that Solomon Islands has joined member states of ITU to commemorate the Girls in ICT Day.



Girls ICT day event in pictures

NATIONAL ICT DAY

The ITU celebrated the 50th Anniversary of World Telecommunication and Information Society Day at ITU headquarters on Friday, 17 May 2019. The WTISD marks the anniversary of the founding of ITU on 17 May 1865, when the first International Telegraph Convention was signed in Paris.

The event was marked in the Solomon Islands by presentations in various high schools in Honiara and a radio talk back show at SIBC.

This year's theme was "Bridging the Standardization Gap." Developing international standards is a foundational pillar of ITU's mission. ITU standards offer a common basis for growth and innovation, and thereby accelerate progress towards the Sustainable Development Goals. They enable interoperability, economies of scale and grant access to global markets. They create opportunities enjoyed by small and bigger market players.

ITU's bridging the Standardization Gap programme facilitates the participation of developing countries in ITU's standards-making process, empowers local experts in the standardization process at the national, regional and international levels, and promotes the implementation of international standards in developing countries.



Source: WITSI, ICT Show at Woodford school by WITSI



ICT Day activities in pictures.

DIGITAL FINANCING

Under the Pacific Financial Inclusion Project, NPF with UNCDF and CBSI have develop new voluntary saving scheme designed especially for the self-employed. The scheme is called “*youSave*”. Under this scheme NPF, Telekom & Bmobile jointly use the “*airtime platform technology*” which enables top-up deposits directly to customers of youSave and their accounts at NPF using their mobile phones. The application is called “*youSave LoMobile*” and it’s first of this kind in the Pacific.

The scheme was launched in October 2019.



Source: CBSI

Appendix 1. Statement of Cash Receipts and Payment

TELECOMMUNICATIONS COMMISSION SOLOMON ISLANDS

STATEMENT OF CASH RECEIPTS AND PAYMENTS FOR THE YEAR ENDED 31 DECEMBER 2019

	2019	2018
	(SBD)	(SBD)
RECEIPTS		
Services licence fees	8,616,022	7,680,007
Supplementary fees	894,087	798,260
Radio spectrum application fees	121,044	110,500
Other income	261,599	402,499
Total receipts	9,892,753	8,991,266
PAYMENTS		
<u>Operational expenses</u>		
Commission remuneration	6,603,821	4,747,296
International membership subscriptions	215,370	223,077
Office premises rent	640,080	640,080
Telecommunications	380,140	340,071
Utilities-electricity,gas & water costs	182,649	333,080
Stationery, printing and publications	123,012	110,922
Transport maintenance & operation	159,678	208,554
Bank & tax charges	56,119	5,680
General repair & maintenance	5,600	9,038
Insurance	63,975	63,975
Regulatory functions & training	551,712	249,773
Workshops & participation	560,743	489,151
Services contracts	81,562	8,800
Accounting Services	583,800	581,980
Legal Fees	22,812	368,112
Office supplies	51,508	73,914
Miscellaneous	86,074	76,925
	10,368,654	8,530,428
<u>Capital Expenses</u>		
ICT equipment	-	
ICT maintenance	1,600	3,675
Office equipment	9,500	107,124
Furniture & fittings	-	3,877
Spectrum Equipment & Software		
	11,100	114,676
Total payments	10,379,754	8,645,105
Net increase/(decrease) in cash and cash equivalent	(487,001)	346,162

Appendix 2. Retail Data Plans in the Pacific

The following table shows prepaid data plans offered by Digicel in its markets in the Pacific at 27th May 2020. Data are taken from its website in each country. All prices have been converted at SBD at rates taken from the Bank of the South Pacific (BSP).

Also shown are prepaid data plans offered by Our Telekom and Bmobile in the Solomon Islands at 22nd May 2020.

Digicel PNG			Digicel Vanuatu		
1 Kina =	2.41		1 VUV =	0.070488	
SBD	GB	Days	SBD	GB	Days
7.23	0.065	1	3.52	0.35	0.125
16.87	0.4	1	4.58	0.5	0.125
24.10	0.3	3	8.81	0.5	1
72.30	1	7	21.15	1.2	3
241.00	4	30	35.24	2.2	7
482.00	10	30	70.49	5	30
			211.47	17	30
Digicel Fiji			Digicel Tonga		
1 FJD =	3.785142		1 TOP =	3.707692	
SBD	GB	Days	SBD	GB	Days
7.57	5	1	3.71	0.3	0.041667
11.36	3	1	11.12	1	1
15.14	4	3	18.54	1.3	3
26.50	10	7	37.08	2.7	7
30.28	16	7	55.62	5	14
56.78	15	15	74.15	7	30
94.63	35	30	185.38	18	30
189.26	100	30			
Digicel Samoa					
1 WST =	3.12987				
SBD	GB	Days			
3.13	0.25	0.041667			
6.26	0.3	0.041667			
9.39	0.75	0.041667			
15.65	1.5	3			
18.78	1.5	3			
21.91	2.5	5			
31.30	4	7			
62.60	8	15			
156.49	20	30			
312.99	50	30			

Our Telekom Solomon Islands			Bmobile Solomon Islands		
SBD	GB	Days	SBD	GB	Days
6	0.1	1	6	0.09	1
15	0.25	3	15	0.225	2
20	0.4	4	20	0.4	3
50	0.85	7	50	0.75	7
100	1.7	14	90	1.25	14
220	3.7	28	220	3	30
400	6.8	28	500	14	30
580	10	28			
1160	20	28			

Regression results with zero intercept		
	SBD/GB	SBD/Day
PNG	39.61	2.86
Fiji	1.36	1.75
Samoa	5.29	1.64
Vanuatu	11.72	0.44
Tonga	11.72	0.44
Bemobile	25.83	4.61
Our Telekom	57.70	0.20

Sources:

<https://www.digicelgroup.com/pg/en/mobile/plans-services/prepaid-plans.html> = PNG

<https://www.digicelgroup.com/fj/en/mobile/plans-services/prepaid-plans/big-phat-data-plans.html>
= Fiji

<https://www.digicelgroup.com/ws/en/mobile/plans-services/prepaid-plans/prepaid-supu-seki-data-plans.html> = Samoa

<https://www.digicelgroup.com/vu/en/mobile/plans-services/prepaid-plans/awesome-data-plans.html> = Vanuatu

<https://www.digicelgroup.com/to/en/mobile/plans-services/prepaid-plans/prepaid-data.html> =
Tonga

Appendix 3. Network Service Providers

RETAIL SECTOR (Domestic)

Solomon Telekom (trading as Our Telekom)

Bmobile Solomon Islands

Satsol

Pacific Vaizeds

WHOLESALE SECTOR (International and Domestic Backhaul)

Satellite

O3b

Oneweb

Kacific

Speedcast

JC Sat

Submarine Cable

Coral Seas Cable (CS2) - International
Solomon Islands Domestic Network (SIDN) - Domestic



Honiara CLS



Auki CLS



Noro CLS



Taro CLS

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