



Business Plan

FY 2020 – 2024

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Executive Summary

This 2020 – 2024 Belau Submarine Cable Corporation (BSCL) Business Plan focuses on completing the network extension to Airai (CAP-A) in 2020, the elimination of further potential single points of failure in BSCLnet through development of a second submarine cable connection to Republic of Palau, and the further refinement of operational processes.

Forecast expenditure on general expenses for 2020 is \$733K, with another \$314K of specialist operational services. With interest expense of \$504K, \$500K added to reserves, capex of \$19.6M, and borrowings of \$18.1M, total forecast net cash outflow is \$2.0M, representing BSCL's contribution to the second cable project (PC2).

BSCL Structure

BSCL was established in 2015 by RPPL9-47 (the BSCL Act), to progress a project initiated by the World Bank and Asian Development Bank (ADB) to provide international submarine fibre optic connectivity for the Republic of Palau (RoP). ADB remains the sole financier.

BSCL has provisionally applied for a licence to operate a wholesale network in RoP in January 2018 in accordance with RPPL 10-17 of 2017 (the Telecoms Act).

The sole shareholder in BSCL is the Minister of Finance. A Board of Directors is appointed by the ROP government.

Business Objectives

The primary business objective of BSCL is to

Provide licensed Retail Service Providers in Palau with equal access to high quality wholesale capacity at the lowest pricing commensurate with full cost recovery.

The focus of this Business Plan is to build on the gains flowing from the submarine link constructed in 2017, ensuring robust international connectivity and cost-effective core Palau infrastructure for RoP Retail Service Providers (RSPs) on a fair and equal basis.

The business issues addressed by this Plan are:

- (a) Complete CAP-A Extension.
- (b) Complete CAP-A building.
- (c) Complete the east-side extension around Babeldaob
- (d) Develop a second international fibre optic link for RoP

- (e) Work with other parties in the RoP telecommunications market to ensure effective market performance.
- (f) Work with relevant authorities to ensure effective disaster planning for international connectivity.
- (g) Develop BSCC capability, including staff recruitment and network resilience.
- (h) Define key operational arrangements including ongoing management, marine maintenance, landing party agreements and Network Operations Center (NOC).
- (i) Establish the expenditures and revenues associated with the development and operations of BSCCnet.
- (j) Set out the financing arrangements to underpin BSCC and its projects.
- (k) Analyse risks associated with the company's activities.

Strategic Framework

BSCC's price positioning is defined by the BSCC Act. Accordingly, BSCC will operate pricing regimes that support servicing and repayment of debt and business costs, rather than maximise profits.

BSCC is a wholesale supplier in the RoP telecommunication market. This enables the lowest possible cost structure, as BSCC supplies raw capacity to Retail Service Providers (RSPs), rather than telecommunications services to end-user customers, avoiding the need to invest in complex product support and billing systems, sales and marketing capability and customer support systems. By positioning as a wholesaler, BSCC also avoids the difficult position of having to compete with its own customers, who are much better resourced to develop, supply and support telecommunications services in the retail market.

BSCC offers the same capacity products, pricing, payment options and terms and conditions to all eligible customers (ie licensed RSPs).

Because BSCCnet is relatively small in terms of capacity in service compared to other intercontinental submarine networks, and is likely to have relatively few customers (perhaps no more than four in the medium term), its operational needs will not justify extensive full-time roles. Accordingly, BSCC outsources the majority of its business functions in network operations and management, finance, IT and legal.

BSCC is pursuing a four-part strategy to achieve its business goals:

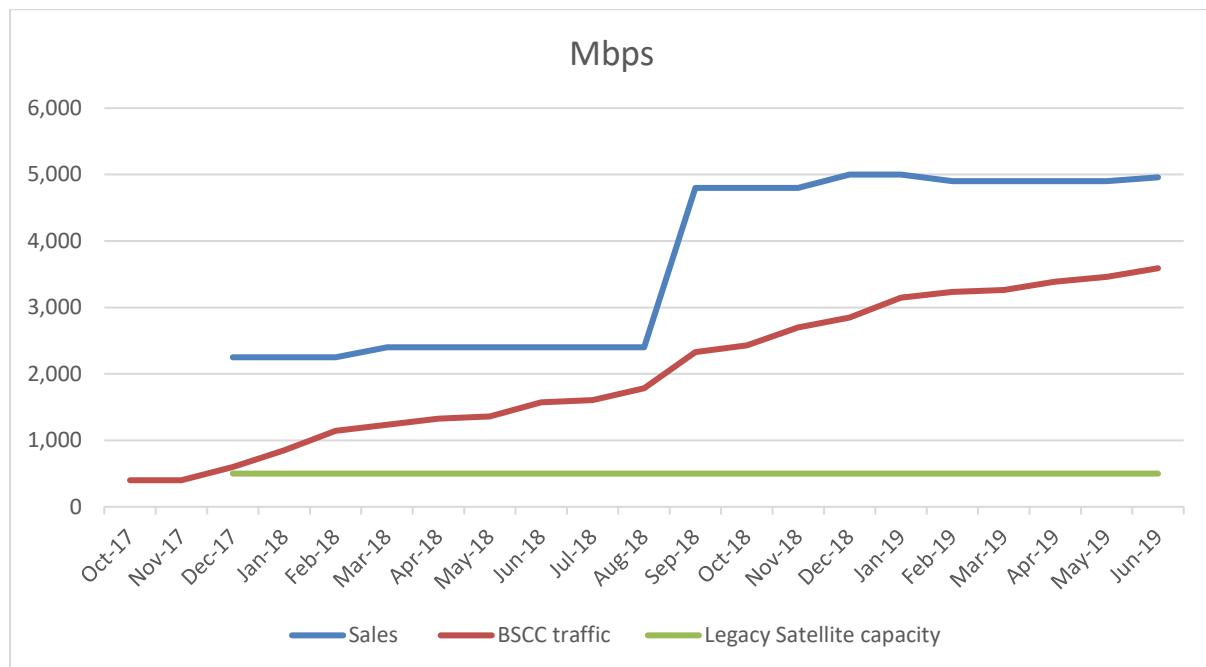
1. Ensure flawless operation of the current international submarine cable network connection for Palau
2. Improve access through a network extension around the Compact Road to new Capacity Access Point in Airai (CAP-A), adjacent to existing Airai / Koror fiber networks owned by RSPs

3. Improve resilience of CAP-A by completing the network extension loop clockwise around the east side from Ngeremlengui to Airai
4. Improve resilience and capabilities with a second international submarine cable network connection for Palau

Marketing

Capacity

Pre-BSCCnet, total satellite capacity use for RoP was estimated at 400 Mbits / sec. There was an immediate increase to 1,000 Mbits / sec by March 2018. In the six months after Ready for Service, BSCCnet traffic doubled again to 2,000 Mbits / sec and in the twelve months since, nearly doubled again. Total download volumes have been growing at about 8% per month or about 100% pa. Global average growth over the past decade was about 40% pa compound. The faster growth in Palau can be attributed to a catch-up effect once BSCCnet was in service.



At current growth rates, customers will be at reorder point at Q1 of this plan. Once that point is reached, all three customers will have absorbed the bonus capacity awarded in September 2018 and be on the related lower price schedule that was adopted from September 2018. This is occurring a full year earlier than was forecast when the price decline and bonus capacity approach was adopted.

The current BSCC price list was designed to deal with this scenario. However, the faster than expected growth may necessitate further adjustment of pricing in the course of 2020, particularly for high volume sales.

With all customers close to reorder points, BSCC made a 2 for 1 offer in August 2019, valid until the end of calendar 2019. This initiative is expected to generate significant capacity growth in 2020.

This Plan assumes 5% growth in 2021, 25% in 2022 and 32% in 2023. It assumes a structural increase in capacity purchases in 2020, increasing by 132%. For this reason, forecast capacity growth is nominal in 2021.

Pricing

All pricing is in USD, which is industry standard.

BSCC reduced prices by 30% from September 2018. The current price list is:

Mbit /sec		
From	To	3 Year Lease
50	199	190
200	399	140
400	999	105
1000	1999	79
2000	4999	60
5000	9999	45
10000	19999	34

BSCC pricing is intended to support a virtuous cycle, where higher volume purchases attract lower unit prices, which in turn allow retail price reductions by customers, which in turn generate higher volumes.

Market and Regulatory

The Palau telecommunications market is competitive, regulated by the Bureau of Communications established under RPPL 10-17 of 2017 (the Telecoms Act).

Regulation remains in its infancy, with significant uncertainty. It is expected a Regulator will be functional in the second half of 2019. However, a lot of early focus will be on issues that manifest in January 2020, including the moratorium on new licences (and the issue of licences to the three RSPs and BSCC, all of whom applied in January 2018). The Telecoms Act (2017) provides for a moratorium on new market entrants until January 1st 2020, with provision for a further extension of up to three years. The terms of current BSCC Board members expire in January 2020. BSCC's tax exempt status expires in 2020.

The RoP telecommunications market is still largely dominated by the incumbent provider, Palau National Communications Corporation (PNCC). The main competitor is Palau Telecom, which has operated a Wi-Fi network and is expanding into mobile and possibly fixed line customer access. Palau Mobile (previously Palau Wi-Fi) continues its smaller operation focused on tourist hotels and a limited set of customers.

RoP is the world's first all-IP network. RSPs agreed to establish an open interconnection regime in August 2018 and PNCC and PT have already implemented a voice interconnection regime. BSCC supports minimum regulatory complexity consistent with orderly allocation of public resources such as spectrum and numbering.

BSCC Positioning

BSCC positions as a carriers' carrier, providing wholesale capacity on its network to licensed RSPs. Irrespective of scale, BSCC will not sell capacity directly to retail customers. This "wholesale only" positioning has three features:

- BSCC is able to focus on capacity products, avoiding the need to maintain costly billing, customer management and sales infrastructure
- BSCC avoids competing with its own customers, who are better resourced to service retail markets
- BSCC supports ROP government's objective of fostering the development of healthy competition in the retail service provision market

BSCC offers CAP-N (capacity access point at Ngeremlengui Cable Landing Station) to CAP-G (Tata at Piti, Guam) connectivity, and will further offer CAP-A (Airai, at the airport site) connections in 2020.

BSCC can offer minimum space for customer equipment at the Ngeremlengui cable station, but more extensive co-location space will be available on reasonable terms at CAP-A for all BSCC customers.

In order to meet the different cash flow goals of the different players in a developing capacity market, BSCC currently offers Lease products, although Indefeasible Rights of Use (IRU) will be available if customers express interest. To date customers have indicated interest only in leases.

BSCC Products

The core product offered by BSCC on the cable is leased capacity between the BSCC Capacity Access Point (CAP) at the Cable Landing Station (CLS) at Ngeremlengui, Palau (CAP-N), and CAP-G at Tata Piti in Guam.

The minimum capacity offered is 50 Mbit / sec.

Leases are available on one or three-year terms.

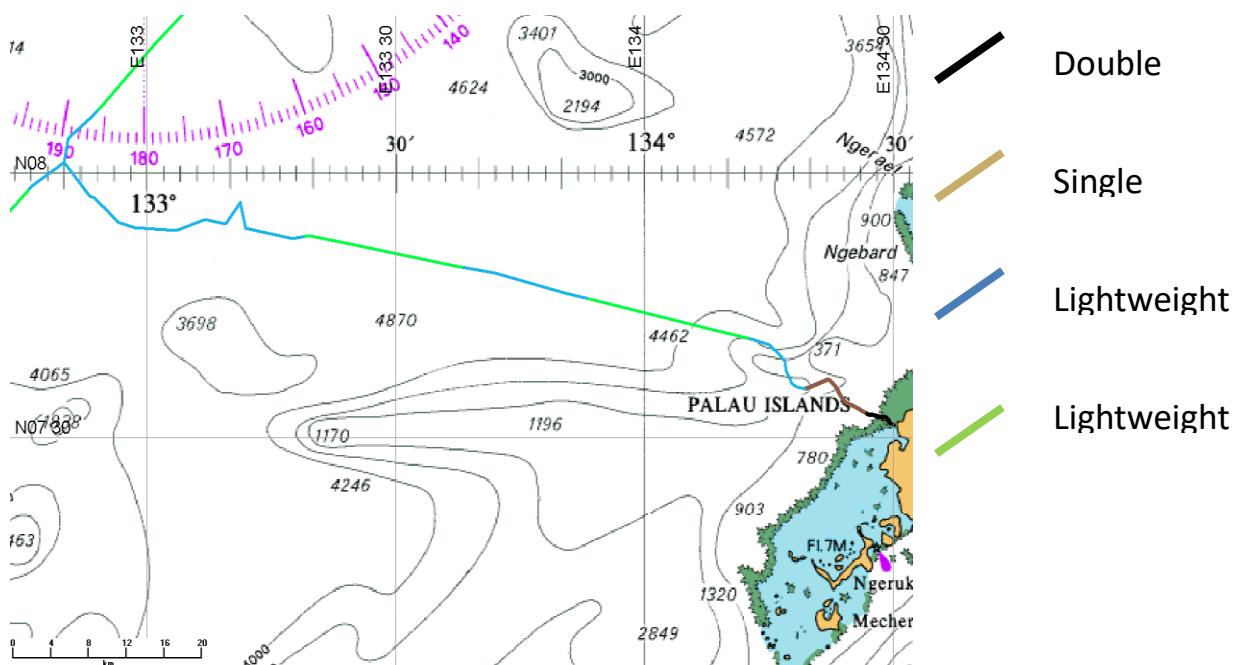
BSCC is service provider neutral. Key elements of the product offering will support this stance:

- BSCC will offer the same product set and pricing to all customers.
- BSCC will ensure that CAP-A space is available on fair terms to all BSCC customers.
- BSCC will ensure that low volume products remain available to encourage new market entrants.
- BSCC will ensure that distribution of customer information is limited to necessary operational purposes.

- BSCC will ensure that a process is defined to enable customers to raise and resolve concerns related to equal access and confidentiality.

Network

The international route is a repeatered branch connection from Ngeremlengui Cable Landing Station (CLS) to a Branching Unit on the SEA-US main trunk cable, with onward transport on SEA-US to the GTA CLS in Guam.

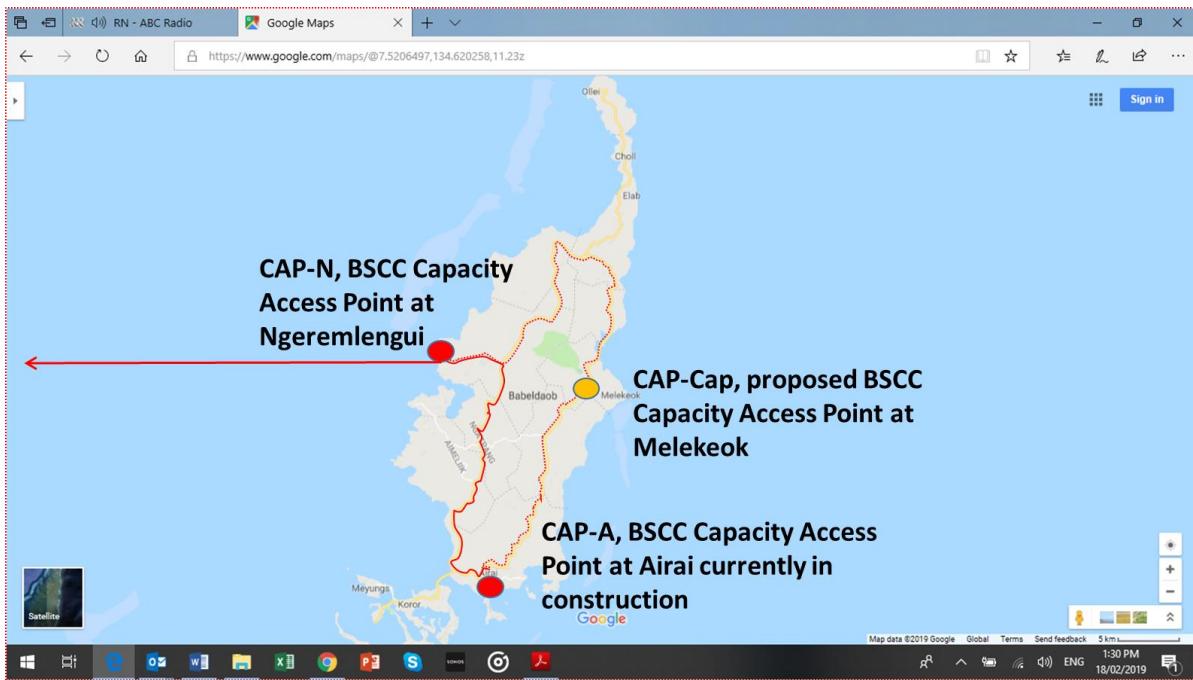


BSCC is currently constructing a network extension to the airport site to establish a new Capacity Access Point, CAP-A. Costs of current BSCC network development projects can be completed within the original \$25M loan to RoP from ADB:

Project	Completion Date	Cost (US\$M)
International connection to CAP-N	Completed December 2017	20.0
Network extension CAP-N to CAP-A westside	October 2019	1.5
CAP-A Building incl fit-out	January 2020	0.5
Network Extension CAP-N to CAP-A eastside	July 2020	3.0
TOTAL		25.0

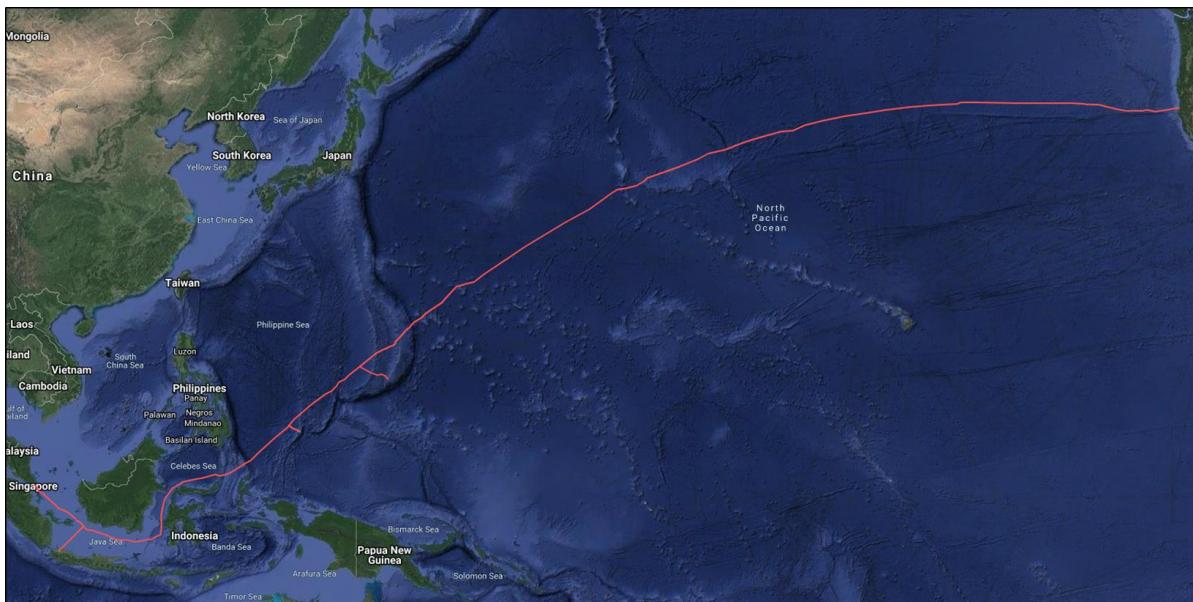
The completed network will provide a robust shared infrastructure that will enable all RSPs equal and cost-effective access to international connectivity:

BSCC Business Plan



However, while the targeted network topography provides a very robust access architecture, the entire BSCL link from CAP-N to CAP-G represents a single point of failure. Further, the ever-widening gap between capacity in use (the red line on the graph in the marketing section above) and satellite capacity available in the event of an outage (the green line) indicates the growing vulnerability of economic and social activity in Palau to a service interruption on BSCL.

Accordingly, BSCL is pursuing construction of a second cable link for Palau (PC2), with the support of government and the RSPs. BSCL has identified Echo, a new cable proposed for Singapore to USA, passing within 200 km of RoP, which is prepared to consider incorporating a Palau Branching Unit (BU) into their design.

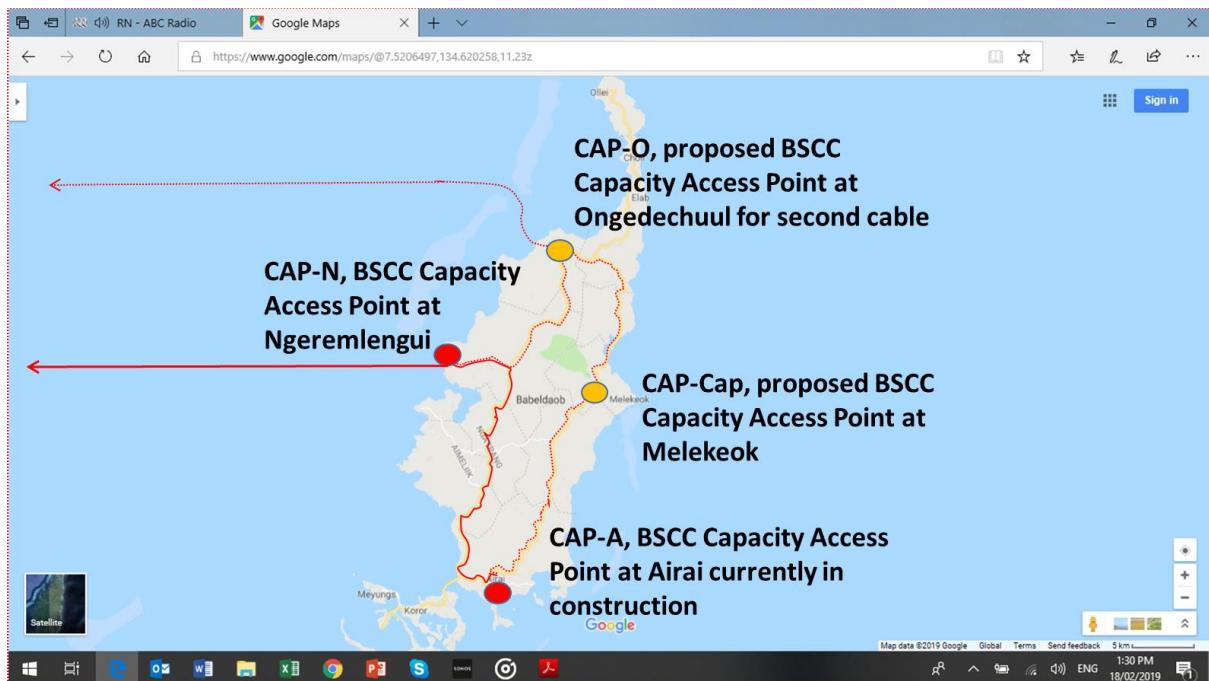


BSCC has arranged a loan from National Development Bank of Palau (NDBP) of \$2M to finance the minimum investment for a BU, estimated at \$3.5M. The balance can be provided from BSCC reserves. BSCC is arranging financing of the full PC2 connection through Japan Bank for International Cooperation (JBIC) and the Australian Department of Foreign Affairs and Trade.

BSCC has identified Ngardmau as a suitable landing point for PC2, and has commenced work on an Initial Environmental Evaluation (IEE) for the project.

The source of additional income required for BSCC to finance PC2 will be sourced from the current outlays on satellite on legacy contracts that expire in 2021 and 2022, an outflow of \$2.2M pa at present.

The target network topology is:



Technology

The network technology deployed for BSCCnet is identical to that used for the main SEA-US cable, based on the latest available commercial technology, utilising 100 Gbit / sec wavelengths, supplied by NEC.

BSCC has currently lit one of five 100 Gbit/sec wavelengths over which it holds an IRU with Globe Telecom of Philippines. The link between the GTA CLS and CAP-G, provided by GTA of Guam, is currently configured at 10 Gbit/sec. This potential bottleneck and single point of failure may be addressed by provision of a diverse link in late 2020.

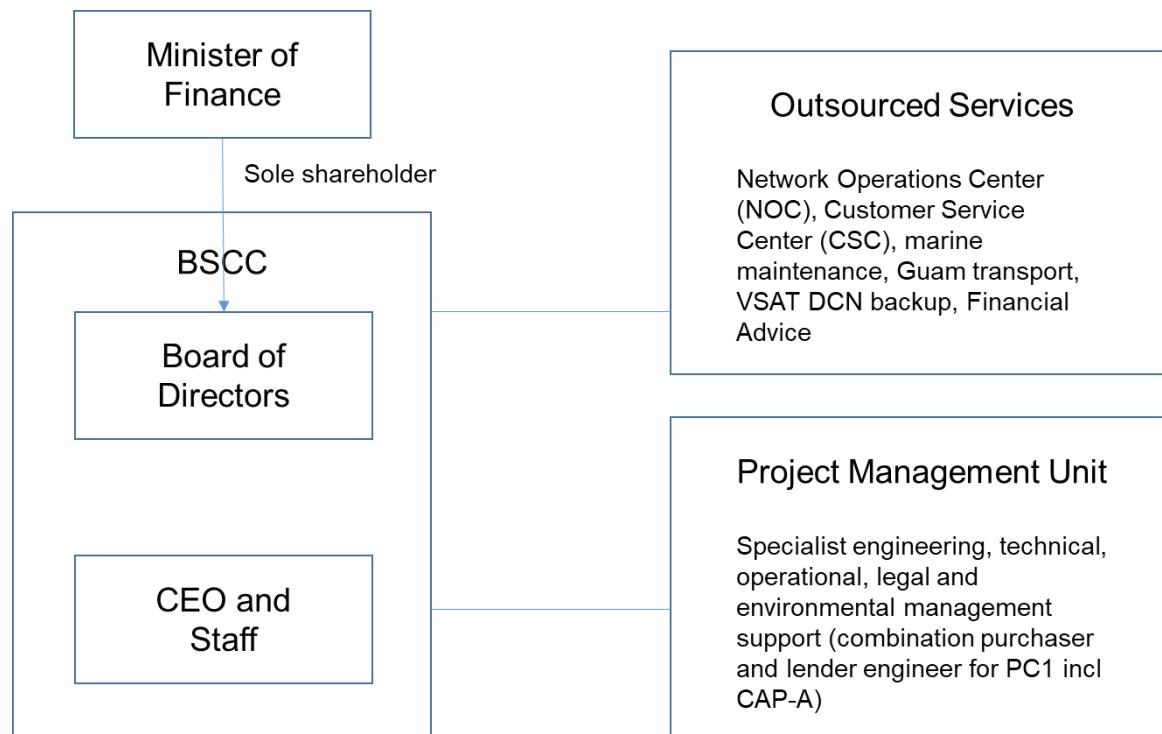
The core submarine network is augmented by twin Ciena network routers in both CAP-N and CAP-G to facilitate resilient and flexible management of customer access. The same standard interface will be available to BSCC's RSP customers at CAP-A.

BSCC can support up to 10 gbit/sec on current network configuration.

Operations

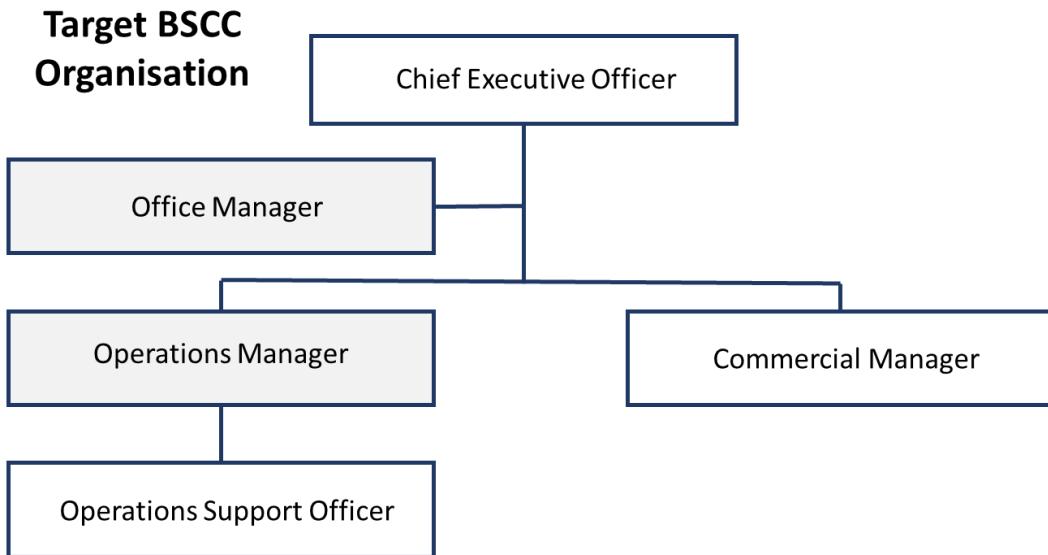
BSCC outsources the following business functions:

- Marine maintenance and Guam spares storage (TE Subcom)
- Network Operations Center (NOC) management (Globe Telecom)
- Customer Service Center (CSC) management (Docomo Pacific)
- Engineering and Commercial Support (McCann Consulting International)
- Guam interconnection (GTA)
- Diesel generator and air-conditioning maintenance (Surangel)
- Financial accounting (nem and Deloittes)
- Legal (Office of the President)



Organisation

The target organisation structure is:



Currently, two of the positions are unfilled (shaded above).

During 2020 BSCC will recruit two additional staff to support the increased network infrastructure that will be delivered through the CAP-A project, expected to be completed in Q1 2020.

Finance

Key Parameters

Key assumptions underpinning the financial analysis are:

- Strong capacity growth in 2020 on the back of large sales to PNCC:
 - a. Current PNCC capacity – 2,000Mbps + 2,000 Mbps bonus – Total 4,000Mbps
 - b. Planned increase of 1,000Mbps in Nov 2019
 - c. Planned increase of 2,000Mbps in Apr 2020
 - d. Total capacity will increase to 7,000Mbps (5,000Mbps + 2,000Mbps bonus)
- Nominal forecast growth in other customers
- O&M cost is included in lease pricing
- Year on year expense growth – 3%
- Cap A to commence January 2020
- Cap A specific expenses of \$85k p.a.
- Existing RoP financing to continue (ADB back-to-back)
- LIBOR for ordinary loan 1.5% ie LIBOR + 1% = 2.5%, Special Loan 2% fixed
- Cable design life 25 year

Capital Expenses (Capex)

Key project expenses:

Cap A Project – Westside Plant	\$ 1,527,760 (completed 2020)
Cap A Project – Eastside Plant	\$ 3,000,000 (completed 2020)
Cap A Project - Building	\$ 500,000 (completed 2020)
PC2 Project	\$31,655,511 (50% 2020 – completed 2021)

Cap A capex is funded by remaining ADB/RoP Funding

PC2 Project to be funded by a debt consortium including JBIC and the Australian Infrastructure Financing Facility for the Pacific (AIFFP).

Tax

BSCC remains exempt from all taxes except those related to payroll – WHT, SSA and Health.

Equity

The Minister of Finance holds the only share, in accordance with the BSCC Act.

Debt

This plan assumes BSCC draws down the full \$25M of available funding for Cap A (East & West loop)

The PC2 project will be consortium funded. Assumptions:

Debt:	30.1M
Interest Rate:	7.00% p.a.
Principal & Interest payments:	\$2,200,000 p.a. (sourced from existing satellite capacity of RSP's)
Interest capitalised during project.	

Dividends

In accordance with the BSCC Act, no dividends are expected to be paid. Operating surpluses, after full debt service provisioning in the Debt Service Reserve Account (DSRA) and funding of the Marine Maintenance Reserve Account (MMRA), are reflected in price reductions, effectively a general dividend.

Outcomes

Detailed financial data are provided in an associated spreadsheet, which is confidential to preserve customer information.

In summary, the FY 2020 forecast is:

	USD M
Revenue	3.266

General Expenses	0.733
Network Operating	0.314
Interest	0.504
Net Operating Cashflow	1.715
Debt received	18.104
Cap A Capex	3.818
PC2 Capex	15.827
Reserve Accounts	0.500
Capital	-2.041
NET CASHFLOW*	-0.326

*Cash balance at commencement of year \$1.997. Under financing arrangements BSCC is required to provide circa \$2.0M towards the PC2 project.

Base Model

The outlook for 2020 features:

- Operationally cash positive
- DSRA and MMRA will continue to be accumulated.
- Bonus capacity issued to RSP will be fully utilised and further capacity sales to feature, most notably with PNCC (refer earlier comments)
- Completion of the Cap A project
- Commencement of the PC2 project

Risk Analysis

Refer to Risk Matrix following for a risk assessment and mitigation strategy.

The main categories of risk faced by BSCC are:

- Technological Risk
- Operational & Environmental Risk
- Financial Risk
- Sovereign Risk
- Regulatory Risk

- Resourcing Risk
- Project Management Risk

Technological Risk

As BSCC is now fully operational, technology risk is now restricted to the operational support arrangement in place and the yet to be completed Cap A and PC2 projects.

Technological risks always exist and they are offset by factors including:

- ✓ Reliance on proven industry specialists for all outsourced arrangements (e.g. NOC)
- ✓ Use of appropriate and proven technologies.
- ✓ Selection of an optimal cable route on the sea bed using prove marine survey technologies.
- ✓ Turn-key supplier NEC for PC2, a long-time industry heavyweight with a well-established track record.
- ✓ Professionally managed procurement and acceptance testing to ensure compliance with specifications.
- ✓ Availability of spares for the life time of the system.
- ✓ Supplier guarantees.

Operational & Environmental Risk

Environmental Management Plans have been established and are adhered to.

Further environmental plans will be established for PC2.

BSCC has entered into the South Pacific Marine Maintenance Agreement which provides marine maintenance services of an available cable ship (Reliance) and spares storage, which provides proper insurance in the event of a cable break.

BSCC has established a Maintenance Reserve Account with a progressively increasing balance to peak at \$2M.

BSCC also mitigates operating risk by contracting the experienced carriers, Globe Telecom and Docomo Pacific, to provide Network Operating Center and Customer Service Center services which including network administration and customer service and assurance management.

Financial Risk

BSCL is cashflow positive from an operational perspective.

While project finance risk will feature in the upcoming PC2 project, BSCL has already proven its ability to properly manage the finances of large projects with the initial project being completed on-budget and the Cap A project also running on budget.

External finance support is relied upon from nem Australasia Pty Ltd (operational and project finance support), Deloittes (Accounting) and Burger, Comer, Magliari (audit).

Sovereign Risk

Sovereign Risk exposure is considered low.

Regulatory Risk

A regulatory framework exists for RoP but no executive capacity as yet.

BSCL continues to work cooperatively with the industry and government to encourage development along the lines envisaged in the TAP papers.

Currency Risk (including Transferability and Convertibility Risk)

Currently all outgoings and earnings are USD.

Resourcing Risk

As a small company with only three core staff, BSCL is unable to replace personnel from within its own resources. The CEO, local Project Management Unit (PMU) presence and the Operations Manager and Commercial Manager can provide backup for each other for short term absences and temporary support can be engaged eg while recruitment is undertaken for permanent replacements or BSCL staff are unavailable.

Project Management Risk

Project management continuity will be ensured by contracting McCann Consulting International as PMU. MCI has been contracted by BSCL as technical advisor and has been instrumental in driving all project to completion. This arrangement will continue with the PC2 project.

Timing Risk

The Echo project has been under way for two years. Once Echo moves to Contract in Force (CIF) with its main supplier, NEC, BSCL will have a very limited opportunity to complete its financing arrangements and agree a contract. This risk can be mitigated by maximizing project understanding and documentation with financiers in advance of CIF. The window is estimated at four months.

BSCC Business Plan

Risk	Impact	Probability	Mitigation Strategy
Construction delays	medium	low	PC2 contracts to place construction risk with suppliers. Ensure adequate liquidated damages provisions are in place. Cap A contracts in place, delays are less concerning.
Construction delays (force majeure)	medium	low	Self-insure, with adequate contingencies.
Environmental damage	low	low	EIA completed. EIA for CAP-A completed. PC2 pending
Sovereign risk	medium	low	No action.
Regulation	high	high	Active participation in market change to promote demand growth through TAP.
Technology	high	low	BSCC uses established, well understood technologies. Suppliers with well-established track records are used, offering industry standard warranty periods. Comprehensive acceptance regime applied before acceptance.
Financing	high	medium	PC2 project funding well advanced, however due to complexity in funding secondary cables, this remains a risk to the project.
Project Management	high	low	BSCC has contracted capable, experienced consultants to support financing, technical and legal functions.
Timing	low	low	A limited window of opportunity will be available to secure financing for PC2, between the Echo Contract in Force (CIF) date and the deadline for material changes to the network design (estimated at four months). BSCC and its financiers will maximise progress on the project before the final commercial terms are agreed.