Airline Options for Pacific Aviation Sustainability

CONSULTANT'S REPORT

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ACKNOWLEDGMENTS

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LIST OF ACRONYMS

ACI	Airports Council International
ACMI	Aircraft, Complete Crew, Maintenance, and Insurance
ADB	Asian Development Bank
AOC	Air Operators Certificate
AOG	Aircraft on Ground
ARNS	Aeronautical Navigation Service
ASPA	Association of South Pacific Airlines
CAMO	Continuing Aircraft Management Organisation
COVID-19	Coronavirus Disease
CRM	Crew Resource Management
DFMC	Dual Frequency Multi Constellation
DG	Dangerous Goods
ETOPS	Extended-range Twin-engine Operational Performance Standards
FTO	Flight Training Organisation
GSE	Ground Service Equipment
GNSS	Global Navigation Satellite System
IATA	International Air Transport Association
ICAO	International Civil Aviation Organisation
IFR	Instrument Flight Rules
IOSA	IATA Operational Safety Audit
JV	Joint Venture
MOU	Memorandum of Understanding
MRO	Maintenance Repair and Overhaul
O-D	Origin-Destination
PASA	Pacific Airline Strategic Alliance
PASO	Pacific Aviation Safety Office
PIC	Pacific Island Country
PBN	Performance Based Navigation
PRIF	Pacific Region Infrastructure Facility
RAMM	Regional Aviation Ministers Meeting
RJ	Regional Jet
RSE	Recognised seasonal employer
SBAS	Satellite-Based Augmentation System
SPTO	South Pacific Tourism Organisation
SPV	special purpose vehicle
SMS	Safety Management System
TA	Technical Assistance
TP	Turbo-prop (aircraft)
TWG	Transport Working Group
VFR	Visiting Friends & Relatives

Executive Summary

Following the outbreak of coronavirus disease (COVID-19) and its impact on the aviation industry, the Association of South Pacific Airlines (ASPA) recognized both the need for, and complexity associated with, airline reforms in the Pacific region. Over the past several decades, various attempts were made to restructure Pacific airlines, but these yield limited progress. ASPA sought Pacific Region Infrastructure Facility (PRIF) assistance to explore possible options.

At the second Regional Aviation Ministers Meeting (RAMM) held in 2022, the Pacific aviation ministers agreed that affordable and sustainable air services are critical to economic recovery post-COVID-19.

This study is based both on an analysis of previous reports, detailed information requested from the Pacific Island Countries (PIC) airlines, and the implementation of a stakeholder consultation strategy. Only a few airlines provided data and ASPA was able to schedule only one of the planned workshops within the timeframe established.

Route and Network Options

The airline routes and networks were segmented into domestic (individual PIC), regional (across PICs) and international (external to the PIC region) by airline and aggregated for both regional and international. A preliminary assessment supported the proposal presented to the PRIF-Transport Working Group meeting in December 2022 that suggested segmenting the Pacific Island region into two distinct areas and explored the option of working more closely with a smaller number of selected airlines in each region to gain initial momentum.

From a regional perspective there are some common features that may make this attractive in the medium term for airlines to promote Pacific aviation sustainability. Starting with two airlines provides an opportunity to develop the concept from a manageable base: two airlines, two countries, putting in-place the policy, regulatory and operational framework for optimal outcomes.

In the western Pacific, Solomon Airlines and Air Vanuatu would be logical airlines to encourage this type of closer arrangement. In the eastern Pacific, the challenges facing government-owned airlines currently make this a less viable option; however, Air Rarotonga has demonstrated a consistent ability to develop a domestic resilient network with a regional network capacity built over time. Air Rarotonga is the only privately owned airline in the study; the remainder all have some form of government ownership.

The conclusions reached in this analysis indicate that the feature most consistent with the premier destinations, Fiji and French Polynesia, are strong domestic network schedules aligned with regional and international network capacity, the latter provided through a mix of owned aircraft and codeshare arrangements. The international network is supported through a strong domestic network base. The success of both Fiji Airways and the French Polynesian airlines is due in part to government support. Government and/or private sector investment in aviation infrastructure that supports safe air transport operations is critical.

Some PICs are limited in having insufficient destinations to build a domestic network. This is the case in Samoa, Niue, Tonga, Tuvalu, and Tokelau. However, these limitations can be mitigated through seeking to deploy limited resources in a manner that optimizes a network capacity.

To achieve similar network outcomes, Pacific airlines should ensure the domestic network is resilient, effective, and provides the operational ready capacity to link with wider regional and international network capacity.

To deliver scale and scope that better reflects the personnel and resources available, it is crucial to have collaboration, codeshare arrangements in place, and consolidation of aircraft types operated across the Pacific region. The latter is crucial as there is an ageing aircraft risk across most of the Pacific airline fleets, except for Fiji Airways and the French Polynesian airlines. The following section will expand on this issue.

Framework for Strategic Options

The following options have been presented to ASPA airlines and could be implemented as intermediate forms of collaboration that could potentially establish a regional alliance in the case of airlines that are financially sustainable or could be made so:

- **Airline Collaboration Agreements**: This option involves an agreement between two or more airlines to establish peer-to-peer operational, technical, and/or commercial collaboration. Such an agreement can take the form of collaboration in areas like procurement, training, aircraft leasing, maintenance, and the other areas that could eventually be offered as a hub, under the hub concept. Alternatively, the agreements could focus on collaboration on operational and commercial activities.

- **Airline Partnerships**: Partnerships between two or more airlines that can represent a more formalized financial relationship than collaboration agreements by allowing for the sharing of revenues or both revenues and costs and thus represent a limited form of alliance. The airline remains government owned and operated, with their own aircraft, but engages in and operates with extended commercial relationships with a partner or partners to obtain savings.

- **Dry Lease or Wet Lease Arrangements**: A dry lease is an arrangement whereby an aircraft financing entity (lessor), provides an aircraft without crew, ground staff, etc. Under a wet lease one airline (the lessor) provides an aircraft, complete crew, maintenance, and insurance (ACMI) to another airline (the lessee), the latter airline pays by hours operated. These arrangements can be a stand-alone collaboration between airlines or form part of a broader airline collaboration agreement or airline partnership.

The possible structure of a Pacific Airlines Strategic Alliance (PASA) is explored, including a detailed list of the potential activities that can be carried out jointly by alliance members, in this analysis. These services fall into the general categories of commercial and revenue, airline operations, joint procurement and costs, network, and operations planning, corporate management, and marketing. Over the longer term, a full-fledged alliance can be an important tool for creating a financially sustainable industry in the Pacific region that offers world class standards of service.

At a minimum, to enact such an alliance would require member airlines to collectively conclude the following:

- Code-Share Agreement to expand the PASA members' existing code-share arrangements and set out the operational arrangements as between the members on the Alliance routes.

- Special Prorate agreement to enhance the PASA members' existing special prorate agreement, and set proportional rates, or "prorates" on such routes as members may agree (on their respective networks).

- Premium Customer Handling and Lounge Agreement[1] to enhance members' existing arrangements pursuant to PASA minimum requirements to provide reciprocal premium handling, including lounge access to the extent practical.

- Pacific Flyer Program Agreement to enhance the members' existing frequent flyer program agreement to the extent practical.

It should be noted that an alternative to an alliance for PIC airlines that offers the potential to achieve financial sustainability would be the establishment of **Inbound Joint Ventures** with a large international carrier. The PIC governments form a special purpose vehicle (SPV) that acts as a regional airline, and partners with a larger airline to gain access to its expertise and global resources. The SPV will provide its own aircraft and air operators' certificate; at this point, the national airlines will relinquish their international routes to the newly formed regional airline. The larger airline can provide an equity investment for the transfer of risk or can participate under a management contract with the national airline remaining entirely under the ownership of the government.

But it should be noted that this last option has already been attempted without success in the case of Polynesian Blue (later Virgin Samoa), which was a joint venture between Virgin Australia and the Government of Samoa. The limited international passenger market for Samoa was a contributing factor.

Other strategic relationship forms are more applicable to cases where the PIC airline is not financially sustainable, and therefore are unlikely to be attractive to members of an alliance. These forms were identified, but not further elaborated on in this report.

Detailed Guidance to Support Airline and Government Decisions

Detailed guidance was provided to support decisions at airline and government level, incorporating:

- Aircraft for both domestic and international needs

- Technical training and services needs

- The regulatory framework

Key findings include:

1. With the current mix of aircraft operating across the region, especially in domestic and regional scheduled services, the airlines are not in a position to scale efficiencies through collaboration in provision of maintenance, repair, and overhaul (MRO), training and support services. Standardizing the aircraft used by PIC airlines would have an important impact in these areas.

2. There are a mix of airfield types supporting both day Visual Flight Rules (VFR) and 24/7 Instrument Flight Rules (IFR) scheduled services, from coral surface to paved runways. Domestically, the airfield length is a major influence on what type of aircraft may operate. Some airfields are only 600 m in length. Investment in airfield infrastructure is a key component for the health of the industry.

3. A necessary precondition for achieving the full benefits for greater collaboration between

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[1] SolAir Belama Club and other PASA members' lounge offerings could be consolidated and reshaped to provide a better "value proposition" for passengers.

the airlines is an improvement in the regulatory environment in the region, including a harmonization of safety and economic regulation between the PICs that affect the relationship between airlines.

Roadmap for Options

Short- and longer-term actions that can promote greater collaboration between the airlines are identified. These actions are on the following pathway toward an alliance.

Figure 0:1: Pathways to Pacific Airline Strategic Alliance
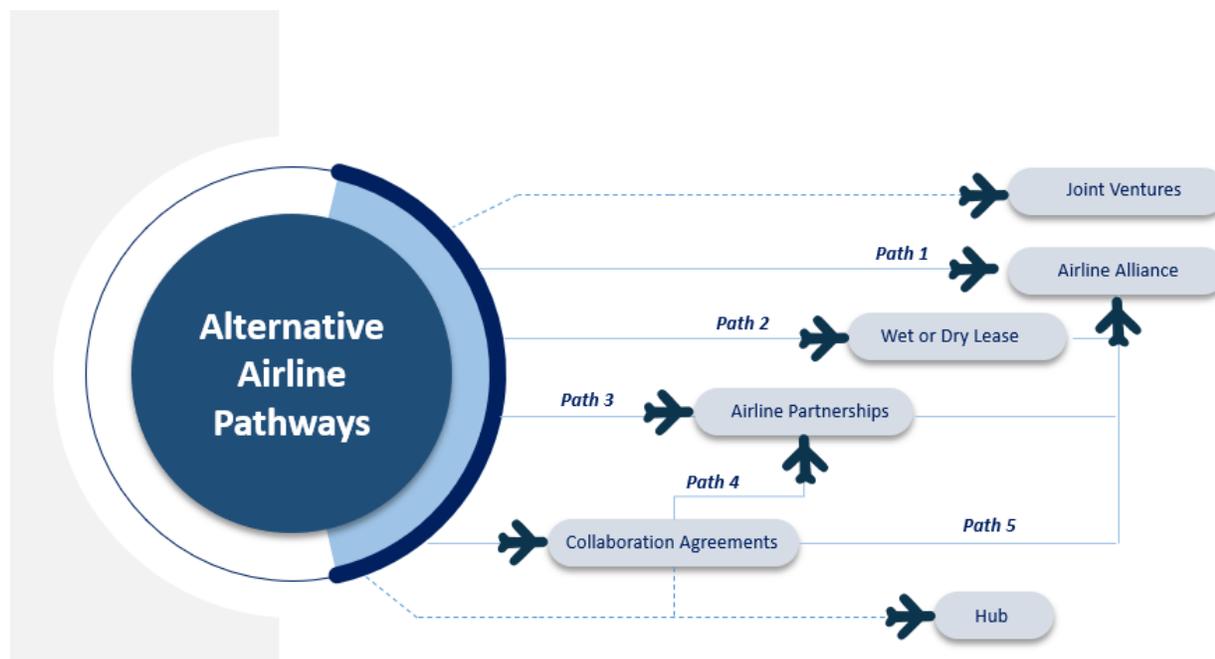
Source: IOS Partners

The first pathway (Path 1) would be the direct implementation of the alliance. As this would also be the most difficult to achieve, alternative pathways are included that correspond to more indirect roadmaps toward an alliance that involve the creation of intermediary strategic relationships over the shorter term. These alternative indirect pathways include the following:

1. Encourage airlines in the western Pacific to increase their collaboration, reaching the signing of memoranda of understanding that cover the specific areas of collaboration.

2. Support the PIC governments and government-owned airlines in the eastern Pacific in determining the financial sustainability of their airlines and the options for further collaboration that may be most suitable.

3. Carry out a detailed analysis of the legal framework that governs the economic regulation of the airlines in each country to identify the primary impediments to collaboration with airlines from other PIC countries and opportunities for harmonizing these regulations between airlines.

4. Harmonize aviation safety regulations across PICs. This might be achieved through incorporating one country's aviation regulations by the PICs. This will provide the Pacific

Aviation Safety Office (PASO) with a single aviation safety regulatory framework to manage risk and safety oversight.

5. Recognize aviation qualifications achieved or completed in another country by authorities such as the International Civil Aviation Organisation (ICAO), International Air Transport Association (IATA), Airports Council International (ACI), or a tertiary organization or apprenticeship schemes.

6. Involve key decision makers in PIC governments in the discussion over specific collaboration options to obtain their buy-in.

The longer-term actions that may become more attractive once the short-term actions have taken place to move toward a PASA fall under two alternate approaches:

1. Encourage the formation of revenue and cost partnerships that could later be expanded to include additional areas of cooperation.

2. Move directly toward the formation of a PASA that includes a broader range of the activities, as listed in Table 3-1.

In conclusion, while there is a viable path toward greater collaboration between PIC airlines, up to and including an alliance, it will require considerable determination on the part of the airlines themselves, as well as political will on the part of PIC governments.

The findings and recommendations in this report are based on available information to date and are flexible to allow adjustment and the incorporation of later developments and additional information.

This final report is to be presented to the ASPA Conference 29 May 2023, and, as airlines in the PIC region renew fleet types and inter-airline arrangements, these can be added to this document to assess how collaboration between airlines may evolve.

1. Introduction

1.1   Background and Objectives

Following the outbreak of the coronavirus disease (COVID-19) and its impact on the aviation industry, the Association of South Pacific Airlines (ASPA) recognized both the need for, and complexity associated with, airline reforms in the Pacific region. Over the past several decades, various attempts were made to restructure Pacific airlines, but yielded limited progress. ASPA sought Pacific Region Infrastructure Facility (PRIF) assistance to explore possible options.

ASPA highlighted a progressive approach and recommended a small number of options to be taken forward into detailed analysis and implementation. This would involve starting with peer-to-peer cooperation between a few Pacific airlines. Based on the successful implementation of this first step, the next step would be to expand this cooperation to more Pacific airlines and to progressively turn this cooperation into a joint venture product, either peer-to-peer or with a larger airline.

At the second Regional Aviation Ministers Meeting (RAMM) held in 2022, the Pacific aviation ministers agreed that affordable and sustainable air services are critical to economic recovery post-COVID-19 and noted that there are opportunities to encourage economic recovery of the region through aviation connectivity by:

(i)   establishing temporary arrangements with other like-minded nations that encourage air travel between nations, as an interim measure to help kick-start economic recovery when border restrictions are lifted, and

(ii)   considering whether there are essential air routes that could be serviced through different funding models.

Based on this RAMM agreement, PRIF has contracted two additional studies to further flesh out a framework for regional cooperation:

1. A Scoping Study Aviation Regional Hub/Body; and

2. The current Airline Options for Pacific Aviation Sustainability study.

The main objective of this last project is to support post-COVID-19 Pacific aviation recovery and sustainability in line with the RAMM2 outcomes by supporting the better option for a Pacific airline strategic alliance through the following:

- Conducting a viable network and fleet options study that would guide the selection of common aircraft types and subsequent servicing and capacity training needs.

- Developing a business case for a potential Pacific Airlines Strategic Alliance (PASA) and secure PIC government buy-in.

1.2   Scope of Work

The original scope of work for this project included the following tasks:

Task 1 – Desk review

Task 2 – Market research

Task 3 – Development of a network plan, incorporating evaluation of passenger and freight traffic

Task 4 – Development of a business case for a potential PASA and common regional technical support services

> Activity 4.1 - Establish a framework for strategic options

> Activity 4.2 - Develop a business case

Task 5 – Workshops

Task 6 – Discussions with PIC governments

Task 7 – Development of roadmap for optimum regional option for Pacific aviation sustainability

Task 8 – Provide detailed guidance to support decisions at airline and government level, incorporating

> Activity 8.1   Aircraft for both domestic and international needs

> Activity 8.2   Technical training and services needs

Task 9 – Preparation of the draft final report

Task 10 – Present the report at the PRIF Transport Sector Working Group

Task 11 – Incorporate comments to final report

Task 12 – Summarize findings in a project completion report

1.3   Information Requested and Reviewed

The list of documents reviewed for this report includes (but is not limited to):

- Post-COVID-19 Pacific Short-Term Aviation Strategy, 2022
- Regional Options for Pacific Aviation Sustainability Post-COVID-19
- Solomon Airlines Strategic Options Analysis, 2021
- Pacific Regional Aviation Strategy 2023–2032
- Pacific Islands Civil Aviation Safety and Security Treaty, 2005
- Pacific Aviation Safety Office Strategic Plan 2022–2032
- Air Services Agreements in the Pacific Island Countries
- Port Moresby Declaration on Aviation Safety and Security
- Scoping Study, Aviation Regional Hub/Body – Draft Final Report 2023

In addition, the following information was requested from the airlines:

- ✈ Annual Financial Statements 2018–2022

➤ Origin-Destination (O-D) sector data including aircraft type, seat capacity segmented by business, premium economy and economy, passenger numbers, freight capacity and total freight per sector

➤ Route sector data to be segmented by domestic, regional PICs, and international (external to PICs)

➤ Airline alliance information and type of alliance

➤ Aircraft types operated 2018-2022, aircraft on order

➤ MRO support, internally and external contract

➤ Pilot annual training capability, internal and external contract

➤ Cabin crew training capability, internal and external

➤ Ground services support, airside and training capacity

As of this report, the above information has been received from Solomon Airlines, Nauru Airlines, and Air Vanuatu. Some information was also obtained from Fiji Airways.

1.4   Stakeholder Consulting Strategy

The consultants established a stakeholder consultation strategy that (1) set out the objectives and scope of the consultation, (2) mapped key stakeholders, and (3) established methods and tools that ensured a comprehensive, balanced, timely, tailored, and incorporated stakeholder consultation process.

Objectives and scope

The main objective of the stakeholder consultation process is to:

- collect information, ideas, opinions and insights on structural reform options for regional airlines in the pacific and the development of a network plan;
- identify major challenges for regional collaboration; and
- understand stakeholders' structural reform preference through the ranking of options.

Methods and tools

The consultants employed a wide range of activities and tools, including e-mail outreach, virtual interviews, virtual workshops, and face-to-face meetings. This approach relies on engagement with and provision of requested data and information from the airlines involved.

Virtual workshops

The workshops were intended to collect information and insights from a wide range of stakeholders.

The consultants established a dynamic and robust method to ensure that the process is:

- Comprehensive - giving all stakeholders the opportunity to express their views;
- Balanced - ensuring that the consultation is representative;
- Timely - allowing sufficient time for stakeholder inputs and contributions;
- Tailored - ensuring that the needs of specific target audiences are met; and
- Incorporated - taking into account all feedback and input in the study.

The virtual workshops were to be conducted over the Zoom platform and would constitute the main form of stakeholder engagement. The three workshops were intended to allow for the Consultants to interact directly with the different stakeholder groups.

The first of these workshops was held on 12 October 2022, with the participation of ASPA and representatives of four airlines. Unfortunately, it has proved impossible to schedule the follow-up workshops, though individual interviews with three specific airlines were held.

<u>E-mail outreach</u>

During implementation, the consultants sought to maintain contact with relevant stakeholders through e-mails and various other electronic tools to request data on airline operations, aircraft, passenger flows, and financial statements.

<u>Face-to-face meeting</u>

The face-to face meeting was intended to take place toward the end of the project should the participating airlines be able to gather in one place.

The consultants were able to make a remote presentation of the draft final report to the PRIF Transport Sector Working Group on 23 March 2023 and have been invited to participate in person at the ASPA workshop planned for 29 May 2023.

This final report incorporates comments received on the draft final report and at the PRIF meeting but ***should be considered a "living document" for further discussion at the ASPA workshop.*** *The findings and recommendations in this report are based on available information to date and are intentionally flexible enough to allow adjustment and the incorporation of later developments and additional information.*

2. Route and Network Options

The objective of this task was to segment findings into domestic (individual PIC), regional (across PICs), and international (external to PIC region) by airline and aggregated for both regional and international. Due to the low response rate, it is challenging to aggregate this information fully.

Current global airline travel recovery is fluid, initial recovery is from a domestic base and, as borders reopened, expanding across regions and internationally. The opening of Pacific Islands' borders has seen the return of Recognised Seasonal Employer (RSE) workers, specifically to Australia and New Zealand; these workers provide much-needed remittances back to their home PIC. However, the recent damage from Cyclone Gabrielle in New Zealand may see the RSE scheme shortened this season, as well as in the short term, as the East Coast region of New Zealand rebuilds communications, transport, and agricultural infrastructure.

Though long-haul international leisure passengers fill most of the seats on flights and cover a portion of fixed costs, their overall financial contributions historically, in net marginal terms are negligible, if not negative; however, with international capacity remaining in rebuilding, average fares have risen markedly with Visiting Friends and Relatives and tourist travellers contributing significantly to airline revenues.

Recovery is being led by leisure travel (VFR and tourism); it is arguable if business travel will recover to pre-pandemic levels as remote work, digitalization, and other initiatives are supplanting it. For instance, business travel did not recover fully to pre-2008 global financial crisis levels leading into COVID-19; consequently, leisure travel recovery, both VFR and tourists, will outpace business travel recovery and with higher average fares.

These factors influence development of the network plan, right-sizing a domestic, regional, and international business model and aircraft framework.

2.1   PRIF-Transport Working Group

At the PRIF-Transport Working Group meeting held on 7 December 2022, the consultants promoted segmenting the Pacific Island region into two distinct areas and explored working more closely with fewer selected airlines in each region to gain initial momentum.

Progress with this concept requires additional information from selected individual airlines to enable higher levels of assessment, especially with respect to fleet operational data. However, from a regional perspective, there are some common features that may make this attractive in the medium term.

In the Western Pacific region, Solomon Airlines and Air Vanuatu would be logical airlines for this type of closer arrangement. In the Eastern Pacific region, the challenges facing government-owned airlines currently make this a less viable option; however, Air Rarotonga has demonstrated a consistent ability to develop a domestic resilient network with a regional network capacity built over time. Air Rarotonga is the only privately owned airline in the study, with the remainder all having some form of government ownership.

Figure 2:1: Building Closer Relationships
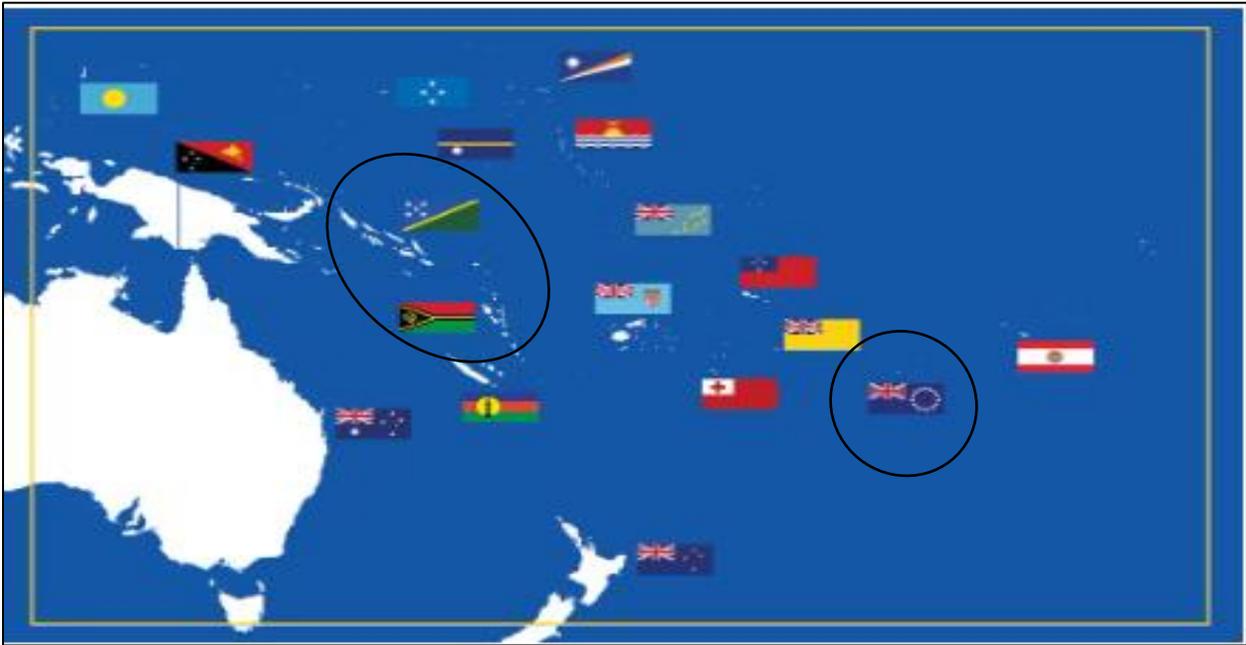
Source: Peet Aviation

2.2   South Pacific Tourism Organisation

Air visitor arrivals across the region during 2021 reached a low of approximately 158,000. This was prior to widespread border openings and the resumption of international scheduled flight operations. While tourism travel remains in pick-up mode, indications are that pre-2019 levels of tourists will be established during 2024. By destination, the market is being led by the premier destinations of French Polynesia and Fiji, followed by the Cook Islands.

Figure 2:2: Pacific Destinations Tourism Share, 2021
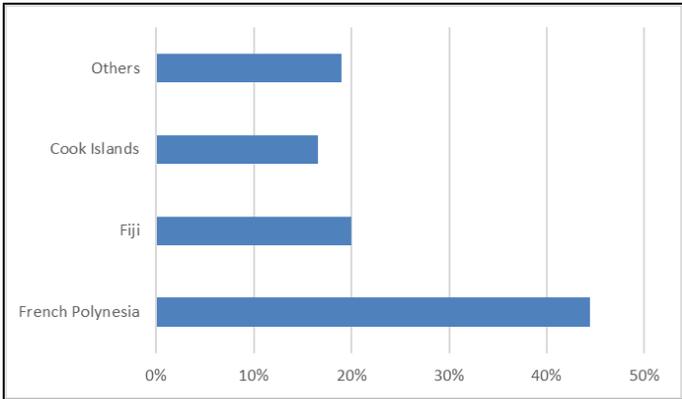
Source: South Pacific Tourism Organisation

2.3   Building Schedule Network Resilience

2.3.1   French Polynesia

French Polynesian airlines, Air Tahiti Nui and Air Tahiti, have domestic and international fleet aircraft providing a mix of capability, from ATR-42 and ATR-72 domestically and inter-regionally through to B787 on international flights. There are comprehensive codeshare arrangements in-place with several other airlines, including Air New Zealand, QANTAS, Air Calin, American Airlines, Alaska Airlines, Air Rarotonga, Japan Airlines, Korean Airlines, LATAM, Air France, and SNCF (the French state-owned railway company).

Figure 2:3: Air Tahiti Nui Route Map and Codeshare Partners
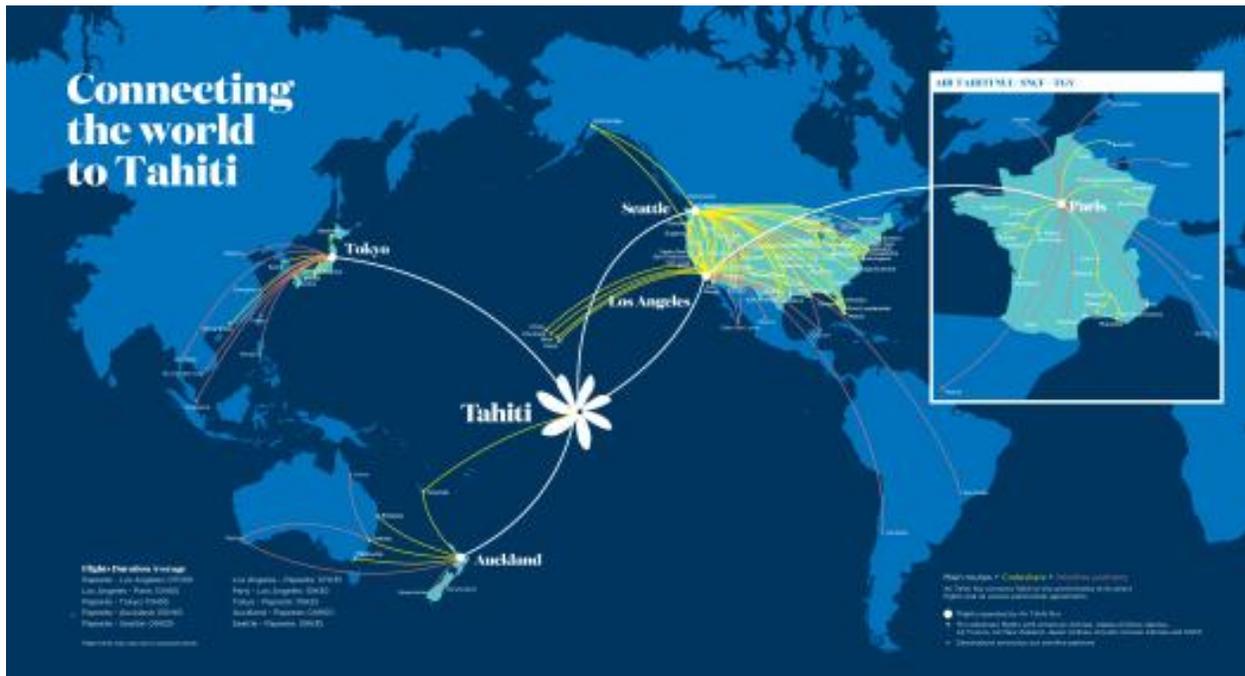
Source: Air Tahiti Nui

2.3.2 New Caledonia

New Caledonia airlines, Air Calin, and Air Calédonie, have domestic and international aircraft that provide a mix of capabilities. Air Calin is focused on international flights, with both Airbus A330 and A320 aircraft and two Twin Otter aircraft for limited domestic connectivity. Air Calédonie operate four ATR-72 aircraft on domestic services. Air Calin has a mix of commercial arrangements, including codeshares with Air France, Air Tahiti Nui, Japan Airlines, QANTAS, Air New Zealand, and Air Vanuatu.

Geographically, New Caledonia is close to Vanuatu and the Solomon Islands and may provide attractive relationships with SolAir and Air Vanuatu in extending current or future collaboration arrangements. The A330NEO Air Calin aircraft may provide options for connectivity to Asia and North America, either directly or through Tahiti.

The aircraft fleet types of both Air Calin and Air Calédonie are similar to other airlines in the region.

Figure 2:4 Air Calin Route Map and Codeshare Partners
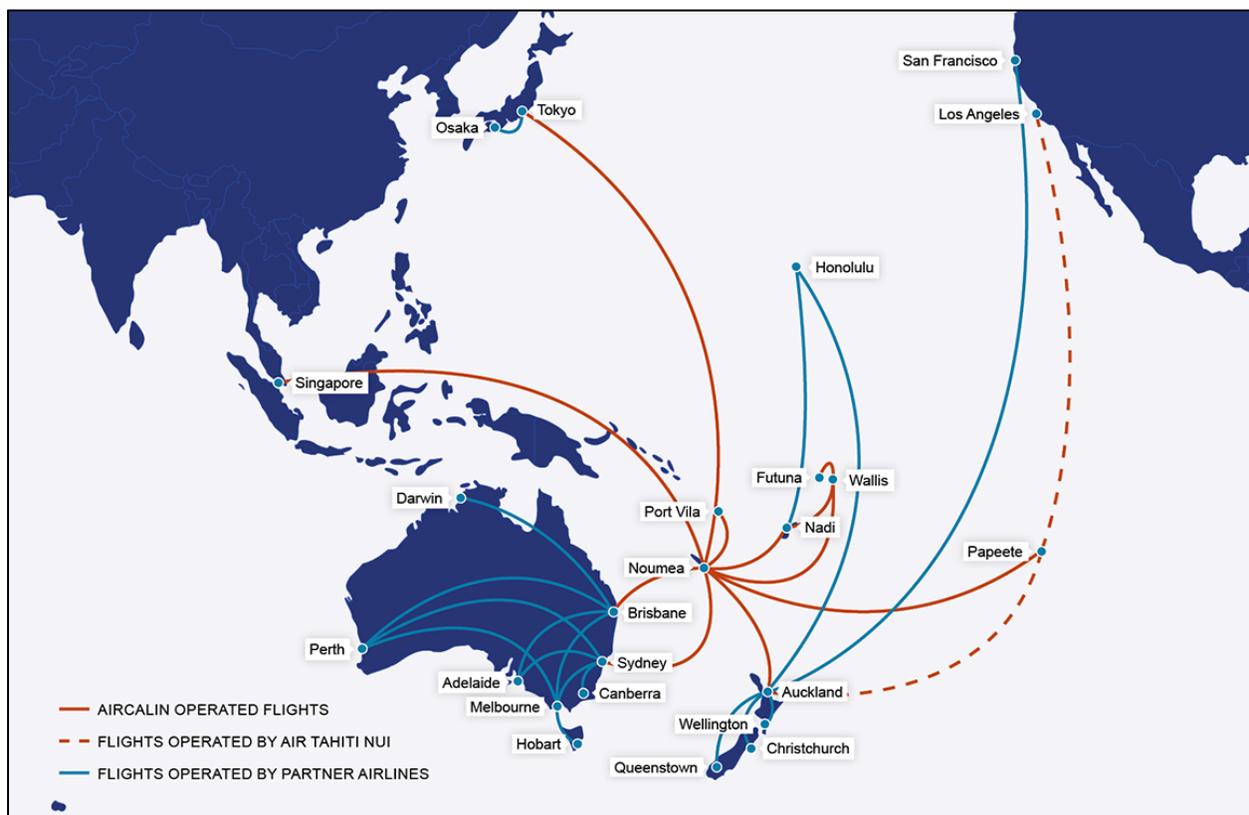
Source: Air Calin

2.3.3   Fiji Airways

Fiji Airways has a mix of capabilities from A350-900, A330-300, A330-200, B737 Max 8 and 737-800, ATR42-600 and ATR72-600 and a domestic only fleet of Viking Twin Otter aircraft with upgraded digital avionics. The airline has a comprehensive list of international codeshare arrangements, including Air New Zealand, QANTAS, Jetstar, Air Vanuatu, Solomon Airlines, American Airlines, Alaska Airlines, British Airways, Finnair, Cathay Pacific, Singapore Airlines, Japan Airlines, and Air India.

Figure 2:5 Fiji Airways Route Map and Codeshare Partners
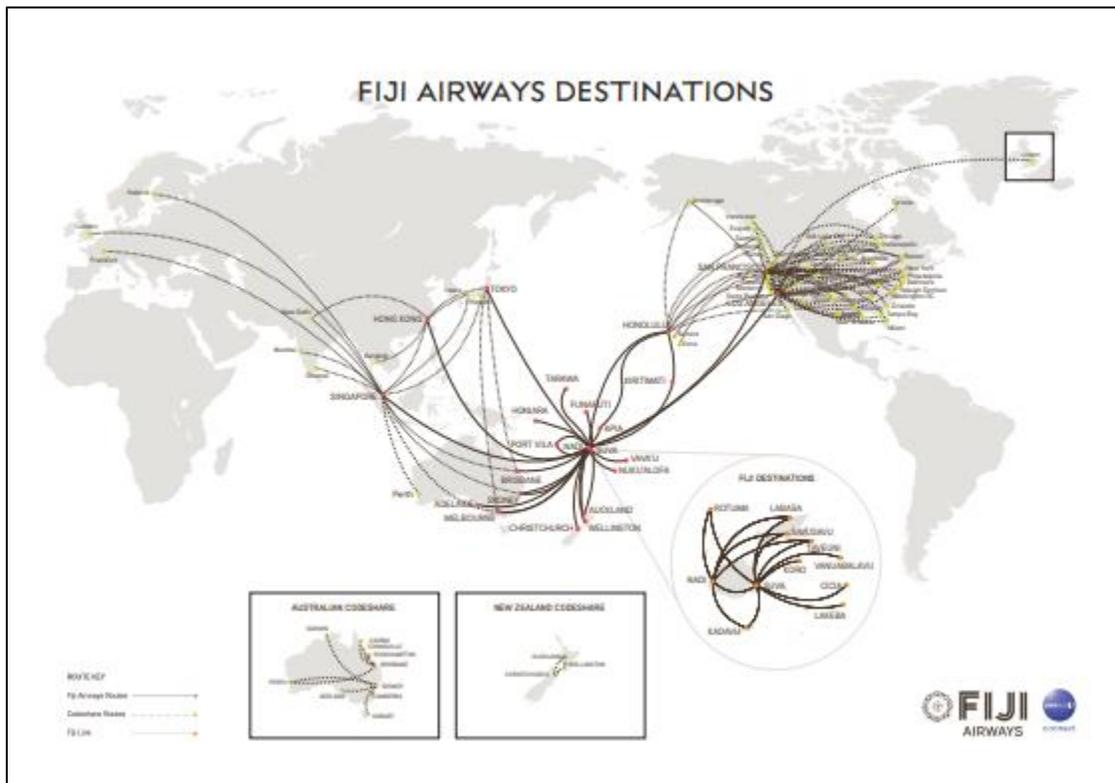
Source: Fiji Airways

Fiji Airways provides a reasonably comprehensive regional Pacific connectivity network with neighboring PICs. This network extends across to Australia and New Zealand, providing one-stop connection options for PIC travelers, through Nadi to/from both countries. With international destinations in Asia and North America, Fiji Airways provides an opportunity for PIC airlines to codeshare for connectivity and opening accessibility opportunities to a wider market.

2.3.4   Air Rarotonga

Air Rarotonga is the only privately held PIC airline in the study, with over 40 years of scheduled flight operations. The airline operates SAAB 340B, Bandeirante and a Cessna CJII jet aircraft. It has codeshare agreements with Air New Zealand, Air Tahiti Nui, and Hawaiian Airlines. The airline is capital-constrained from moving to larger fleet aircraft, in particular the ATR-72, due to being privately owned. However, Air Rarotonga has consistently, over time, provided a domestic route network for the Cook Islands that has shown resilience and continued to operate through the COVID-19 pandemic. More recently, the airline has expanded scheduled services to Tahiti with a codeshare arrangement with Air Tahiti Nui and has undertaken charter operations to nearby PICs such as Tonga and Samoa.

Figure 2:6 Air Rarotonga Route Map
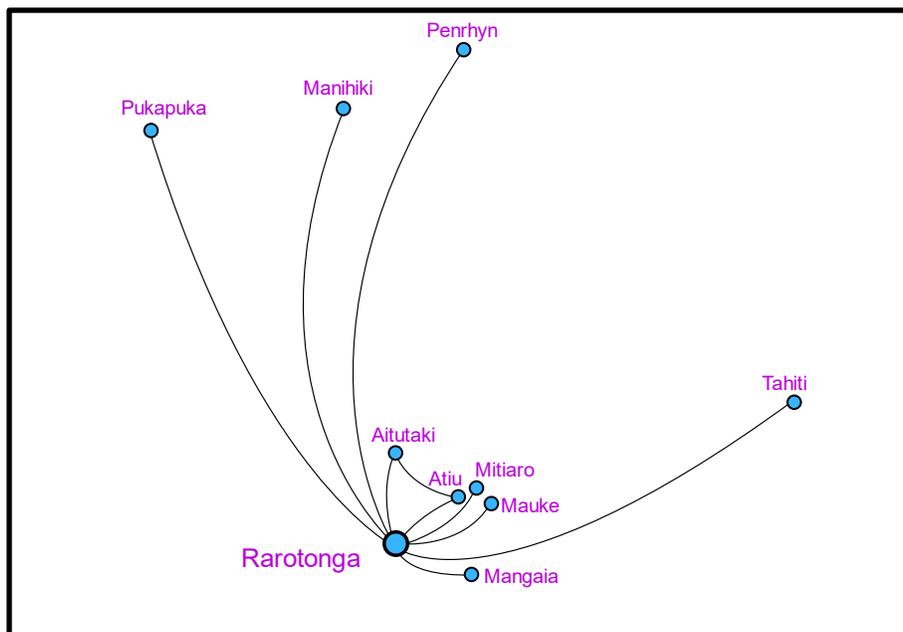
Source: Air Rarotonga

In the Eastern Pacific region, Air Rarotonga provides a stable airline operation, though with an ageing fleet. Air Rarotonga would benefit from access to capital for fleet renewal purposes, with the addition of ATR-72 aircraft providing regional expansion opportunities and enhancing network connectivity for countries in this area of the Pacific.

2.3.5 Solomon Airlines

Solomon Airlines has a single A320 for international flight operations and local regional operations with a single Dash8-100. Domestic flight operations are provided through a mix of Twin Otter and an Ikhana Twin Otter re-lifed aircraft with digital avionics. It is the airline's intent that the two standard Twin Otter aircraft are Ikhana re-lifed in the short-term as capital allows. The airline has comprehensive codeshare arrangements in-place with QANTAS, Fiji Airways, Emirates, Air Kiribati, Air Vanuatu, and Air Nuigini. Solomon Airlines has provided the requested information on flight operations data across the aircraft fleet and financial information.

Solomon Airlines conducted comprehensive strategic options studies through the COVID-19 pandemic. It is assumed the airline is committed to accelerating out of the recent collapse in international tourists and expanding from its domestic scheduled flight operations once international scheduled flight operations and travel return to pre-pandemic levels.

Figure 2:7 Solomon Airlines Domestic Route Map
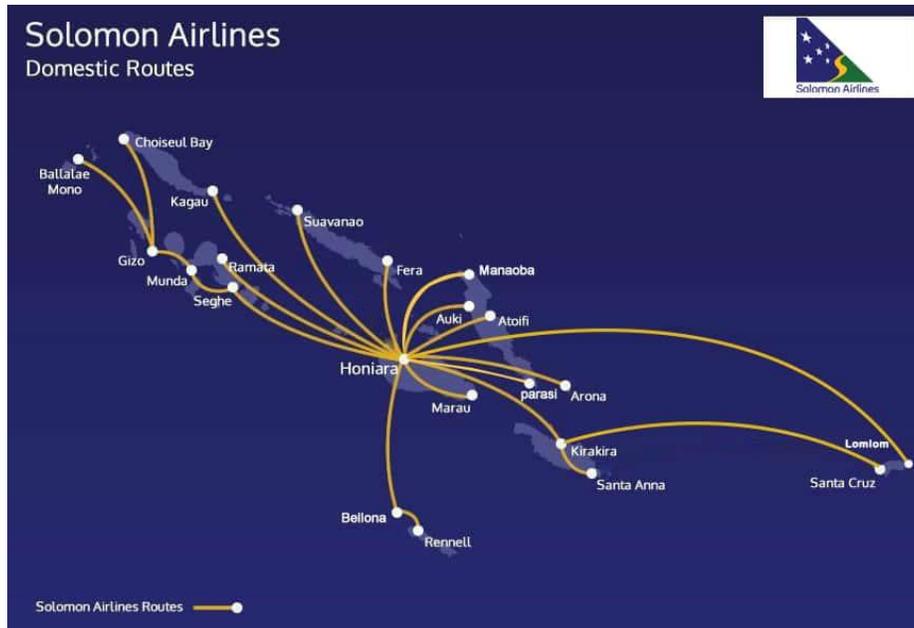
Source: Solomon Airlines

The domestic fleet of Twin Otter aircraft is ageing and will need to be upgraded, either through the Ikhana re-lifed option or a fleet renewal. Options for fleet renewal are the Viking 400 (Twin Otter) or Cessna SkyCourier for domestic scheduled flight operations and the ATR-72 for both domestic and regional Pacific scheduled flight operations.

Figure 2:8 Solomon Airlines Regional Pacific Route Map

Source : Solomon Airlines

Figure 2:9 Solomon Airlines International Route Map

Source: Solomon Airlines

2.3.6   Vanuatu Airlines

Vanuatu Airlines has a comprehensive domestic network along with regional Pacific scheduled services. The airline has codeshare agreements in place with Air Calin, Air Niugini, Fiji Airways, QANTAS, and Solomon Airlines. The airline has faced recent financial challenges that have influenced scheduled flight operations. Domestically, the airline currently operates Twin Otter aircraft, along with an ATR-72 and a B737-800. A recent fleet renewal announcement has been made including two Boeing aircraft, two additional ATR aircraft, and four additional Twin Otter aircraft.

The Vanuatu Airlines Regional Pacific network expands into a wider international network through to Asia, Europe and North America, via the Sydney, Brisbane, Fiji, and Auckland gateways.

Figure 2:10 Vanuatu Airlines Domestic Route Map
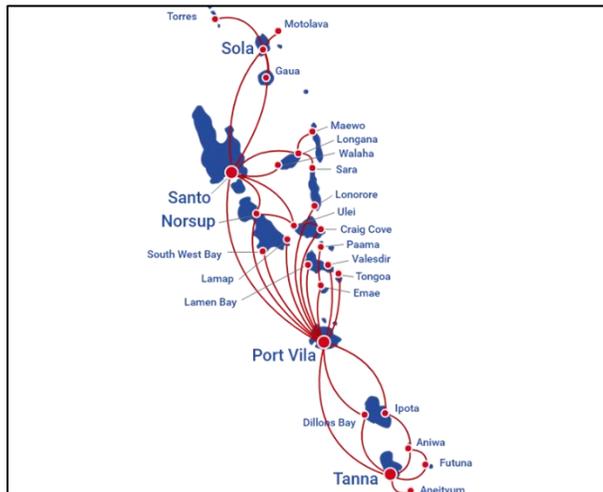
Source: Vanuatu Airlines

Figure 2:11 Vanuatu Airlines Regional Pacific Route Map

Source: Vanuatu Airlines

2.3.7   Samoa Airlines

Samoa Airlines has had challenges through the COVID-19 pandemic, including the return to lessor of a Boeing 737-800. The Airline rebranded and operates a domestic flight schedule with Twin Otter aircraft. International flight operations are currently restricted to American Samoa.

The airline has an ageing fleet of Twin Otter aircraft that would benefit from fleet renewal.

There are no codeshare agreements in-place, although QANTAS, Virgin Australia, and Air New Zealand have scheduled airline services to Samoa and Hawaiian Airlines operates to America Samoa; however, with the latter, Samoa Airlines does not schedule flights for connectivity. Fiji Airways operates a weekly flight through Samoa to Hawaii and return.

2.3.8   Nauru Airlines

Nauru Airlines operates a fleet of five B737-300/700 aircraft. Three aircraft are passenger and two are freighter conversion aircraft. Based in Brisbane, Australia, since 1996 and operating under a Civil Aviation Safety Authority Air Operators Certificate, Nauru Airlines provides scheduled services to Nauru, Fiji, and a weekly island-hopping flight through Nauru to Kiribati, Marshall Islands, and the Federated States of Micronesia.

Figure 2:12 Nauru Airlines Route Map
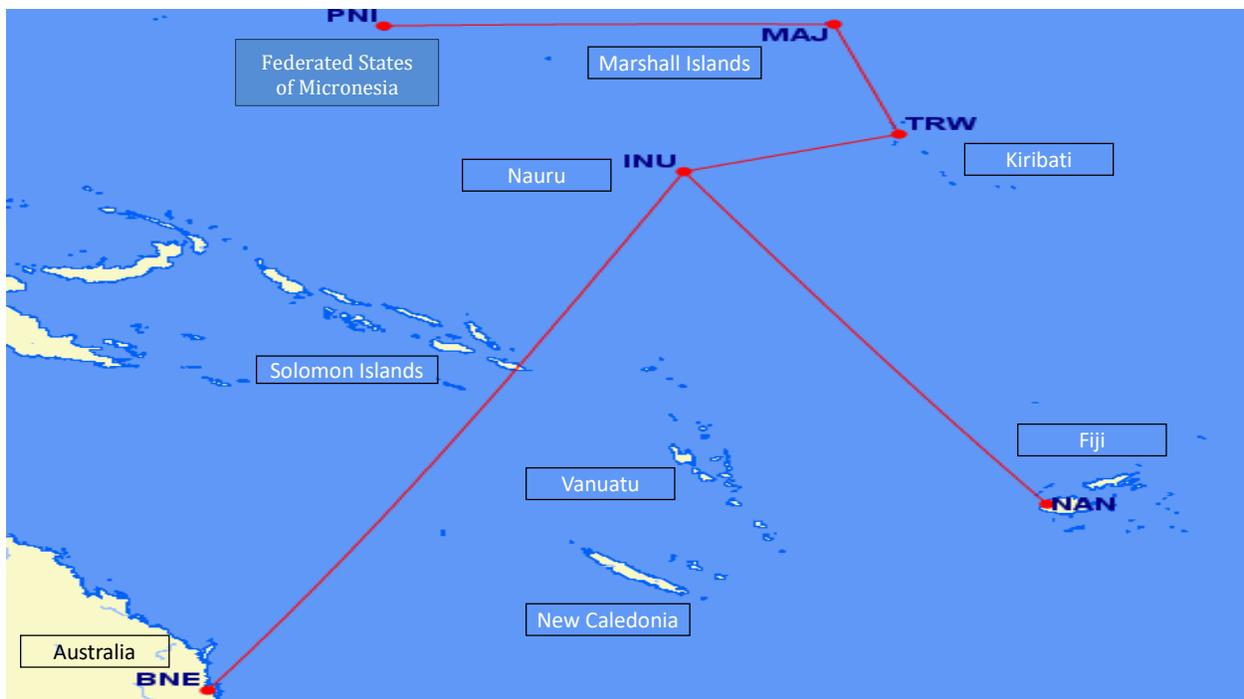
Source: Peet Aviation

With the current scheduled flight operations, Nauru Airlines has additional passenger and freight capacity across the aircraft fleet for expansion of scheduled services, or closer working relationships with PIC airlines where this capacity can be deployed.

2.3.9 Pacific Connectivity

Figure 2:13 Pacific Region Connectivity
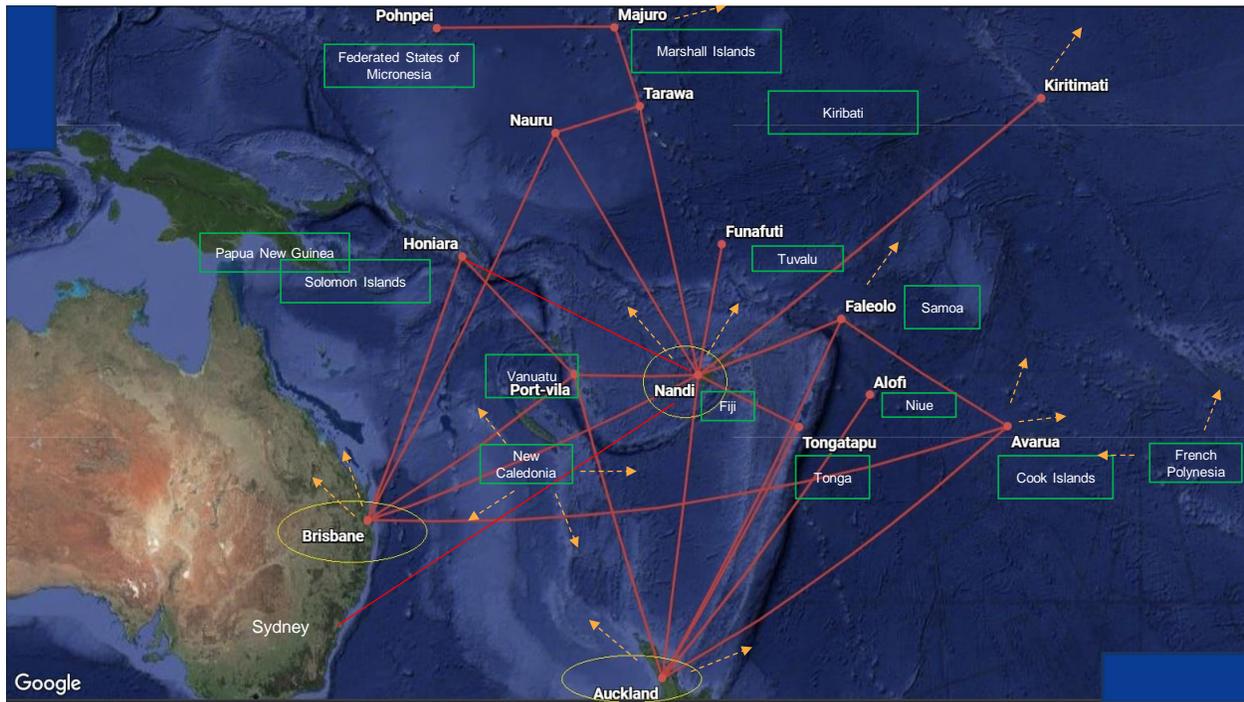
Source: Peet Aviation

A hub exists in the PIC region centered on Fiji. Historically, there have been challenges in how codeshare or commercial arrangements have existed between airlines and countries, which has led, at times, to these arrangements being short-lived.

The developing collaboration between Solomon Airlines and Air Vanuatu provides an opportunity to shift the reliance on Fiji as a connectivity hub. Air Calin, located in the same Pacific region as Solomon Airlines and Air Vanuatu, a wider collaboration arrangement, leveraging from the codeshare arrangement between Air Calin and Air Vanuatu, could enhance connectivity between the countries they service and out to the wider international market.

2.4 Conclusion

The features most consistent with the premier destinations, Fiji and French Polynesia, are strong domestic network schedules aligned with regional and international network capacity, the latter provided through a mix of owned aircraft and codeshare arrangements. The international network is supported through a strong domestic network base. In part, the success of both Fiji Airways and French Polynesian airlines is due to government support. Government and/or private sector investment in aviation infrastructure is critical.

To achieve similar network outcomes, Pacific airlines should ensure the domestic network is resilient, effective, and provides the operational capacity to link with wider regional and international networks.

Some PICs, such as Samoa, Niue, Tonga, Tuvalu, and Tokelau, are limited in what a domestic network is due to lack of destinations. However, these limitations can be mitigated through seeking to deploy limited resources in a manner that optimizes a network capacity.

Collaboration, codeshare arrangements, and consolidation of aircraft types operated across the Pacific region can offer a scale and scope that better reflect the personnel and resources available.

There is an ageing aircraft risk across most of the Pacific Airline fleets, except for Fiji Airways and the French Polynesian airlines. The following section will expand on this issue.

3. Frameworks for Strategic Options

There are many forms of collaboration that are possible between regional airlines. This section will focus on identifying and assessing frameworks for further collaboration among ASPA members up to and including the formation of a PASA.

This assessment is based primarily on an extensive literature review, including options that have been previously identified through workshops with ASPA conducted for previous PRIF studies, the ongoing Scoping Study for Aviation Regional Hub, and other previous relevant reports, as well as concepts developed by the consultants.

3.1   Description of Frameworks

The study "Regional Options for Pacific Aviation Sustainability Post-COVID-19" identified a framework based on four primary options for strategic relationships between airlines through a workshop with ASPA held in 2021.

ASPA members recommended a small number of options to be taken forward into detailed analysis and implementation. This approach would involve starting with peer-to-peer cooperation between a few Pacific airlines. Based on the successful implementation and results of this first step, the next step would be to expand this cooperation to more Pacific airlines and to progressively turn this cooperation into a joint venture product, either peer-to-peer or with a larger airline.

In effect, each option can exist on its own or form a path toward those which produce the highest reward. This pathway and the options chosen are summarized in the following figure.

Figure 3:1: Shortlisted Options Process
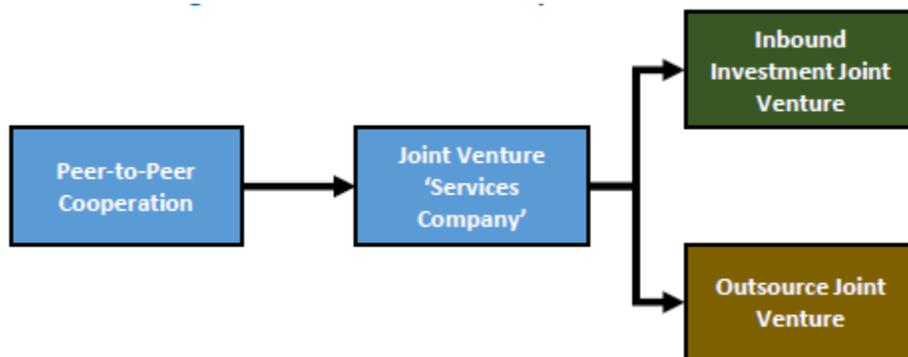
Source: Regional Options for Pacific Aviation Sustainability Post-COVID-19, PRIF, 2021

Each of these was defined as follows:

1. **Peer-to-Peer Cooperation** would represent a series of commercial arrangements between two or more regional airlines. While the airlines remain owned by the individual governments and retain their own branding, they engage in revenue and cost-driven partnerships through a range of activities. Benefits realized include efficiencies gained through economies of scale and the political attractiveness of retaining the national airline.

But the option only provides modest financial benefits with a potentially high complexity of partnerships.

2. A **Joint Venture Services Company** sees a more formal collaboration through a services company jointly owned by the PICs. The company would be staffed with specialists who would provide a range of airline services to the participating PICs on a commercial basis. While this option can increase the quality-of-service benefits, the required investment by PICs into a SPV may raise political issues.

   This joint venture services company presents a subsequent longer-term opportunity for the SPV to obtain an AOC and operate as either a full regional carrier, in which this entity replaces the national carriers, or operate under an ACMI model, in which PICs retain their own airlines and branding but source aircraft from the services company.

3. An **Inbound Investment Joint Venture** requires the PIC governments to form an SPV that acts as a regional airline and partners with a larger airline to gain access to its expertise and global resources, including an equity investment for the transfer of risk. The SPV will provide its own aircraft and AOC; at this point, the national airlines will relinquish their international routes to the newly formed regional airline.

4. An **Outsource Joint Venture** again sees an equity investment from a larger airline, but this time, the SPV will partner with a larger airline (or investor) to source the supply of air services from the partner's resources. The larger airline enters into an agreement to provide all air services and associated infrastructure. The PICs are not required to invest in their own air services and there is limited capital required. PICs will, however, only have an indirect influence on air access and some route underwriting may be required.

As mentioned previously, PRIF has contracted two additional studies, based on the subsequent RAMM agreement, to further flesh out a framework for regional cooperation:

1. A Scoping Study Aviation Regional Hub/Body to establish a wider aviation-focused regional hub/body which might initially function as a Pacific aviation technical support services hub that would aid COVID-19 recovery and future development of regional air access.

2. The present Airline Options Study to identify and assess additional options for greater collaboration between regional airlines up to and including a PASA.

The Hub study has further refined the overall framework by identifying several approaches to implementing a hub (see Figure 3-2).[2] It is important to note that this study focused on greater collaboration for the aviation sector as a whole, including airports.

The first is direct Implementation (Path 1). This involves establishing the legal and governance framework for the hub, followed by basic hub functionality by securing a small workload, and recruiting minimal staffing. Beyond this, the hub would be expanded as opportunities are identified and as service delivery workload increases.

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[2] Scoping Study Aviation Regional Hub/Body, draft final report, January 2023.

Figure 3:2: Shortlisted Options Process (Hub Study)
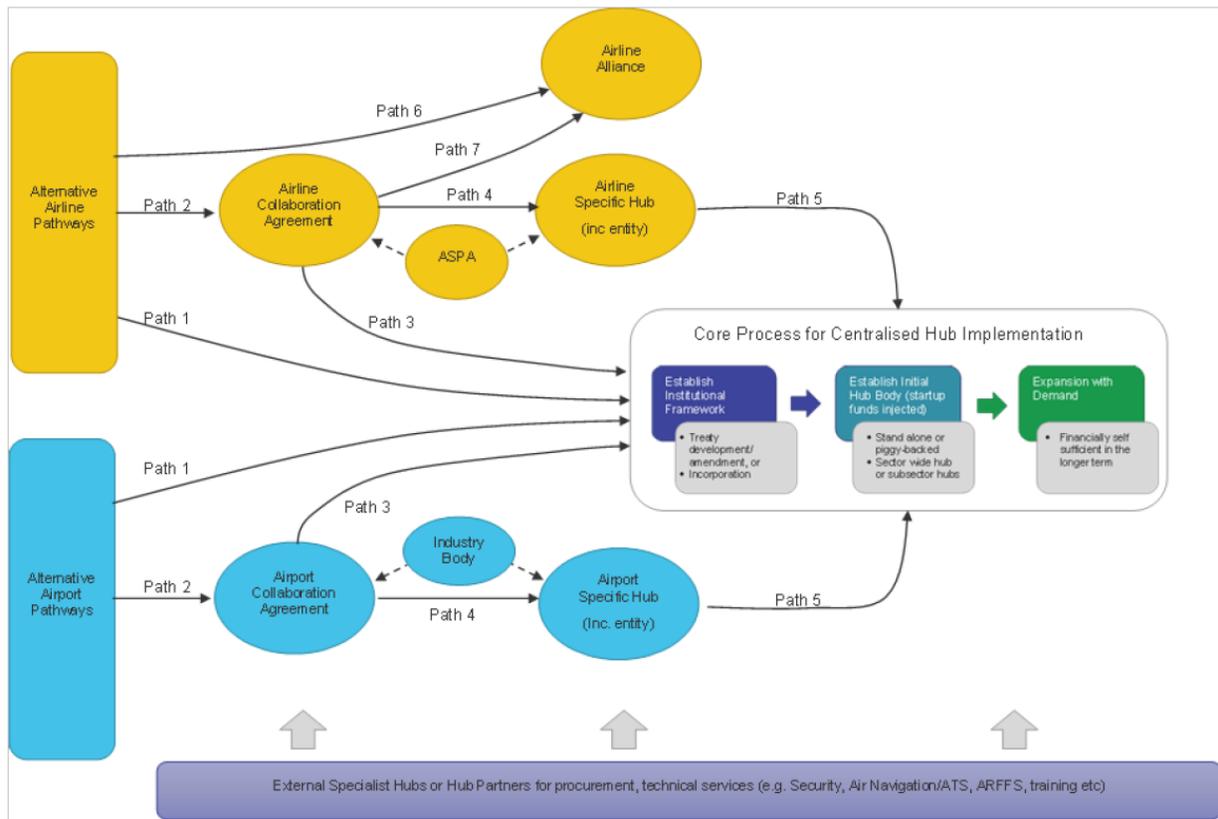
Source: Scoping Study Aviation Regional Hub/Body, Draft Final Report, January 2023.

Alternative approaches involve getting to the same place but by indirect means. The starting place is the minimalist approach preferred by airlines and airport operators, namely establishing a collaboration agreement between airlines or between airports, allowing pooling of resources and strengthening market power (Path 2). Such an agreement may be an end point in itself or may articulate over time into the fully integrated hub, either directly (Path 3), or indirectly through first establishing (one or more) sector-specific hubs (Paths 4 and 5).

The Hub study considers the formation of an airline alliance as being a separate pathway for airlines as a direct initiative. An alliance is considered an end in itself, with no articulation toward an integrated hub due to the highly commercially driven focus of airline alliances.

Though the Hub study does not delve into a framework for the formation of an airline alliance, it is important to note that this could also be the end result of increasing collaboration between regional airlines rather than through direct implementation.

The following options have been presented to ASPA airlines and could be implemented as a pathway to the eventual formation of a regional alliance in the case of airlines that are financially sustainable or could be made so:

- Airline Collaboration Agreements
- Airline Partnerships
- Dry Lease or Wet Lease Arrangements
- Inbound Investment Joint Ventures
- Alliances

Each of these is described and assessed in greater detail in the following sections, as are the potential forms an airline alliance could take.

Other forms of strategic relationships between airlines are more applicable to cases where the airlines are not financially sustainable, and therefore are unlikely to be attractive members of an alliance. These options include the following and are not further elaborated on in this report:

- Sale of airline(s)
- Outsource Joint Ventures
- Mergers with a larger more sustainable airline

3.2   The Hub Concept

The Hub study worked with the airlines and airports to identify the range of services and materials for which they are willing to support regional collaborative arrangements and could be provided by a hub facility. The potential services they have identified include:

- Ground handling
- Aircraft Maintenance Repair and Overhaul
- Catering
- Airline Training Services
- Fuel
- Insurance
- Aircraft Leasing and Financing
- Technical Assistance
- Disbursement of Aid Funding

It is important to note that each of these services could also be the subject of initial collaboration agreements between two or more airlines as a first step towards the formation of a hub.

The study then goes on to make recommendations on the formation of a hub via the following options:

- PASO with an expanded mandate;
- Piggy-backed to another existing Council of Regional Organisations of the Pacific agency;
    - PIFS 26 - Pacific Island Forum Secretariat
    - SPC 26 Pacific Community
    - USP - University of the South Pacific
- A new regional body (potentially a CROP agency);
- A regionally owned incorporated service provider owned by PIC airlines, airports, or PIC governments of hub member states;
- A major aviation industry partner (e.g., major airline, airport, or other aviation sector

specialist firm serving the Pacific) where the partner takes on the hub function on behalf of Pacific airlines, airports, or governments;

- A donor-established project management unit;
- Multiple hub arrangements comprising a combination of the above.

The study then established a set of objectives to be used as key performance criteria for assessing the suitability of these institutional alternatives for the hub models. Their highest ranked outcome includes the "PASO expanded mandate" option, the "piggy-back to other CROP agency" and the "multiple hub" solutions.

The advantage of the PASO option is that it is an established regional aviation organization with a current region-wide scope of aviation-related services, as well as an ability to accommodate most of the additional hub functions with incremental effort. But they note that this option is nonetheless limited by perceived conflict of interest and risk of diversion of PASO's focus. PASO is currently in the process of improving and finding a sustainable funding model for its primary safety regulation-related services through the implementation of an ambitious new strategic plan. Asking it to take on an additional role managing a proposed hub may not be practical until it has consolidated the changes currently underway.

In contrast, a model with multiple specialized hubs offers the ability to flexibly provide a reasonable degree of satisfaction of almost all the identified objectives, albeit experiencing lesser-scale economies than the single hub models.

The Hub study recognizes that further discussion is required to define the preferred institutional alternative.

3.3   Operational Collaboration and Limited Partnerships

There are various forms of limited collaboration between two or more carriers that could represent a good starting point toward more comprehensive forms of collaboration, such as an eventual alliance or joint venture.

3.3.1   Airline Collaboration Agreements

This option involves an agreement between two or more airlines to establish operational, technical, and/or commercial collaboration. Such an agreement can take the form of collaboration in areas like procurement, training, aircraft leasing, maintenance, and the other areas that could eventually be offered as a hub, under the hub concept.

Alternatively, the agreements could focus on collaboration on operational and commercial activities. In response to the COVID-19 impact on Pacific air carriers, discussions were held in 2021 among SolAir, Air Niugini, Air Kiribati, Nauru Airlines, and Air Vanuatu to find an interim solution that will ensure ongoing business continuity for these airlines. Faced with financial obligations to meet as well as a contraction in passenger numbers, these airlines discussed forming an alliance that will cooperate to varying degrees, including connecting services among the Solomon Islands, Republic of Kiribati, Vanuatu, and Papua New Guinea. An eventual PASA could deliver significant benefits and represent a viable model for these smaller Pacific airlines to survive, at the very least, for the next 4 years.

It was envisaged that, as a first step toward an eventual alliance, participating airlines would sign MOUs for varying levels of cooperation that would initially be limited to passenger and cargo services on the following:

- Sectors operating directly between (points to be agreed to by the airlines).
- Routes which comprise a direct service between the Solomon Islands and Australia (other routes to be agreed to with members in compliance with respective air service agreements and concurrence sought from the third country) as part of a connecting journey. Cooperation on these services would differ depending on the jurisdiction to which the route originates/concludes.

Member airlines would pool resources to provide services. Cooperation on services would include revenue sharing, network planning, code sharing,[3] coordinating operational requirements, capacity, and pricing coordination.

Though discussions between the five airlines about forming an alliance of this type have since stalled, in January 2023, Solomon Airlines and Air Vanuatu began moving toward the signing of an MOU to establish greater collaboration. As a first step, Solomon Airlines would loan two pilots to Air Vanuatu to assist in their Check & Training advances.

At the time of the preparation of this report, further steps have been taken by the two airlines, including the following:

- A wet lease of a DHC-6 Twin Otter to Air Vanuatu.
- Solomon Airlines have signed a Letter of Intent to acquire a second Airbus 320 to meet demand for both airlines.
- Codeshare flights on the HIR-VLI-AKL route renewed operations in late March, 2023.

The definition of further areas of collaboration are on hold pending the results of an ongoing Australian Department of Foreign Affairs and Trade (DFAT)-supported study preparing a strategic plan for Air Vanuatu.

3.3.2 Airline Partnerships

Partnerships between two or more airlines can represent a more formalized financial relationship than Collaboration Agreements by allowing for the sharing of revenues and costs and thus represent a limited form of alliance.

There are two types of partnerships that can be highlighted:

1. **Revenue-Driven Partnerships**, which can involve the following:

   - Extended Commercial Relationships with partners.
   - Code share, joint frequent flyer, network coordination, schedule capacity and price coordination, joint marketing, shared lounges, alliance branding.

2. **Revenue- and Cost-Driven Partnerships**, similar to revenue-driven partnership, but the addition of common ground handling, joint maintenance, joint sales and marketing, joint call centers, common information technology platform, joint flights, joint purchasing, etc.

Under both types of partnerships, the airline remains government-owned and -operated, with their own aircraft, but engages in and operates with extended commercial relationships with a partner or partners to obtain savings.

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[3] An agreement (to be concluded) by which airlines will sell each other's flights and define how schedules and fares are going to be set.

3.3.3   Dry Lease or Wet Lease Arrangements

Collaboration between the airlines may include either dry or wet lease aircraft arrangements, delivering better utilization of aircraft in the region. For instance, currently Nauru Airlines has spare capacity in the B737 fleet of aircraft; consequently, deploying these aircraft on additional scheduled services provides more efficient use of this spare capacity, with the additional services potentially being arrangements with other airlines.

Dry Lease: Normally found with longer-term lease arrangements, a dry lease is when an aircraft financing entity (lessor) provides an aircraft without crew, ground staff, etc. Dry lease is typically used by leasing companies and banks, requiring the lessee to put the aircraft on its own AOC and provide aircraft registration. A dry lease can also be made between airlines, wherein one airline provides the aircraft and the other airline operator provides flight crews, maintenance, and other operational aspects.

Wet Lease: A wet lease is when one airline (the lessor) provides an ACMI to another airline (the lessee), with the latter paying by hours operated. The lessee provides fuel and covers airport fees, and any other duties, taxes, etc. The flight uses the flight number of the lessee. At times, arrangements under a wet lease have been made where cabin crews are provided by the lessee.

Dry and wet lease arrangements can be stand-alone collaborations between airlines or form part of a broader airline collaboration agreement or airline partnership, as is the case with Solomon Airlines and Air Vanuatu.

3.4   Alliances and Joint Ventures

There are two alternate routes that can be taken to create the conditions for a financially sustainable industry in the Pacific Region that offers world class standards of service. These are described below.

3.4.1   Alliances

Airlines across the globe have been implementing integrated alliance arrangements that go beyond the traditional level of corporation exhibited in codeshare agreements and other forms of Collaborative Agreements and Revenue/Cost Partnerships. These alliance arrangements provide for overlapping routes, revenue sharing, and alignment of product and service offerings. In implementing these arrangements, airlines achieve greater efficiencies, mainly in ground-handling, marketing and distribution, and inventory management.

There are various forms that a PASA could take. For example, Table 3-1, developed by IOS Partners in conjunction with SolAir, describes the range of possible activity areas that the proposed alliance can pool together and share.

Table 3-1: Pacific Airlines - Collaboration Activity Areas

Division	Activity	Description	Benefit type
Commercial & Customer	Sales	Joint sales team for passengers and cargo. Combined call centers.	Economies of scale
	Airport offices	Shared physical assets and staff resources across the network.	Economies of scale

Division	Activity	Description	Benefit type
	Disruption management	Manage disruption together (better customer outcome).	Economies of scope
	Frequent flyer program	Frequent flyer program synergy and reciprocity. Expansion opportunities.	Economies of scale Economies of scope
	Tourism	Collaborate on joint marketing and planning. Co-develop packages. Long-haul opportunity.	Economies of scope
Airline Operations	Operations Control	Centralized 24/7 operations control center. Network redundancy and back-up (typhoon/volcano).	Economies of scale
		Enhanced disruption management. Staff training and experience. Crisis management.	Economies of scope
	Safety Systems	Centralized Safety Management System (SMS) operations – Hazard identification and Risk management, Change management, Audit, Investigations, IOSA management.	Economies of scope
	Training	Joint recruitment and training. Crew training – technical crew (ab initio, recurrent simulator, Crew Resource Management (CRM)), Dangerous Good's (DG's), cabin crew, safety. Ticketing/Reservations staff.	Economies of scale
	Customer Service	Customer service.	Economies of scale
		Joint strategy and service design. Customer care.	Economies of scope
	Maintenance	Engineer loans. Engineer training. Joint spares. Joint procurement.	Economies of scope
		Aircraft On Ground (AOG) assistance Continuing Airworthiness Maintenance Organisation (CAMO) back-up.	Economies of scale Economies of scope

Division	Activity	Description	Benefit type
	Catering	Joint menus. Shared equipment, crockery, and strategy.	Economies of scale
	Cargo	Joint sales. Shared equipment including Ground Service Equipment (GSE). Efficient cargo services network.	Economies of scale
Finance	Joint purchasing	Aircraft. Engineering components such as engines and spare parts. Third party MRO contracts. Cabin seats and galley equipment. Catering supplies (equipment, crockery, strategy). Joint menus. Tenancy agreements at common airports. Training programs.	Economies of scale
Network & Operations Planning	Rationalize aircraft fleet types	Simplification. Aircraft redundancy. Shared spares. Decreased crew training costs.	Economies of scale
	Joint Planning	Efficiency and improved overall network reach. Supplement networks. Disruption management.	Economies of scale
	Codeshare	Joint codeshare arrangements.	Economies of scope
	Cargo	Joint cargo operations.	Economies of scale
Corporate Management	Leadership	Joint strategy development. Sounding board. Leadership development. Education and training. Mentoring. Sharing ideas. Redundancy back-up. Succession planning.	Economies of scope
		Sharing consultants. Sharing skilled resources.	Economies of scale
Tourism, Legal & Government	Tourism	Joint Marketing campaigns. Regional collaboration to drive global Marketing plans. Sharing legal support.	Economies of scope/Economies of scale

Source: Solomon Airlines Strategic Options Analysis, IOS Partners, April 2021.

Not all these activities would necessarily be incorporated into the alliance. For instance, if some of the operational and financial (procurement) activities were to be offered by a third party (for instance some form of hub), the alliance could focus primarily on collaboration on commercial activities.

Either way, to enact such an alliance would require member airlines to collectively conclude the following:

- Codeshare agreement to expand the PASA members' existing code-share arrangements and set out the operational arrangements as between the members on the Alliance Routes.

- Special Prorate Agreement to enhance the PASA members' existing special prorate agreement, and set proportional rates, or "prorates" on such routes as members may agree[4] (on their respective networks).

- Premium Customer Handling and Lounge Agreement[5] to enhance members' existing arrangements pursuant to PASA[6] minimum requirements to provide reciprocal premium handling, including lounge access to the extent practical.

- Pacific Flyer Programme Agreement[7] to enhance the members existing frequent flyer programme agreement to the extent practical.

3.4.2   Inbound Joint Ventures

As an alternative to regional airlines forming an alliance among themselves, Inbound Joint Ventures involve different forms of partnership with a larger international carrier short of a direct sale of the national airline. The objective is to transform a struggling airline into a world class airline.

An **Inbound Investment Joint Venture** requires the PIC governments to form an SPV that acts as a regional airline and partners with a larger airline to gain access to its expertise and global resources, including an equity investment for the transfer of risk. The SPV will provide its own aircraft and AOC and, at this point, the national airlines will relinquish their international routes to the newly formed regional airline. Under this option,

- The larger airline takes equity into existing PIC airline or a PIC regional airline (which may take the form on an SPV)

- PIC airline enters into a management agreement with the mother airline (e.g. Provision of management resources, access to sales and marketing and distribution, access to technical and training, airline system and processes)

- PIC airline remains an operating entity, though the larger airline becomes a shareholder in return for its equity investment.

An alternate form of an Inbound Joint Venture is an **Airline Management Contract**, where a government and/or PIC airline reaches a commercial arrangement for a larger airline to oversee the operations of the national airline, without any equity investment by the former, which instead will receive a set management fee or percent of gross revenues. In other terms, the government

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[4] An agreement between two or more airlines on the apportionment of through-fares on journeys with two or more legs operated by different airlines. In brief, an agreement setting out the rates the airlines will charge each other for seats on a flight they operate.

[5] SolAir Belama Club and other PASA members lounge offerings could be consolidated and reshaped to provide a better "value proposition" for passengers.

[6] A PASA that will offer passengers an extended choice of destinations on member airline's networks and more synchronized lounge access, ticketing, and check-in services.

[7] A concept to be developed servicing the Pacific market.

retains sole ownership of the national airline .

Under this option, the national airline, to the extent allowed by the larger airline, has access to the following:

- Enhanced revenue growth through access to larger airlines sales/marketing and distribution.
- Reduced cost through economies of scale/access to the larger airlines purchasing power.
- Technical and management skills of a world-class airline.

An example in the Pacific Region of a JV with investment is the case of Polynesian Airlines. From 2005 to 2017, Virgin Blue Holdings (later Virgin Australia Holdings) took up a 49% stake in the national carrier from the Government of Samoa through a joint venture to form Polynesian Blue (later Virgin Samoa). The joint venture agreement allowed Polynesian Blue to take over the international routes and the restructured flagship carrier, Polynesian Airlines, to operate regional and local flights. The airline did not own any aircraft; instead, Virgin Blue operated the services on behalf of the airline.

Unfortunately, the JV was not a success and in 2017 the Government of Samoa announced that it was closing down Virgin Samoa, citing a lack of competitive fare pricing and that the Government and people of Samoa were not receiving sufficient benefits. The government established Samoa Airlines in its place, which is currently operating as a domestic carrier with international service only to American Samoa. Samoa is currently primarily served internationally by Air Fiji, though there are no code-share agreements or other forms of collaboration in place.

Part of the problem according to the current management of Samoa Airlines is that Samoa simply does not have a sufficiently large market to sustain the type of international operation attempted by Virgin Samoa. But this does not mean that Samoa Airlines could not benefit from the other types of collaboration with regional airlines outline in this report, up to and including an eventual alliance.

3.5   Business Case of a PASO

Unfortunately, insufficient data has been received so far from the airlines to allow preparing a business case at this time.

The Hub study prepared a financial model for a generic stand-alone hub business that included the following five functions: procurement services, technical services, investment project delivery, administration, and governance. The results show that the stand-alone business model would initially operate at an annual deficit but could be expected to be financially self-sustaining on an annual basis after 3–4 years against a growing level of service.

Preparing a similar model for an airline alliance requires more financial information and operational data from the airlines involved.

4. Detailed Guidance to Support Airline and Government Decisions

The objective of this task is to provide detailed guidance to support decisions at airline and government level, incorporating:

- ✈ Aircraft for both domestic and international needs
- ✈ Technical training and services needs
- ✈ The regulatory framework.

The impact of the COVID-19 pandemic is far from over. There is now relief to be found in various parts of the world with widespread vaccination, but the road to recovery for air traffic will take several years. The shape of the post-COVID-19 airline sector is becoming clearer and holds lessons for airlines today. Multiple longer-running trends have been accelerated, such as digitalization and the phasing out of less efficient aircraft. Many carriers have depleted their cash reserves to service debt. But current industry forecasts are not without opportunities. Travel will become greener and more efficient, and people want to travel again for holidays. Taking steps now will help PIC airlines thrive in this transformed sector. We will shape our modelling on the PIC dynamics across domestic, regional, and international demands.

These factors straddle aviation policy, regulatory, and PIC sovereign consumer regulations. They are also influenced by PIC governments, international organizations and local tourism agencies. There is an opportunity for constructive collaboration across agencies to reshape the aviation sector and treat it as an opportunity on how the sector evolves, collaborating across key stakeholders.
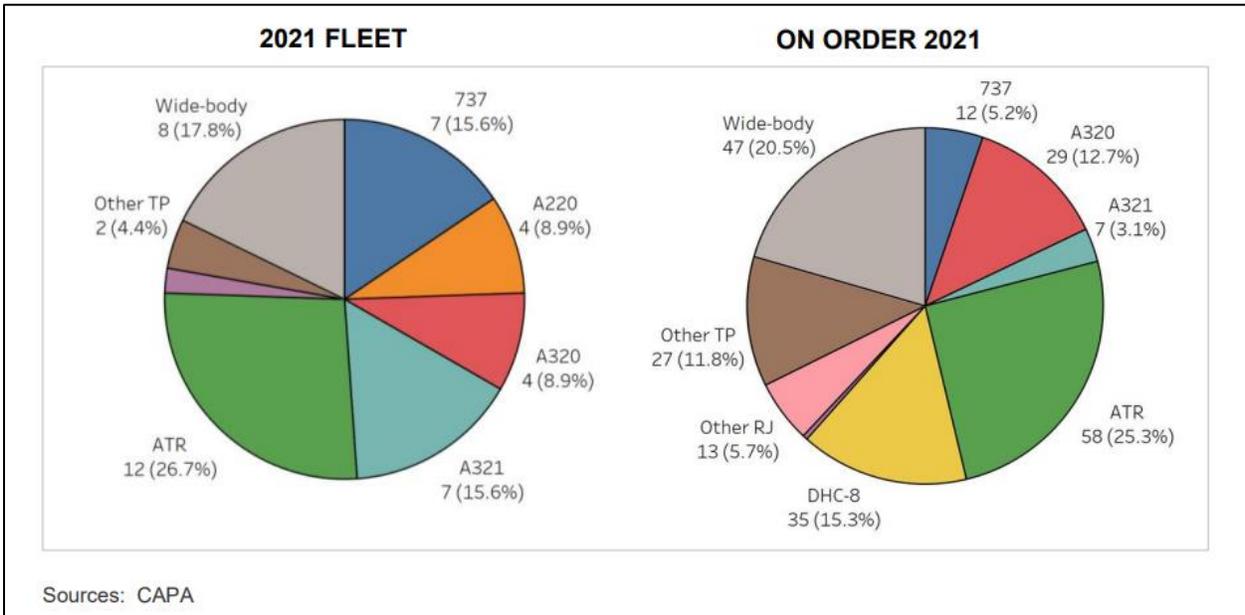
4.1   Aircraft

4.1.1   Current Aircraft Fleet of Pacific Island Nations

There are a range of aircraft types and variable ages, with a tendency to older aircraft across the PICs, especially on domestic scheduled operations. Fiji Airways and the French Polynesian airlines have near-new aircraft fleets, with Fiji Airways recently upgrading the domestic fleet to Viking Twin Otter digital aircraft.

The remainder of the Pacific fleet are older aircraft. This adds a burden through higher maintenance, parts, and support services costs for these aircraft.

There are, for a small population base spread over a large geographical area, a large number of aircraft types operated, limiting the economies and efficiencies that can be achieved through scale and scope.

Figure 4:1: Pacific Airlines Aircraft Types

Figure 4:2: Pacific Airlines Aircraft Fleet Age
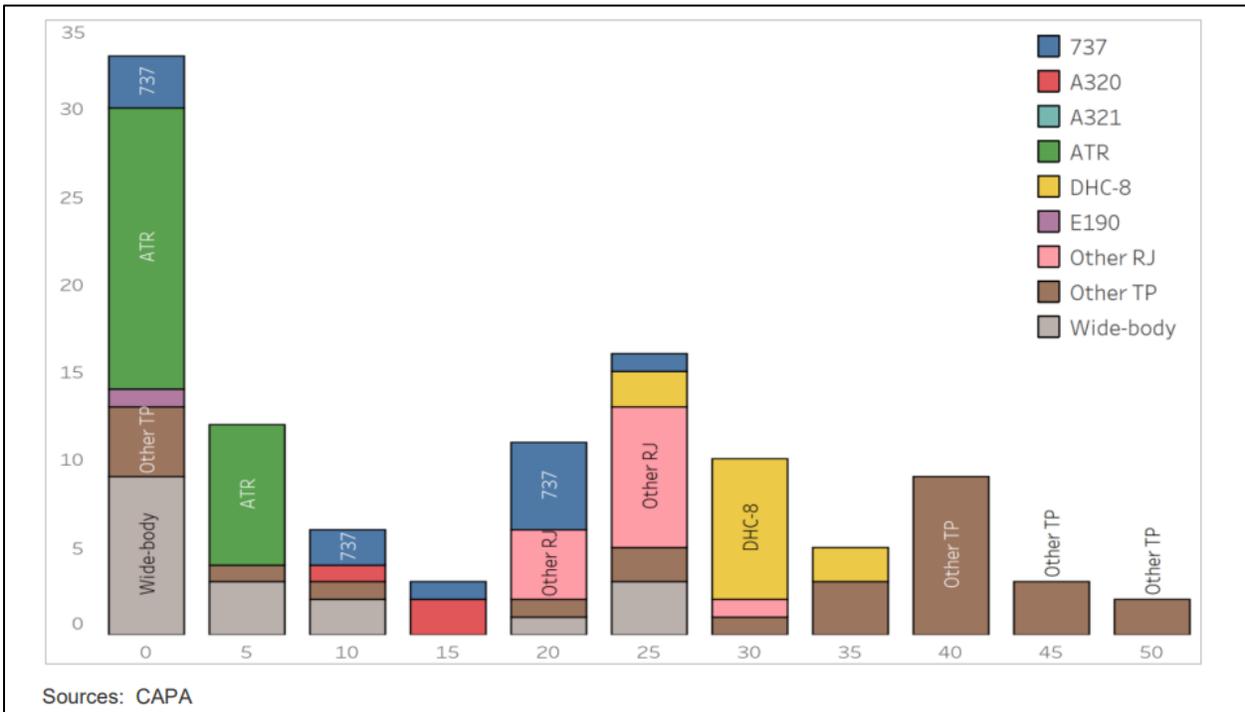
4.1.2   Aircraft Options

With a mix of aircraft operating across the region, especially in domestic and regional scheduled services, the airlines are not in a position to scale efficiencies through collaboration in provision of MRO, training, and support services.

There are a mix of airfield types supporting both day VFR and 24/7 IFR scheduled services, from coral surface to paved runways. Domestically, airfield length is a major influence on what type of aircraft may operate. Some airfields are only 600m in length.

4.1.3   Viking Twin Otter

The Twin Otter aircraft is utilized extensively across PICs. It is an ageing fleet, with many aircraft 50 or 60 years old. The Twin Otter, recently rebadged as the Viking 400 due to company ownership changes, can operate from 600m length runways. The Twin Otter Series 400 has quick-change interior configurations. For regional commuting and industrial support, the standard Series 400 is equipped with 19 passenger seats and allows for additional configurations or a combination of configurations including medevac, cargo or a combi passenger/cargo option.

The aircraft has digital avionics, enabling it to use satellite navigation and approach services.

4.1.4   Cessna SkyCourier

The Cessna SkyCourier is a newly designed aircraft for both commuters and cargo. It is a digitalized aircraft for Performance based Navigation (PBN) operations, with up to 19 passenger seats, allowing for configurations of all cargo or a combined passenger/freight option. The aircraft operates optimally from 1000m length runways.

4.1.5   ATR-72

The ATR-72 variants are operated by airlines extensively in Australia, New Zealand, Fiji, and French Polynesia. There is capability in support services, MRO, training, engines and avionics across the region; importantly, the ATR-72 has 120-minute Extended-range Twin-engine Operations Performance Standard (ETOPS) approval. This latter approval enables more O-D schedule options for an airline. The aircraft is digitalized and enabled for all satellite services. Focus on the ATR-72 for some domestic and regional network options could provide scale and scope, enhancing the "hub" concept and providing for efficiencies across the Pacific fleet.
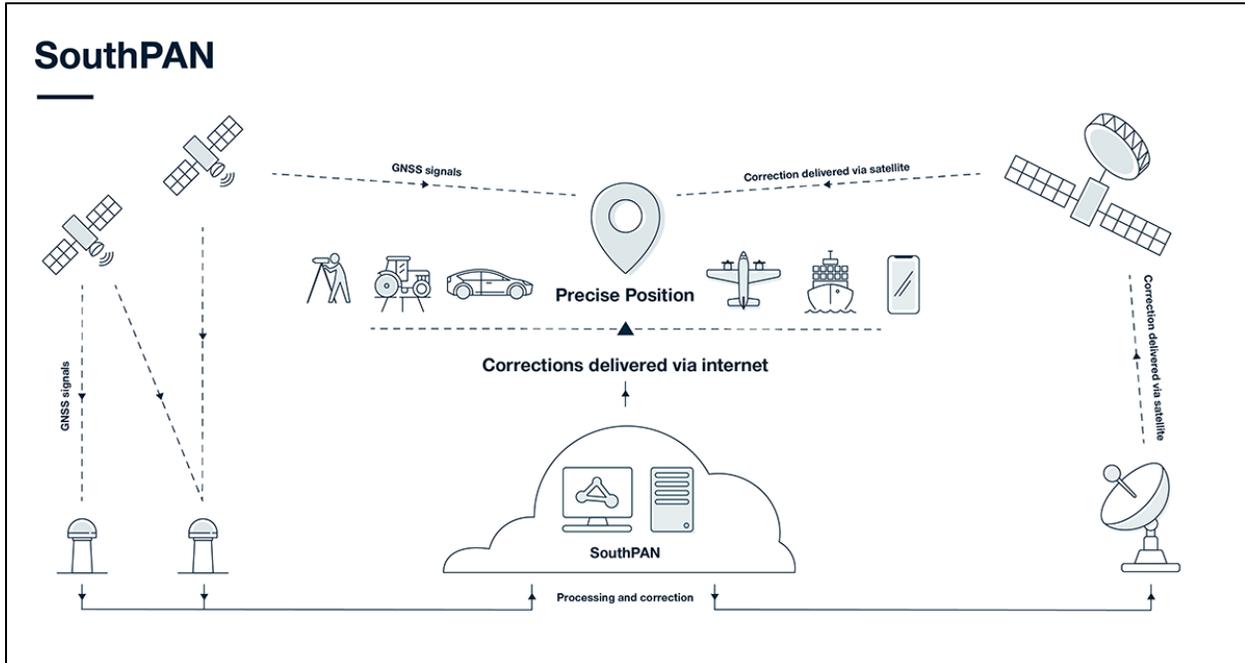
4.1.6   SouthPAN

The Southern Positioning Augmentation Network (SouthPAN) is a joint initiative of the Australian and New Zealand Governments that provides Satellite-Based Augmentation System (SBAS) services for Australia and New Zealand. Geoscience Australia, as the Australian Government lead agency, is working in collaboration with Toitū Te Whenua Land Information New Zealand on the development, deployment, and operation of SouthPAN, the first SBAS in the Southern Hemisphere.

SouthPAN consists of reference stations, telecommunications infrastructure, computing centers, signal generators, and satellites that provide improved positioning and navigation services in Australia, New Zealand, and their maritime regions.

Precise positioning from SouthPAN offers accuracy to as little as 10 cm: a significant improvement on previous accuracy of 5 to 10m. SouthPAN provides augmented and corrected satellite navigation signals directly from the satellite. This provides improved accuracy in regional and remote areas, as well as in maritime zones.

Source: Geoscience Australia, LINZ New Zealand

Originally developed to support aviation safety, the technology has the potential for wide-ranging uses, from agriculture and transport to maritime. Currently, ground-based stations need to be established to ensure the level of accuracies needed; this is L1 SBAS. Due to this, there may be lower accuracies if this system was also deployed across the PICs.

Providing the SouthPan satellite network to extend over the PICs will enhance aviation safety and provide options for domestic and regional flight operations. Aircraft require digitized systems to use the SouthPan network.

Dual Frequency Multi Constellation SBAS is a future aeronautical navigation service that will be defined in ICAO Annex 10 Amendment 93. This service will have the potential to be certified as a safety-critical system for aviation and other sectors in the future. This system does not require ground-based stations to augment accuracy for navigation purposes and therefore will be suitable for the PIC region. This system may be operational in 10 years.

Once fully operational, SouthPAN will support aviation safety. Domestic air travel will be safer and fewer flights will be disrupted by low visibility or bad weather conditions. Emergency flights and rescue helicopters will be able to operate in extreme weather conditions. Combined with other technologies, SouthPAN will support Pacific aviation and airline sustainability.

4.2   Building Skills and Expertise Capacity

4.2.1   Skills and Capability

The Air Transport industry is highly regulated, demanding high levels of skill and expertise in a range of roles. These regulatory requirements stem from the ICAO Standards and Recommended Practices, Conventions and Protocols.

People and resources will always be limited across PICs due to demand across local industry sectors exceeding supply. Expertise in the aviation industry is through working within the system, which is limited to small government agencies or small local airline activity. Upskilling is limited in these local domestic situations and building capacity in the aviation sector is challenging.

4.2.2   Management

The regulatory requirements that inform aviation activity put pressure on these small domestic resources in the region. External organizations such as ICAO, IATA, and ACI can bridge some of the gaps in local capability. Further professional development can be found in tertiary or technical organizations located in Brisbane, Auckland, and Fiji.

4.2.3   Pilots

Flight training for commercial licensed pilots across PICs is currently limited to Fiji and Cook Islands. Historically, Pacific airlines have utilized expatriate pilots due to restrictions in the availability of local licensed personnel. This is changing over time through a combination of more local licensed personnel, scholarship availability for flight training in New Zealand or Australia and the development of specialist training capability, for instance the Fiji Airways Academy, for ratings and annual recurrency requirements.

Capacity for training and the infrastructure to support commercial training is well established in Australia and New Zealand, for instance, in the cities of Brisbane and Auckland, from ab-initio through to specialist turbo-prop and jet aircraft ratings.

Building this end-to-end infrastructure within the region may not be the optimum use of limited resources, but, through a mix of local regional and nearby resources, it may ensure the continued provision of pilot training capability.

4.2.4   Engineers

Similar to pilot personnel capacity and Pacific regional training capability, a mix of local and expatriate personnel are employed across the Pacific airlines. The infrastructure needed to provide for training and skills development is significant and is beyond the capacity of most individual countries in the Pacific; however, both Fiji and Papua New Guinea have internal capability for the end-to-end training and skills development needed. Other countries rely on local engineering- licensed personnel being trained in part in either Australia or New Zealand in avionics, engines, airframes, aircraft systems and additional further complexity being individual aircraft rating dependent.

Consolidation of aircraft types operated, and some commonality in aircraft fit-out across the PICs, could be an opportunity to deploy resources across the region better, especially in support services such as MRO facilities and personnel. Fewer aircraft types builds scale and scope and can enhance the likelihood of greater Pacific regional capacity in development of training services, through a localized hub.

4.2.5   Other Aviation Core Capability Training

Since skills development is required across the aviation industry sectors, it is specialized to ensure certifications, approvals and licenses meet international standards and recommended practices. To deliver the capacity for this requires facilities that many PICs find challenging. Working together through a hub concept can provide the capacity, on a regional basis, that individual countries cannot provide.

There are options to build capability via ICAO, IATA, ACI, and tertiary institutions providing a comprehensive suite of undergraduate, graduate, master's and PhD courses in aviation industry subjects. Airlines, airports, and government aviation agency personnel would benefit from opportunities to build skills and capability in management, policy and regulatory development, oversight and aviation risk management. Many of these professional management courses are now delivered through online education channels.

4.3   Improving Pacific Regional Regulatory Capacity

The aviation industry has global standards and recommendations, policies, and regulations that place significant demand on local skills and expertise. The scarcity of personnel and resources across the PICs creates a challenge within individual countries, making it unrealistic to build this capacity locally.

Deploying a common set of policies and regulations across the region enables sharing limited resources for certification, approvals and licenses, providing a wider range of services to the Pacific region and making best use of the resources available.

One of the main objectives of PASO's strategic plan is to alleviate some of these constraints as regards safety and security regulation.

Equally important to encouraging greater collaboration between the airlines is the economic regulation of the aviation sector. This would include the competences to negotiate and sign bilateral and multilateral air service agreements, grant licenses to the operators of air transport services, the approval of the tariffs and fees to be charged by airlines, the establishment of airport and air navigation fees, while also protecting the economic-financial equilibrium of these regulated service providers

Australia and New Zealand both have very structured competition "rules of engagement" and have in the past approved airline alliances that would, by extension, have had an impact on their respective market.

Each application is treated on its own merits and, while there have been approvals granted, in some instances, other such arrangements have been denied. However, the intent expressed by Solomon Airlines and other Pacific carriers does not seek to achieve the purpose of being anti-competitive with the potential to adversely impact consumers. Rather, the proposed formation of a strategic alliance among airlines from PICs is in direct response to being adversely impacted by COVID-19 and provides these airlines a glimmer of hope of surviving the next 4 years at a minimum. Failure to recognize this intervention and the merits on which it is founded may result in a number of these airlines going bankrupt. As a result, Australian and New Zealand airlines that benefitted from significant financial support provided by their respective governments during the COVID-19 period would now be in a prime position to dominate the Pacific market, and, in so doing, may very well defeat the objective of consumer protection.

The significant efforts undertaken by Australian and New Zealand to support PICs during the post-COVID-19 period, in particular the support provided for PIC aviation, indicates that it is likely that the alliance arrangements sought by regional airlines would be a welcome intervention by both the Australian and New Zealand governments.

But economic regulation remains an issue at the PIC level, where the legal framework in each country can inhibit greater commercial and operational collaboration between their carriers. For instance, competition law in the PICs (or lack thereof) could derail a lot of the initiatives.

There is an important need to harmonize the economic regulation of the airlines in each country in a way that creates an opening for greater collaboration, and this is a matter that deserves more detailed study.

5. Roadmap for Options

This section summarizes potential short- and longer-term actions to promote greater collaboration between the airlines based on the analysis presented in previous sections of the report.

The following figure presents a summary of the resulting roadmap.

Figure 5:1: Pathways to Pacific Airline Strategic Alliance
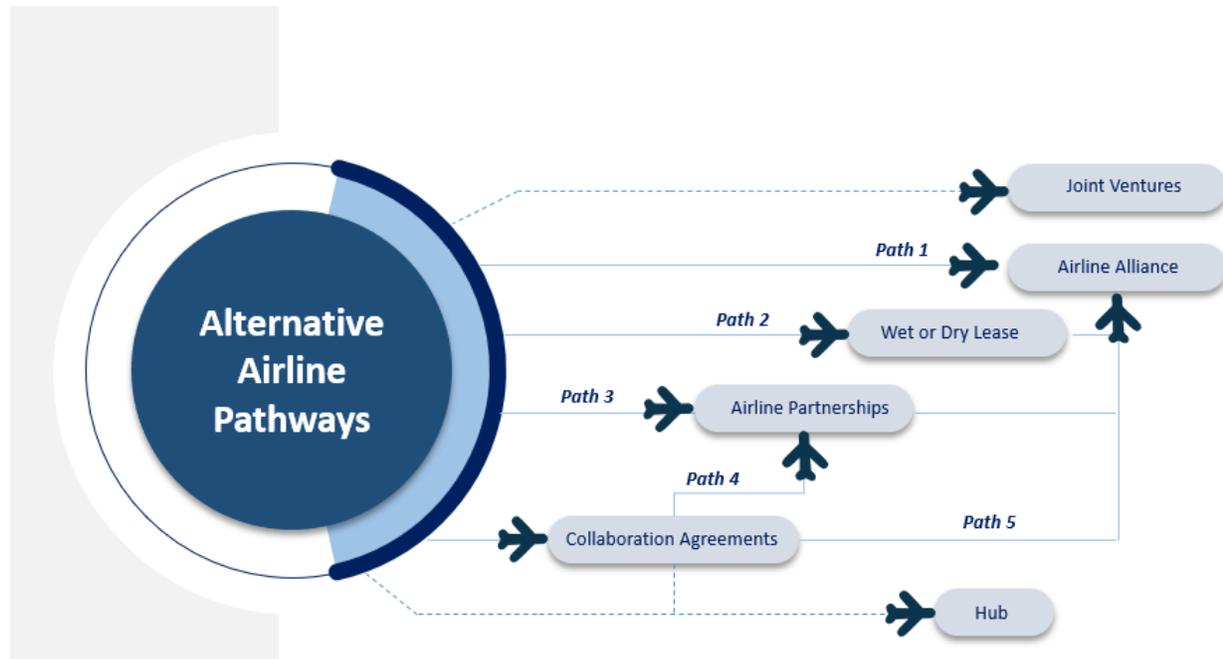
Source_ IOS Partners

The first pathway (Path 1) would be the direct implementation of the alliance. But as this would also likely be the most difficult to achieve, alternative pathways are included that correspond to a more indirect roadmaps towards an alliance that involve first the creation of intermediary strategic relationships over the shorter term than can build towards the eventual formation of an alliance.

The actions required to follow this more indirect path are listed below.

5.1   Short-Term Actions

A first step is to encourage greater collaboration between specific airlines through collaboration agreements.

As noted in Section 2.1, at the PRIF Transport Working Group meeting in December 2022, the consultants promoted the concept of segmenting the Pacific Island region into two distinct areas and explored the option of working more closely with a smaller number of selected airlines in each region to gain initial momentum.

In the western Pacific, Solomon Airlines and Air Vanuatu would be logical airlines to progress this type of closer arrangement and recently have begun taking the first steps.

In the eastern Pacific, the challenges facing government-owned airlines currently makes this a less viable option; however, Air Rarotonga has demonstrated a consistent ability to develop a resilient domestic network with a regional network capacity built over time. Air Rarotonga is the only privately owned airline in the study; the remainder all have some form of Government ownership.

Therefore, specific actions that can be taken by ASPA, the airlines, and the donor community over the short-term include the following:

1. Encourage airlines in the western pacific to increase their degree of collaboration, reaching the signing of MOUs that cover the specific areas of collaboration.

2. Support the PIC governments and government-owned airlines in the eastern Pacific in determining the financial sustainability of their airlines and the options for further collaboration that may be most suitable.

3. Carry out a detailed analysis of the legal framework that governs the economic regulation of the airlines in each country to identify the primary impediments to collaboration with airlines from other PIC countries and opportunities for harmonizing these regulations between airlines.

4. Harmonize aviation safety regulations across PIC nations. This might be achieved through incorporation by reference of one countries aviation regulations by the PIC nations. This will provide PASO with a single aviation safety regulatory framework to manage risk and safety oversight programmes across PIC nations.

5. PIC nations to establish formal qualification recognition for aviation qualifications achieved or completed in another country by a recognized aviation qualification provider, for instance ICAO, IATA, ACI, tertiary organization or apprenticeship schemes.

6. Involve key decision makers in PIC governments in the discussion over specific collaboration options to obtain their buy-in.

5.2   Long-Term Actions

The longer-term actions that may become more attractive once the short-term actions have taken place to move toward a PASA. There are two alternate approaches:

1. Encourage the formation of revenue and cost partnerships that could later be expanded to include additional areas of cooperation.

2. Move directly towards the formation of a PASA that includes a broader range of the activities listed in Table 3-1.

In conclusion, while there is a viable path towards greater collaboration between PIC airlines, up to and including an alliance, and these could be of great benefit to the sustainability of the airlines and to improving connectivity in the region, it will require considerable determination on the part of the airlines themselves, as well as political will on the part of PIC governments.

6. Addendum One – ASPA Workshop 29 May 2023

A joint PRIF-ASPA workshop was held on Pacific Airline Sustainability on 29 May 2023, prior to the ASPA 2023 Conference 30-31 May. The key points from the workshop and discussions over the following Conference days are as follows:

- Collaboration between Solomon Airlines and Air Vanuatu - whilst they are keen for the collaboration to progress, they may lack the internal capability and resources to make it happen. Third party assistance might be required to map out a workable plan for the airlines.
- The Solomon Islands and Vanuatu Aviation Ministers most likely will need assistance in developing a workable aviation economic policy and regulation between the two countries.
- Solomon Islands and Vanuatu will need to ensure aviation safety regulations are harmonised or each is accepted as equal level of safety.
- Air Calin is very keen to join with both airlines (Solomon Airlines and Air Vanuatu), sooner rather than later, in collaboration and joint ventures across the three airlines. This raises conformance challenges across aviation economic policy & regulation and aviation safety regulation. [Note: New Caledonia is harmonised with EASA regulations].
- Whilst the PIC airlines are sceptical about the RAM, the PIC region will need assistance in developing aviation economic policy and regulations.
- ███ [Both NZ and Australia have deep experience with Open Skies policy and supporting regulation within Government agencies]. (Redacted due to sensitivity of information)
- The ageing domestic aircraft fleet across PIC airlines is a concern. The options are, (1) upgrade the current Twin Otter fleets to zero time aircraft through a top to tail refurbishment, (2) upgrade Twin Otter fleet and include deployment of single engine turbo-prop aircraft, the latter being the C208 Caravan or Kodiak aircraft, or (3) upgrade fleet to a mix of single engine turboprop C208 Caravan and twin engine SkyCourier aircraft. Outputs, digital aircraft fleet and lower maintenance, leading to domestic schedule resiliency.

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