POLICY BRIEF

STRENGTHENING DIGITAL CONNECTIVITY AND DIGITAL FINANCE IN ASIA AND THE PACIFIC

Insights from Samoa
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Summary

In the developing regions across the world, access to finance remains one of the main barriers to socioeconomic development. Globally, and specifically within the Asia-Pacific region, the Pacific small island developing States have one of the most expensive and least accessible financial systems. The lack of Internet connectivity in the Pacific small island developing States, which is among the lowest across the Asia-Pacific region, is a key barrier to financial inclusion. Such digital divides challenge the achievement of an inclusive and accessible digital financial system. Thus, to enhance digital access and connectivity, the use and deployment of already existing fintech solutions deserves increased attention.

In an effort to improve digital connectivity in the Pacific, ESCAP, together with Samoa, Fiji and New Zealand, is working towards the establishment of a Pacific Internet exchange point (IXP). IXPs reduce the transit costs of Internet traffic exchanged internationally, reduce the Internet traffic tromboning effect, and improve the quality of access, for domestic users, through more direct connections to local and cached content. The deployment of the Pacific IXPs would also facilitate the evolution and expansion of financial services in Samoa, thereby enabling a shift towards building a digital economy. However, some implementational challenges remain; IXPs need to be linked across countries which requires building trust and collaboration between all Internet server providers and stakeholders, both nationally and internationally; a neutral location needs to be found and the IXPs need to be managed as a platform for all operators to connect; and a conducive, regulatory environment that supports an open market for telecommunication services needs to be developed.

As a way forward, this policy brief provides key recommendations to accelerate digital finance options and connectivity. It calls for strong political support that will create an enabling regulatory environment which will promote a supportive business environment for the expansion of financial services, and facilitate the interconnection between operators, at both local and international levels. Furthermore, this paper raises the importance of multilateral cooperation to allow for secure cross-border money transfers with the highest respect for the privacy of counterparts, and encourages collective agreement to deploy IXPs, with support from national and international organizations, such as the Internet Society and the Asia-Pacific Network Information Centre. Other issues, such as enhancing incentives for investment in ICT infrastructure and increasing financial literacy are also highlighted.
Acknowledgements

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I. Introduction

DIGITAL FINANCE

Digital finance offers vast possibilities for accelerating financial inclusion, lowering national and international money transfer fees, facilitating online payments, and expanding financial and loan services to micro, small and medium enterprises (MSMEs), particularly in the context of recovery from the COVID-19 pandemic.

The Pacific small island developing States remain highly dependent on remittances which amount to about 40 per cent of the Gross Domestic Product (GDP) in Tonga, and 17 per cent of the GDP in Samoa, in 2020 (Podolski, 2020). Therefore, lowering the international transfer fees is among the top priorities for the expansion of digital finance, not only for Samoa, but also for the other Pacific small island developing States.

Currently, the barriers for accessing digital finance may be divided into two main areas: (1) digital connectivity, since access to the Internet, in many regions, is still a limiting factor; (2) limited availability and deployment of digital finance solutions that are suitable for the needs of respective populations and economies. Thus, the use and deployment of already existing fintech solutions provide options for increasing access to digital finance, especially with respect to removing legal obstacles to their implementation.

Given that the foundations for digital financial transformation have been already laid, by building further upon the existing fintech solutions, particularly with respect to accelerating post-COVID-19 recovery, Pacific communities will be in a position to transform their economies, expand financial inclusion, facilitate access to finance for business growth, and even alter social norms that allow for more inclusive and gender-balanced sustainable growth. The Pacific small island developing States, particularly those with the most expensive and least accessible financial systems, will be able to leapfrog the brick-and-mortar banking system and move towards low-cost, inclusive, and universally accessible finance systems created in digital reality.

DIGITAL CONNECTIVITY

Digital connectivity is a critical component that enables the growth of digital finance and the quality of digital infrastructure determines business competitiveness and features prominently in the decision-making criteria of investors. However, a large part of the population of the Pacific small island developing States does not have access to affordable and reliable Internet services, leaving them unable to reap the benefits of digital financial services. Furthermore, service providers lack a secure digital platform and infrastructure to support business operations and transactions at the lowest cost possible. Such factors compound the digital divide which continues to be a challenge particularly during the COVID-19 pandemic, both between and within countries in the Asia-Pacific region, including Samoa.

According to ITU statistics (ITU, 2020), out of the 4.6 billion inhabitants in Asia and the Pacific, only 13 per cent (598 million) have fixed-broadband subscriptions. Within ESCAP subregions, in South and South-West Asia and South-East Asia, only 3 per cent (53 million people) and 6 per cent (43 million people) have fixed-broadband subscriptions, respectively. In the Pacific small island developing States (excluding Australia and New Zealand), less than 1 per cent of the 12 million inhabitants have fixed-broadband subscriptions.
Similar digital divides can be found with Internet broadband speeds. As depicted in Map 1, while the fixed broadband download speed is higher in countries, such as the Republic of Korea, China, Thailand, and Japan, countries in South and South-West Asia, South-East Asia, North and Central Asia, East and North-East Asia and the Pacific small islands developing States have lower download speeds (below 10 mb/s). Map 1 also reveals the present urban-rural digital divide in the Asia-Pacific region, with higher download speeds concentrated in major cities.

However, according to ITU statistics, Internet users, as a percentage of total population, increased threefold within 7 years, from 11 per cent in 2011 to 33 per cent in 2017. Mobile-broadband subscriptions, as percentage of population, increased significantly from 4 per cent in 2013 to 26 per cent in 2017. International bandwidth (Kbit/s) per user increased three-fold from 3.8 Kbit/s to 10.7 Kbit/s. Despite these developments, challenges remain. Access to fixed (5.7 per cent) and mobile (3.1 per cent) broadband is
still considered unaffordable. In addition, the Internet-user rate and mobile-broadband subscriptions rate is much lower than the Pacific averages at 68 and 99 per cent, respectively.

Digital connectivity, in Samoa, has improved significantly in the last decade due to conducive policies (introduction of competition in the mobile sector and establishing of an independent regulator) implemented in the telecommunications sector (see Table 1). New national digital policies and government entities have been approved, including a National Cybersecurity Strategy, National Computer Emergency Response Team (CERT), and a Digital Transformation Authority. In addition, the Government’s investment in new submarine cables in partnership with donor agencies has resulted in the connection of three submarine cables (SAS Cable (2009)); Tui-Samoa Cable (2018); and Manatua Cable (2020). This has resulted in significant availability of bandwidth for users. However, access and affordability of Internet, in Samoa, lags behind the averages of the other Pacific small islands developing States as well as of the Asia-Pacific region. But, as connectivity increases, either via broadband or mobile networks, there is potential for a wider deployment of digital finance and positive socioeconomic transformation.

Table 1. Internet access and affordability in Samoa

<table>
<thead>
<tr>
<th>Country</th>
<th>Internet users</th>
<th>Fixed broadband subscriptions per 100 inhabitants</th>
<th>Active mobile broadband subscriptions per 100 inhabitants</th>
<th>International Internet bandwidth per user</th>
<th>Affordability - Fixed broadband basket</th>
<th>Affordability - Mobile broadband basket</th>
</tr>
</thead>
<tbody>
<tr>
<td>Samoa</td>
<td>34</td>
<td>1</td>
<td>26</td>
<td>11</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>Pacific small island developing States</td>
<td>20</td>
<td>1</td>
<td>24</td>
<td>48</td>
<td>16</td>
<td>10</td>
</tr>
<tr>
<td>Pacific</td>
<td>68</td>
<td>24</td>
<td>100</td>
<td>71</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Asia-Pacific region</td>
<td>46</td>
<td>13</td>
<td>62</td>
<td>38</td>
<td>4</td>
<td>1</td>
</tr>
</tbody>
</table>


Note: Weighted averages by population. Data from 2017 (latest year available). Pacific includes Australia and New Zealand.

II. Digital finance

DIGITAL FINANCE FOR FINANCIAL INCLUSION

The financial system development, as well as overall financial inclusion indicators, remain largely challenging for Samoa, similarly to other developing countries of the Pacific. Survey estimates indicate that around one third of adults in Samoa remain entirely beyond the financial system – 39 per cent of men, and 30 per cent of women. Only around 39 per cent have a bank account, with further 12 per cent using other financial services. Access to finance is even lower in rural areas. Financial inclusion among women remains slightly higher at 40 per cent (38 per cent of men), likely driven by migrant remittances sent from abroad by official financial channels to a higher share of female population - 48 per cent vs 39 per cent of male population (CBS, 2015).

According to the United Nations Broadband Commission, broadband basket costs as a percentage of monthly expenses per capita equal to or lower than 2 per cent is considered affordable.

Including Australia and New Zealand.
Reasons for low financial inclusion and often low interest in financial services vary from lack of physical access in rural areas, lack of digital connectivity and ICT devices, towards simple lack of need for such services. For example, 21 per cent of adults in Samoa had bank accounts in the past but have resigned entirely from this kind of service. Out of that 21 per cent around half resigned entirely from any form of financial services. Most of unbanked live in rural areas (83 per cent) and decided to close accounts because of low usage or lack of need for such account (47 and 33 per cent, respectively). Lack of need for financial services remains also linked to the financial situation of the unbanked population – 80 per cent of them reported that due to lack of money they do not need a bank account\(^3\) (CBS, 2015). Furthermore, the level of financial literacy remains a point of concern and needs to be addressed (PFIP, 2020).

Financial system in Samoa is still in its early development phase not only in terms of population coverage, but also in terms of overall technical advancement and operational framework. For example, interoperability between the four commercial banks in the country is almost non-existent due to lack of a national payments gateway\(^4\). In plain terms, transactions may not be realized between customers of various national banks – only customers of the same bank may make transactions between themselves.

The challenging landscape of Samoan financial services evolves along advancements in economic development, and the shift towards digital economy. In 2018, SkyEye Pacific created an app for e-commerce business which included an option of online payments. As it turned out, financial system in Samoa was not ready for such online payments. Addressing this challenge, in 2019, with support from the United Nations Economic Commission for Asia and the Pacific (ESCAP) and the United Nations Capital Development Fund (UNCDF), SkyEye started to develop Samoa’s first-ever home-grown interoperable payments system - MauaPay.

In the beginning, the system aimed to solely support an e-commerce app, but in reality, the system soon superseded its initial goals. MauaPay allowed local entrepreneurs and their clients to connect with national and international banks, opening the entire new financial world to Samoans. This important move facilitates digitalization and transactions within the local economy and opens possibilities for low-cost international transfers necessary for expansion of local businesses. Onboarding other mobile network providers and digital payment technology companies, further expanded the low-cost payment system, including to Samoa’s close business partners - Australia and New Zealand, which host large Samoan communities (ESCAP, 2021).

Expanding digital inclusion, MauaPay facilitated also business operations for women entrepreneurs, enabling them to reach more customers, and create a digital invoice and payments history – important for not only time saving, but for women empowerment through increased access to financing for their businesses which became more transparent and less risky to financing institutions (ESCAP, 2021).

**DIGITAL FINANCE FOR LOWERING REMITTANCE COSTS**

Low-cost digital payments address another challenge faced not only by Samoa, but the majority of Pacific island States, as well as developing countries globally – high cost of remittances sent back home by migrant communities. Remittances often do not only keep their families out of poverty but also remain an important part of national economies of receiving countries. For example, remittance flows to Samoa were estimated at around 17 per cent of the GDP in 2020 - the first year of COVID-19 crisis (Podolski, 2020). Similarly for other Pacific island States, remittance flows may be an equivalent of up to 40 per cent of their GDP (table 2), pointing to the importance of any transfer fee reduction through digital finance solutions.

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\(^3\) Hight minimum balance requirements remain a further barrier for opening bank accounts (CBS, 2015).

\(^4\) National payment gateway is a bank-to-bank network allowing banks to process credit/debit card payments and ATM transactions between each other.
On top of the high dependence on remittances, Pacific economies have been historically charged one of the highest remittance transfer fees globally (ESCAP, 2019). It must be stressed that currently available digital technologies, developed relatively long time ago, allow for low-cost international remittance transfers with fees below SDG 10 target 10.c of 3 per cent. The main barrier for their wide deployment are legal restrictions imposed on the region by third-country legislative regulations.

The need for remittance transfer cost reduction has been noted long ago, and became SDG target 10.c which specifies: “By 2030, reduce to less than 3 per cent the transaction costs of migrant remittances and eliminate remittance corridors with costs higher than 5 per cent” (as a proportion of amount remitted). In 2020, the total remittance transfer costs varied between 5-7 per cent across Asia-Pacific, against the global average of 6.75 per cent (World Bank, 2020a).

Furthermore, As the COVID-19 crisis brought tourism to a halt, one of the most important economic sectors of the Pacific island region (Tateno and Bolesta, 2020), lowering the remittance costs through digital finance solutions to increase the net-fee financial inflows to the region became even more urgent.

Table 2: Remittance inflows and remittance transfer fees into Pacific island economies, 2020 estimates.

<table>
<thead>
<tr>
<th>Country</th>
<th>Total inflows US$ million</th>
<th>% GDP</th>
<th>Transfer fees, per cent</th>
<th>Access point/type</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Caledonia</td>
<td>620</td>
<td>6.3</td>
<td>Avg. 7.6</td>
<td>Mobile phone</td>
</tr>
<tr>
<td>French Polynesia</td>
<td>581</td>
<td>9.9</td>
<td>Lowest 4.4</td>
<td>Mobile phone</td>
</tr>
<tr>
<td>Fiji</td>
<td>273</td>
<td>6.8</td>
<td>9.8</td>
<td>Mobile phone</td>
</tr>
<tr>
<td>Tonga</td>
<td>176</td>
<td>40.2</td>
<td>5.9</td>
<td>Mobile phone</td>
</tr>
<tr>
<td>Samoa</td>
<td>141</td>
<td>17.1</td>
<td>8.4</td>
<td>Mobile phone</td>
</tr>
<tr>
<td>Vanuatu</td>
<td>34</td>
<td>4.0</td>
<td>11.4</td>
<td>Internet</td>
</tr>
<tr>
<td>Marshall Islands</td>
<td>30</td>
<td>14.4</td>
<td>8.8</td>
<td>Internet</td>
</tr>
<tr>
<td>Solomon Islands</td>
<td>24</td>
<td>1.7</td>
<td>9.9</td>
<td>Internet</td>
</tr>
<tr>
<td>Micronesia, Fed. States of</td>
<td>23</td>
<td>5.9</td>
<td>9.9</td>
<td>Internet</td>
</tr>
<tr>
<td>Kiribati</td>
<td>19</td>
<td>9.9</td>
<td>9.9</td>
<td>Internet</td>
</tr>
<tr>
<td>Tuvalu</td>
<td>4</td>
<td>9.7</td>
<td>9.7</td>
<td>Internet</td>
</tr>
<tr>
<td>Palau</td>
<td>2</td>
<td>0.6</td>
<td>0.6</td>
<td>Internet</td>
</tr>
</tbody>
</table>

Note: Total remittance transfers in current US dollars; remittance transfer fees presented as average values for all available remittance corridors.

Addressing some of the above challenges, KlickEx, in partnership with the United Nations Capital Development Fund (UNCDF), started to bring a change into the digital finance landscape of the Pacific already in 2009. The company allows customers in Samoa, Fiji and Tonga to receive digital, low-cost transfers from the main destinations of their migrants: Australia and New Zealand. As the company operates mostly online it can provide services at low operating costs. Further savings come from forex spreads. The platform matches individuals sending money to and from the same origin/destination. Instead of sending each transfer between the destinations across the borders, transactions are netted within the same country corridor, and only the remaining balances need to be exchanged and transferred. At the end, the total number of transfers and exchanges is reduced – hence the savings.

5 The total transfer costs are often relatively higher for small amounts of money (most often transferred by migrants), due to minimum fixed fees (e.g., Gibson et al., 2006), and higher variable fees, therefore, the additional stress on reduction of fees for all remitted amounts.
DIGITAL FINANCE FOR BUSINESS SUPPORT DURING COVID-19 CRISIS

In 2020, Samoan GDP contracted by an estimated 2.7 per cent, which is expected to be followed by further 7.2 per cent contraction in 2021 (IMF, 2021). In the context of the severe COVID-19 crisis, ESCAP and UNCDF (2020) stressed the critical role of additional financing for micro, small and medium size enterprises (MSMEs), comprising around 88 per cent of all enterprises in Samoa. MSMEs encountered declining sales, liquidity and cash flow difficulties, leading into increased layoffs and general worsening of business climate amid increasingly heightening risks. SMEs were also identified to encounter increased difficulties servicing their debt obligations. Similarly to other globally observed patterns, women entrepreneurs face relatively greater challenges in running business, especially in harsh crisis times. In Samoa women perform a greater share of family and household duties at the cost of their business activity. It has been also observed that women remain more risk-averse, which corresponds to lower interest in borrowing from financial institutions to save their businesses. Therefore, ESCAP and UNCDF (2021) suggested specific attention and support services to address financial needs of women entrepreneurs aiming to support their survival throughout the crisis.

On the backdrop of these events, digital finance may serve as a tool for such additional financing, facilitating access to capital for MSMEs. ESCAP has been supporting expansion in digital finance access years before the 2020 COVID-19 pandemic brought destruction to the Samoan economy, especially into the severely affected MSMEs, which constitute the majority of Samoan economy. Building on that experience, ESCAP along with the Government of Canada, Central Bank of Samoa, and UNCDF, prepared a report with policy advice on access to finance for MSMEs with a particular stress on women-owned or managed enterprises (ESCAP and UNCDF, 2020).

DIGITAL FINANCE VS LEGISLATIVE AND BUREAUCRATIC BARRIERS

Despite low-cost money transfer technologies being available, implementation of digital finance remains restricted leaving many behind. Financial exclusion due to lack of legal identities among vulnerable communities, undocumented stay abroad, over-regulation of money transfer companies and banks, for example, by impossible or too costly to implement Know-Your-Customer (KYC) procedures, may entirely prevent deployment of low-cost technologies - or at best severely limit their accessibility.

Aiming to limit money laundering and terrorism funding, KYC-procedures are costly, thus often economically justified to implement only in sufficiently large markets. The KYC procedures may also require impossible to pass personal verification due to lack of necessary identity documents (IDs) among multiple low-income remote communities, characteristic for not only Samoa but also other Pacific states and territories (ADB, 2016). For example, Australian and New Zealand banks pushed to close accounts of digital money transfer agencies serving Pacific island States as a part of blanket de-risking response to international KYC requirements. The blanket de-risking was launched due to either impossible or too costly to carry out KYC compliance procedures among Pacific island communities which, consequently, were a deal-breaker for correspondent banks (ESCAP, 2019; IMF, 2017a).

An emerging, relatively low-cost technological solution might be digital identities provided by mobile

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6 For details, please see: https://www.unescap.org/resources/micro-small-and-medium-sized-enterprises-access-finance-samoa


8 Correspondent banks act as agents for domestic banks to process and facilitate transactions originating in foreign countries. Unless their partner banks exercise sufficient KYC diligence, correspondent banks may prefer to cease cooperation with such banks in order to avoid penalties and sanctions from their own regulators. Correspondent banks serving Pacific island markets are relatively little interested in taking additional risks, related to potential failures in full KYC implementation, given the small potential of profits from such small markets (ESCAP, 2019). For more challenges related to correspondent bank relationships, please see, for example, IMF, 2017b.
operators (GSMA 2018). Providing legal identity, such as digital IDs, strengthens also Agenda 2030. As noted by Sustainable Development Goal 16.9: “By 2030, provide legal identity for all, including birth registration indicator”. Furthermore, digital identities allow to not only access low-cost money transfers, but also other financial services such as saving accounts, insurance, business operations, loans, and even non-financial benefits like access to e-government or health services.

Concluding, as it was noted over a decade ago: “(... burdenful regulatory and compliance requirements all tend to keep fees high” (World Bank, 2006). In recent years, though, the regulatory limitations have even increased, pushing back already existing digital finance solutions and limiting deployment of new ones (IOM, 2019). As the world aims to build back better from the COVID-19 crisis, such unnecessary development barriers require increased attention and urgent action.

The following section discusses the technological challenges linked to digital finance focusing on the internet accessibility and operational efficiency of internet networks. As internet connectivity remains still a challenge across the Pacific islands, including Samoa, it is necessary to expand internet access which remains fundamental for deployment of digital finance technologies.

III. Strengthening digital connectivity through Internet Exchange Point (IXPs)

IXPs FOR STRENGTHENING DIGITAL CONNECTIVITY AND FINANCIAL INCLUSION

Benefits of IXPs

One of the key reasons for low financial inclusion and interest in financial services includes the lack of digital connectivity and ICT devices. As introduced in the first section, there are big digital divides within and across countries from Asia and the Pacific. One way of tackling the present digital divides is through the deployment of Internet Exchange Points (IXPs). The key role of Internet exchange points is to coordinate and link all Internet traffic locally within a country or a group of countries, thereby reducing the transit costs of Internet traffic exchanged internationally, reducing the Internet traffic tromboning effect9 and improving the quality of domestic users’ access through more direct connections to local and cached content. Internet exchange points therefore drastically improve the efficiency of Internet traffic flows by eliminating the need for Internet traffic to flow through expensive long-distance traffic routes lying outside the country of origin.10

However, establishing an Internet exchange point is complex, especially when multiple countries are

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involved. Many Internet exchange points are established for non-commercial public service, which requires the collaboration of all Internet service providers in the country. The subsequent success of an Internet exchange point relies on the willingness of competing Internet service providers to cooperate and connect their traffic. Considerable time and resources are required to build trust and convince them of the expected mutual benefits.

Not only IXPs increases Internet speed, but also countries with higher number of IXPs tend to have higher access to broadband Internet, making it more affordable (ESCAP, 2019). In response, Samoa is in the process of deploying its first national Internet exchange tentatively scheduled to be operational by end of 2021 or early 2022. Furthermore, Samoa is actively engaging consultations with other Pacific island countries on the establishment of a subregional IXP.

**Internet speed and latency estimations in Pacific island countries (with and without IXPs)**

Internet latency in the Pacific varies significantly and is generally affected by factors, including inefficient Internet network and traffic management and the long distances that fibre-optic cables have to cover. Figure 1 indicates the combined average national latency of major telecommunications operators for selected Pacific island countries connected to New Zealand.

Higher Internet latency in several Pacific island countries has been linked to the lack of national or international Internet exchange points. In the Pacific, Australia, New Zealand and Papua New Guinea have established neutral Internet exchange points. Samoa is the process of establishing a national Internet exchange point while Fiji, Tonga, and Vanuatu have established already, and latency between local operators has improved significantly in those countries. Most of the other Pacific island countries do not have Internet exchange points.

**Figure 1. Internet latency for selected Pacific island countries connected to New Zealand, December 2019 (Weighted average in milliseconds)**

![Figure 1. Internet latency for selected Pacific island countries connected to New Zealand, December 2019 (Weighted average in milliseconds)](image)

An ESCAP feasibility study on establishing a subregional Internet exchange point predicted significant improvement in Internet latency between selected Pacific island countries and New Zealand (see Table 3). The average national latency of the seven Pacific island countries without a subregional Internet exchange point was 187 milliseconds. However, if Internet exchange points in Fiji, New Zealand and Samoa were connected to coordinate the traffic using the shortest route, it could drastically reduce average latency by up to 94 per cent, to 6 milliseconds. In the case of Samoa, it will be a 96 per cent decrease from 231 milliseconds to 2 milliseconds if an IXP is connected.

**Table 3. Estimated change in latency for selected Pacific island countries connecting to New Zealand, if Internet exchange points in Fiji, New Zealand and Samoa were connected.**

<table>
<thead>
<tr>
<th>Country</th>
<th>National latency without subregional Internet exchange point (weighted average, milliseconds)</th>
<th>Estimated latency with subregional Internet exchange point (weighted average, milliseconds)</th>
<th>Percentage change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vanuatu</td>
<td>76</td>
<td>2.55</td>
<td>-97</td>
</tr>
<tr>
<td>Fiji</td>
<td>91</td>
<td>11.24</td>
<td>-89</td>
</tr>
<tr>
<td>Tonga</td>
<td>108 Adamian</td>
<td>1.47</td>
<td>-99</td>
</tr>
<tr>
<td>Samoa</td>
<td>231</td>
<td>2.13</td>
<td>-98</td>
</tr>
<tr>
<td>French Polynesia</td>
<td>269</td>
<td>13.16</td>
<td>-87</td>
</tr>
<tr>
<td>Solomon Islands</td>
<td>344</td>
<td>3.69</td>
<td>-96</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td><strong>187</strong></td>
<td><strong>6.00</strong></td>
<td><strong>-94</strong></td>
</tr>
</tbody>
</table>


**PACIFIC IXP PROPOSAL**

Establishing an Internet exchange point is complex, especially when multiple countries are involved. Many country-based Internet exchange points are already established for non-commercial public service, however the linking of Internet exchange points requires the collaboration of all Internet server providers in the country and building trust between several stakeholders (national and international); neutral location and management of IXP as a platform for all operators to connect, and a conducive regulatory environment that supports an open market for telecommunication services (ESCAP, 2019).

The Pacific-IXP proposal arose from requests by member States for ESCAP to facilitate investigations on the feasibility of establishing a Pacific-islands wide Internet exchange point. Recognizing the challenges, the ESCAP secretariat and the Internet Society have been facilitating studies and multistakeholder consultations in Fiji, New Zealand, and Samoa respectively on the Pacific Internet Exchange Point (IXP) Proposal.

According to the Feasibility Study on Pacific IXP, the Pacific IXP is envisaged as a single distributed Internet traffic exchange, with nodes located in three locations - Fiji, Samoa and New Zealand, as shown in Map 2.

Internet service providers in almost every Pacific island country can connect to one of these three node
locations with a single cable-hop. These three node sites minimizes the average latency to a node site from all Pacific Island nations, on a weighted-average basis (weighted by Internet-using population), and forms the mathematically optimum topology for a Pacific IXP.

Multistakeholder consultations has taken place in each of the three node countries (Fiji, New Zealand and Samoa) in 2021. Different stakeholders (governments, regulators, and Internet Service Providers) have provided inputs towards the establishment of a Pacific and these consultations is expected to continue in 2022. The deployment of the Pacific IXP would facilitate the evolution and expansion of financial services in Samoa, facilitating a shift towards a digital economy.

**Map 2. Proposed Pacific IXP.**


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11 The exception being Solomon Islands, which needs two short cable-hops via Vanuatu on ICN2 and ICN1 to connect in Fiji. The higher the number of cables that data is transmitted through, the higher the delay.

III. Policy recommendations

1. EXPANDING ACCESS TO DIGITAL FINANCE

I. Financial inclusion and literacy

Increase financial literacy, especially among the communities at the base of the economic pyramid and living in remote areas, to facilitate and encourage use of already existing digital finance technologies. Suggestions provided in PFIP (2017) may serve as valuable examples.

Strengthen financial inclusion and empowerment of women. Ensure women have equal access to banking services, including digital financial services.

II. Legal barriers

Create supportive business environment for international digital finance companies eliminating legislative obstacles for their expansion. For example, implement overview and regulatory “sandboxes” which would allow fintech companies to operate under minimum legal requirements within well-defined space and duration, for example, such as in Singapore (MAS, 2020).

III. Legal identity

Support development of digital technologies which allow to create low- to no-cost, secure, publicly available digital legal identities provided by the governments, which would facilitate KYC compliance. For examples from Asia and the Pacific please see GSMA (2018) report.

IV. Prevent exclusion due to legal requirements

Given the challenges faced by international money transfer companies in their regular business operations due to blanket de-risking, consider temporary relaxation of KYC compliance requirements for low amount money transfers (such as remittances), in environments where high-level compliance is impossible to implement due to geographical, technological, or low ID-penetration challenges.

Consider implementation of “low-KYC” accounts and protocols. For example, video KYC permitted by the Reserve Bank of India in January 2020 (RBI, 2020b), or consider minimum KYC accounts with low monthly transaction limits such as those suggested by some representatives of the fintech industry (PCI, 2018).

V. Legal cooperation

Ensure migrants are able to use their legal identities, including digital IDs for e-KYC procedures, across different legal jurisdictions, to the extent which allows for secure cross-border money transfers, and with highest respect to the privacy. For data privacy concerns and risks, please consider European Commission research on data sharing in the context of KYC (EC, 2019).

2. DIGITAL CONNECTIVITY

By improving digital connectivity, countries such as Samoa can strengthen digital finance and inclusion, by offering new financial services to citizens that were previously unconnected. The consultations and studies conducted on the Pacific IXP for Samoa, Fiji and New Zealand has highlighted some useful lessons learnt on improving digital connectivity.
I. Enabling regulatory environment

Strong political commitment is needed. The government championing the process needs to ensure that existing and new regulatory policies facilitate an enabling regulatory environment for interconnectivity between operators (local and international).

II. Enhance economic incentives for investment

Governments and regulators need to provide incentives for encouraging investment opportunities on establishing IXP (such as tax incentives on equipment for IXPs as well as operator network equipment).

III. Enhance cooperation

All stakeholders in the process, need to cooperate and share information and best practices. National and international organisations (such as Internet Society and the Asia Pacific Network Information Centre) provide expert advice and capacity training in this area.

IV. Collective agreement

Collective agreement among all parties on a model for establishing and operating IXP is required. This includes the agreement on the organization structure, peering and interconnection policies, ownership of equipment and services, and the leadership and management, among others.

V. Analytical research

Analytical research on the opportunities and challenges of establishing an IXP needs to be undertaken to provide member States with holistic assessments and raise awareness on the importance of the Pacific IXP deployment.

References


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