

Papua New Guinea's Digital Transformation

Understanding the Governance Structure



The Center for International Private Enterprise (CIPE) is a global organization that works to strengthen democracy and build competitive markets in many of the world’s most challenging environments. Working alongside local partners and tomorrow’s leaders, CIPE advances the voice of business in policy making, promotes opportunity, and develops resilient and inclusive economies. Founded in 1983, CIPE is a core institute of the National Endowment for Democracy and an affiliate of the U.S. Chamber of Commerce. CIPE currently has programs in more than 80 countries with private sector and think tank partners.



The Foundation for Media Alternatives (FMA) is a non-profit that seeks to democratize access to information and communications systems for Philippines citizens and communities. FMA works on democratic governance of information and communications technologies (ICTs), advancing human rights in digital environments, equitable, safe access to and responsible use of ICTs, and gender-transformative perspectives, policies, and practices through critical and meaningful engagement with development stakeholders. FMA’s three focal areas are gender and ICTs, data privacy, and open internet. FMA’s gender and ICT initiatives include mapping online gender-based violence (OGBV).

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Glossary of Abbreviations

ADB	Australian Dollar
AUD	Australia Papua New Guinea
B2B	Business-to-business
B2C	Business-to-consumer
BBCPNG	Business Council of PNG
BRI	Belt and Road Initiative
BSP	Bank South Pacific
BTI	Bertelsmann Stiftung
C2C	Consumer-to-consumer
CERT	Computer Emergency Response Team
CIPE	Center for International Private Enterprise
CS2	Coral Sea Cable System
CSO	Civil Society Organization
DFAT	Department for Foreign Affairs and Trade
DFC	United States International Development Finance Corporation
DICT	Department of Information and Communications Technology
FDI	Foreign Direct Investment
FMA	Foundation for Media Alternatives
GNI	Gross National Income
GDP	Gross Domestic Product

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GLOSSARY OF ABBREVIATIONS

GoPNG	Government of Papua New Guinea
ICAC	Independent Commission Against Corruption
ICT	Information and Communication Technology
ICCC	Independent Consumer and Competition Commission
IGIS	Integrated Government Information System
IPA	Investment Promotion Authority
IPG	Internet Payment Gateway
IT	Information Technology
ITU	International Telecommunication Union
IXP	Internet Exchange Point
JBIC	Japan Bank for International Cooperation
KSCN	Kumul Submarine Cable Network
KCH	Kumul Consolidated Holdings
LTE	Long Term Evolution (4G LTE)
MSME	Micro, Small & Medium Enterprises
MTDP	Medium Term Development Plan
N3C	National Cyber Coordinating Center
NCSC	National Cyber Security Center
NEC	National Executive Council
NICTA	National Information and Communications Technology Authority
NPC	National Procurement Commission
NSO	National Statistical Office

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GLOSSARY OF ABBREVIATIONS

OECD	Organization for Economic Cooperation and Development
PGII	Partnership for Global Infrastructure and Investment
PGK	Papua New Guinean Kina
PM	Prime Minister
PNG	Papua New Guinea
PPP	Public Private Partnership
PPSDI	Pacific Private Sector Development Initiative
RTI	Right to Information
SIDS	Small Island Developing States
SIM	Subscriber Identity Module
SME	Small and Medium-Sized Enterprises
SOE	State-Owned Enterprises
TFEC	Technical and Financial Evaluation Committee
TV	Television
UAS	Universal Access and Service
UASF	Universal Access and Service Fund
UNCAC	United Nations Convention Against Corruption
UNCTAD	United Nations Conference on Trade and Development
UNESCAP	United Nations Economic and Social Commission for Asia and the Pacific
UNESCO	United Nations Educational, Scientific, and Cultural Organization
US	The United States

Introduction

Papua New Guinea (PNG) is an island country in the southwestern Pacific Ocean that comprises the eastern half of the New Guinea island and several smaller islands. It has a rugged landscape which poses enormous difficulties to building ICT infrastructure. This is exacerbated by the country's location along the Pacific Ring of Fire, where frequent and sometimes severe earthquakes, mudslides, and tsunamis occur.

This report analyzes the relevant policies, regulations, and institutions concerning digital governance in Papua New Guinea (PNG). Digital governance encompasses the norms, institutions, and standards that shape the regulations around the development and use of digital technologies. This report provides a baseline assessment and understanding of the current governance structure of PNG's digital transformation and identifies key governance gaps.

The FMA research team was composed of researchers and digital rights advocates

from the Philippines. Using their knowledge and understanding of digital governance in the Philippines, the authors introduce a cross country comparison, when appropriate, to highlight certain trends found in PNG and the Philippines, particularly over the last three decades.

The FMA research team and PNG-based research consultants made several unsuccessful attempts to secure interviews with relevant government officials. Accordingly, the insights reflected here are primarily informed by the PNG private sector and civil society. Thus, while the report seeks to provide a comprehensive overview of the current state of digital governance in PNG, it cannot be claimed to be completely comprehensive. Moreover, the lack of accurate and publicly available data poses a considerable challenge for conducting any type of research in PNG.

While a crucial part of digital governance is how the government uses digital technologies to fulfill its mandate and functions, this study aims to look at digital governance as a broader concept that involves the relationships between and among different stakeholder groups, including the government, civil society, and the private sector.¹

¹ Tuano, P.A; Lallana, E.C.; Garcia, L. and Alegre, A. (2017) Evolving an open e-governance index for network societies, Making All Voices Count Research Report, Brighton: IDS. https://www.fma.ph/wp-content/uploads/2017/11/MAVC_FMA_E-governance-index_Pr2Final_WEB.pdf

CONTEXT

The internet was first introduced in PNG in 1993. Thirty years later, while many countries in the Asia Pacific have very high rates of access, in PNG roughly 36% of the population, 3.74 million people, have cellular mobile connections.² Internet penetration is at roughly 32% of the population, approximately 3.3 million users.³ This relatively low level of cellular and internet access is attributed to several factors, including the country's large size, rough terrain, limited infrastructure, and very high costs.⁴ Eighty six percent of the population live in rural areas where internet access is limited or non-existent. According to 2020 data from the World Bank, most of the country's internet users (70%) are from the two largest cities, Port Moresby and Lae. A problematic statistic, since urban settlers account for a small fraction of the population. In rural areas, where the majority of the population lives, connectivity, as well as access to electricity, remains very poor.⁵

The Government of PNG's goal of having 70% of the population connected to the internet by 2030, as stated in its "PNG Development Strategic Plan 2010-2030," will be challenging to meet.

Compounding matters is the country's outdated telecommunications infrastructure, with most people relying on 2G and 3G networks. Ookla, which assesses international internet speeds, ranks PNG 114 out of 181 countries in terms of mobile internet connection speed and 142 in terms of fixed broadband connectivity speed.⁶

Internet access in PNG is also very expensive compared to most other countries. According to the Internet Telecommunications Union (ITU), a PNG internet user spends an average monthly budget of US\$44.40 on mobile telephony, which is estimated to be roughly 22% of a person's average income.⁷

² GSMA (October 2022). The State of Mobile Internet Connectivity 2022. <https://www.gsma.com/r/wp-content/uploads/2022/12/The-State-of-Mobile-Internet-Connectivity-Report-2022.pdf>

³ Data Reportal (2023), supra

⁴ ISP Page (2023, June 22). Papua New Guinea's Telecommunications Landscape: A Look at Internet Service Providers. <https://isp.page/news/papua-new-guineas-telecommunications-landscape-a-look-at-internet-service-providers/>

⁵ World Bank Group (2020, July). In the Time of COVID-19: From Relief to Recovery. <https://documents1.worldbank.org/curated/en/964591594230524376/pdf/Papua-New-Guinea-Economic-Update-In-the-Time-of-COVID-19-From-Relief-to-Recovery.pdf>

⁶ <https://www.speedtest.net/global-index>

⁷ World Data. Mobile communications and Internet in Papua New Guinea. <https://www.worlddata.info/oceania/papua-new-guinea/telecommunication.php>

The population was estimated to be around 10.24 million in January 2023. The median age is 22, with around 86% of the people living in rural areas. The primary livelihood is agriculture, fishing, forestry, as well as artisanal and small-scale mining. PNG is classified as a lower middle-income country with a per capita gross domestic product (GDP) at USD 3,020 in 2022, a 14% increase from the GDP in 2021. Mineral and energy extraction account for most export earnings and the country's GDP. In 2022, the United Nations Human Development Index placed PNG at 155 out of 189 countries, significantly lower than other Pacific Islands.

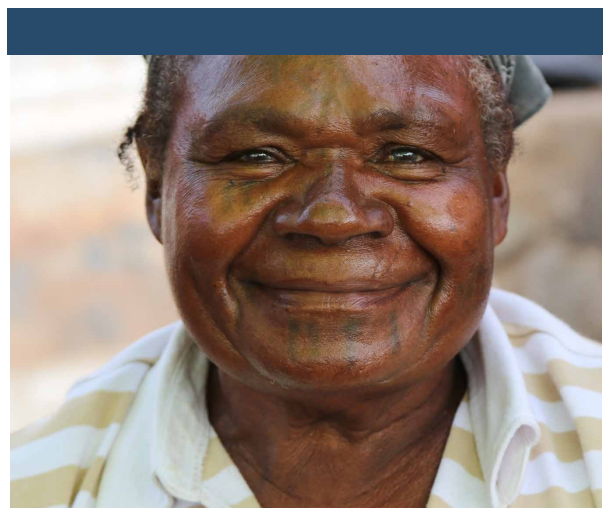
In an unpublished 2023 Center for International Private Enterprise (CIPE) survey conducted in PNG, which surveyed 106 local business organization members, small business owners, and entrepreneurs, more than a third of the respondents reported experiencing internet access interruptions a few times a week (38.7%), while over a quarter experienced interruption daily (28.3%). Respondents cited a lack of digital economy awareness (14%), digital security, (13%), and data privacy concerns (11%) as the major factors preventing them from transitioning their businesses online. This report finds their apprehensions are well-grounded.

In PNG, there are roughly 872,900 social media users, approximately 8% of the population.⁸ The gender divide is pronounced, with women representing 40% of social media users and men 60%. Facebook is the most used platform, followed by Facebook Messenger, Instagram, and Twitter. The majority of internet users connect to the internet through mobile devices, rather than laptops or desktop computers. This finding was backed up by the unpublished CIPE survey, mentioned above, with 65% of the respondents accessing the internet via mobile phones, and 23% through laptops.⁹

The majority of women entrepreneurs surveyed were unaware of any consumer protection, seller protection, or competition laws in existence in PNG.

⁸ NOTE: Social media users may not represent unique individuals (see: individuals https://datareportal.com/notes-on-data?utm_source=DataReportal&utm_medium=Country_Article_Hyperlink&utm_campaign=Digital_2023&utm_term=Papua_New_Guinea&utm_content=Notes_On_Data)

⁹ Unpublished CIPE survey, please contact CIPE for access



ICT INDUSTRY

Despite high demand, the ICT industry in PNG is characterized by low competition, and most companies involved in the ICT sector are state owned enterprises (SOEs). Three major SOEs dominate the telecommunications sector, PNG DataCo, Telikom, and Bmobile, all of which operate under the umbrella entity of Kumul Consolidated Holdings (KCH), which owns all of the government’s non-natural resource assets and other state-owned entities.¹⁰

For decades, the Philippines shared a similar problem with a duopoly in the telecommunications industry. Recent reforms, however – including the passage of a competition law and the creation of the Philippine Competition Commission – as well as the entry of a third major market player, prove to be driving the sector to a promising trajectory of growth and improvement.

These three SOEs are the sole wholesale service providers in PNG, with DataCo having a monopoly on the international and domestic fiber cable networks.¹¹ The presence of state-owned vertically integrated enterprises across the entire ICT supply chain remains a significant barrier to attracting private investment and enhancing service quality for consumers through increased competition. One of the few private players that was able to enter the market is Digicel, which arrived in PNG in 2007 after the National Executive Committee issued a decision opening up PNG’s mobile services market.¹² Although Digicel’s services cover most of the Pacific, its biggest market is PNG. It was acquired by Telstra Corp Ltd in July 2022, with funding from the Australian government.¹³

A Lowy Institute report suggests that public-private partnerships (PPPs) in the telecommunications sector may help improve the industry. It stresses the need for effective competition policy and economic regulation, which will need to address monopolistic behavior in the telecommunications industry and encourage commercially relevant and competitive price paths.¹⁴ And, according to a World Bank report, the Government of Papua New Guinea (GoPNG), through this ownership structure, “has effectively created a state-owned vertically integrated ICT company that [...] has engaged in a vertical squeeze by restricting access to the new Coral Sea cable.”¹⁵ This, along with Digicel’s long standing dominance and the presence of Bmobile in the market, has discouraged potential new entrants, effectively limiting competition in the country’s ICT sector.

¹⁰ <https://www.kch.com.pg/about-us/>

¹¹ <https://documents1.worldbank.org/curated/en/964591594230524376/pdf/Papua-New-Guinea-Economic-Update-In-the-Time-of-COVID-19-From-Relief-to-Recovery.pdf>

¹² Chris Newens, “Papua New Guinea calling,” Rest of world, January 5, 2021, <https://restofworld.org/2021/papua-new-guinea-calling/>

¹³ Unnamed Author (2022, July 14). Australia’s Telstra completes Digicel Pacific buyout. *Al Jazeera*. <https://www.aljazeera.com/economy/2022/7/14/australias-telstra-completes-digicel-pacific-buyout>

¹⁴ <https://www.lowyinstitute.org/publications/building-australia-png-digital-ecosystem>

¹⁵ World Bank Group (2020), supra.

INTRODUCTION

To address slow internet speeds and poor connectivity, GoPNG has launched several initiatives, including the expansion of 3G and 4G towers, and the construction of submarine cable systems that will connect PNG to the rest of the world. PNG is connected to four submarine cable networks, consisting of two inter-regional deployments, including PIPE Pacific Cable-1 that was officially completed in October 2009 and Coral Sea Cable System (CS2). Two domestic deployments include PNG LNG from April 2014 and the Kumul Submarine Cable Network (KSCN) completed in June 2020. Five islands in the country are connected through these cable networks.¹⁶

The Coral Sea Cable System (CS2) is a 4,700km long fiber optic submarine cable system linking Sydney, Australia, to Port Moresby, Honiara, as well as the Solomon Islands. It includes a 730 km submarine cable system connecting Honiara to Auki (Malaita Island), Noro (New Georgia Island) and Taro Island. Funded by the Australian government, with contributions from its counterparts in PNG and the Solomon Islands, the project was completed in December 2019 and was officially launched in Port Moresby in August 2020.¹⁷ The CS2 is supposed to offer more cost-effective bandwidth to licensed operations thus providing faster, affordable and more reliable internet connection.

The Kumul Submarine Cable Network (KSCN) was completed in June 2020 and developed by the PNG SOE ICT infrastructure development firm, PNG DataCo, in collaboration with Chinese telecoms giant, Huawei. It connects 14 main cities in PNG, while facilitating international connectivity via a link to Jayapura, Indonesia, and interconnection with PPC-1 at Madang cable landing station, onward to Guam and Sydney, Australia.¹⁸ The KSCN was promoted as providing stable, reliable, and high-speed internet connection in PNG and would help reduce internet prices, as well as driving the overall digital economy by enabling socio-economic development of PNG.

In recent years PNG's telecommunications industry has improved. However, it has yet to expand to the rural areas, where the majority of the population reside. There is inadequate ICT infrastructure to deliver fast and reliable connectivity. For example, with a population of about 10 million, PNG has two submarine cables providing 2.5 Gbps of capacity, compared to Singapore with a population of about 6 million but with 15 submarine cables landed at different locations.

¹⁶ <https://unctad.org/publication/digital-economy-report-pacific-edition-2022>

¹⁷ PNG DataCo (2020, August 8). Prime Minister Launches Coral Sea Cable. <https://www.pngdataco.com/prime-minister-launches-coral-sea-cable/>

¹⁸ Qiu, Winston (2016, October 14). PNG National Cable Network Enables New Route to Sydney, Australia. *Submarine Cable Networks*. <https://www.submarinenetworks.com/en/systems/asia-australia/png-national/huawei-marine-to-supply-png-national-submarine-fibre-cable-network>

Yet, these benefits have not materialized. It has been criticized that the landing stations are too distantly located from major switching centers of second-tier telecom providers, resulting in high costs for customers and preventing the delivery of high-speed connections.¹⁹

The unfulfilled potential of the KSCN and the CS2 shows that vertical integration and concentrated ownership in the ICT sector is not enough to bridge the connectivity gaps and address the unique challenges brought about by PNG's challenging and large geography. Hence, the heavily state-controlled nature of the ICT industry in PNG is a potential factor in the slow pace of digital infrastructure development, negatively impacting the rate of overall digital transformation in the country.

DIGITAL ECONOMY

Mirroring developments in other parts of the world, online banking and e-commerce in PNG has grown significantly in recent years, catalyzed because of the COVID-19 crisis. According to the Bank of Papua New Guinea's December 2020 *Quarterly Economic Bulletin*, the pandemic effectively steered consumers towards online transactions.²⁰ Retail sales increased by 3% in 2020 due to higher online spending.²¹ That same year, e-commerce revenue amounted to US\$100.8 million.²²

Food and personal care account for 46% of PNG's e-commerce revenue, followed by electronics and media (19%), fashion (14%), furniture and appliances (12%), and toys, hobby, and DIY (9%).²³ In the retail market, the online share is 2% and is expected to increase to 3% by 2027.²⁴ Despite this growth, the PNG e-commerce market remains small and underdeveloped. While there are many opportunities for expansion (both domestic and abroad), a successful venture will have to overcome a number of formidable obstacles. For instance, the high cost of the internet which is still considered a luxury by many. Coverage is limited to urban and more developed areas. Internet speed remains a challenge, with 20% of mobile users on 4G, despite the bulk of web access being via mobile devices.²⁵

¹⁹ <https://www.dwu.ac.pg/en/images/1-Suwamaru-Beneath-the-veil-of-the-Kumul-Submarine-Cable-Network.pdf>

²⁰ James, David (2022, March 21). Ecommerce: the future of doing business in PNG. *Business Advantage PNG*. <https://www.businessadvantagepng.com/ecommerce-the-future-of-doing-business-in-png/>

²¹ Ibid.

²² International Trade Administration (2022, August 1). Papua New Guinea - Country Commercial Guide. <https://www.trade.gov/country-commercial-guides/papua-new-guinea-ecommerce>

²³ eCommerce DB. eCommerce Market in Papua New Guinea. <https://ecommercedb.com/markets/pg/all>

²⁴ Ibid.

²⁵ Rupokei, Felix (2019, August). Papua New Guinea QoS Regulatory Framework - ITU Workshop on Telecommunication Service Quality as Enabler of the Digital Economy, Singapore, 19-21 August 2019. https://www.itu.int/en/ITU-T/Workshops-and-Seminars/qos/201908/Documents/Felix_Rupokei_Presentation.pdf

The digital skills and digital literacy of the general population remain low, especially in rural areas. This is in part because ICT education and training have not been formally introduced in primary and secondary schools.²⁶ ²⁷Language presents an additional barrier, as PNG's most widely read and spoken language, Tok Pisin, remains very limited online. This contributes to limited access to digital services, including digital payments and investment.²⁸

Complicating the country's digital transformation efforts, PNG has a large unbanked population. In 2015, 20% of Papua New Guineans had an account with a commercial bank.²⁹ While more banks have started offering mobile and online services in recent years, numbers remain low. Kina Bank offers retail mobile banking and personal online banking and has established an Internet Payment Gateway (IPG) service allowing customers to use ATM cards for online payments. The Bank South Pacific (BSP) launched its "BSP Pay" service and claims to manage over 1.8 million accounts. BSP offers full-service personal internet banking and is moving into providing e-commerce services. There is also Moniplus, which provides a full catalog of online products (e.g., personal loans, asset finance, term deposits, foreign exchange, etc.).

COVID-19 Pandemic

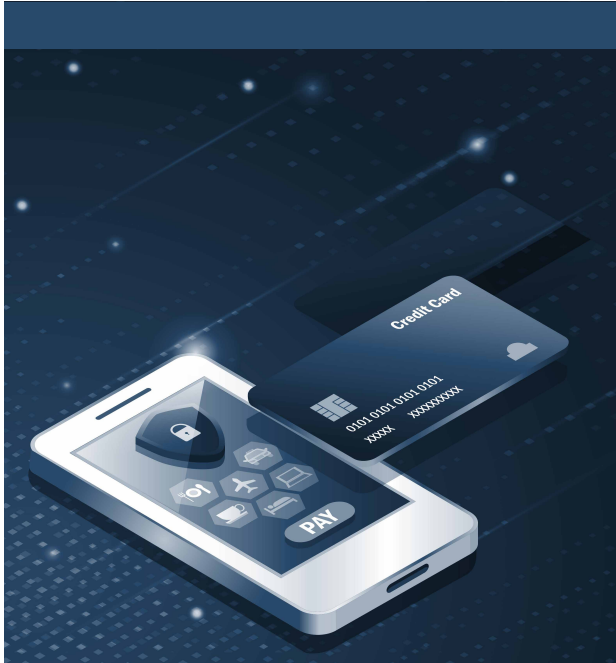
As it did globally, the COVID-19 pandemic catalyzed PNG's digital transformation, pushing government agencies to quickly develop digital tools and systems. According to the Digital ICT Cluster, this impressed upon policymakers the importance of ICT infrastructure and digital governance and led to the passage of the passage of the Electronic Transactions Act in 2021. The Digital ICT Cluster is composed mainly of small and medium enterprises. However, Business Council of PNG (BCPNG) observed that PNG was not significantly affected by the pandemic in this manner, unlike most other countries. From BCPNG's experience and perspective, the push towards digitalization during the pandemic, however significant, was largely among private companies only and not the government. Large corporations and businesses quickly shifted to digital transformation, from holding virtual meetings to electronic financial transactions. BCPNG's members are primarily medium to large companies.

²⁶ Kelegai, Limbie and Middleton, Michael (2002). Information Technology Education in Papua New Guinea: Cultural, Economic and Political Influences. <https://jite.org/documents/Vol1/v1n1p011-024.pdf>

²⁷ Ibid.

²⁸ Kretchmer, Harry (2020, September 22). This Pacific Island is working towards a digital revolution. World Economic Forum. <https://www.weforum.org/agenda/2020/09/papua-new-guinea-digital-transformation-covid-19/>

²⁹ Centre for Social Responsibility in Mining (2015, July). Mobile transparency? Financial inclusion, mobile money & Papua New Guinea's resources sector <https://www.csrsm.uq.edu.au/media/docs/1227/mobile-money-financial-inclusion-and-pngs-resources-sector-june-2015.pdf>



Remarkably, there is no digital payment process market in the country to facilitate or enable e-commerce. According to Kimberley Botwright, the Global Lead of the Global Trade and Investment unit at the World Economic Forum, this is a market that must be tapped in order to give customers the option of where and how they want to pay.³⁰ She notes that its continued absence may be due to regulatory challenges, or a simple lack of awareness about the market among stakeholders. This equates to PNG's startup scene being still in a nascent stage, except for minor transportation startups that are currently boosting innovation in the country.³¹

These challenges make it difficult to connect urban and rural markets, bolster women's participation in e-commerce, for entrepreneurs and MSMEs to transition their businesses online, create new innovative economic opportunities, among many others. The "Pacific E-commerce Initiative" report notes that the key set of policies developed by GoPNG so far relate more towards general connectivity and fails to address the specific needs of developing e-commerce.³²

According to a UN study from 2020, PNG has the largest gender gap in financial inclusion in the Pacific region, with women 29% less likely than men to have access to formal financial services. Multiple factors contribute to this inequality, including a low level of access to education, financial services, financial management, and digital skills among women. Women are also more likely to be engaged in informal, vulnerable, or unpaid work. This is again influenced by lack of access and lower levels of education for women, combined with and stemming from societal expectations for women. This same report also noted that in 2020, 50% of the population owned a mobile phone in PNG, but only 16% of women.³³

³⁰ Yafai, Melisha (2019, June 25). 'No payment process to enable e-commerce in PNG,' Papua New Guinea Post-Courier, <https://www.postcourier.com.pg/no-payment-process-enable-e-commerce-png/>

³¹ StartupBlink (2023). Startup Ecosystem of Papua New Guinea. <https://www.startupblink.com/startup-ecosystem/papua-new-guinea>

³² Pacific E-commerce Initiative (2020), supra.

³³ <https://www.unCDF.org/article/5804/five-reasons-women-in-solomon-islands-and-papua-new-guinea-are-financially-excluded>

INTRODUCTION

Consumer rights and welfare are protected through the Independent Consumer and Competition Commission (ICCC) Act of 2002, however these rules have not yet been revised to properly support the development of e-commerce platforms. The ICCC is designated as a principal economic regulator and consumer watchdog, whose primary role is to administer and implement the ICCC Act and other related legislation. The ICCC performs a number of functions including promoting industry conduct and standards, and protecting consumers interests with regards to the price, quality and reliability of goods and services.

Consumer protection including data protection and privacy is a growing need in PNG and the rest of the Pacific countries. With the development and evolution in technologies, more and more services have shifted online. In many Indo-Pacific countries, online consumers are increasingly accessing e-commerce platforms, digital financial services, social media, e-health, and e-education among others. These services collect data, apply different technologies, make decisions, and provide information about the users collectively, and at times individually as the services are used. Thus, as PNG moves forward in its digital aspirations, the need for consumer protection has become more complex as well as more urgent.

The UNCTAD Rapid eTrade Readiness Assessments of Least Developed Countries has identified key challenges in relation to the consumers of ICT and other online services especially in relation to the digital economy in the Pacific Islands. These include limited awareness of e-commerce relevance among policy and law makers, consumers, and businesses, weak legal and regulatory frameworks, lack of consumer protection online, lack of education for the digital economy, limited internet access in rural/remote areas, costly access to fixed and mobile-broadband Internet, among others.³⁴

³⁴ International Telecommunication Union (2021). Consumer protection in the digital age, Data Privacy and Protection. <https://www.itu.int/en/ITU-D/Regional-Presence/AsiaPacific/Pages/Events/2021/Consumer%20Protection/Consumer-protection-in-the-digital-age,-Data-Privacy-and-Protection.aspx>

Digital Governance: The Legal and Regulatory Landscape

INSTITUTIONS

The Department of Information and Communications Technology (DICT) is responsible for oversight of PNG's ICT sector, including its ongoing digital transformation vision and implementation. DICT was established in 2007, its mission is to “harness the potential of ICT” and bring government closer to the people through effective governance, improved service delivery, and socio-economic growth. As a government agency, DICT is also responsible for providing policy advice to the Minister for ICT on digital infrastructure development, digital governance, coordinating digital government programs and initiatives, as well as raising public awareness and disseminating government development information.

Apart from the DICT, there is also the National Information and Communications Technology Authority (NICTA), which is responsible for the regulation and licensing of ICT in the country, specifically: broadcasting, radio communications, and telecommunications. It was established in 2010 following the adoption by the PNG Parliament of the National Information and Communications Technology Act of 2009.³⁵ NICTA works closely with various stakeholders while ensuring industry compliance with license conditions, codes, and standards. It monitors the effects of regulations to ensure they are responsive to the wider community's needs.

LAWS AND POLICIES

In 2020, the Cabinet approved the PNG Digital Transformation Policy which set the direction for digital policy creation and reform as well as other interventions taking place within the ICT sector. Its policy directives have since resulted in programs and activities through the Digital Government Plan 2023-2027.³⁶ This plan is intended to support the government in utilizing relevant and appropriate digital technology platforms to increase revenue, to deliver public services more effectively and efficiently, and to digitally track development indicators in real time. As of 2022, the PNG government had already identified several ongoing and new digital related public investments.³⁷

³⁵ NICTA website, <https://www.nicta.gov.pg>

³⁶ Papua New Guinea Digital Government Plan 2023-2027, <https://www.ict.gov.pg/Digital%20Govt%20Plan%202023-2027/Digital%20Government%20Plan%202023-2027%20-%20Final%20Version.pdf>

³⁷ Ibid.

Besides this new policy, which has yet to be fully implemented, PNG has a set of core of digital governance policies, most of which were enacted in the last few years. Yet a review of these indicates that digital governance is still a new concept in the country and lacks a comprehensive digital governance framework.



For example, the country has a constitution which, together with its other Organic Laws, are regarded as the Supreme Law of the land.³⁸ Nothing in its existing text is associated with digital governance or related concepts, even if only as a general objective or state policy. In terms of statutes, there are a few old and new laws on subjects that could possibly be revised to address digital governance. However, these laws do not lend themselves towards a digital governance framework as they are currently written. Yet, major changes in the country's policy landscape have occurred during the past decade, with the passing of several key pieces of legislation. Ahead of its peers by a

wide gap, there is the National Information and Communication Technology Act 2009 which regulates the ICT industry, radio communications, and provides for the establishment of the NICTA. Its ultimate objective is to ensure that the ICT industry contributes to the long-term economic and social development of PNG.³⁹ Among its notable features is the establishment of the Universal Access and Service Fund.⁴⁰ The objective of this fund is to finance approved UAS Projects that will encourage the development of ICT infrastructure and improve the availability of ICT services within the country, including rural communities.⁴¹

According to ITU, PNG has one of the most sophisticated UAS institutional frameworks in the Pacific region. It is also the most prescriptive.⁴² Two related policies have since come out to take up in greater detail the law's implementation: (1) National Information and Communication Technology (Operator Licensing) Regulation 2010; and (2) Standard and

³⁸ PNG Constitution, 11.

³⁹ National Information and Communication Technology Act 2009, 2.

⁴⁰ National Information and Communication Technology Act 2009, 89.

⁴¹ National Information and Communication Technology Act 2009, 90.

⁴² International Telecommunication Union (2013). Universal Access and Service: Knowledge Based Report. <https://www.itu.int/en/ITU-D/Projects/ITU-EC-ACP/ICB4PAC/Documents/FINAL%20DOCUMENTS/uas.pdf>

Special Conditions of Individual Licenses Rule 2011. Meanwhile, the UAS Strategic Plan 2023-2027 and the Proposed UAS Projects for 2023 have just been released and the government is seeking comments from interested parties ⁴³

In 2016, the country enacted the Cybercrime Code Act. The law defines and establishes acts or omissions that constitute cybercrimes, essentially adding offenses to those already featured in the country's Criminal Code Act. ⁴⁴ It defines twenty-six (26) distinct crimes, including unauthorized access or hacking,⁴⁵ electronic fraud,⁴⁶ identity theft,⁴⁷ pornography,⁴⁸ defamatory publication,⁴⁹ cyber bullying,⁵⁰ cyber harassment,⁵¹ cyber extortion,⁵² spam,⁵³ cyber-attack,⁵⁴ unlawful advertising,⁵⁵ and a few others relating to intellectual property rights. ⁵⁶ Other notable provisions include its discussions on the admissibility of electronic evidence,⁵⁷ the criminal liability of ICT service providers,⁵⁸ as well as international cooperation and matters relating to extradition. ⁵⁹

In 2021, the Electronic Transactions Act was introduced. It establishes a legal framework for the use of electronic transactions for commercial and non-commercial purposes. On the whole, it legitimizes the use of electronic records by putting them on the same plane as their paper-based counterparts. For instance, it declares that no information shall be denied legal effect, validity, or enforceability for the sole reason that it is in an electronic record format. ⁶⁰ Meanwhile, if a law requires the signature of a person in relation to an electronic record or data message, the use of an electronic signature is allowed. ⁶¹ Other noteworthy provisions relate to the admissibility of electronic records or data messages as evidence and the validity of contracts entered into via electronic communications. ^{62, 63}

⁴³ UAS Secretariat, UAS Strategic Plan 2023-2027 and Proposed UAS Projects for 2023, <https://uas.nicta.gov.pg/index.php/component/content/article/2-uncategorised/70-public-consultation-uas-strategic-plan-2023-2027-and-proposed-uas-projects-for-2023?Itemid=105>

⁴⁴ Cybercrime Code Act 2016, 3.

⁴⁵ Cybercrime Code Act 2016, 6.

⁴⁶ Cybercrime Code Act 2016, 12.

⁴⁷ Cybercrime Code Act 2016, 15.

⁴⁸ Cybercrime Code Act 2016, 17.

⁴⁹ Cybercrime Code Act 2016, 21.

⁵⁰ Cybercrime Code Act 2016, 22.

⁵¹ Cybercrime Code Act 2016, 23.

⁵² Cybercrime Code Act 2016, 24.

⁵³ Cybercrime Code Act 2016, 26.

⁵⁴ Cybercrime Code Act 2016, 27.

⁵⁵ Cybercrime Code Act 2016, 31.

⁵⁶ Cybercrime Code Act 2016, 28-30.

⁵⁷ Cybercrime Code Act 2016, 43.

⁵⁸ Cybercrime Code Act 2016, 44.

⁵⁹ Cybercrime Code Act 2016, 46-47.

⁶⁰ Electronic Transactions Act 2021, 9.

⁶¹ Electronic Transactions Act 2021, 25.

⁶² Electronic Transactions Act 2021, 12.

⁶³ Electronic Transactions Act 2021, 18.

The Digital Government Act 2022 provides for a digital government and e-government. It enables the streamlining, planning, coordination, development, and implementation of digital services, digital infrastructure, digital skills, and all other aspects of e-government. It has for its scope all public bodies, but only to the extent that it does not prevent the proper discharge of digital or ICT infrastructure regulatory functions and powers prescribed under the National ICT Act 2009.⁶⁴ The principal implementing agency is the DICT⁶⁵ whose mandate now includes the formulation of an official Digital Government Plan.⁶⁶

Supporting the DICT are other key bodies established under the law such as the Public Service ICT Steering Committee,⁶⁷ the Public Service ICT Audit Committee,⁶⁸ and the National Cyber Security Centre.⁶⁹ Apart from setting up new government offices, the law also calls for a number of ICT-related projects, including the establishment and/or ownership of a Government Private Network,⁷⁰ a Government Leased Cloud Infrastructure,⁷¹ a National Electronic Data Bank,⁷² a Central Electronic Data Repository,⁷³ a Secured Data Exchange Platform,⁷⁴ and a National e-Government Online Portal⁷⁵

PNG's National Cyber Security Policy sets out the government's approach towards the dynamic and growing number of cyber security risks and challenges yet remains inadequate. In 2020, PNG ranked 118 of 182 countries surveyed under the Global Cybersecurity Index and placed 21st among 37 countries in Asia and the Pacific.⁷⁶

The strength of PNG's digital governance laws and policies, especially data privacy and cybersecurity, will be soon tested. In 2027, the country will hold its National General elections. At the time of this writing, there are many in government pushing for the digitalization of elections under the banner of ensuring transparency and efficiency in the counting of votes. The DICT is proposing eVoting, basing it on India's biometric identification system. This will be the first step to roll out national digital IDs for its citizens.

⁶⁴ Digital Government Act 2022 No 41, 3.

⁶⁵ Digital Government Act 2022 No 41, 5.

⁶⁶ Digital Government Act 2022 No 41, 10.

⁶⁷ Digital Government Act 2022 No 41, 11.

⁶⁸ Digital Government Act 2022 No 41, 10.

⁶⁹ Digital Government Act 2022 No 41, 18.

⁷⁰ Digital Government Act 2022 No 41, 22.

⁷¹ Digital Government Act 2022 No 41, 25.

⁷² Digital Government Act 2022 No 41, 26.

⁷³ Digital Government Act 2022 No 41, 28.

⁷⁴ Digital Government Act 2022 No 41, 31.

⁷⁵ Digital Government Act 2022 No 41, 35.

⁷⁶ International Telecommunication Union (2021), Global Cybersecurity Index 2020, https://www.itu.int/dms_pub/itu-d/opb/str/D-STR-GCI.01-2021-PDF-E.pdf

THE ROLE OF CIVIL SOCIETY AND THE PRIVATE SECTOR

Churches are the largest and most prominent component of civil society in PNG.⁷⁷ Churches are responsible for a high proportion of social services in the country. They provide about 50% of PNG's health services, run two of its universities, and co-manage about 40% of the country's primary and secondary schools.⁷⁸ Aside from church-run and secular organizations, there are also local and indigenous organizations.

The role of churches and CSOs as partners in PNG's digital transformation development should be acknowledged. Under the PNG Open Government Partnership (OGP) Action Plan 2022-2024, GoPNG has made commitments to participatory planning and budgeting, the timely production and public publication of audit reports, and the provision of accurate, timely, and accessible fiscal data.⁷⁹

In regards to digital transformation, there are a few CSOs with the goal of supporting the digital economy, entrepreneurship, and innovation, such as the PNG Computer Society and the PNG Digital ICT Cluster. These organizations engage in digital rights and good digital governance advocacy. They also engage with academia and other stakeholders through policy development

Local civil society organizations (CSOs) are active in community development, youth issues, gender equality, human rights, good governance and transparency, environmental protection, education and capacity building, health, family welfare and domestic violence, food security, and poverty alleviation. International organizations such as Save the Children and Transparency International also have branches in PNG.



⁷⁷ Asian Development Bank (2015), Civil Society Briefs: Papua New Guinea, <https://www.adb.org/sites/default/files/publication/173264/csb-papua-new-guinea.pdf>

⁷⁸ Ibid.

⁷⁹ Department of National Planning and Monitoring of Papua New Guinea (2022, March), Papua New Guinea Open Government Partnership National Action Plan 2022-2024, <https://www.ogp.gov.pg/wp-content/uploads/2022/07/PAPUA-NEW-GUINEA-2ND-NAP-2022-2024.pdf>

consultations and partnerships. The PNG Digital ICT Cluster also advocates for the customization of digital tools appropriate for the PNG population, holds hackathons, and supports local startups and innovators. It recently entered into a Memorandum of Understanding (MoU) with the DICT to establish a national incubator for innovation.

The private sector has a key role to play in PNG's digital transformation and digital governance efforts. Most companies, big or small, are now dependent on the internet for supply chains, connections to customers, and market information. A robust and inclusive digital economy requires the protection of digital rights: universal human rights of expression, assembly, privacy, and more as applied to the digital sphere. The local private sector understands what they need for their businesses to thrive and thus should be part of this important policy discussion. For example, founded in 1995, the Business Council of PNG (BCPNG) is a business support organization that advocates for digital policy reforms to improve economic growth, digital rights, and an open internet. BCPNG has 80-90 corporate members coming from major corporations, such as banks, legal firms, big retailers, manufacturers, extractive industries, telecommunication companies, as well as SOEs.

One BCPNG strategy to advocate for improved digital governance is through their "smart digital agenda." The BCPNG hosts the Praivet Gavamani Konekt (PGK3), a public-private dialogue (PPD) focused on enhancing the digital economy and ICT infrastructure. BCPNG also partners with the University of Papua New Guinea for its Fresh Programme, which is an internship program for university students to enter the digital economy with real life private sector experience to allow them to "become value added employees immediately upon entering the workforce."⁸⁰

The PNG business support organizations and CSOs alike face similar challenges, including:

- **Insufficient funding.** Like many of their peers around the globe, CSOs in PNG are constantly burdened with funding issues. At a forum organized by UN Women, CSOs called for the government to invest in them and approve the State Civil Society Partnership Policy so that organizations can receive funding directly from the Government.⁸¹ They also requested the government: (1) to establish a body to coordinate human rights promotion efforts by the public and private sectors; (2) to invest in women's economic empowerment in order to prevent gender-based violence; and (3) to support the violence prevention and response activities of CSOs.

⁸⁰ Business Council of Papua New Guinea, Fresh Programme, <https://bcpng.org.pg/fresh-programme/>

⁸¹ Nanyonjo, Aidah (2021, December 15), Forum discusses financial plight of Papua New Guinea's civil society organizations, UN Women Asia and the Pacific, <https://asiapacific.unwomen.org/en/news-and-events/stories/2021/12/forum-discusses-financial-plight-of-papua-new-guinea>

- **Inadequate capacity.** Digital transformation and adoption take more than just the introduction of new technologies. It also requires a wide and sufficiently skilled user base, something that PNG lacks. This is due to its challenges in ICT infrastructure, energy supply, and public education. This is why education is a key priority for most CSOs.
- **Limited engagement with the government.** Civil society and the government interact through a number of public forums. However, these engagements remain limited with little impact. These forums rarely take place outside of Port Moresby, in remote or rural areas. One reason could be that there is no single government body for coordinating the civil society sector. The Papua New Guinea Vision 2050 calls for the establishment of a clear NGO–Government Partnership Framework.⁸² Whether this will be enough to improve CSO engagement remains to be seen.
- **Low membership.** Membership-based business support organizations and CSOs, like the Digital ICT Cluster, have low membership. Based on interviews with membership-based organizations, the organizations lack clear membership fee structures, are unable to articulate the benefits of membership, lack internal and external communication strategies, among other capacity issues.
- **Privacy and security.** Digital transformation for business relies on the collection, storage, and analysis of vast amounts of customer data. The BCPNG is among those locally advocating for stronger data privacy and cybersecurity rules, engaging with both the government and the judiciary. Data privacy remains a hot-button topic in PNG.

According to the Digital ICT Cluster, a proper resolution of these issues requires a change in how both the government and the private sector view the ICT ecosystem in PNG. The government should recognize that entrepreneurs must be part of the ICT development process—from the procurement of tools to the designing of services to the rolling out of ICT policies and products. On the other hand, entrepreneurs—especially those from rural areas—should learn how to use ICT tools and start thinking of themselves as innovators and creators. The need for more accessible funding, particularly for CSOs and MSMEs, cannot be emphasized enough. Most sources available today require an endorsement from the government, creating an advantage for industry organizations because they have more capacity, resources, and networks to tap.

⁸² Government of Papua New Guinea (2009, November), Papua New Guinea Vision 2050. <https://actnowpng.org/sites/default/files/png%20version%202050.pdf>

Challenges for PNG's Digital Transformation

Digital transformation processes anywhere in the world are complex and dynamic. The PNG context compounds these challenges. **Key challenges include:**

- **Inadequate public infrastructure and unequal development.** A 2012 report from the Asian Development Bank (ADB) emphasized that among the key infrastructure areas, PNG's deficiencies in telecommunications, transport, and electricity are the most critical.⁸³ The same report cited lack of competition in key areas, shortage of skills, difficulties in acquisition of and compensation for land, and inadequacies in operation and maintenance financing as key constraints to infrastructure investment in PNG.⁸⁴ In 2017, a report by the Lowy Institute notes that connectivity remains scarce in PNG's island and western provinces because of the country's geographic interior and dispersed communities.⁸⁵ The rugged and mountainous terrain of the country makes it difficult to lay fiber optic cables, necessary for connectivity.

The Digital ICT Cluster points out that the Pacific Islands have unique challenges given their geography, as well as economic and cultural contexts. In the case of PNG, they propose that ICT hubs be established in different regions so that ICT and business development will not be limited to the capital and to urban areas. They note the need not just for training in rural areas, but also for such trainings to make use of local dialects to facilitate greater inclusion.

- **Electricity.** At the core of PNG's struggle towards digital transformation lies a fundamental problem: lack of or unstable power supply. Data from the World Bank shows that, as of 2021, less than a quarter (21%) of the population has access to electricity, with the percentage significantly higher among urban settlers (65%), compared to those in rural areas (14%).⁸⁶ Under the PNG Development Strategic Plan 2010-2030, the country aims to provide at least 70% of households with electricity by 2030.

⁸³Asian Development Bank (2012), Papua New Guinea: Critical Development Constraints, <https://www.adb.org/sites/default/files/publication/29776/png-critical-development-constraints.pdf>

⁸⁴ Ibid.

⁸⁵ Lawrence, Craig (2017), Infrastructure challenges for Papua New Guinea's future, Lowy Institute, https://interactives.lowyinstitute.org/archive/png-in-2017/downloads/Lawrence_Infrastructure.pdf

⁸⁶ World Bank Group (n.d.), Access to electricity (% of population - Papua New Guinea), <https://data.worldbank.org/indicator/EG.ELC.ACCS.ZS?end=2021&locations=PG&start=1996&view=chart>

In 2020, the U.S. government initiated the USAID PNG Electrification Partnership in order to achieve this target through a number of key strategies: (1) by improving the financial viability and operational efficiency of PNG Power Limited, the country's electricity provider; (2) by developing viable off-grid electrification models such as solar energy systems; (3) by improving the National Energy Authority, PNG's recently established regulatory body for the electricity sector; and (4) by catalyzing private investments.

- **Cybersecurity.** In 2021, it was widely reported that the Department of Finance's Integrated Financial Management System became the subject of a cyberattack that briefly disrupted government payments and operations. The system, which manages access to foreign aid money, was disabled by the perpetrators who demanded Bitcoin as ransom payment. In the private sector, a notorious cybercrime syndicate called CLOP was also reported to have targeted PNG companies and obtained confidential information after hacking into a popular third-party software. There are also claims of unreported cases of insider threats causing data breaches in companies.⁸⁷ As PNG becomes more reliant on ICT, it is important for the government to develop a strategy for the protection of its information systems and critical infrastructure. This includes the improvement and strengthening of its technical and intelligence capabilities that meet international standards.
- **Lack of digital skills and capacity.** The Digital ICT Cluster, which works with IT professionals in the country, expressed the need to improve technical capacity among IT practitioners. Similarly, there are opportunities for the growth of SMEs and e-commerce, but such would need a push in the right direction. Targeted education and training are necessary to assure SME owners and managers that ICT is critical in improving the performance of their businesses. There is also a need to encourage an entrepreneurial mindset. According to the Digital ICT Cluster, many IT professionals have not adopted an entrepreneurial mindset and are unable to see career directions other than being employed by a company. This insight is shared by the Business Council of PNG, whose membership is composed mostly of big companies and very few MSMEs. Further, the country has to adopt a regulatory framework that protects internet users in order to reap its full benefits. The key set of policies developed by PNG should not just relate towards the general space of ICT and but should also focus on the characteristics of e-commerce.⁸⁸

⁸⁷ Ketias-Zingunzi, Happymabel (2023, July 5), Cybercrime in Papua New Guinea: what businesses need to know to stay safe, Business Advantage PNG, <https://www.businessadvantagepng.com/cybercrime-in-papua-new-guinea-what-businesses-need-to-know-to-stay-safe-analysis/>

⁸⁸ Pacific e-commerce initiative, December 2020, supra.

- **Lack of data management.** PNG does not have a Right to Information law. For ordinary PNG citizens, accessing information is difficult, especially since government agencies rarely share information for public access. If data or information is available, it is scattered and is not coordinated through a central government data repository. There is no central government data repository system that stores and processes data or information public where it can be pushed out to the public through the central E-Government Portal where information can be easily accessible to the public. As a result, some of the policies are formulated based on little or no data.⁸⁹

Governance Gaps

DIGITAL GOVERNANCE

The Government of PNG has introduced its Digital Transformation Policy. However, it is not a comprehensive plan nor is there a roadmap for full implementation. Compared to other Pacific countries and territories, PNG's digital development continues to lag behind.⁹⁰ Simultaneously, cybersecurity is emerging as a significant problem in PNG, with the country a convenient target for hackers and other bad actors. In 2021, for example, the finance ministry fell prey to a ransomware attack that locked millions of dollars of foreign aid during the height of the COVID-19 pandemic.⁹¹

Yet, there are positive signs of improvement. Compared to ten years ago the pace of digital development has noticeably increased because of government policies.⁹² Though still low, competition in the ICT sector has improved with the entry of new players like Vodafone, even if it has not helped lower the costs of connectivity. These improvements are happening despite the country's difficult and large geography, a major barrier to improving connectivity.

DATA PRIVACY AND SECURITY

In 2018, the Department of the Australian Prime Minister, NEC, and NICTA launched a project that included a National Cyber Security Center (NCSC) and a computer emergency response

⁸⁹ Open Government Partnership, National E-Government Portal (PNG0014), <https://www.opengovpartnership.org/members/papua-new-guinea/commitments/PNG0014/>

⁹⁰ Sora, Mihai (2023, June 15). Building the Australia-PNG Digital Ecosystem.

Lowy Institute. <https://www.lowyinstitute.org/publications/building-australia-png-digital-ecosystem>

⁹¹ Ikeda, Scott (2021, November 3). Ransomware Attack on Papua New Guinea Government Freezes Much-Needed Foreign Aid. CPO Magazine. <https://www.cpomagazine.com/cyber-security/ransomware-attack-on-papua-new-guinea-government-freezes-much-needed-foreign-aid/>

⁹² Interview with Winifred Kula of Digital ICT Cluster of PNG

team (CERT) to offer cybersecurity services.⁹³ Unfortunately, the Department of Finance was exposed for ignoring endpoint protection services supplied by the NCSC or using the CERT when it was hit by a ransomware attack that crippled the country's financial system.⁹⁴

Following the ransomware attack in late 2021, the DICT released the National Cyber Security Policy (NCSP) for PNG.⁹⁵ The policy outlines the government's vision, goals, objectives, as well as the evolving governance and the principles to minimize cybersecurity-related risks that may adversely affect its ICT development and the overall economy of PNG. In chapter 4.1 of the NCSP, the government sets the initial task to transition the NCSC from being under partial foreign control to total national administrative control. This is meant to be completed when the current operation capacity of the NCSC will evolve into a National Cyber Coordinating Center (N3C).

Prior to this 2018 project, the Cyber Crime Code Act of 2016, regulated by NICTA, contains provisions relevant to cybersecurity and aspects of data protection but inadequate to protect the information of individuals and groups, including businesses. As the BCPNG noted in an interview with the research team, more private companies and businesses are collecting and processing large amounts of data in their drive towards a more digitized world. The lack of adequate laws and policies to protect GoPNG and its citizens reduces public trust and confidence. In addition, PNG companies are missing out on potential business opportunities.

In 2018, the ITU Global Cybersecurity Index ranked PNG 139th out of 175 countries. The country does not offer a cyber security professional certification course, have national standards on cyber security frameworks, and does not participate in any ISO Technical or Policy Development Committees, it also does not hold a membership with IEC. While it has made strides in developing bodies to oversee the standardization of cybersecurity, there remains an opportunity to improve the internal capacities of these bodies and the collaboration between government departments and relevant stakeholders.⁹⁶

⁹³ <https://www.egovreview.com/article/news/81/bill-strengthen-cyber-security-measures-papua-new-guinea>

⁹⁴ <https://www.bloomberg.com/news/articles/2021-10-27/papua-new-guinea-s-finance-department-hit-with-ransomware-attack>

⁹⁵ <https://www.ict.gov.pg/cyber-security-policy-2021/>

⁹⁶ Standards Australia (2020, January), Pacific Islands Cyber Security Standards Cooperating Agenda, <https://openresearch-repository.anu.edu.au/handle/1885/278551>

DIGITAL RIGHTS

The PNG constitution states that "every citizen has the right of reasonable access to official documents subject only to the need for such secrecy as is reasonably justifiable in a democratic society"⁹⁷ and that "[p]rovision shall be made by law to establish procedures by which citizens may obtain ready access to official information."⁹⁸ However, the country has not yet enacted a law that protects the right to information. Moreover, PNG does not have a Right to Information (RTI) law, a general data protection law, or a data protection law. Section 51 of the PNG constitution gives its citizens the right of reasonable access to official documents, subject only to the need for such secrecy as is reasonably justifiable in a democratic society. However, without a RTI law, transparency and accountability remain weak. The GoPNG should address this urgently. In the digital age, laws and policies need to be established or reformed to protect and fulfill fundamental rights.

In 2014, the prime minister of PNG filed multiple defamation cases against two critical bloggers. In 2017, a PNG court banned a political blogger from publishing "defamatory remarks" about Electoral Commissioner Patilias Gamato. The case arises from alleged defamatory remarks the blogger made on social media, associating the Commissioner to a fruit. The blogger responded by publishing a "gagged" silhouette image of himself on his Facebook and Twitter accounts.⁹⁹

In 2018, there were reports that the DICT planned to ban Facebook for a month. A media article quoted the DICT Minister to have said that the one-month ban would "allow information to be collected to identify users that hide behind fake accounts, users that upload pornographic images, and users that post false and misleading information . . ."¹⁰⁰ This proposed ban has raised concerns about government suppression of free speech.

In 2023, PNG released the draft National Media Development Policy. It proposes to turn PNG's Media Council from a non-governmental entity into a regulatory government body and calls for the licensing of journalists. According to the government, it is designed to improve

⁹⁷ Sec. 51(1)

⁹⁸ Sec. 51(3)

⁹⁹ Pacific Islands News Association (PINA) (2017, July 12). PNG court silences political blogger's comments, blogger posts gag image. <https://ifex.org/png-court-silences-political-bloggers-comments-blogger-posts-gag-image/>

¹⁰⁰ Geteng, Benny (2018, May 29). Shutting down Facebook in PNG is a reality. Papua New Guinea Post-Courier. <https://postcourier.com.pg/shutting-facebook-png-reality/>

democracy and a means to professionalize journalism in the country. However, rights advocates say that this is the beginning of state control over the media. The said policy has been likened to Fiji's Media Industry Development Act, which is considered as punitive.¹⁰¹

Similar to the Philippines, there have been proposals in the PNG parliament to enact a law that would require social media users to register and reveal their real identities. In both cases, there has been opposition to the proposed laws, especially from media workers and social media users who said that such a law could have a chilling effect and, if implemented, could endanger activists and remove an essential check on abuse of power. The government, according to critics of the proposed measure, should focus more on solving the problem of corruption in the country and not on what its citizens say about corruption.¹⁰²

Recommendations

Designing a strategic vision for PNG's digital transformation is vital. PNG faces many digital transformation challenges, especially when it comes to developing its digital governance framework and its ICT infrastructure. Progress may be slow when it comes to reaching the digital transformation goals that GoPNG has set, but progress is happening. GoPNG acutely recognizes that digital transformation is happening and is a key driver of economic growth for the country.

Recommendations include:

1. **Improve critical ICT infrastructure and electricity.** The challenges cited by stakeholders bring us back to the fundamental problem of delivering electricity to the entire population living across the country. Telecommunications and internet service providers require a stable supply of electricity to provide or improve their services. There is a wide digital divide between the urban and rural areas of PNG, which can aggravate other types of urban-rural divides such as in education, the economy, media, electoral literacy, among others.

¹⁰¹ Singh, Shailendra Bahadur (2023, April 5). The beginning of the end for PNG press freedom? East Asia Forum. <https://www.eastasiaforum.org/2023/04/05/the-beginning-of-the-end-for-png-press-freedom/>

¹⁰² Pacific Freedom Forum (2015, April 14). Social media law could chill free speech in Papua New Guinea. IFEX. <https://ifex.org/social-media-law-could-chill-free-speech-in-papua-new-guinea/>

2. **Adopt and implement a comprehensive Right to Information (RTI) law.** Transparency remains a challenge in PNG, this could be addressed by a comprehensive Right to Information (RTI) law that would enforce public access to information. A Right to Information law is a needed and valuable tool to allow for greater engagement of citizens in the management of public affairs. It is a key instrument that can contribute towards transparency and accountability to build more open institutions and generate useful public knowledge. The full and effective implementation of policies and the enforcement of laws and regulations remain the biggest challenges for the PNG government. For civil society and private-sector organizations, it would be prudent to identify champions in parliament to advocate for a RTI law, as well as for the necessary digital governance legislation the country needs urgently.
3. **Address weak governance.** Digital governance gaps (e.g., the lack of a data protection law) could be partially addressed through existing policies and institutions already in place to strengthen digital governance in PNG. However, government actors do not have the capacity to fully utilize them and there is not a sufficient push from civil society or the private sector to hold authorities to account. Although GoPNG, through individual agencies such as the DICT, is open to the comments and feedback of the public on proposed policies, an institutionalized mechanism does not exist. Without such a mechanism in place, allowing or encouraging public participation in the development of ICT policies and legislation remains ad hoc and ineffective. A fundamental requisite of such a participatory structure is freedom of information law or policy, which is currently lacking in PNG.
4. **Encourage competition in the ICT sector.** Although several new players have entered the PNG telecommunications market in recent years (i.e., Vodafone, Telstra), this has not translated to an improvement in the affordability of internet services to general consumers. It will be valuable to monitor how these developments impact consumer use and experience over time. The Lowy Institute's 2017 report on PNG's infrastructure challenges suggests that the entrance of new private sector network operators in the market will "encourage greater aggregation across geographic markets and cost sharing across all operator investors."¹⁰³
5. **Support and include small businesses in PNG's digital transformation.** The presence of SOEs vertically integrated across the entire digital transformation supply chain remains a significant barrier to attracting private investment and enhancing service quality for consumers through increased competition. The government can support SMEs by setting aside a certain percentage of government procurement contracts for SMEs that meet certain qualifications or through bid preferences.

¹⁰³ Lawrence, Craig (2017), supra.

Conclusion

PNG has not progressed as quickly on its digital transformation journey compared to other Pacific Island Countries, as it faces particular challenges due to the lack of electricity, physical infrastructure, linguistic limitations, and difficult terrain. At the same time, the slow but steady growth of internet access and e-commerce presents an opportunity for the government and population of PNG.

This slow but steady pace of digital transformation will have increasing social, economic, governance, and geopolitical implications for the country in the coming years. Newly proposed foreign investments in cables and satellites are set to affordably connect the previously digitally marginalized, yet as detailed in this report, weak and insufficient governance, including institutions, legislation, and policies, creates openings for malign or authoritarian technologies and influence. Currently, there is no overarching digital governance framework that provides clear vision and metrics to support growth and scale of digital economy activities. Monitoring these developments is a critical point for future study.

It is clear that the pace of digital transformation in PNG will rapidly increase in the next few years. As has happened in much of the world, digital transformation passes a tipping point and then expands extremely rapidly with governments left to play catch up. Drawing inspiration from the digital transformation experiences of Estonia, Singapore, India and South Korea, the government of PNG introduced the Government Technology Stack 2023, which will serve as a governance framework for digital transformation in the country. The Government Technology Stack envisions “a future where citizens can access digital services seamlessly, and the government can optimize resource allocation, enhance service delivery, and drive economic growth through digital innovation.”¹⁰⁴ Learning from other countries' experiences, and through multistakeholder consultation, this Pacific island nation has the opportunity ensure that its digital transformation both enhances inclusive economic growth and strengthens good governance.

¹⁰⁴ DICT unveils Technology Stack 2023, paving way for digital transformation in PNG, <https://www.ict.gov.pg/dict-unveils-technology-stack-2023-paving-way-for-digital-transformation-in-png/>

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ANNEX I: OTHER RELATED LAWS

1. **Evidence Act 1975.** A law that consolidates, revises, and amends certain laws relating to evidence. As regards computerized information, it says that a statement contained in a document produced by a computer is admissible as evidence, subject to certain conditions.¹⁰⁵
2. **Copyright and Neighboring Rights Act 2000.** A law that seeks to protect copyright and other related rights. Among the protected works eligible for copyright are derivative works that include collections of works and databases, whether in machine, readable or other forms.¹⁰⁶ As regards a particular computer program, the law allows the lawful owner to reproduce a single copy with the authorization of the author or copyright owner, subject to certain conditions.¹⁰⁷
3. **Organic Law on National and Local-level Government Elections consolidated to Organic Law on National and Local-level Government Elections (Amendment No. 3) Law 2012.** A law that regulates the conduct of elections in the country, including the establishment of an electoral commission. It allows said agency to establish several types of voter ID systems: computer recorded and recognized fingerprint system, computer recorded and recognized palm recognition system, or computer or other photographic or electronic system.¹⁰⁸ It also permits the transmission of any electoral manner via electronic means if it is impractical to do so by post.¹⁰⁹
4. **Central Depositories Act 2015.** A law that establishes the country's central depository which regulates the deposit, holding, withdrawal of, and dealings in securities. It states that a central depository may give access to its computer system to parties specified under the law and any subsequent implementing regulations.¹¹⁰ Unlawful accessing said system is a crime, as is unlawfully interfering (including attempts) in its operations.¹¹¹

¹⁰⁵ Evidence Act 1975, 65.

¹⁰⁶ Copyright and Neighboring Rights Act 2000, 4.

¹⁰⁷ Copyright and Neighboring Rights Act 2000, 14.

¹⁰⁸ Organic Law on National and Local-level Government Elections consolidated to Organic Law on National and Local-level Government Elections (Amendment No. 3) Law 2012, 51A (1), 71A (2).

¹⁰⁹ Organic Law on National and Local-level Government Elections consolidated to Organic Law on National and Local-level Government Elections (Amendment No. 3) Law 2012, 291.

¹¹⁰ Central Depositories Act 2015, 55.

¹¹¹ Central Depositories Act 2015, 55.

5. **Criminal Code (Money Laundering and Terrorist Financing) (Amendment) Act 2015.** A law that criminalizes money laundering and terrorist financing. Among its key provisions is the definition of property as assets that may include “legal documents or instruments in any form, including electronic or digital”.¹¹²
6. **Defamation Act 1962.** A law that consolidates the country’s policies on defamation. Amended in 2016, it now explicitly states that defamation may be committed through the “use of electronic systems or devices”.¹¹³ Similarly, the term “publication” now also includes those generated through the use of an electronic system or device.¹¹⁴
7. **Classification of Publication (Censorship) Act 1989.** Last amended in 2017, this law provides for the classification of publications, and a prohibition on objectionable and unclassified publications. A number of violations are considered crimes, such as the publication of objectionable publications,¹¹⁵ the possession of objectionable publication,¹¹⁶ and making objectionable publications¹¹⁷. To facilitate its enforcement, the law established the censorship board.¹¹⁸ Curiously, in the list of prescribed (i.e., regulated) activities,¹¹⁹ the operation of an online platform like a website or social media platform is not explicitly mentioned. Neither is the definition of the term “publication” clear if it includes activities like posting online content.¹²⁰
8. **Organic Law on The Independent Commission Against Corruption Law 2020.** A law that provides for the establishment of the Independent Commission Against Corruption (ICAC). It allows government investigators, in the conduct of an investigation, to obtain an interception warrant authorizing the use of an interception device,¹²¹ which may consist of a data interception device, a listening device, an optical interception device, a tracking device, or any combination of the first three.¹²²

¹¹² Criminal Code (Money Laundering and Terrorist Financing) (Amendment) Act 2015, 1.

¹¹³ Defamation Act 1962, 1.

¹¹⁴ Defamation Act 1962, 2.

¹¹⁵ Classification of Publication (Censorship) Act 1989, 70.

¹¹⁶ Classification of Publication (Censorship) Act 1989, 71.

¹¹⁷ Classification of Publication (Censorship) Act 1989, 74.

¹¹⁸ Classification of Publication (Censorship) Act 1989, 4.

¹¹⁹ Classification of Publication (Censorship) Act 1989, 26.

¹²⁰ Classification of Publication (Censorship) Act 1989, 2.

¹²¹ Organic Law on The Independent Commission Against Corruption Law 2020, 86(1).

¹²² Organic Law on The Independent Commission Against Corruption Law 2020, 4.

9. **Controlled Substance Act 2021.** A law that regulates controlled substances and defines crimes relating to the use of illegal drugs. Law enforcement authorities may apply for a production order that would require a person to submit for inspection any premises, vehicle, or even an electronic system believed to be connected with a drug-related crime.¹²³ For access purposes, law enforcement may also seek assistance from other persons (i.e., not suspects) that have control or are in possession of the object or system.¹²⁴ A court has a similar power or authority.¹²⁵
10. **Essential Services Act 2022.** A law that protects the community's interest in the supply of essential services during an emergency. It defines "essential service" as including radio and television services, telecommunications, and any other prescribed service.¹²⁶ A "proclaimed essential service", on the other hand, is any essential service a law declares to be covered by a period of emergency.¹²⁷ If an essential service is to be significantly interrupted, dislocated, or materially diminished, such that public health, public safety, public welfare, or peace and order is prejudiced or threatened, a period of emergency may be declared in relation to such service.¹²⁸ During such time, the government may decide to control or regulate the said service.¹²⁹ The affected entity has no choice except to comply,¹³⁰ but shall be entitled to compensation if it suffers a loss as a direct result of its compliance.¹³¹ Meanwhile, non-compliance is considered a crime.¹³²
11. **Family Protection Act 2013.** A law that, for the most part, defines the crime of domestic violence and establishes a regime for family protection orders. It recognizes that one way to commit domestic violence through stalking, which includes "making persistent telephone calls, sending persistent text messages or other forms of communications to the person or to the premises where the person lives or works"¹³³. Communication is defined as any written, oral, sign or electronic form of communication.¹³⁴ In 2022, it was amended primarily to increase criminal penalties.

¹²³ Controlled Substance Act 2021, 73.

¹²⁴ Controlled Substance Act 2021, 74.

¹²⁵ Controlled Substance Act 2021, 75.

¹²⁶ Essential Services Act 2022, 2.

¹²⁷ Essential Services Act 2022, 2.

¹²⁸ Essential Services Act 2022, 3.

¹²⁹ Essential Services Act 2022, 4.

¹³⁰ Essential Services Act 2022, 5.

¹³¹ Essential Services Act 2022, 8.

¹³² Essential Services Act 2022, 9.

¹³³ Family Protection Act 2013, 5.

¹³⁴ Family Protection Act 2013, 2.

Also introduced, though, were two new key definitions. The first is “sexual abuse” which includes the “publication of a statement or other material relating to a person or purporting to relate to or originate from a person to another using the internet, e-mail or another form of electronic communication” or the “unlawful publication of intimate material including photograph, texts, video, voice or audio recording or other image or picture with the purpose to harass, frighten, intimidate, threaten or abuse another person”.¹³⁵ The second is “stalking” which includes the “publication of a statement or other material relating to a person or purporting to relate to or originate from a person to another using the internet, e-mail or another form of electronic communication” or “tracing or intercepting the person's mail or communication through the use of the internet, by e-mail or through another form of electronic communication”.¹³⁶

¹³⁵ Family Protection (Amendment) Act 2022, 1.

¹³⁶ Family Protection (Amendment) Act 2022, 1.

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